

American Medicine

A WEEKLY JOURNAL
FOUNDED, OWNED, AND CONTROLLED BY
THE MEDICAL PROFESSION OF AMERICA



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The Number of Subscribers to American Medicine and their Residences.—On December 28, by invitation, a committee of advertisers examined our subscription lists, post-office receipts, etc., and they certified that the number of subscribers and their residences were as follows:—

Alabama	76	New Jersey	317
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Arkansas	86	North Carolina	84
California	610	North Dakota	36
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Colorado	235	Oklahoma	44
Connecticut	282	Oregon	78
Delaware	43	Pennsylvania	1851
Dist. of Col.	174	Rhode Island	104
Florida	32	South Carolina	55
Georgia	126	South Dakota	31
Idaho	20	Tennessee	119
Illinois	857	Texas	316
Indiana	248	Utah	26
Indian Territory	47	Vermont	74
Iowa	420	Virginia	166
Kansas	178	Washington	105
Kentucky	155	West Virginia	143
Louisiana	240	Wisconsin	255
Maine	240	Wyoming	10
Maryland	408	Foreign	73
Massachusetts	593	P. I. and Cuba	20
Mexico	17		
Michigan	486		14,453
Minnesota	168	U. S. War Dept. and	
Mississippi	58	M. H. Service	275
Missouri	439	Unclassified subscrip-	
Montana	56	tions to begin Jan.	
Nebraska	173	1, 1902	71
Nevada	10		
New Hampshire	88		14,799

This result in less than nine months is a most gratifying proof of the desire of physicians for an independent and professionally owned journal. We think it perfectly possible for every present subscriber to secure another and if each would resolve to do so, AMERICAN MEDICINE would be so well established that it could be made a still more powerful means of professional and journalistic reform. We heartily urge every reader to use his utmost endeavors to this end.

The Plans for Special Departments in American Medicine to which allusion was made in last week's issue, have been so far completed that we are able to

announce that the following physicians will be in charge of:

Clinical Medicine	{ Dr. David Riesman, Dr. A. O. J. Kelly.
General Surgery	{ Dr. Martin B. Tinker, Dr. A. B. Craig.
Obstetrics and Gynecology	{ Dr. Wilmer Krusen, Dr. Frank C. Hammond.
Treatment	{ Dr. Solomon Solis Cohen, Dr. L. F. Appleman, Dr. R. Max Goepp.
Nervous and Mental Diseases	{ Dr. J. K. Mitchell, Dr. F. Savary Pearce.
Orthopedics	—Dr. H. Augustus Wilson.
Dermatology	—Dr. Henry W. Stelwagon.
Pathology	—Dr. R. M. Pearce.
Rhinology, Laryngology and Otology	—Dr. D. Braden Kyle.
Ophthalmology	—Dr. W. L. Pyle.

Announcement of other departments will be made later.

Dr. MacDonald and Mr. Spitzka Pronounce Czolgosz Sane.—We regret that the exigencies of our space have prevented us from publishing the article, sent to us synchronously with other leading weeklies, upon Czolgosz, the murderer of President McKinley. The report is by Dr. Carlos F. MacDonald and Mr. Edward Anthony Spitzka. Dr. MacDonald examined the man several times and reached the conclusion that he "was in all respects a sane man—both legally and medically—and fully responsible for his act." Mr. Spitzka makes a very careful postmortem examination of the gross anatomy of the brain and other organs and "found absolutely none of those conditions of any of the viscera that could have been at the bottom of any mental derangement." It is, of course, well known that insanity may exist without any visible lesion of the brain or any other organ, but such cases do not present the history of this man. Further we have been told that he was in truth a disappointed office seeker, and this may have been the motive of his crime. The country may congratulate itself on the quiet dignity with which the trial was conducted, and on the rapidity with which punishment followed. It has been stated, in criticism of the American methods of carrying on criminal trials, that a man with typhoid fever has a greater chance of dying than a murderer. There is little if any exaggeration in this statement, and judges and courts would do well to use the Czolgosz trial

as a model in the future. As to the use of insanity as a plea in criminal cases, it is not so much used as is popularly supposed, and this case proves that sometimes at least doctors agree, for in it the opinion of the sanity of the accused was acquiesced in by all who examined him.

Fog and Smoke.—Recently a meeting of the Coal Smoke Abatement Society was held in London, and many facts and figures were brought forth to show the evils arising from smoke in that city. A report of this meeting and editorial comments on it will be found in the *Lancet* for November 16 and 23, 1901. It seems that these influential Londoners believe that the famous fogs of London are due as much to the large clouds of smoke which overhang the city as to the moisture in the air. The factors are a moist, still air, and the large quantities of unconsumed smoke. Sir William Richmond estimated that as many as 6,000 tons of coal were carried off in suspension in the atmosphere daily from the chimneys of London. This gives some idea of the magnitude of the nuisance in that city. The dirt caused by this black fog is only one of the resulting evils; days spent in darkness or in artificial light affect the mind as well as the body. The expense of artificial light as well as the large amount of oxygen consumed by artificial light is another item of much importance which should be considered in this connection. Inhabitants of dark cities are never cheerful, and no doubt this may be the reason for the spleen of the English, which is supposed to be characteristic by the French and some others. The London society state that there is even a decided increase in the deathrate during these heavy black fogs, and there can be no doubt but what so much smoke in the air is a cause of bronchitis and other inflammations of the respiratory tract, which in their turn give rise to greater liability to pneumonia and tuberculosis. Some of our American cities are nearly, if not quite, as much in need of a Coal Smoke Abatement Society as London. This is notoriously true of Pittsburg, although some efforts have been made to abate the nuisance of late, and Cleveland, formerly one of the cleanest of cities, is rapidly coming to rival Pittsburg. Even in many other cities in which the nuisance is not so great, an effort at abatement would be very desirable.

The High Pressure American.—There is hardly a week that we do not see in some journal or newspaper an allusion to the high pressure of American life. It is taken for granted that the only pace that kills is our own, that we are shortening our lives and bringing on early death by the strain. In a recent number of the *Nineteenth Century and After*, for instance, a writer plainly one of these self-destroying Americans, writes as follows:

The average American in every branch of business wears out his physical powers before his time; and only too often, under the self-imposed strain, his mental powers break down also; but the high pressure at which he works in the maturity of his strength, intellectual and physical, however bad for himself in the end, is very good for the community in which he lives. Thousands and tens and hundreds of thousands fall in their tracks, like soldiers in the fire and smoke of battle,

victims of their own overstimulated energies; but their places are promptly taken by younger men, animated by the same indefatigable and unflinching spirit. The community is practically made up of men working at a white heat, and its progress is hastened by the very fact that this heat is so consuming that before it dies out in the average individual it injures, if it does not destroy him.

We have often been minded to deny the allegation, but upon second thought have not done so because of the great difficulty that exists in getting at scientific disproof. It is a huge task to collate and analyze the statistics necessary to make the correction of the error anything more than the error itself—mere assertion without basic facts. We are as little inclined as another to justify overstrain and feverish commercialism, but we believe that these are unwise, chiefly because of other reasons than those pertaining to vital statistics. The fallacy of the scoffer at American high pressure lies doubtless in the fact that every one has the virtues of his defects, *i. e.*, that we have other qualities which more than compensate in a life-lengthening way for the waste or shortening of our strain. The insurance statistician, Frederick L. Hoffman, makes a statement which if true in all its details should be laid before the echoers of the old charge against the fast-living American:

It is then a matter of great importance to note that there has been a material increase in the number of those who survive to the ages of 30, 40 and 50 in the United States, and the number will probably continue to grow, as the conditions of city life are improved.

At present in Massachusetts there are expected to survive to the age of fifty 5,275 persons out of every 10,000 born, against 4,409 survivors out of the same number in 1855. At the age of 80 the number of survivors is 1,266 at present, against 1,059 half a century ago. Therefore, most valuable lives, valuable because of enhanced intelligence and comprehension, have been saved to the state because of the sanitary and other social progress made during the last fifty years. This country is more healthy with the exception of Norway and Sweden than any part of Europe, and the effect of the intense struggle for success on the part of our business men and women is more than balanced by our higher standards of living, which tend to make our people continue along the path of improvement. While it is impossible to arrive at final conclusions on the basis of our industrial or ordinary experience, because of the careful medical selection exercised in insurance practice, the facts established by other investigations indicate that the adult foreign-born citizen is subject to a lower mortality in the United States than in his own country, and it may be safely assumed that any inherited tendency to early decay will be more than balanced by the healthier conditions of life in our country. A comparative mortality table shows that close behind Norway, and ahead of Great Britain, France, Germany, and ahead of other states of our country, New Jersey has the lowest deathrate. The chance of attaining the age of 100 in Massachusetts is today ten times what it was half a century ago.

Certainly the facts are abundant, tending to prove that old age is being attained by men and women in this country with an increasing degree of frequency, and, what is better, to quote the words of an authority: "It is certain that our American men at sixty are not broken up as badly as our fathers were at forty."

"**Medical Liberty**" is the title of a periodical published at No. 29 Arapahoe Building, Denver, Colorado. We give this address in order that physicians may secure a copy of this most instructive example of antiism. It is certainly worthy of notice both from a psychologic and a sociologic point of view, and we hope

it will have a wide circulation. A Falstaff gathering of all possible sorts of opponents of medicine has evidently been made in order to repeal all restrictive legislation of the state in reference to the practice of medicine. Philologists will also find amusement and subjects for study in the wonderful language used to convey the hatred of the writers. The subtitle is as follows:

"A critical monthly journal, giving the views of eminent doctors and revealing the frauds and tricks of the quacks and fakirs in the medical profession.

"Why the people are slaves to schemers who hide behind purchased medical diplomas while impudently posing as guardians of public health.

"Laws to send honest men and women to jail for curing disease by natural methods, in order to make room and create a monopoly for the half-baked students of rival colleges who imagine that conferring a medical diploma upon a simpleton supplies him with the brains of a doctor whom the public should be compelled to support."

For many reasons we shall not quote examples of billingsgate, but here is one that shows ourselves as others see us:

Vote for an imbecile, a nigger, or a yaller dog in preference to a medical beast who would arm himself with the law (the coward's club) and when death hovers over the brow of your dying wife or child refuse you the right to employ any assistance outside the pill and powder gang of which he is the putrescent tool and procurer.

We trust that as secretary of the Colorado Board of State Medical Examiners, Dr. Van Meter's heart may not fail him in his crusade against these people.

Experimental Inoculation.—Almost one hundred years ago, the Boston Board of Health erected a hospital at Noddle's Island, and appointed a number of physicians to pursue a series of experiments to determine the value of vaccination, which had been introduced but a few years before. On the sixteenth and nineteenth of August, 1802, nineteen boys were inoculated with vaccine matter. The operation was successful in every case. On the nineteenth and twenty-first of November, these nineteen children, together with one who had been vaccinated two years before, were inoculated directly from a smallpox patient; the arms became slightly inflamed, but no constitutional symptoms developed. At the same time two boys who had neither had smallpox nor been vaccinated, were inoculated from the same smallpox patient; these two boys developed typical smallpox. When the disease was at its height in these two children, the twenty boys were again inoculated from them; they were also exposed to infection in the natural way by being constantly in the same room with the two boys, but in none of the twenty did the disease appear. The physicians certify that the experiment is satisfactory evidence that the "cowpox is a complete security against the smallpox."

Again, in 1808, the Massachusetts Medical Society appointed a committee to study the subject, for the operation had not gained rapidly in favor. The report was published in the Society's "Communications," Volume I. It concludes that vaccination affords as complete a protection as smallpox itself, but advises revacci-

nation as a test of the satisfactory result of the first operation.

It is well for the profession to keep this experiment in mind, an experiment possible then when inoculation directly from smallpox patients was still practised. If statistics may be questioned, if our opponents will not accept the evidence gained in countries where vaccination is general because compulsory, it would seem that the result of this experiment is unquestionable. Here we have the tangible experimental proof of the protection afforded by vaccination. How do our friends, the antis, interpret this result? Perchance they have never heard of it, nor of Jenner's own similar experiments. It is discouraging to think that the profession, with all the advance it has made, must still labor with a public no more susceptible to truth than the public of a century ago, when the opponents' chief argument was that the operation was new and untried.

Street Cuspidors vs. No Spitting.—The Board of Health of Grand Rapids is said to have recently authorized signs, reading "No spitting on the sidewalks," to be placed in prominent places throughout the city. On the other hand, Dr. T. J. M. McCoy, of Los Angeles, is reported as favoring the placing of cuspidors on street corners and in office buildings, with sewer connections and constantly flushed with running water. So much has been done of late towards abating the disgusting though characteristically American habit of spitting in public conveyances, stations, etc., that any action such as the supplying of street cuspidors may appear at first glance as an encouraging rather than a repressive measure, and therefore ill advised. Much good can undoubtedly be done by the "don't spit" signs, in the same way that the "Commit no nuisance under penalty of the law" signs have been effective in many instances. There is, unfortunately, a considerable percentage of the population of our large cities afflicted with tuberculous and catarrhal diseases which necessitate frequent and copious expectoration and some means should be devised by which such ejecta may be rendered innocuous to the majority.

American modesty draws the line at street urinals or *cabinets d'aisement*, but American women continue to mop the filthy expectorations with which a tobacco-chewing and catarrhal race soil their sidewalks; and any means which will bring about reform is to be encouraged. Several towns have recently passed ordinances making it a legal offense to wear a trailing skirt on the street; but such regulations cannot be enforced, and the remedy lies in keeping the thoroughfares clean and in teaching the younger generation to abstain from spitting. The public spittoon as now supplied, is a loathsome example of hygienic and anesthetic incompetence and the suggestion of Dr. McCoy that it be replaced by some arrangement that can be constantly flushed is an excellent one. If our Health Boards would combine all the plans—put up signs forbidding spitting and calling attention to the dangers which arise from getting the filth of the sidewalks on dress skirts—many women would avoid trailing skirts if their attention was constantly called to the indecency and danger of the custom.

The Legitimate Demands of Science.—There yet remains a silly sentimentality in opposition to the scientific study of medicine. A great number of people view with a horror that is entirely uncalled for the suggestion of allowing a complete necropsy on the bodies of deceased relatives and friends. Physicians acquiesce too readily with this prejudice. In many instances knowledge of infinite value might be gained if the attending physician in a case having a fatal termination would insist firmly upon the rights of medical science. We should educate the public to recognize that knowledge of disease can advance only through the study of its processes and results. Every physician should reckon it a sacred duty properly to inform his patients and their friends in regard to this.

Turning to another aspect of this matter, much more vigorous expression is justified. In all our public institutions for the care of the defectives of our social organization there occurs at present a most sinful waste of pathologic material that, properly studied, would undoubtedly be productive of results most useful to the world. It certainly seems to be only simple justice for the state to demand that medical science shall not longer be cheated of knowledge to be gained by scientific necropsy on the bodies of those who have enjoyed the bounty of the state. It is a common occurrence, upon the death of an inmate of one of our asylums or other similar institutions, to have relatives or often very distant acquaintances step in and claim the body for burial. The time has come when physicians should force the state to assert its rights. If the state in pursuance of altruistic duty relieves a family of all the burden and expense of supporting and caring for an imbecile, a lunatic, an epileptic, or one infirm from disease, it most certainly has a right in equity to demand that medical science be allowed to glean the knowledge that careful study will find in every case. No misguided sentimentality should be permitted to stand in the road of this perfectly fair requirement.

Those physicians who are in charge of such institutions should at once make up their minds to work steadily and judiciously toward this end. It can be attained by conscientious and tactful effort. The benefits that will result will fully repay the trouble. State officials must be educated to recognize the insistent demands of medical science. Sentiment must be created that will permit the world to profit by the opportunity to gain valuable facts that are now so prodigally wasted.

As one of the popular objections to postmortem examinations is that of dislike for the mutilating of the body—an objection which in a very recent and famous case prevented the obtaining of a full knowledge of the cause of death—it is quite possible that there is demanded some perfection of our technic in making necropsies. Unnecessary mutilation must in every case be avoided. So far as the abdomen and thorax are concerned, present methods probably suffice. In case of the head, however, there is distinct room for improvement. It is within our knowledge that great restriction in the liberty of making necropsies resulted in one famous state institution from a badly replaced calvarium. Ingenuity should

find some device for retaining rigidly in place the calvarium after removal of the brain. There is an evident and present need for such an invention.

It should become the duty and pleasure of every physician insistently to urge that the state has a valid claim to the scientific benefits that will certainly be gained by careful postmortem study of every person dying an inmate of a state institution, and a recipient of a state's bounty.

"Mental Science."—We have frequently noted the fact of the word-drunkenness of ignorance, the strange intoxication which seems to have seized upon millions whereby they secure a morbid and delusional exaltation that is inversely proportional to their lack of real knowledge, and, while repeating some bombastic farrago of senseless words they soar in a kind of phantasmagoric no-man's-land, freed from all the laws of logic and common sense. In Helen Wilman's defense of her system of "Mental Science" and "Absent Treatment," one occasionally comes upon sentences that betray glimmers of sense, but one wonders how to explain psychologically the fact that stares at one of crazy folk discoursing grandiloquently on mental science who have not studied science, or psychology logic, or etymology a minute. Observe the words and sentences of the following excerpt—not by any means the most senseless that could be made:

If I believe in the power of disease, my thought atmosphere would not heal a patient. But I have reasoned myself out of the world's accepted beliefs on this subject. Disease has no power of its own, but only as much power as our ignorance concedes to it. Disease is ignorance, and intelligence is its cure. Now, imagine that I, for instance, as the result of years of study, have learned absolutely that disease is but the negation of the ubiquitous life principle. This life principle has taken entire possession of me and my thought; I live in it; I am it. My thought atmosphere admits no contradiction of the one great fact. Then, imagine that one steeped in the belief of the power of disease comes to me in thought; her thought atmosphere mingles with mine, and mine, being positive to hers, produces marked changes in hers. Her disease ceases to hold her. Indeed, it never held her; she held it. She learned its instability from me, and drops it.

Each patient has instructions about how to come to me in thought. If he cannot understand them, I go in thought to him. And I do cure. I cure at least 80% of my patients, and I seldom have one who has not been discharged by the regular physicians as incurable.

Periodicals and books and pamphlets by the million, and all made up of such astounding stuff as this, are being poured over the land. One at first is inclined to laugh and sneer, but one soon comes to see that there is no more ominous and awful thing than such a phenomenon. Verily, "disease is ignorance and intelligence its cure," but how shall cure be brought to such diseased minds as those who are proud that they "have reasoned themselves out of the world's accepted beliefs."

The first vaccination, it seems, was not made by Jenner, but by a simple farmer, Benjamin Jesty, of Dorsetshire, England. In 1774 he inoculated his wife and two sons with virus taken from the teats of the cows. The children had the disorder in a favorable manner; Mrs. Jesty's arm was badly inflamed, but she

finally recovered. In 1789 the two sons were inoculated for smallpox with others who had not had the cowpox. The Jestys did not have the disease, but the unprotected had typical inoculated smallpox. In 1805 Mr. Jesty went to London as the guest of the Jennerian Society. To us now it seems somewhat strange that Jenner should have waited so many years to operate upon the Phipps boy when it was generally recognized by the dairy people of his neighborhood that those who milked the cows were protected from smallpox.

Hydrophobia in England.—As short as the famous chapter on snakes in Ireland is that concerning hydrophobia in England: "There is no hydrophobia in Great Britain." The authorities are proud to say it because the stringent rules of the Board of Agriculture, chiefly as regards muzzling, have aroused not a little opposition. The muzzling ordinances have been repealed, but importers of dogs and travelers with dogs will still have a hard time of it for a while. A six-months' quarantine of animals will be demanded after March 15, 1902, in order to be sure that the disease is not brought from foreign countries. The experience in this disease, not only of England but of all countries, is another illustration of the fact that in the scientific prevention of disease medicine is more kind both to animals and mankind than their mistaken spokesmen, the antis.

A Capital Argumentum ad Hominem is the answer of an English medical journal to the French press which has been mercilessly criticizing the child mortality in the African concentration camps. In Paris, the supposed center of civilization, and in time of peace, it has been found that the mortality of children put out to nurse (a large proportion of all born) is at least 80%! Africa is bad enough, but how much worse is this! Zola and other writers have bravely fought this cruel waste of life, since Rousseau used to knit lace as rewards of mothers who would nurse their own children. It is so easy to excuse or ignore our own faults and crimes while vehemently criticizing those of others.

Local Quarantine Against the Tuberculous is reported to have been resolved by the Board of Health of Liberty, N. Y., which place has become somewhat of a resort of such patients. We do not understand the exact nature of the ordinance. If it is so stringent that tuberculous guests are not to be allowed to stop at the hotels or live in the village, we think it both poor policy and poor medicine. Pulmonary tuberculosis is not so contagious as to warrant such legislation, and we doubt if the principles of our government will permit any such infringement of the rights of citizens. The dissemination of the germs of the disease is so easily prevented that our efforts to decrease the spread of the disease should be in this direction rather than in interference with the movements of the patients.

Eddyism and Smallpox.—We read in the newspapers that a New Jersey family of six afflicted with Eddyism was also stricken with smallpox. One child died when removed to the hospital, and all the others

are in a serious condition. The family had, it is said, refused a physician, and had relied upon their unchristian unscience. In cases of this kind the smallpox is only an aggravation of the other disease, and warrants the community in taking severe measures against the repetition of such offenses against it. In such instances there is no excuse that the liberty of the subject is interfered with, as the dealing with highly contagious diseases is an affair of the entire people. Moreover, when innocent children are killed by the delusions of cranks the city or state is bound to protect them. There is a criminal liberty, and such happenings are proofs of its perniciousness.

The settlement of claims as to priority of invention or discovery can be made in one way only, and that is by the publication date. In epitomizing the literature of a subject a writer may be in error as to the date, fact, or discoverer, and in this way he may be unjust to another who did in fact discover or print the account previously. The sole method of setting the matter right is the printed record. It might possibly happen that an author had read his article to some society without a printed report having followed. The secretary's minutes at least should contain a record of the facts, and, if an important matter, some mention would almost certainly be found in contemporary medical literature. There are people so constituted that they think (honestly or not) that every discovery made today was previously made by them long ago. In such matters, word of mouth will not substantiate the claim; the printed record makes no mistake.

EDITORIAL ECHOES

Eclampsia.—Taking it all in all we must admit that eclampsia is a toxic disease in which coagulative substances exist in the blood, but the source of these substances has not been determined. No decisive proof is at hand to the effect that the intoxication is of fetal origin.—[*Jour. Amer. Med. Assoc.*]

Diabetes.—If the numerous investigations and the accumulated knowledge upon the subject of diabetes teach anything, it is that we have to deal with derangement of a somewhat complex process, the elimination of certain factors of which results in metabolic disturbances manifested by the appearance of sugar in the urine. In this way we may have glycosuria of central, of alimentary, of hepatic, of pancreatic, of adrenal origin, and possibly there may be other types of the disorder.—[*Jour. Am. Med. Assoc.*]

The Canadian Medical Profession.—The suggestion that Canadian medical men intermingle more with their American professional confreres and look less humbly up to English medicine is one that perhaps they will do well to consider. It is in no way disparaging to British medicine—which we in this country duly respect and appreciate—to say that it cannot in the nature of things influence so advantageously the profession of Canada as can that of the United States. Whether the Canadians realize this or not is less a matter of importance to us than to them. The best of their leading men do realize it and give evidence of it in the professional associations.—[*Journal of American Medical Association.*]

The Blight on the Army Doctors.—It does not require any unusual argument to sustain the view that an army is able to do its work in the field in proportion to the maintenance of the health of the troops. This condition is to be assured only by the employment of enough of the ablest medical officers. The remedy of the present menacing condition is the simple one of legislation by which the mistake committed by Congress last year may be corrected, as it should be corrected, at the next session. One of the first legislative reforms to be attempted by the War Department and the House and Senate military committees should be that of placing the medical department of the Army upon its former efficient basis, by making it worth while for the graduates of our medical schools to take up the work of an Army surgeon. It is a question which concerns the health, comfort, life and efficiency of our troops, and it is a matter which cannot be completely ignored.—[*Army and Navy Register*.]

The Medical Services of the Army and Navy.—The army examining boards, in session for the past nine months, recently concluded their examination of all the young medical men who could be induced to present themselves for this purpose, and there remains at the present time more than three-score vacancies unfilled in the medical department of the army—or a number equal to 20% of the entire strength of that department. It is safe to say that the class of men who have reflected so much credit upon the army medical department in the past will not enter it in the future. It, therefore, behooves the profession of this country—individually and collectively—to arouse itself to action in the matter. Medical men in civil life cannot afford to remain indifferent to anything which affects the efficiency of their representatives in any of the medical services of the government, and they have in their own hands the political influence necessary to secure favorable consideration by Congress upon any demands they may choose to make.—[*Boston Medical and Surgical Journal*.]

Concerning Glycerinated Vaccine.—The glycerinated lymph depends not only upon the care with which it is prepared, but also upon the care which it receives between the time it leaves the manufacturer and the time it is used. The physician who only vaccinates occasionally is too apt to be careless regarding the vaccine which he uses, and the average druggist is not over careful in regard to the vaccine which he dispenses. Glycerinated vaccine deteriorates quite rapidly, and the physician should always know the date at which it left the laboratory. It should be remembered, too, and this is a point which the druggist too often overlooks, that the temperature at which it is kept is a very important factor. It should be kept cool, preferably in an ice chest. Three months is probably the limit of age for glycerinated lymph, as at present prepared, and it will lose its efficacy in a much shorter time if exposed to the ordinary temperature of the drug store or the office. With glycerinated lymph, fresh from the laboratory of the best manufacturers, which has been kept at a low temperature until used, we have had no fault to find. Vaccination properly performed with fresh glycerinated lymph gives, in our opinion, the best results with the least discomfort to the patient. Some physicians, and the majority of the laity, seem to think that vaccination which has not produced a very painful arm or leg, has not been successful. The typical vesicle resembling (in Jenner's own words) "a section of a pearl on a rose leaf," is ample evidence that the vaccination has "taken" and that the individual is protected. The mixed infection, which gives the swollen and painful limb, is not only unnecessary but often masks the vaccination so that it is impossible to be sure that the vaccination has been successful. [*St. Paul Medical Journal*.]

AMERICAN NEWS AND NOTES.

GENERAL.

Infectious Diseases, it is said, are practically unknown in Greenland.

Medical Colleges of United States.—Statistics of the 155 medical schools in the United States show that in all but two a four years' course is compulsory. There were 26,147 students enrolled and 5,958 teachers in these colleges last July. The degree M.D. was conferred on 5,444 students during the past year. Canada has only 12 medical colleges.

Medical Supplies for the Army.—Surgeon-General Sternberg is endeavoring to purchase medical supplies without resorting to public advertisements for bids. The peculiar character of the medicines and medical supplies make it almost impossible to fix a standard upon which intelligent competition can be based. Therefore it is deemed probable that Congress will restore to the purchasing officers the privilege of going into open market, at their discretion, for these supplies.

National Leper Colony.—A bill for the establishment of a national leper colony was recently introduced in the House and Senate. The measure provides for the appointment of a commissioner of leprosy, who must be a physician of at least ten years' practice, and who will receive a salary of \$5,000. He must live in New York or San Francisco. An appropriation of \$50,000 is asked, for the erection of buildings, and a square mile of public land for the colony. It will probably be established somewhere on the Pacific coast.

No Yellow Fever in Havana.—In the recent publication of the vital statistics of Havana for November, 1901, the statement is made that there has not been one case of yellow fever during the month. No preceding November, since 1762, has shown such a record. For the past 11 years the average number of deaths from yellow fever during November has been 48. The whole number of deaths for November during 11 years has averaged 902; this month the minimum number was reached, there being but 443 deaths. The sanitary condition of the city is reported to be excellent, a steady improvement being noted.

International Sanitary Scheme.—At a meeting of the committee on sanitation, of the Pan-American Conference recently held at Mexico City, Volney W. Foster, the American member, advised the creation of an international sanitary commission of not more than five members, from each government. The commission which should be invested with advisory powers only, should hold annual or periodic meetings at Washington. The business of the committee would be to discuss sanitary matters generally, and to lay special stress on inspection of dangerous or infected ports, and to take proper precautions regarding them.

Leper Settlement.—Dr. M. H. Foster reports only four lepers, all Chinamen, on Darcy Island at the present time. In these both the tuberculous and anesthetic types of the disease were seen, the duration of the cases being from three months to four years. They live in small frame houses and have an excellent garden which gives them sufficient employment. Every two weeks supplies are sent from Victoria, and the sufferers seem to be well cared for. Only one white man has been sent to the island, he having come from Alaska, where he contracted the disease, possibly from the Chinese employed in the canneries.

Obituary.—JAMES P. LEWIS, of Washington, D. C., December 22, aged 59; FREDERICK WEILL, of New York, December 22, aged 69; WILLIAM W. TUFTS, of Cambridge, Mass., December 21; L. L. WAKEFIELD, of Summit, Ill., December 25, aged 66; GEORGE C. DEVINE, of Philadelphia, December 26, aged 43; JAMES M. WALLIS, of Philadelphia, December 28, aged 77. During the civil war Dr. Wallis was in medical charge of Battery Gregg and of Fort Wagner, opposite Charleston, S. C.; of the Post Hospital, at Jacksonville, Fla.; of the Annapolis General Hospital; of the hospital at Horn Point, Md., and of the Satterlee General Hospital, in West Philadelphia.

Against Medicine Samples.—To stop the indiscriminate distribution of patent medicine samples, the District Commissioners of Washington have decreed that a fine of not less than \$5.00 nor more than \$25.00 shall be imposed on any person who shall "throw, deposit, drop, scatter, or leave or cause to be thrown, cast, deposited, dropped, scattered or left upon any public highway or place in the District of Columbia, any medicinal or toxic substance, either in package or in bulk, except officers, employees and agents of the United States or the District of Columbia distributing such material for the purpose of disinfecting or cleansing." Provision is also made that the medicinal or toxic substances must not be left "in or upon any premises in the District of Columbia, without the consent of the owner or occupant of said premises, except officers, employees or agents of the District of Columbia."

Contagious Diseases on Incoming Ships.—In view of the fact that ship owners are exceedingly careless in allowing diseased persons to obtain passage on their ships bound for this country, a bill (Section 9 of the Immigration Bill) which has been recently introduced in the House will probably be adopted. The bill makes it unlawful for any transportation company, or the owners, masters, or agents of any vessel to take on board for transportation to the United States "any alien afflicted with a loathsome or with a dangerous contagious disease," and imposes a fine of \$100 for each and every violation of the prohibition. It also states that the decision of the examining officer of the United States Marine-Hospital Service shall be final, both as to the fact and nature of the disease, and on the question whether the disease existed at the time of embarkation. Furthermore, when ship owners are fined, the vessel concerned shall not receive clearance papers while the fines remain unpaid, and the fines shall not be remitted.

Tuberculous Immigrants.—An inspection by the customs authorities of a northbound steamer which arrived at Galveston a short time since revealed the fact that a passenger was afflicted with pulmonary tuberculosis. He was going to Amarillo but was detained until the Treasury Department report upon the case. It was decided to permit him to proceed to Amarillo with the proviso that he would be subject to recall within a year, and if necessary be deported. As regards the International law respecting tuberculous immigrants, Assistant Secretary Taylor says that as the number of sufferers is so small, he would strongly favor the repeal of the law which includes pulmonary tuberculosis among loathsome and contagious diseases which bar immigrants from landing in the United States. There has been a hint of foreign countries adopting retaliatory measures whereby the United States would suffer greatly. Contrary to this the Commissioner of Immigration still advocates the exclusion of all such immigrants.

Hospital Stewards.—Great dissatisfaction is expressed over the meagre pay of hospital stewards of the army. At present they receive but \$30 a month; a full steward receives \$45. The duties of the stewards and acting stewards are to look after and distribute hospital stores and supplies; to care for hospital property; to compound and administer medicines; to supervise the preparation and serving of food; to maintain discipline in the hospital and watch over its general police; to prepare the hospital reports and returns; to supervise the duties of the hospital corps in hospital and in the field. The steward must be an efficient disciplinarian, expert clerk, accurate arithmetician, and a trustworthy pharmacist, with as much knowledge of materia medica, therapeutics, and minor surgery as will enable him to give sound advice and suitable treatment in the minor ailments and accidents; in addition he must have that higher knowledge for use in the wards, which enables the experienced nurse to appreciate the condition of those who are seriously ill. The pay is considered entirely inadequate to the services required.

EASTERN STATES.

Bequests to Charity.—Under the will of the late Mrs. Susan Cornelia Warren the Massachusetts General Hospital receives \$20,000 and the Boston Home for Incurables \$2,000.

Vaccination Edict.—Although 400,000 persons have been vaccinated in Boston since January 1, 1901, the Board of Health ordered December 26 that all the inhabitants who had not been successfully vaccinated since January 1, 1897, should be vaccinated or revaccinated forthwith.

NEW YORK.

New York Academy of Medicine.—At a meeting held December 18, 1901, Dr. Emil Mayer was elected Chairman and Dr. Z. L. Leonard Secretary of the Section on Laryngology and Rhinology.

Metropolitan Medical Society.—At the last meeting the following officers were elected for the ensuing year: President, Dr. W. M. Leszynsky; vice-president, Dr. F. L. Wachenheim; recording secretary, Dr. W. M. Brickner; corresponding secretary, Dr. S. Yankauer; treasurer, Dr. I. Pierce Oberndorfer.

Lunacy Commission.—Ex-Judge Daniel N. Lockwood, of Buffalo, formerly a representative, has been appointed a member of the State Commission in Lunacy, in place of William C. Osborn, who resigned some months ago. This completes the membership. The salary attached to the place is \$5,000, with an extra allowance of \$1,200 for expenses. The Commission is headed by Dr. Frederic Peterson, of this city, as president, the other members being William L. Parkhurst, of Canandaigua, and Mr. Lockwood. The Commission has the power to investigate the condition and administration of the public and private insane asylums and institutions of the State, as well as the treatment of patients in them. The Pathological Institute, which is now in course of reorganization by the new director, Dr. Meyer, is also under the Commission in Lunacy.

Change in Hospital Government.—On February 1, 1902, the control over Bellevue, Fordham, Harlem and Gouverneur Hospitals and the Emergency Hospital in East Twenty-sixth

street will pass to a Board of Trustees. The Commissioner of Charities, however, will be ex-officio a member of the board. The trustees are to be appointed by the Mayor upon the recommendation of the United Hebrew Charities, the Particular Council of New York of the St. Vincent de Paul Society and the Association for Improving the Condition of the Poor. Selections are to be made solely from a list presented by these organizations, containing at least twice as many names as there are trustees to be appointed. The board is to consist of seven members, and the full term of office is seven years. The members of the first board are to be appointed for terms ranging from one to seven years. Their successors must be named for the full term. They are to serve without compensation and cannot be removed except on charges. To the Sinking Fund Commissioners has been allotted the task of preparing a plan for the separation of Bellevue and the allied hospitals from the Charities Department. Provision is made for the retention of all employees and subordinates in the institutions when the trustees take office. The medical board is also to be retained, but any vacancies occurring are to be filled by the trustees from the medical profession of the city. House and medical officers are to be appointed upon the recommendation of the Medical Board.

PHILADELPHIA, PENNSYLVANIA, ETC.

The Lehigh Valley Medical Journal, which has been the organ of the Lehigh Valley Medical Association for the past twelve years, closed publication with the December issue of 1901.

Hospital Bed.—Mrs. Hannah M. Wright, of Wilkesbarre, Pa., has given to the Wilkesbarre City Hospital \$5,000 to endow a bed in memory of Colonel Wright, his first wife, Mrs. Eliza Jones Wright, and their son, Joseph B. Wright, assistant surgeon general, U. S. A., who died last October. The donor is the widow of the last named.

Vaccination by Osteopaths.—The Health Board of Ashland, Pa., recently issued an order that all public school children must be vaccinated. In accordance with this, the local school of osteopathy offered to vaccinate the children at 25 cents each. As the charge by regular physicians was \$1.00, many of the poor took advantage of the offer. Now the Board of Health has decreed that only those children presenting certificates of successful vaccination by regular physicians will be allowed to attend school. Much feeling is expressed, and the matter will probably be taken to court.

Tuberculosis Cured.—Dr. J. E. Rothrock, State Commissioner of Forestry, has found a region in the Pocono belt in which the climate favors the successful treatment of tuberculosis and he cites the results attained by an invalid family which he located on the borders of the State forestry reservation near Resica Falls in Monroe County last July. The father of the family, a Philadelphian, six months ago was apparently in the advanced stage of pulmonary tuberculosis and was so weak he could scarcely walk and the three children were weak and anemic. A diet of milk, eggs and fresh meat with outdoor exercise, never pushed to the limit of fatigue, has resulted in such improvement that he can now walk 10 miles daily without feeling the exertion and the children are in robust health.

SOUTHERN STATES.

Tuberculosis.—The Maryland State Board of Health, it is said, purposes asking the Legislature to provide for a commission to study tuberculosis in Maryland as to its distribution, extent and present cost to the State and look forward to having a system of sanitariums located in various parts.

Physiology and Hygiene.—The Georgia House of Delegates recently passed a bill requiring that physiology and hygiene, particularly as relates to the effect of alcoholic stimulants and narcotics on the human system, shall be taught in the public schools of the State. It requires that at least $\frac{1}{4}$ of the textbooks used in the primary grades shall relate to these subjects; that county Boards of Education which fail or refuse to have these subjects taught shall be liable to have withheld their pro rata of the State school fund, and that all teachers, before receiving license, shall stand a thorough examination on these subjects.

WESTERN STATES.

A New Antiseptic.—Dr. Frederick Novy and Prof. Paul C. Freer, a chemist of the University of Michigan, have produced a new synthetic compound to which they have given the name of benzozone. It is believed that it is an absolute antiseptic and disinfectant for such intestinal diseases as cholera, typhoid and dysentery.

Osteopaths in Wisconsin.—According to a recent interpretation of the law bearing on the subject, the registration or license to practise by osteopaths in Wisconsin is entirely optional. While defining clearly all points which constitute an offense against the law, there is no specific provision for a penalty, and accordingly osteopaths may continue to practise without any application to the State Board.

FOREIGN NEWS AND NOTES

GENERAL.

Obituary.—RICHARD SHOCKLIDGE LEGGATT, of West Folkestone, England, December 15. MARQUIS DE MAGAZ, of Madrid, member of the Spanish Academy of Medicine.

Camphor Eating.—The cosmetic effects attributed to the ingestion of small and regular doses of camphor has resulted in an enormous number of "camphor-eaters" among well-to-do women of India. The drug is said to give a clear, creamy complexion, hence its adoption although extreme weakness invariably follows its constant use and the habit once formed is very difficult to break.

Surgeon's Masks.—As a further means of avoiding septic poisoning during operations, a special mask is now being used by a number of surgeons throughout Europe. The invention is the outgrowth of the fact that a great obstacle to thorough antisepsis is occasioned by the danger arising from the breath of the surgeon and his assistants. The mask is of fine gauze and tightly covers the mouth and nose, but does not interfere with the sight, hearing or breathing. If the protection is as great as is claimed, this mask will soon become an important antiseptic precaution in all operations.

Blind Masseurs.—The ability of the blind to successfully perform massage has been clearly demonstrated in Japan, where they are employed exclusively for this work. Their wonderful delicacy of touch has enabled them to acquire a high degree of proficiency, and therefore when massage was introduced into Russia, their employment also became general in that country. At the Institute for the Blind in St. Petersburg, a considerable number of the students are carefully instructed in the best methods of performing massage and also in the main points of physiology and anatomy. Their introduction into other European countries has thus far not been attended with success although Germany is now making arrangements tending to their permanent employment.

Foreign Physicians in Cape Colony.—The governor of Cape Colony has under advisement an amendment to the law respecting foreign practitioners. The amendment, which was passed by a large majority of those present at a recent meeting of the Colonial Medical Council of Cape Colony, held at Capetown, reads as follows: "No diploma granted by the government or any university or other body of a foreign country shall entitle the holder thereof to registration as a medical practitioner or dentist in this colony unless equal rights and advantages are given in such country to the holder of any British registrable degree." It was pointed out at the meeting that such a regulation was necessary in view of the fact that under present conditions, the foreign doctor is given an opportunity to obtain practice in English territory, while the English physician is limited strictly to his own colony.

Beri-Beri from Rice Eating.—Baron Sancyoski, the Director-General of the Medical Department of the Japanese navy, published in the *Sei-i-Kwai Medical Journal*, for April and May, 1901, interesting statistics in relation to the prevalence of beri-beri in the Japanese army and navy between the years 1884-1885. The conclusions arrived at are: That in the east the rice eaters are the only persons affected by the disease; that its extirpation from the army and navy of Japan is due solely to improvement in diet; that rice eaters transmit beri-beri to localities where it did not exist before their arrival, and that it is inseparably connected with rice, and is caused by lack of nutrition. It is more apt to occur among communities which are supplied by "white Chinese rice" than among those which live upon "red Chinese rice." This last yields, upon analysis, a larger quantity of fat and albumin.

GREAT BRITAIN.

Prevalence of Suicide in Great Britain.—According to late statistics suicide in Great Britain has increased 200% during the last 50 years. A remarkable feature is the enormous increase among women, 25% of the whole number in England and 30% of that in Scotland being attributed to them. On investigation it was found that the percentage is higher in provincial towns than in the large cities and in the plains rather than among the mountains. Alcoholic excess is given as the most prominent cause of the tendency to self-destruction. Climate, season, locality and race are also cited as contributing causes.

Plumbism in Pottery Factories.—Lord James Hereford, who had been chosen to arbitrate between the Home Office and pottery manufacturers, has postponed the inquiry for 18 months. He has requested the manufacturers in the meantime to do everything in their power to carry out the Special Rules of 1898 in order to further reduce the number of cases of plumbism. The controversy occurred as follows: In pursuance of a report by Professors Thorpe and Oliver, in which they strongly

advised the abolition of raw lead in glazes, the fritting of lead compounds, the use of leadless glazes whenever possible, and periodic medical examinations of persons working in the dangerous processes. The Home Office obtained finally the consent of the manufacturers to adopt a 5% standard of solubility. Afterward the question arose among the manufacturers as to whether a fritted lead conforming to this standard could effectively take the place of the raw material. They, therefore, made application to have the whole matter settled by arbitration. Much dissatisfaction is felt at Lord Hereford's attitude, especially as he did not fix any standard of solubility, and until the matter is finally settled the manufacturers will probably add lead to the glaze in whatever percentage and in any form they choose.

CONTINENTAL EUROPE.

New Cure for Tuberculosis.—It is reported that M. Ryshnowski, a Polish engineer, has discovered a new gas called eleotroid, which physicians at Cracow and at Lomberg are prescribing for tuberculosis. It is inhaled for periods ranging from $\frac{1}{2}$ a minute to $\frac{1}{2}$ of an hour.

"Roussky Vrach" (the Russian physician), under the editorship of Professor Podvyssotsky, the dean of the medical faculty of the University of Odessa, and Dr. S. V. Vladislavlieff, editor of the *Vrach* during the illness and since the death of Dr. Manasseine, will succeed the *Vrach*, which closes with 1901, according to the wish of Dr. Manasseine.

Rat Extermination in Odessa was instituted by the governor, Count P. P. Schonvaloff at the outbreak of plague in that city, paying a premium of one-half penny for each captured rat dead or alive. Already a sum of £2,000 has been paid representing the destruction of 1,000,000 rats. As the rats are taken they are conveyed to specially erected district furnaces, where the carcasses are cremated.

Uses for Abattoir Blood.—A cheap and rapid method for concentrating the enormous quantities of blood collected in abattoirs is described by its inventor in the *Technische Rundschau*. The blood is injected in a finely pulverized state into an oven-shaped chamber, open at the top, and brought into contact with a current of hot air ascending from below. All the water is evaporated in this manner, and the blood powder is carried to the receiving chamber. According to the inventor, the powder thus obtained is tasteless and contains 74.8% of digestible albumin.—(*Scientific American*.)

Pellagra in Italy has diminished in recent years in the northern part but in other sections, notably in the Marches, Umbria and Tuscany the number of cases has quadrupled. An investigation of causes points strongly to the very greatly increased importation of damaged maize from America. Since about 1895 speculators have been buying up maize in immense quantities on the coasts of the Argentine Republic and the United States and at a very trifling cost shipping it to Italy, where the sale was attended with immense profit. This imperfectly dried maize becomes mouldy in the hold of the vessels developing the poisonous properties which cause pellagra. The Minister of the Interior has now issued strict orders to the prefects instructing them to use the utmost rigor in the enforcement of an ordinance which has existed on the statute book since 1895 forbidding the importation into the country of any damaged maize for any purpose whatever. Concession made to the government by the speculators had neutralized the effect of the law.

Foot and Mouth Disease.—A circular addressed to the veterinary officers of the Italian army has been issued by the Italian war office calling attention to Baccelli's treatment of the foot and mouth disease by endovenous injections of corrosive sublimate and giving instructions concerning its preparation and use and recommending great care in observing its after effects. The initiator of this system of treatment appears to be Remo Guzzi, a young Lombard physician, who first brought it to the attention of the Pavia medical faculty in a special thesis last July after the completion of satisfactory experiments upon his own cattle. The solution used by him was composed of one gram of corrosive sublimate and 75 grams of common salt in a kilogram of distilled water. The cattle treated had developed the disease between 48 and 24 hours previously, and their temperatures varied from 106.7° to 104.9° F. With the solution five injections were made into the big vein on the right side of the animal's neck, the first consisting of 30 cc. of solution, the second of 50, the third of 70 and the fourth and fifth of 100 cc. each. Within a maximum period of ten hours the temperature of the animals thus treated fell suddenly 4° or 5° F., but afterward began again to rise. A second injection, however, sufficed to conquer the fever and to maintain a normal temperature. It is noteworthy, too, that none of the cattle thus treated have suffered from those after-effects of the disease usually noticeable four or five months after an ordinary cure. As far as can be at present ascertained, the corrosive sublimate treatment is free from drawbacks of any sort, while on the other hand it has regularly given 100% of cures. Dr. Guzzi recommends the washing of external sores with naphthalene and bandaging the feet with cloths saturated with it during the course of treatment and for some days afterward.

SOCIETY REPORTS

THE WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING, HELD IN CHICAGO, DECEMBER 18 AND 19, 1901.

An Old Shoulder-Dislocation, with Report of a Case.—Dr. J. RUDIS-JICINSKY of Cedar Rapids, Iowa, made this report of an apparently simple case to show what the x-ray could do for the profession in the investigation of injuries to the joints, in luxations, fractures, and in observations of the growth of the callus, the bones themselves, etc., and to furnish an aid in the interpretation of the x-ray findings. Before one could interpret correctly the fluoroscopic image of the skiagraph of certain parts, when their relationships were altered by disease or trauma, he should have always before him a skiagraphic picture of the normal parts, and of their normal relations. After taking all the other precautions of a proper technic into consideration, one could not go astray. Moreover, the eye would be prepared to take in much which would otherwise not be seen.

Treatment of Irreducible Backward Dislocation of the Astragalus by Opening the Joint and Repositing the Same.

—W. JEPSON, of Sioux City, Iowa, summarized his observations as follows: (1) His own experience and the results of recorded cases led him to believe that it would rarely be possible with present knowledge and technic to bring about a reduction of a backward dislocation of the astragalus without opening the joint and bringing about a reposition of the bone by direct manipulation. (2) With our present command of aseptic surgery he could see no reason why this should not be undertaken in all cases uncomplicated by severe infection, with good prospects of securing nearly a perfect result. (3) Removal of the astragalus should be reserved for such cases as where the bone was completely separated from its ligamentous attachments, consequently, having no adequate source of blood supply. (4) If amputation be resorted to only when the dislocation was compound and infected to a degree impossible of removal, the patient's life was jeopardized by the septic intoxication of infection.

Some Internal Injuries of the Kneejoint.—M. L. HARRIS, of Chicago, called attention to two varieties of injuries to the inner structures of this joint, which, he believed, were more common than the attention heretofore given them would seem to indicate. These injuries might be produced in one of two ways: First, by the direct application of force, as might occur in a fall upon the knee, or by the forcible impingement of a more or less pointed object against this portion of the joint. Second, by pinching or crushing the apex of the mass in the angle between the femur and tibia, as might occur when these bones were slightly separated during hyperflexion or sudden wrenching. These cases narrated by the author illustrated the serious and persistent disablement that might occasionally result from comparatively slight pathologic changes affecting the inner structures of the kneejoint, and showed the necessity of operative treatment in those cases following an injury in which the characteristic symptoms persisted after the usual treatment of the joint by rest and immobilization.

Ankylosis of Joints.—JOHN B. MURPHY, of Chicago, recommended arthroplasty for the relief of ankylosis without destructive bone defects. Ankylosis and contractures were of three varieties: First, atrophy of soft parts; second, union (fibrous and bony) between joint surfaces; third, a combination of one and two. He referred to the experimental work of Chlumsky, of Würzburg, who decided that the best way to relieve such joints was to treat them precisely on the same basis as one would nonunion of fractures from the interposition of foreign material between the fragments. He experimented with several kinds of material, absorbable and non-absorbable, to determine the best material to use, but finally abandoned the use of foreign materials and resorted to a plastic operation in the neighborhood of the joint for its relief. The method of Chlumsky was described, the essayist stating that he had adopted it in several cases with good results.

Treatment of Dislocation of the Clavicle Through Open Wound.—JAMES E. MOORE, of Minneapolis, Minn., said that some recent writers had advocated the treatment of such a dislocation by wire suture, but he had been unable to find any literature upon the subject. Quite recently he had treated a case by cutting down upon the dislocated bone, replacing it and the surrounding soft parts, and fastening them there by means of silver wire and catgut sutures. The result was very satisfactory and the findings were instructive.

Etiologic Factors in the Production of Tumors.—GEORGE HALLEY, of Kansas City, Mo., said scientific investigations had been enlarging the scope of knowledge along the lines of etiology, hence tumors were very early divided into benign and malignant. No theory had been broad enough to account for all the phenomena characteristic of benign or malignant tumors. Inflammatory conditions that almost invariably produced some kind of tumefaction were for a long time regarded as the principal factor in their production. Many things, however, in the inflammatory conditions in no way comported with the ordinary processes found in tumor

growths, and the products of most of the tumor growths were utterly unlike those of the inflammatory process. But as inflammation was believed to be principally due to irritation, it was held to be the prime factor in the production of morbid growths. One constantly recurring element in all benign tumors was the connective tissue. Sometimes it predominated and sometimes it was held in abeyance. Its presence was never wanting. Of all the tissues in the body, it most readily responded in physiologic activity to irritating processes. In inflammatory changes it was found to be the reconstructing agent. It was not wonderful, therefore, that we had in this tissue the essential part, if not the entire mass, composed of this tissue. Was the connective tissue germ cell altered in quality? Had it been inoculated by a plastic material altered in equality by an irritant, or had there been a coalescence of protoplasmic germs from other tissues? We had not yet determined this, but he took it that along these lines, if not exactly, yet relatively near to it, would be found the true etiology of the benign tumor.

Surgical Procedures in the Removal of Fibromyoma of the Uterus.—JOSEPH EASTMAN, of Indianapolis, Ind., said the morphology of the tumor and the environment of the patient should be considered before selecting the method to remove the tumor. Clay, of Manchester, in 1844, operated, for the first time, for the removal of fibromyoma of the uterus. After speaking of the early history of removal of myoma of the uterus, Dr. Eastman described the first case that he operated upon, February 3, 1887; also the method pursued by him at that time, which can be found in the literature on this subject.

Myomectomy; its Place in the Treatment of Fibromyoma of the Uterus.—O. Beverly Campbell, of Chicago, said the operation of myomectomy was not applicable to all cases of fibromyoma of the uterus, but could apply only to well-selected cases. This operation did not supplant panhysterectomy, hysteromyomectomy, and the different procedures for the relief of fibromyomas, but took its place as one of the recognized rational procedures, and as it was a comparative measure, it should be the favorite procedure when possible. A critical bimanual examination through the vagina and rectum under complete anesthesia would usually admit of the diagnosis of cases amenable to this operation. All of the different varieties of fibromyoma may be treated by this method. Myomectomy should be the preferred method in every case where possible to do so without extra risk to the patient, and where the ovaries can be conserved with the uterus. Operative interference should be advised in every case of fibromyoma where after a careful examination myomectomy was considered possible.

Management of Uterine Fibromyoma Complicated by Pregnancy.—Miles F. Porter, of Fort Wayne, Indiana, concluded (1) that pregnancy was a frequent and serious complication of uterine fibromyomas; (2) if, because of their size or location they were likely to interfere with gestation or jeopardize the patient's life, they should be removed; (3) each case was a law unto itself, and should be treated accordingly; (4) the tumor and not the pregnancy was the disease and, therefore, any procedure which resulted in leaving the tumor and removing the pregnancy was unjustifiable. This, of course, was not meant to apply to those cases in which the fibroids did not interfere in any way, either with gestation or labor; (5) pregnancy did not materially add to the risk of operations for uterine fibroids, so far as the mother was concerned; (6) the life of the mother, the life of the child, and the question of future offspring, were the most important matters to be considered in reaching a conclusion as to the treatment of a case of uterine fibroids complicated with pregnancy.

The Treatment of Fibroids of the Uterus by Electricity and Present Status.—Franklin H. Martin, of Chicago, said there was a time when he submitted practically all his fibroid cases to the Apostoli treatment, because this treatment scarcely ever failed to materially benefit the patients; it symptomatically cured quite a large percentage, and occasionally the tumor seemed to disappear. Gradually the evolution of the surgery for fibroids had reversed the relative position of the galvanic treatment. He considered vaginal and abdominal hysterectomies and myomectomies for fibroids, giving rise to serious symptoms, with their legitimate mortality reduced to 1% and 2%, as remedies more conservative in their results than the treatment of the same tumors with electricity. He believed this, because hysterectomies and myomectomies, with a small percentage of risk, were the only remedies which absolutely relieved the difficulties in all cases. Electricity relieved frequently, symptomatically cured, but seldom actually removed the tumor, and the treatment was tedious to the patient, and occupied much time of the physician in administering it. The present status of the electric treatment of fibroids of the uterus of the uterus was in his opinion, that it had been properly superseded by surgery as a conservative remedy. He now recommended its employment in the following cases only: (1) As a local and general tonic, and as a relief of pressure and reflex pains and of hemorrhage in cases with complications contraindicating surgery; (2) in all interstitial fibroids where operative assistance was absolutely refused by the patient; (3) in tumors of small size of the interstitial variety in which hemorrhages were the principal symptom in women within one or two years of the menopause.

[To be continued.]

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

NATURE AND TREATMENT OF GOUT AND RHEUMATISM.¹

BY

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My object is mainly to find a working theory for the pathology of all so-called gouty and rheumatic diseases, from the short-lived muscular rheumatism up to the full-fledged gouty arthritis. I will, however, exclude from discussion syphilitic troubles, inflammatory, rheumatic and gonorrheal arthritis, since they are due to the invasion of specific germs. Neither will I consider Charcot, nor deforming arthritis, since both seem to depend principally upon the failure of nerve action.

The theories most favored as to the etiology of the diseases in question are: (1) That they are due to invasion of specific germs. (2) That they start from faulty nerve action. (3) The uric acid diathesis, which is the old dyscrasia teaching, plus the claimed detection of the real evil-doer.

It is not my intention to give a systematic criticism of the merits of these theories, although I will mention some of the many intricacies connected with them, but first I desire to give an outline of my own views formed through a study in former years, in the period of Texas' wild life, of an unusually large number of cases of gout and also from a long experience with it in my own body. I am sorry that I cannot strengthen my position by personal pathologic findings, but I hope that some pathologist will make a closer study of this matter in the future. In my opinion all these diseases in question have their origin in damages of the body periphery and are therefore eminently surface disorders. The injurious forces are of extraneous nature, telluric as well as atmospheric, they prey on the different tissues and organs of the skin (cells, blood-vessels, nerves and glands), and extend under certain circumstances to the subjacent structures to such an extent as to cause structural changes. The consequence is a toxic condition of the body fluids either from interference with proper elimination of effete matter, or by the addition of new vicious products. This in turn causes perverted functionality of all or some of the most important organs, liver, kidneys, pancreas, etc. They in response will produce additional abnormal constituents, or they will fail to properly remove the toxic substance in the system. Of course the damage may stop short at any period; they may remain local or become general. They may be repaired in a short time, or they may become permanent.

It is remarkable how little weight pathology places on outside influences upon the surface of the body, while with the exception of the respiratory organism, man is almost entirely dependent upon a proper relation between the skin and its outside influences.

We are fully justified, without microscopic proofs, in assuming that the cellbody of the epidermis and cutis may become so crippled as to produce a tainted progeny forever, or that a portion of the cells may be entirely destroyed and replaced by fibrous or other inferior tissue. Likewise the terminal organs of the nerves will be liable to changes in structure and functions. Since they are turned to irritants within certain limits, a plus or minus of the latter, act injuriously upon them, even without detectable tissue alteration. Also the bloodvessels and the glandular apparatus will become disturbed.

What strikes me most forcibly is that in all the modern theories the starting point in the development of gouty and rheumatic diseases is left in the dark so that nothing but deductions, branching off somewhere from the road, are offered. Taking the nerve-theory, the question, how and by what agency the nerves are primarily affected so as to cause the rheumatic

tissue changes, is not answered. The bacteric hypothesis does not tell how and what microbes get to the different localities, sometimes straight through the sound skin. Examining the gouty or uric acid diathesis, as to its etiologic principal, I cannot understand how anybody can believe in the heredity of the disease this being the main basis of this doctrine though hereditary susceptibility in many other diseases may be admitted. The theory believes in prenatal damnation, in a malicious provision for thousands of miseries whose livers and kidneys and other organs are held as naturally inadequately developed. These organs are not able to handle the average amount of nitrogenous substances contained in human food. They become upset and finally refuse good work and resent every imputation by polluting the blood. The glutton therefore is the man who gets the most intimate acquaintance with that capricious dame, uric acid diathesis. It is not plain why people do not experience the appearance of the diathesis before they are 30 or 40 years old, and then sometimes with wonderful suddenness. Neither is it evident why this condition does not develop in everybody who indulges to excess for a long time in nitrogenous food; nor why abstinence from such food does not cure at once. The fact that uric acid is found in abnormal quantities in most of the gouty, is the only practical foundation of this theory, which has overcome all the contrary views of excellent authorities who show how uric acid in superabundance is to be seen in many other diseases of entirely different nature, and even in the healthy; that it is often absent in the gouty, that a hundred other abnormal substances must be the product of disturbed metabolism; and that all that can be demonstrated, is that the uric acid is the most readily detected. Uric acid in abnormal quantity, and especially in crystallized form, will most likely do additional harm mechanically; it will perhaps have some chemic influence; but it must not be considered the primary cause of all the diseases in dispute.

In contrast with the failure of those theories, my view has the advantage of presenting an always ready occasion by thousands of mischievous incidents and conditions which at any time and anywhere may do injury to the body surface. The atmospheric influences to be considered, are of thermometric and barometric nature. Chilling, catching cold, freezing, getting wet, exposure to draughts, to high altitudes, etc., are the best known and popularly most accused incidents. By far the most damaging force seems to be exerted by a combination of cold and wet, consequently moist climate and moist rooms have rightly a bad reputation. Perhaps the moisture lowers the protective faculty or increases the conductive power of the epidermis. After having undergone a certain amount of damage the skin will become so excitable that the most trifling provocation, a single wetting, a moment of exposure of the naked feet, a draught upon an unprotected or perspiring skin, the wearing of thinner clothing than usual, will at once aggravate the vicious mechanism and each time it occurs will increase the susceptibility of the patient and the gravity of the attack. Other causes may have considerable influence in provoking exacerbations in the once afflicted; for instance alcohol may do harm, or excesses in diet may unduly excite circulatory action. Accepting this explanation I can understand why the rheumatic affection may be confined to one particular spot. The joints oftenest affected, are those which are most exposed and at the same time least protected by soft parts. The subcutaneous tissues will become affected either directly by extension of the damaging force, or indirectly, by biologic relation or by reflex action from the overlying skin, processes which unfortunately are not satisfactorily studied. But when a large area or the whole skin has been injured without palpable changes and without any damage to the deeper tissues; then we will have an uncomplicated picture of uric acid diathesis. These are the cases of general malaise, which are so numerous. Such patients never feel absolutely well, and from time to time feel very sick, especially after exposure or excesses of any kind. They are the unfortunates who catch cold very easily, complain of cold feet, and all kinds of discomforts; they may lose their mental and bodily energy, and occasionally become full asthenics. They feel sluggish and tired, they suffer from what is called impaired liver and kidney action. They complain of disordered digestion; their urine is often muddy and contains urates and other

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salts in abundance. As every organ in the body may suffer, specialists have claimed the uric acid diathesis as a cause for some of their special diseases. In fact, the practitioner of olden, and many of present times speak of gouty liver, kidney, stomach, spleen, eye, and even of gouty ulcers. The practitioner will never fail to elicit in the history of the patient an unquestionable, at least a very probable, extraneous cause as the starting point of the trouble. In many instances it is true, it may date far back, perhaps to an exposure, long forgotten. This can be explained by an accumulation of effects from oft-repeated insults until tolerance has been overstepped; or by a progressive degeneration. This we meet in epilepsy, when only years after the injury the first symptom appears. The English, who have, according to tradition, a particular claim on gout, owe it to the moist climate and the exposure in the much indulged hunting and other outdoor sports, which afford the best chance of getting soaked and chilled. The enjoyment of the good things of this world with which they are charged, they have in common, with many other nations that are not inclined to gout. The glutton who devours delicacies and drinks champagne all day, is in fact the careless fellow who does not mind rain and wet feet and similar little inconveniences, and therefore will get the gout whether he drinks champagne or ditch water. In the time of our wild frontier life, gout and rheumatism were most prevalent, and the doctor who would have traced them to gluttony would have been sent to a lunatic asylum. At the present time many of the younger physicians will not have an opportunity to see a case of true gout. The reason being the better housing, better raiment, and less exposure of this generation. As the differentiation between gouty and rheumatic arthritis is of great practical importance, I will discuss it briefly. There is no strict definition for either term, and according to my theory I will hardly be able to find one. Both are caused by the same extraneous causes, and I think with Ebstein that the involved parts must be structurally disordered to some degree of necrosis, before the deposits can take place. In my opinion the nature of those deposits depends more upon the degree and nature of the destructive processes and upon the difference of the affected tissues, than upon the presence of a superabundance of uric acid in the body fluids, since we may have free precipitation with even a normal quantity of uric acid in the blood, and no precipitation coupled with the greatest abundance of it. It seems to me reasonable to expect a different aspect of the disease when the cartilages, the bones, or the soft part of the joints are affected. The identity of the pathologic processes is acknowledged in practical medicine, and there is the same treatment for both, and the case may be pronounced either gout or rheumatism.

Treatment.—Prevention of gout and rheumatism will require strict care of the surface of the body, and the treatment of these diseases will have to be protective and curative. Obviously the skin should be the main consideration, and since the most trifling provocation may bring on the severest attack, the most trifling precautions must be taken. As a general thing a dry and moderately warm climate is the best. The body surface should be exposed as often as possible, and therefore sunbaths and walking barefoot may be beneficial. It is of the greatest importance to avoid sudden chilling, draughts when perspiring, and to remove wet clothing. In wet or very cold weather the feet must be protected by rubber overshoes; affected kneejoints should be wrapped in waterproof coverings; wristjoints should be protected by pulse warmers; the hands by rubber gloves, and the body by a rubber overcoat. Washing dishes, washing clothes, and similar manipulations must be done in warm water, tiled floors must be religiously avoided, the temperature of sleeping rooms must not be allowed to go below 65°. It is an entirely erroneous idea that it is healthy to sleep in the cold. The bedstead should not stand close to open windows nor close to the wall. Wet clothing must be changed so soon as practicable and the body rubbed thoroughly; undergarments should be long, reaching down to or below the knees in order to fully protect the small of the back.

I am fully convinced that acute and chronic kidney diseases are often due to local chilling. Two thin undergarments will be better than one thick one. Whether they should be of flannel or cotton goods I do not know. The body should be rubbed

morning and night with a towel wrung out of water of ordinary temperature and followed by dry rubbing. The patient should be active and take as much bodily exercise as he can in the open air without fatiguing himself. To the well protected cold and rain will do no harm. Alcoholic drinks and excesses in diet must be entirely avoided; a sensible ordinary mixed diet is all that is necessary; the bowel action must be kept well regulated. In the more active treatment bathing stands foremost. Hot baths will enhance the blood circulation and will thereby excite absorption of deposits and effete matter; but these baths would have to be prolonged for hours in order to become really effective. The Tallerman overheated air treatment for gouty and rheumatic joints seems to act principally by forcibly tunneling new bloodvessels or enlarging old ones, and thereby increasing biologic processes depending upon circulation. This treatment seems to have given great satisfaction, though some writers report rather harmful consequences. It would be advisable not to overdo it. In my opinion the best and most effective means to improve the vitality and function of a skin which admits improvement is a judicious use of cold water, the so-called hydropathic treatment. Moderately cold douches and packs of not more than five or ten minutes' duration are the best means to stimulate all processes. In serious cases these applications should be given three or four times daily, followed by dry rubbing and light covering. The patient must realize that only unceasing care and watchfulness will procure relief. A course of treatment for some weeks at home or in some wateringplace will certainly not effect a permanent cure. If there should be evidence of undue increase of uric acid in the urine or deposits in joints and other tissues, the use of alkaloids may be connected with the treatment, although their efficacy is questionable, practical experience rather speaks in their favor.

I will now consider the treatment for the acute gouty or rheumatic arthritic attack. As we have seen it is an exacerbation of the latent disease, aggravated by immigrated bacteria, and perhaps by the mechanic irritation of the uric acid precipitated crystals or salts. I would advise warm fomentations, although ice applications sometimes are better at the height of inflammation, but prolonged effect of ice may injure the skin, which is what we want to avoid. I do without ice as much as possible in my practice, and I have not found that my patients grow worse. As to medicines, salicylates are of some use, but they fail entirely in many cases. In fact I do not know of anything that gives much and prompt relief but morphin, hypodermically, and the old reliable colchicum which is considered by some to have a direct influence on blood and tissue cells. It should be given freely in order to produce diarrhea and nausea if necessary. The drug loses its effect if used too long, and therefore it would be advisable to save it for the worst cases. Altogether we cannot brag of mastering the bad cases of arthritis by medicine; but fortunately surgery has come to the rescue. In fact there is no reason why these inflammatory diseases and their sequels in bones and joints should not be treated like similar ones from other causes. The only sound objection is the generally short duration of the acute stage followed perhaps by long periods of relative freedom; but when the suffering is unendurable and does not yield to the usual treatment, or when the inflammatory condition is unduly prolonged, or when there should be permanent disorder of joints and bones, I do not see why we should hesitate to operate. Relief from tension and inflammation by removing the fluids and allowing drainage, is obtained in many instances by simple incision, and even permanent improvement may result. Chronic diseased parts may be removed, if necessary, as well in these cases as when tuberculosis or syphilis or any other disease is the contributing cause. Even resection may be justified, since it is preferable to be without a joint than to have it permanently diseased. From my own observation I can state that a simple incision is an entirely harmless and beneficial measure, since I have incised joints several times. In one patient the trouble never returned. The kneejoint I have freely opened, and drained in two instances with equally good success. The quantity of fluid in diseased joints is small, and one must not be governed too much by the amount of fluctuation. The secretion is not decidedly purulent, although it is very destructive

and acrid, containing virulent bacteria. To my satisfaction I see that surgery for gouty joints and bone diseases is becoming more and more accepted, and I would heartily recommend you to give it a trial when everything else fails.

NO "SORE EYES" IN MANILA. LACRIMAL FISTULA, BOTH WITH AND WITHOUT PURULENT DACRYOCYSTITIS, AS SEEN IN THE PHILIPPINES.

BY

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So much has been said in medical and lay prints about "those peculiar sore eyes in the Philippines," that a few words by an observer may not be out of place. The subject is hardly new; so long ago as 1880, Chiralt published an article under the title of "La rija," and I presume it is no exaggeration to say that it was copied in all the European medical prints. I remember that, much to my surprise, I found it in the *Revue Medical y Cirurgical*. It was the same sort of printed wonderment—"those peculiar sore eyes." I was therefore much interested in the matter when I arrived at Manila, and was told that I would see enough to satisfy my observing faculties before long. I had the opportunity as I crossed the plank, and the opportunities have multiplied. The "sore eyes" abound, and as for their "peculiarity"—well, I was a heretic so soon as I met the disorder.

There was not a sore eye to be found. Perhaps that is too sweeping; I should say that while there may be eye diseases in the Philippines, the "peculiar sore eyes" is not a disease of the eye. It was readily apparent that while sympathetic ophthalmia might complicate, the disorder concerns the lacrimal apparatus. The lacrimation was excessive in but few cases, but was markedly continuous and persistent. This naturally suggested an inflammation of the lacrimal gland, but the possibility seemed somewhat remote, from the fact that it is so rare in more than 100,000 cases of disease of the eye observed at the great London Ophthalmic Hospital, less than 20 of this kind are on record. Yet, on examination, I found that, upon evident history of catarrh of the lacrimal passages, lacrimal fistula had supervened, and mucocele of the neck and purulent dacryocystitis complicated. The fistulous openings looked raw and filthy, and there were severe cases where the skin was excoriated, and disease of the bone was present. On pressing the sac, a mucopurulent discharge issued from the fistula or the punctum.

The common treatment is "eye washes" (one grain of zinc sulfate to an ounce of water), administering at the same time sulfate of zinc internally. Histories of radical cures were few, if any, but when a patient was "better than he used to be," that was the height of satisfaction. It is true, though, that Cevera, the leading Manila practitioner, uses the acid nitrate of mercury as a cauterizing agent, with some success. There have been some cases of destruction of the lacrimal sac, and I met with the "open problem" propounded by the army surgeons. They were doing the operation to some extent, and the argument prevailed that no other method in use gives such a large proportion of cures. Much stress was laid on the fact that cases rebellious to all other methods are perfectly cured by this procedure in from ten to 20 days. I embraced an early opportunity to see the operation. The canal was probed with a conical sound, sometimes with, and sometimes without incision of the upper canal, and the cautery freely applied. The received reports were stated to be of "successful operation."

"Every case is successful," I was told, but the trouble was that the natives have a fixed antipathy to the appearance of Bowman's probes, and a knife is positively hateful to them.

I was but a visitor, but in my own experience with blenorhea of the lacrimal passages, I had been successful in injecting the canals with a solution of three grains of cocaine in one dram of eucalyptol, and employing as an ointment five drops of the eucalyptol to the ounce. Mentioning this, I was told that stillingia was the only vegetable injection ever used, and that it

was of no value. As for the eucalyptol, had it been employed by a physician previous to the Dewey Day, the correspondence of odor with the incense used in the churches would have suggested rude treatment at the hands of the priests! However, I had the pleasure of seeing my suggestion carried into effect with success. There is no reason why it is not worth while, though, of course, hygienic regulations gain no force in Manila, and it seems almost as though ophthalmia should prevail as cruelly as in Egypt. But it does not. There are no "sore eyes" there.

NEW INSTRUMENTS.

BY

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Multitudes of new instruments are offered to the profession for the advancement of medicine and surgery, of which only a small minority prove of value, yet the failures may form stepping stones to success. The earnest man should not be deterred by possible failure, but offer unhesitatingly that which his cool judgment, reinforced by suitable experiments, leads him to believe will prove of value. The great mass of instruments in present use are cumbersome, and the selection of even a necessary number is apt to prove troublesome. The instrument I offer is only a slight modification of the clamps now in use, my object being to secure for them a more useful and extensive application. Any size or type of clamp can be modified by having longitudinal instead of transverse grooves, and tapering bayonet points so that they may be forced into the tissues and locked before an incision is made. In order to facilitate their use they should also be made to lock when the jaws are at least one-half inch apart. By this measure the clamp may grasp a large amount of tissue and also be more easily controlled in its application when considerable force is required to enter the tissues. This clamp is applicable to all surgical procedures, but in very vascular regions and to check profuse and persistent parenchymatous hemorrhage it will prove of service, also when the hemorrhage occurs from a large vessel, like the facial, the clamp may be used before incision is made. Here its application is similar to the old acupressure forceps. By the judicious use of these clamps the occurrence of hemorrhage, which is the sole cause of mortality in a certain number of cases, may be curtailed, and thus further advance this class of operations. I would advise great caution in its use however, as its unnecessary application will prove deleterious; the pressure exerted tending to devitalize the tissues in proportion to the length of its application, and the amount of pressure brought to bear upon the tissues within its grasp. This must be rigidly kept in view, as the present status of aseptic and antiseptic surgery will not allow extensive devitalization of tissues which would form a suitable culture for the multiplication of the few germs present in healthy tissues, and we would have infection virtually following the use of these instruments, whereas their nonapplication would result in aseptic resolution. As we further advance in aseptic and antiseptic technic, I am satisfied that the use of these clamps in conditions absolutely inoperable, owing to the vascularity of the parts involved, will come under the scope of successful surgery, and thus materially assist us alleviating human suffering.

A NOVELIST'S KNOWLEDGE.

To the Editor of AMERICAN MEDICINE:—The following quotation will be of interest to the profession. It is from Cable's last novel, "The Cavalier," chapter 49:

"The surgeon is yonder, he will tell you."

"This person Kendall and I had the luck to meet at the Roy's breakfast table. 'Yes, left lung,' he said. 'No, hardly perforated, but the top deeply grazed.' The ball, he said, had passed on and out, and he went into particulars with me, while I wondered if Kendall knew, as I did, what parts of the body the pleura, the thorax, the clavicle and the pyemia were."

Yours sincerely,

Kingston, Ont.

J. C. CONNELL.

ORIGINAL ARTICLES

NOTE ON THE FEVER OF HODGKIN'S DISEASE;
RECURRENT (RÜCKFALL) FEVER; EBSTEIN'S
DISEASE.*

BY

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of Philadelphia.

Fever has long been observed as a symptom of Hodgkin's disease. It has usually been described as continuous. That other types are not uncommon the following notes will show. The type upon which we wish to lay most stress is that known as *recurrent fever* the relapsing type.

In 1870, Murchison¹ described the case of a girl of six years, who had had scarlet fever and whooping-cough.

Shortly after the latter disease she developed fever, and from then until her death, 10 months later, had regular paroxysms, recurring every four weeks, the maximum temperature being attained on the seventh day. During these attacks the lymph-glands in the neck and axilla became enlarged and tender, and the heart enlarged slightly. During the intervals the patient had a ravenous appetite. The family history was entirely negative. At the autopsy the glands were found enlarged and firm, and there were white nodules in the enlarged spleen, in the liver, and in the lungs, and general anemia of the tissues. The microscopic examination showed the characteristic picture of lymphoma, and Murchison regarded the case as one of pseudoleukemia, similar in all respects, save the paroxysms of fever, to one he had already reported. He was unable to find any similar case recorded in literature, but recollected one in his own practice that had occurred in a girl of 18, whose spleen and lymph-glands were enlarged. Unfortunately she was under observation only a short time.

Nine years later Gowers,² in his memorable article, described three types of fever as occurring in pseudoleukemia—continuous, alternating, and remittent. He reports no cases, but gives a chart of a case of the second type, and probably also had in mind Murchison's isolated case when mentioning this. Except for this brief notice the symptom appears to have attracted no attention.

After another long interval a second case was reported by Pel³ in connection with another of pseudoleukemia.

The patient was a man, aged 25, who, in June, 1884, developed chills, fever, nausea, pain in the abdomen, and malaise. When first observed a few days later he was pale, the spleen was enlarged, and there were physical signs of acute bronchitis. From this time the temperature showed the following extraordinary course: Fever for 11 days, apyrexia for 15 days, fever 12 days, apyrexia 15 days, fever 15 days, apyrexia 15 days, fever 32 days, apyrexia 9 days; fever and death from heart failure. During the last week there had been jaundice. No blood-counts apparently were made, but Pel states that the leukocytes were slightly increased, and that there was progressive anemia. At the autopsy the liver, spleen and lymph-glands were enlarged; there was none of the lesions of typhoid fever, although this disease had been suspected during life, and he therefore made a diagnosis of pseudoleukemia, and reports the case as such.

Two and one-half years after this Ebstein⁴ reported the case that had been most carefully studied and has been the cause of giving his name to the disease. Ebstein called it a case of recurrent (Rückfall) fever; or as Osler puts it, "by the remarkable title of chronic recurrent fever, a new, infectious disease." The symptom attained the dignity of a disease.

The patient, a male, aged 19, had diphtheria and dysentery in childhood. In June, 1886, he first noticed malaise, headache, and loss of appetite, and pain of an intermittent character in the right side of the abdomen. In September of the same year the temperature records began. In 211 days there were nine paroxysms of fever of an average duration of 13 to 14 days, with afebrile intervals of 10 to 11 days, making the intervals between the highest temperatures about 24 days. The maximum temperature was 40° to 41°C., or a little more; the minimum, 35.6° to 36°C. During the attacks the temperature rose slowly, and sank rather suddenly. Often the

defervescence was accompanied by sweating. At one time there was an attack of acute pleurisy, with exudation. The pulse and respiration varied with the temperature; the mind remained clear; the appetite was lost during the paroxysms, but became ravenous during the intervals. The feces and urine were normal, though the urea was slightly increased during the paroxysms. The spleen was enlarged, and became even larger during the febrile periods, but the lymph-glands were not enlarged. Treatment had not the least effect. After the tenth paroxysm the temperature remained elevated for 22 days, then fell, but rose almost immediately, and the patient died five days later in collapse. In the last days there had been dyspnea, pleural effusion, anasarca and a gangrenous bed sore over the left trochanter. At the autopsy white nodules were found in the pleura; the bronchial and mediastinal lymph-glands were enlarged, but not softened, and there were nodules in the spleen, liver and kidneys.

He regards the case as one of hard malignant lymphoma, but is not willing to include it among the pseudoleukemias, unless a sharp distinction be drawn between the febrile and afebrile forms.

While the observations upon this case were being completed, Pel⁵ had reported two additional cases which had already been published in a Dutch journal.

The first was that of a sea officer, aged 32, who had spent considerable time in the Dutch East Indies, where he had frequent attacks of malaria, inflammation of the liver, and dysentery. Upon his return to Europe he felt ill and took several cures. These were not thoroughly successful. From March 1, 1884, he began to notice slight attacks of fever. He was under observation from May of the same year. From this time he had regular attacks of fever, lasting 10 or 12 days, alternating with periods in which the temperature was normal or subnormal. There was progressive anemia and cachexia. Death occurred January 12, 1885. A short time before, the patient had developed hematogenesis icterus, had had persistent singultus, and died apparently as a result of cholemia. At the autopsy the spleen and liver were found greatly enlarged, and there was also considerable hard enlargement of the mesenteric lymph-glands. Microscopically the changes found were those of focal hepatitis.

The second case was also in a man, aged 41, who had been a sailor and had been in the East Indies where he had contracted yellow fever. He had never had malaria or dysentery, and his family history was entirely negative. The attacks of fever commenced in October, 1883. The febrile periods lasted about 14 days, and the afebrile periods from 14 to 21 days. The spleen, liver and lymph-glands were enlarged; there was progressive anemia; the skin was grayish-yellow, but there was no jaundice until just before death. When the blood was examined the red blood-cells were normal, and there was no leukocytosis. At the autopsy the lymph-glands were enlarged and hard, and there were grayish-yellow nodules in the liver, spleen and kidneys. It was particularly mentioned that not a trace of tuberculosis was found in the lungs.

With the publication of these cases and the completion of Ebstein's paper the early history of this symptom-complex may be regarded as complete. The clinical course is so characteristic that it was given a place almost at once as a clearly defined process. Since then additional cases have been recorded, but practically nothing has been added to our knowledge. The cases which we have been able to collect from the literature, which appear to be all, are as follow:

Hanser⁶: A male, without any important features in the family or previous history. On December 2, 1882, he was taken sick with pain in the abdomen. When examined, a tumor-like formation was found in the abdominal cavity, which was somewhat tender, and there was dilation of the left ventricle of the heart. He had attacks of fever lasting from 10 to 12 days; the temperature would rise slowly to about 40° C. Usually there was some sweating in the beginning of the attack, and during it the pulse increased in frequency, the dilation of the left ventricle became more pronounced, and there was moderate loss of weight. The intervals averaged about 10 days, although occasionally, especially toward the end, when the fever was moderately irregular, they only lasted one day. The blood was normal throughout the entire course of the case. Four weeks before death the patient developed anasarca. Death occurred as the result of exhaustion. An autopsy could not be obtained.

Völckers⁷: A man, aged 30, who had had syphilitic infection. In October, 1884, he had some gastric disturbance, with pain located just to the left of the umbilicus, and slight fever. He was given sodium iodid, and improved, but, after severe physical exertion he had a renewed attack of fever, and a tumor was recognized situated to the left of the spinal column and extending from the umbilicus into the pelvic cavity. From this time he had the characteristic febrile movement. The periods of pyrexia lasted 14 days; the periods of apyrexia from seven to eight days. The temperature rose and fell slowly, and during the intervals was not subnormal. During the febrile attacks the patient had loss of appetite and gastric disturbance,

* Read before the American Association of Physicians at Washington, D.C., May, 1901.

characterized by nausea and occasional vomiting. Toward the end of the attack the fever became quite irregular, but even then showed a tendency to the recurrent type. At the autopsy a tumor was found attached to the periosteum of the lumbar vertebrae, and the retroperitoneal lymph-glands were enlarged. The tumor was diagnosed as a fusocellular sarcoma with peculiar areas of degeneration. Bands of connective tissue passed through it in various directions. The bloodvessels were distinctly sclerotic. The tumor was composed of two types of cells, the epithelium and lymphocytes. Völkers regards it as of an infectious type.

Although there is little doubt that this case belongs to the group of cases we are describing, there seems to be more doubt in regard to the case of Hammer.⁸

The patient, aged 41, was a miller by occupation, and had had an attack of pericarditis at the age of 36. He had also suffered from time to time with articular rheumatism and pains in the lumbar region. On February 6, 1891, he had a sudden attack of headache, with pain and tenderness in the chest. For nine months he had recurrent fever, somewhat irregular, the periods of pyrexia lasting from one to six days and the periods of apyrexia from one to twelve days. In the early part of the disease he had an attack of acute pleurisy, which did not recur. Shortly after the first symptoms, pains developed in the knees and rapidly involved the whole bony system, especially the spine. There was some edema over the spinal column. The blood showed at first a moderate poikilocytosis; later there was slight leukocytosis, and progressive anemia. Death occurred November 27, 1892, 19 months after the appearance of the first symptoms. At the autopsy the bones were found hardened throughout the body. There were numerous small nodules on the serous membrane, and the lymph glands were enlarged. Microscopically the bone tumors presented the picture of multiple myeloma. The tumors of the serous membranes and of the glands were composed of round cells.

A typical case, clinically, is the one reported by Askanazy.⁹

The patient, a woman, aged 32, whose parents were healthy, and who had herself been healthy in childhood, was attacked with a severe cough, thirst, and fever. There was a slight greenish-white tenacious expectoration; also some gastric disturbance, with nausea and vomiting; pain in the right side of the abdomen and moderate psoriasis of the body. The nutrition was poor, and a tumor could be detected in the right supraclavicular fossa, which was soft and not painful. The heart was normal. The patient was under observation 19 days. During this time, for four days the temperature was normal in the morning and slightly elevated in the evening; then for three days it was elevated morning and evening; then for two days normal in the morning and considerably elevated in the evening, and for the last nine days there was persistent pyrexia, with temperature usually exceeding 39° C. There was frequent diarrhea, the sputum did not contain tubercle bacilli, and the urine was normal. The patient died of exhaustion and edema of the lungs. At the autopsy the thoracic glands were found greatly enlarged; the lymph glands at the hilum of the spleen were also increased in size; the lungs were normal. Microscopic examination of the glands showed the characteristic changes of tuberculosis, and tubercle bacilli were found in great numbers.

The author believes that possibly the case of Ebstein was also one of tuberculosis, although tubercle bacilli were not found, and thinks it not unlikely that Pel's case was of similar nature. He concludes that there are cases that give the clinical picture of pseudoleukemia, and yet, as a matter of fact, are due to tuberculosis of the lymph-glands.

Renvers¹⁰ reports the case of a man, aged 21, who in childhood had smallpox, but had otherwise been healthy. In 1887 he suffered from time to time with colic-like pains in the abdomen. When admitted to the hospital, on October twentieth of that year, it was found that the spleen and liver were enlarged and somewhat tender. While in the hospital he had repeated attacks of fever, lasting from 8 to 11 days, in which the temperature usually exceeded 40° C. This alternated with attacks in which the temperature was normal or slightly below, lasting from 8 to 14 days. During these attacks the spleen and liver distinctly increased in size; and the retroperitoneal lymph-glands gradually enlarged during each attack, until they formed a tumor-like mass to the left of the umbilicus. There was no leukocytosis, but there was progressive anemia and cachexia. The appetite was lost during the febrile periods, but the patient ate ravenously during the intervals. The diazo reaction was constant throughout the disease. An autopsy was secured, and the changes characteristic of lymphosarcomatosis were discovered. Renvers regards the case as a form of infectious pseudoleukemia.

Seeborn¹¹ reports an extremely doubtful case. A woman, aged 18, who had frequently suffered from anemia, in June, 1880, had severe pain in the left thorax, extending to the left

shoulder. This disappeared for a year, and then recurred in the same situation. On July 5, 1890, she had chills and fever, followed by headache. When examined, signs of a tumor just behind the left side of the sternum were discovered. This tumor was tender on pressure. The thyroid glands were much enlarged; fever continued until July 16; there was then an intermission of three days, when the temperature rose again, and the patient died. At the autopsy a lymphosarcoma of the thymus was found, involving the neighboring lymph-glands.

Kisset¹² points out the frequent occurrence in children of the above-mentioned type of fever. Osler refers to it in his textbook, and states that he has seen three cases. Quite recently the symptom was more firmly established as a disease, Pinkus being the godfather. He terms the ailment "Chronic Relapsing or Recurrent Fever" (Ebstein). Briefly his paper is as follows:

Pathologic Anatomy.—There is present a malignant growth in some lymphatic organ (glands, spleen, or bone-marrow). Hammer says sarcoma. Often a lymphosarcoma or a sarcoma-like round-celled tumor is found.

Clinical Relations.—The disease has the symptoms and signs of a pseudoleukemia with intermittent fever. A period of one to three weeks of fever alternates with an apyretic period of the same length. It must be differentiated from similar cases of malaria, which are also cured by arsenic, and not affected by quinin. A peculiar tubercular lymphoma may give the same clinical picture, while the tumors may be of spindle and epithelial cells (Schottelens in Völcker's case). The pathologic anatomy and the blood histology have not been sufficiently worked out to decide definitely in regard to the nosology of this disease.

In 1898, Sternberg¹³ reported 15 cases that had been diagnosed as pseudoleukemia, in which he had been able to make a careful histologic examination of the tissues. The clinical histories are entirely inadequate, and it is impossible to state how many of them belong to the category of Ebstein's disease. In the eighth case, however, it is stated that the clinical diagnosis was pseudoleukemia, with recurrent fever. In this case the histologic examination showed the presence of miliary tuberculosis, involving especially the liver and kidneys. In the lungs there was the typical picture of cheesy pneumonia, with miliary tuberculosis in the lymph glands, and numerous large cells. Many of them had undergone extensive cheesy degeneration. Nearly all of the other cases showed extensive tuberculous changes, and Sternberg expressed the opinion that in the majority of cases pseudoleukemia is really a tuberculosis of the blood-forming apparatus. He thinks that in all likelihood this is especially true of the cases with recurrent fever.

In cases of pseudoleukemia without tuberculosis, the hyperplasia and peculiar structure of the lymph-glands lead him to believe that it is not impossible that it is really a form of multiple sarcoma. He thinks, however, that there is a peculiar form of tuberculosis of the lymphatic apparatus, essentially characterized by the fact that a more or less peculiar form of granulated tissue is produced in the lymphatic system, that is apparently distinguished by great rigidity in their large structures. Sometimes there will be in the course of the disease a typical tuberculous granular tissue, and he urges particularly against the diagnosis of pseudoleukemia before a careful histologic examination of the tissue has been made, and before experimental inoculation of animals has been performed.

Ehrlich and Lazarus have recently discussed the literature of this subject in their article on anemia in Nothnagel's *System*. They regard it as a peculiar form of pseudoleukemia characterized by the recurrent type of fever. It is often associated with splenic tumor, and occasionally lymphomas appear that resemble round-celled sarcoma; in fact, the anatomic picture resembles that of lymphosarcoma or Hodgkin's disease. Among the etiological factors malaria should be reckoned; at least it sometimes produces a clinical picture that is identical, with the exception that the patient recovers upon treatment by arsenic. The authors regard the occurrence of tuberculosis, which has caused Sternberg to express the idea that

pseudoleukemia is merely a form of tuberculous lymphoma, as usually accidental. They are not certain that it is justifiable to regard cases of pseudoleukemia with recurrent fever as a peculiar form of disease, but prefer to await further investigations.

Kost¹⁴ reports three interesting cases:

The first, that of a boy, aged 7, who was admitted to the hospital March 31, 1889, with a history of having had an acute sickness for 14 days, during which time he had headache, felt weak and had lost his appetite. There was slight diarrhea and apparently fever. The patient was pale, poorly nourished. There were physical signs of bronchitis of the left lower lobe; the spleen was enlarged and palpable; the cervical lymph-glands were considerably enlarged. A diagnosis was made of typhoid fever; the temperature was 39° C. On June 2 the temperature was normal. Seven days later the spleen was smaller, patient had increased in weight; appetite was ravenous. On June 14 there was slight elevation of temperature, which increased and persisted until June 20, when it fell suddenly. During this afebrile period the patient did not improve much. On July 1 there was again gradual rise of temperature; spleen enlarged; the other symptoms remained the same. On July 8 the temperature fell suddenly. This continued, the attacks of fever lasting from 7 to 24 days (the last), the intervals from 3 (the last) to 17 days. The patient died in the ninth attack, which lasted a day. The condition was characterized by the rapid progressive anemia, slight edema of the extremities and enlargement of the spleen and lymph-glands during the febrile attacks. Toward the end there was distinct ascites. The blood showed toward the last a marked leukocytosis (100,000), which rapidly increased until there were 2,700,000 and 3,200,000 whites. Hemoglobin was greatly reduced. At the autopsy the spleen and lymph-glands were found enlarged. There were numerous, in part confluent, nodules surrounding the bloodvessels, and there were numerous scars in the kidneys. Nodules similar to those in the spleen were found in the liver. The bacteriologic investigation consisted in various cultures on various mediums; and the implantation of fragments of tissue in the anterior chamber of a rabbit's eye and in the peritoneal cavity of guinea-pigs, gave no results. The histologic examination of the tissues showed that the tumors were really small sarcomatous masses, and in all probability were metastatic; they did not resemble leukemic infiltration.

The second patient (a man, aged 35) gave no previous history, family or otherwise. He had noted in the summer of 1889 that the left foot enlarged on long standing. The previous winter he had noticed an enlargement of the inguinal glands on both sides. In course of time these gradually enlarged, and he had an attack of erythema in the right thigh, and fever, lasting three days. He continued to vary from good to worse for some time. Enlargement of the cervical glands occurred, and in April, 1890, he had another attack of fever, lasting five days. When brought to the hospital the temperature was slightly above normal, the axillary and inguinal glands were enlarged, and there was a tumor about the size of a fist in the epigastrium. On May 22 he had an elevation of temperature to 40° C. There was erythema of the right thigh. On the twenty-fifth the temperature fell to normal, rising again on the thirtieth, and became normal on June 2. On June 18 a tumor appeared on the right side of the inferior maxilla. This diminished somewhat in size, and on the twenty-second a tumor appeared in the fourth intercostal space, and upon the back at the level of the first dorsal spine. There was neither peptone, propeptone, nor acetone in the urine. The patient is still under observation.

Finally, the case of a boy, aged 16, who had always been weakly. He had noticed a swelling in the region of the right hip in 1883. When admitted, in February 28, 1894, the temperature was slightly elevated, the right hip was diffusely swollen, and there was some limitation of movement. The patient had a remittent fever, which after an operation, still persisted, and was associated with enfeeblement of power: finally death. The tumor of the hip was a sarcoma, and there was sarcomatous infiltration of the neighboring lymph-glands.

The author also reports five cases of carcinoma of the stomach, in all of which fever had been a prominent symptom. He concludes as follows: Malignant tumors, sarcomas or carcinomas, may cause considerable elevation of temperature. This is, however, exceptional. The type of fever may be remittent, intermittent or recurrent. The cause of the fever may be the absorption of septic material as the result of the breaking down of the tumor. Other hypotheses are: the peculiar type of the temperature-regulating apparatus of the individual, the intermittent type of the invasion of the metastases, the localization of the tumor in the organs concerned in the formation of blood.

A very similar case has recently been reported by Withthorpe.¹⁵

The patient, a woman aged 24, had been admitted to the hospital, supposed to be suffering from influenza. She was

well-nourished, and apparently had no disease. Physical examination disclosed the presence of a pleural exudate on the left side. There was moderate fever, which continued until this was aspirated eight days later. On April 22 the fever returned and continued until May 11, when a second aspiration was practised. For five months after this the patient suffered from periodic attacks of fever lasting three days, and separated by intervals in which the temperature was normal or slightly below, lasting three or four days. This fever was absolutely rebellious to treatment. Malarial parasites were not found, and tubercle bacilli were absent from the sputum. In the last six weeks of life the patient became slightly cyanotic, and there was visible pulsation of the cervical vessels; symptoms of stenosis of the bronchi developed, there was paralysis of both vocal cords, and she died October 7 of exhaustion. At the autopsy a round-celled sarcoma was found in the posterior mediastinum, which had invaded the auricles of the heart and the right lung. There were multiple abscesses on the right lower lobe, and passive congestion of all the organs. Withthorpe believes that this extraordinary temperature was due to the introduction, at regular intervals, of the products of disintegration, the toxins, or similar material, into the circulatory organs.

I have had the opportunity of studying two cases worthy of consideration. Neither came to autopsy. The first case was one of Hodgkin's disease with undoubted tuberculosis, although tubercle bacilli were not found in the discharges. The second was also one of so-called Hodgkin's disease, in which the clinical course was that of tuberculosis, such diagnosis being made positive by the finding of tubercle bacilli in the sputum.

CASE I.—This case was observed in 1891 and 1892. The patient, a boy, aged 16, was admitted to the hospital on November 13, 1891, with the following history: He had been sick for five or six months with a condition diagnosed by the attending physician as malaria. During this time he had been unable to work, and had had occasional chills, irregular pains, and loss of strength and appetite. Previous to this he had had no sickness. On November 27 he felt much worse than usual, was feverish, and had a profuse hemorrhage from the nose. From this time the fever continued and he felt very weak. Upon admission the temperature was 105°; pulse 120, full, regular, and compressible, and respiration 27. There was slight hebetude, some gurgling and tenderness in the right iliac fossa; the spleen was enlarged, but the abdomen was not distended. Heart-sounds were clear, the lungs normal, and the postcervical glands on the left side were palpable. From the time of admission the temperature steadily and slowly declined, and on the morning of December 3 was normal. The following night it reached 96°; the pulse had dropped to 64, with good volume. From this time the temperature continued subnormal until December 12. Appetite improved, he slept well, and felt much brighter. There was some constipation. On the twelfth the temperature began to rise, and in 24 hours reached 104°. The axillary and cervical glands became considerably enlarged; the pulse was full and soft, and reached 95. The stomach became irritable, and the patient vomited, particularly after the administration of quinin. The appetite was lost, but the patient did not complain, and presented absolutely no symptoms to account for the rise of temperature, which ranged from 103° to 105°, while the pulse was 110 to 120; respirations varied from 24 to 30. The patient had no cough, did not complain of pain, and the lungs were clear; there was slight yellowing of the skin, and very pronounced emaciation. On December 21 the temperature steadily declined, and reached normal at 3 p. m. It then became subnormal, and remained so until January 1. From this time the swollen glands in the neck and axilla diminished in size. The urine contained some bile and a distinct trace of albumin, but no casts. On January 2 the temperature began to rise gradually, and on the fourth had exceeded 103°. The lymphatic glands at the angle of the jaw, and the postcervical glands, enlarged rapidly during this attack, and the glands in the groins and in other parts of the body became palpable. The tongue was coated; appetite remained fairly good; patient did not complain of pain, and slept well. There was a soft systolic murmur at the base of the heart. On January 6 the stomach again became irritable, the patient vomited several times a day, and was constipated. Slight icterus reappeared on this day. On January 9 the temperature again commenced to decline, and reached normal in 24 hours. It then became subnormal and continued from 94° to 97° until the fourteenth, when it rose to 97°. During this period the pulse dropped to 70, appetite became ravenous, and the patient gained rapidly in weight; the jaundice cleared slowly, the glands in the neck decreased considerably in size, and the patient seemed in every way improved. As a rise in temperature was expected, he was given bisulfate of quinin, five grains every three hours, on January 19. In spite of this, the temperature again rose and reached 104°; it then dropped again below normal. On February 1 the patient passed into another service. The temperature was noted as elevated on the twelfth. It was evidently of short duration, as it was stated that it was easily controlled, and the patient was discharged improved, on the nineteenth of that month. He was readmitted almost immediately in a state of collapse, with weak, rapid pulse, subnormal temperature, and

enlarged and tender spleen. On March 4 the temperature rose to 102°, and subsequently reached 106°. On the eleventh it was 102.4°; the patient was exceedingly weak and the pulse thready. On the eighteenth the temperature was again subnormal, and the patient seemed stronger. It remained down for 14 days, and then suddenly rose to 104° on March 25. On April 1 the patient had a severe attack of epistaxis, and on the eighth it was noted that the temperature was subnormal, and the patient very weak. He was discharged from the hospital on April 9.

After leaving the hospital we learned that the patient lived just one month, dying on May 9, 1892. During this month he grew weaker rapidly, and the lower part of the body was said to have been paralyzed. There did not seem to be any fever, although the temperature was not taken. The patient became extremely jaundiced, but had no vomiting, nose-bleed, nor edema. On the day of his death he complained of severe pains in the knees and feet. His appetite had been failing, and, although depressed, his mind was clear. No autopsy was performed.

During the course of the case the diagnosis was exceedingly uncertain. At first it was supposed to be typhoid fever, as was Pel's first case; of course, the Widal reaction was not known at that time. It was then diagnosed as malaria. Investigation was made for the plasmodiums of malaria, but they were not found. The blood was frequently examined for the spirilla of relapsing fever, but the results were always negative. Counts were made with the red-blood pipet, which showed reduction of the red blood-corpuscles, and no obvious leukocytosis. Quinin was used very freely at various times, but often seemed to cause vomiting, and had to be discontinued. It had absolutely no influence upon the temperature, and the same was true of cold sponges and the coal-tar antipyretics which were occasionally used. The case may be enumerated as follows. Recurrent fever of the following course:

Febrile period—November 27, 1891, to December 3, 1891 (six days).

Afebrile period—December 3, 1891, to December 12, 1891 (nine days).

Febrile period—December 12, 1891, to December 21, 1891 (nine days).

Afebrile period—December 21, 1891, to January 1, 1892 (eleven days).

Febrile period—January 1, 1892, to January 9, 1892 (eight days).

Afebrile period—January 9, 1892, to January 20, 1892 (eleven days).

Febrile period—January 20, 1892, to January 30, 1892 (ten days).

From the subsequent notes it is known that the temperature was subnormal on February 4, that there was a transient rise just before the twelfth, and that it was normal on the nineteenth. The next recorded febrile period commenced on March 4, and continued on the eleventh, but had ceased some time before the eighteenth. The afebrile period now lasted 14 days, when, on the twenty-fifth, the temperature again rose to 104°, but on April 8 the temperature was again subnormal.

This case is remarkable for the number of paroxysms observed, and for their extreme regularity. During the paroxysms the glands in the neck and axilla became swollen, and a heart-murmur developed. The patient had impairment of appetite, nausea, vomiting, and emaciated rapidly. Toward the end of the attack there was slight jaundice, and bile in the urine. During the interval the swelling of the glands subsided, appetite returned, the patient ate ravenously, and increased in weight. Death occurred as a result of the progressive cachexia, with the usual terminal icterus.

CASE II.—Hodgkin's disease: lymphatic, pulmonary, pleural, and meningeal tuberculosis; recurrent fever of more than 6 months' duration; death from tuberculous meningitis.—J. C. W., aged 59, married; merchant and capitalist. Active in business life; nervous temperament; moderate in the use of tobacco and stimulants. Never robust; subject to attacks of "biliousness" every two or three months. Family history of tuberculosis very marked; no other inherited tendency.

Present illness of 5 years' duration. At first adenitis and asthenia; cervical, axillary and inguinal glands involved. At the end of two years considerable return of strength, with diminution in the size of the glands, but not of the spleen. The cervical and inguinal glands entirely disappeared. In 1899 had slight cough, but no physical signs of tuberculosis. In the autumn of 1900 failed rapidly, and in October fever began. It continued immoderately, and was recurrent or relapsing in type. In December, 1900, pulmonary tuberculosis developed. In February there was a large serous effusion in the left pleura. In May cerebral meningitis set in.

The Blood.—Opportunity to make many examinations was not permitted. February 24, 1898: Hemoglobin, 71%; red blood-corpuscles, 4,778,500; white blood-corpuscles, 3,688; polynuclear, 58.8%; eosinophiles, 12.7%; small lymphocytes, 21.04%; large lymphocytes, 13.77%. April 6: Hemoglobin, 82%; red blood-corpuscles, 5,913,280. October 6: Hemoglobin, 70%; red blood-corpuscles, 3,335,000. February 3, 1899: Hemoglobin, 105%; white blood-corpuscles, 9,000; polynuclear, 42%; mononuclear, 12%; large lymphocytes, 6.5%; small lymphocytes, 4%; eosinophiles, 17%; transitional, 14.5%; myelocytes, 3%. October 23, 1900: Hemoglobin, 55%; red blood-corpuscles, 3,940,000; white blood-corpuscles, 4,000; polynuclear, 54.50%;

small lymphocytes, 31%; large lymphocytes, 25%; transitional, 3.25%; eosinophiles, 10.75%; mononuclear, 25%.

Lymphatic Glands and Spleen.—At first the adenitis was general; later the glands diminished in size; then they enlarged, to decline again. During the occurrence of the fever each paroxysm was preceded by pain in the inguinal glands of the right side. The patient could always predict a paroxysm. During the last 6 months of his illness progressive atrophy of all the glands took place. The spleen was enlarged and prolapsed. It never regained its normal size, although it was not enlarged to the same degree, because of the general atrophy, the last 6 months of life. The diagram shows the position and shape. The liver was enlarged two fingers' breadth upward and to the same extent along the lower margin; it was hard and often painful.

Gastrointestinal

Symptoms.—Not unusual. There was some anorexia always, and during the course of the fever it was complete. Food was repugnant, and for two or three days at a time none would be taken. Constipation alternated with diarrhea; the former was more constant. Vomiting of fluid, as in chronic gastritis, occurred during the febrile paroxysms, especially in the first period of the fever.

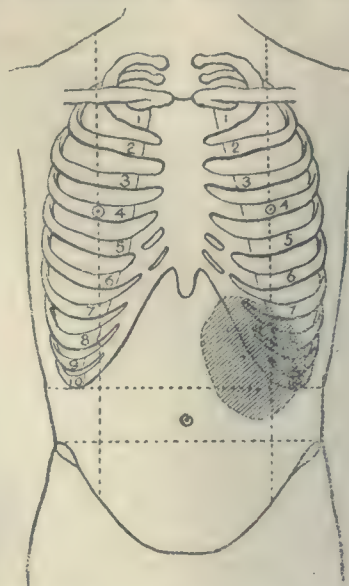
Pulmonary Symptoms.—Cough and dyspnea occurred in due time. During 1900 there was some cough. In December, 1900, there was bronchitis, and tubercle bacilli were found in the sputum. In January consolidation of the upper part of the lower right lobe was found. In March there was a left pleural effusion; the fluid removed by aspiration was negative for tubercle bacilli. General tuberculosis of the lungs ultimately prevailed.

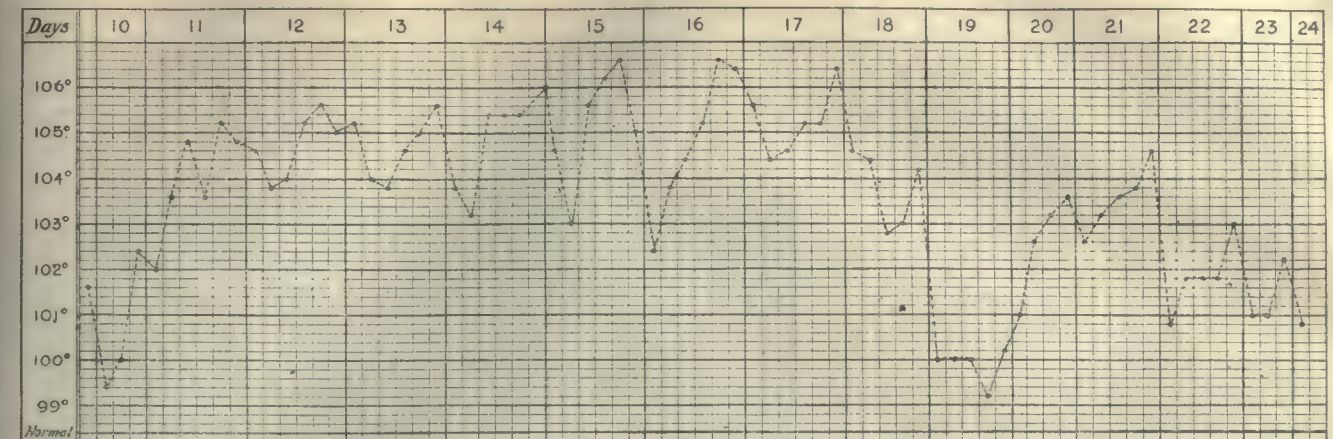
Heart and Bloodvessels.—The heart in the late periods (three months) dilated, and murmurs developed in consequence. The pulse was always of low tension.

Urine.—October 30, 1900: Specific gravity, 1,010; albumin, trace; sugar, 0; occasional granular casts. Twenty-second: Red amber; specific gravity, 1,020, acid; albumin, trace; sugar, 0; several granular casts; epithelial cells. November 14: Amber; specific gravity, 1,010, acid; albumin, trace; sugar, 0; few hyalin casts. Twenty-sixth: Specific gravity, 1,020; albumin, trace; sugar, 0+; small hyalin and granular casts. Twenty-eighth: Specific gravity, 1,020; albumin, trace; sugar, 0; amorphous urates. December 3: Specific gravity, 1,012, acid; albumin, trace; sugar, 0; oxalates of lime; hyalin cast. Fourteenth: Specific gravity, 1,018; albumin, trace; hyalin cast. Eighteenth: Twenty-three ounces in 24 hours; dark amber; specific gravity, 1,030, acid; albumin, trace; sugar, 0; urates, amorphous; occasional hyalin casts. January 23, 1901: Specific gravity, 1,015; albumin, trace; sugar, 0; granular casts; oxalates. February 8: Specific gravity, 1,020, acid; albumin, 0; several hyalin casts. Twenty-fifth: Specific gravity, 1,020; albumen, 0; an occasional hyalin cast. April 15: Specific gravity, 1,015; albumin, trace; oxalates. No unusual urinary symptoms; the amount varied from time to time.

The Fever.—During October and November there were several paroxysms of fever. From December 1 until the patient's death in May the temperature was carefully recorded. From the first-named date until March 5 there were 5 periods of apyrexia, lasting 10, 10, 6, 15 and 8 days respectively, each followed by a period of 12, 9, 8, 8 and 8 days respectively.

During the apyretic periods the temperature would range from 97° to 98.5°. After a paroxysm of fever the temperature would be subnormal for 24 or 48 hours. The onset of the periods of fever was somewhat abrupt; the acme of the range would be marked in 24 hours. In the earlier paroxysms the temperature was higher than in the later. It would rise to 103°, and, with a difference of a degree or a degree-and-a-half between morning and evening, would remain during the paroxysm at this height, falling somewhat abruptly to or below normal in about 18 hours. In two of the paroxysms there was a crisis and a pseudocrisis. The fever would be preceded by pain in the groin, and attended by extreme anorexia and insomnia. The degree of each of these symptoms was remarkable. There was no change in the size of the spleen. The urine would be scanty and loaded with urates. The pulse would range from 65 to 75 during the apyretic period; from 80 to 90 during the febrile period. The respirations were 22 to 26 in the former; 28 to 35 in the latter period. After March 5 the fever became mildly con-





tinuous, rising to 101°-102° in the evenings. (See chart for record of a paroxysm.)

Symptoms of cerebrospinal meningitis of tuberculous origin arose two weeks before death. The final invasion of the tuberculous process was in the nervous system.

CONCLUSIONS.

Hodgkin's disease is in all probability a lymphatic tuberculosis. Fever, recurrent in type, occurs commonly in this affection of the glandular structures. So-called recurrent fever is a symptom, not a disease. In a few rare instances the clinical diagnosis, when such fever prevailed, was malignant lymphoma (Pel), sarcoma (Völckers), myelosarcoma (Hammer), and lymphosarcoma (Remus and Witthower, Seeböhn). It must be remembered that such distinguished authorities as Ehrlich and Lazarus believe that Hodgkin's disease is a lymphosarcoma, and that the tuberculous process is accidental. Sternberg, on the other hand, has pointed out the differences, and insists strongly upon the tuberculous as the process giving rise to the adenitis of Hodgkin's disease. He believes that the symptoms are different from those of other forms of tuberculosis, the anatomy of the gland having much to do with the process. I agree with the conclusions of Sternberg.

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- ¹² Vratich, 1894.
- ¹³ Archiv für Heilkunde, vol. xix, p. 21.
- ¹⁴ Jahrbücher der Hamburgischen Staats Kranken Anstalten, 1889, No. 1, p. 174.
- ¹⁵ Münchener medizinische Wochenschrift, February 5, 1901, p. 224.

Writing for the Blind.—The methods in vogue of teaching the blind to write present so many difficulties that the apparatus introduced recently by M. Dussaud, at the Academy of Medicine in Paris, will probably be generally adopted. According to present methods, the blind student must be taught to write from right to left, while he reads from left to right, thus entailing two cerebral processes that are directly antagonistic. The use of M. Dussaud's invention will considerably simplify such instruction, for it obviates the necessity of learning the alphabet twice over, once to read it and in a reverse manner to write it, and by its means the student makes the letters as he reads them. The apparatus consists of 2 metal regulators. The upper one is divided into compartments, the bottom of each having 6 holes. This part is placed on the paper, underneath which the second part is placed in position. This part is like the top except that it has points which stick up into the holes. In writing, the stylus is driven into the necessary holes, the two regulators are forced together and the letter is thus formed in relief. Figures and music can also be written quite readily by the above method.

PRELIMINARY NOTES ON THE VIRULENCE OF THE BOVINE TUBERCULOSIS BACILLUS FOR MONKEYS AND THE EFFECT OF TUBERCULINS MADE FROM TUBERCULOSIS BACILLI DERIVED FROM DIFFERENT ANIMALS.

BY

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In order to determine some points which would apparently throw light upon the virulence of the tuberculosis bacilli derived from cattle, for man, as experiments directly upon man are impracticable, it occurred to one of us several years ago (de Schweinitz) that some information might be gained by trying the effect of these germs upon man's first cousins, the monkeys. At that time other matters interfered with the rapid pushing of this work so that the experiments which were originally planned in 1899, are only being carried out at the present time.

It would seem very strange, indeed, if the bovine tuberculosis bacillus, which, it is well-known, is more virulent than the human germ for various species of animals upon which it has been tried, should suddenly become less virulent, when another animal, man, is exposed to its influence.

The experiments recorded here in brief, a more detailed account of which will be subsequently printed in a bulletin of this Department, appear to confirm our suppositions in this respect.

The bovine culture which we used was obtained several years ago from Dr. Theobald Smith, of Boston, and since that time has been grown for a number of generations upon artificial liquid culture media.

The varieties of monkeys with which we experimented were the following: Baboons, rhesus and an American ringtail monkey. All these animals were tested with tuberculin to prove the absence of tuberculosis and kept for several weeks under close observation, and appeared to be perfectly healthy. The animals were kept in large cages in a new, large, specially constructed house, carefully isolated, so that one animal could not contract disease from the other.

September 12, No. 1.—An African female baboon was injected subcutaneously with 1 cc. of bovine tubercle culture. The injection was made in the subcutaneous tissue on the left side, the weight of the animal at the time being 8 pounds, 9 ounces. In a few days a tumor formed at the seat of injection. It was at first hard and increased rapidly in size, softened, broke and discharged a creamy pus-like substance. The wound was washed with a solution of carbolic acid and kept covered with a layer of powdered chalk and alum, as the animal tried to pick continually at the wound.

October 4.—The axillary lymph gland on the side of the injection had become prominent and hard.

October 12.—The weight of the monkey had decreased to 7 pounds, 15 ounces.

October 26.—The animal was very weak and depressed, had no appetite and the weight had decreased to 7 pounds.

October 29.—She was much weaker and could scarcely sit with body erect.

October 30.—She was unable to climb upon the perch in the cage, and was chloroformed for autopsy. The autopsy proved the presence of generalized tuberculosis, all the organs being infected and literally filled with tubercles.

September 12, No. 2.—A small American ringtail male monkey was inoculated with $\frac{1}{2}$ cc. of the same tubercle culture as that used for the baboon. The weight at the time of injection was 2 pounds, 1 ounce.

October 12.—Weight was 1 pound, 14 ounces.

October 29.—He was bright and lively, but the appetite was not good.

November 7.—The weight was only 1 pound, 12 $\frac{1}{2}$ ounces.

November 22.—The animal was found on the floor of his cage in an apparently dying condition, and was hence chloroformed. The autopsy showed the presence of considerable tuberculosis, but not nearly so generalized as that noted in the baboon. Although proportionately to its weight this animal had received the larger quantity of the tuberculosis culture, it seemed to show a greater resistance.

This would agree with our supposition that the bovine bacilli are even more virulent for the animals more closely allied to man than for those nearer the lower animals. As these two tests had shown the extreme susceptibility of the monkeys to the bovine bacilli we next started two comparative tests.

November 7.—Male baboon, No. 4, received subcutaneously on the inner side of the right thigh 1 cc. of the same bovine tubercle culture as that used above. The weight of the animal at the time was 9 pounds 12 ounces. As in the inoculation of the first baboon an ulcer was formed at the seat of injection.

December 4.—The inguinal gland had become considerably enlarged, the animal was troubled with spells of coughing and was not nearly so lively as he was previous to the inoculation. His weight on this date was 9 pounds 9 ounces.

November 7.—Female baboon, No. 3, weight 9 pounds 8 ounces, was inoculated with 1 cc. of human tubercle culture. An ulcer in this case was also formed at the seat of the inoculation.

December 4.—The inguinal gland near the seat of injection had become greatly enlarged. The monkey coughed considerably and was quite depressed. The weight at this time was 7 pounds 14 ounces.

November 7.—Male rhesus, No. 5, was injected with 1 cc. of virulent human tubercle culture. The weight was 5 pounds 11 $\frac{1}{2}$ ounces.

November 20.—An abscess had formed at the seat of inoculation.

December 4.—The weight of the animal had decreased to 5 pounds 2 ounces, and although the inguinal gland near the seat of inoculation was hard and enlarged the animal seemed to be in fairly good health.

December 21.—This animal was dead from tuberculosis.

November 7.—Female rhesus, No. 6, received an injection subcutaneously on the inside of the right thigh, of 1 cc. of bovine culture.

November 20.—An abscess had formed but there was no enlarged glands. The weight of the animal at the time of inoculation was 5 pounds.

December 4.—The animal was very sick and weak and could move from place to place with great difficulty. Respiration was accelerated and labored. The inguinal glands near the seat of inoculation were somewhat enlarged and the weight had decreased to 3 pounds 15 ounces.

December 11.—The animal was found dead and autopsy showed in this case again a generalized tuberculosis.

The cultures used were tested upon guineapigs at the same time that the monkeys were injected. Those receiving the bovine culture died about the same time that the rhesus that received the bovine culture died, and showed generalized tuberculosis. The guineapigs that received the human culture are alive at the present time, but show the presence of disease. The material used for injection was prepared by shaking up a liquid culture of the germ and then drawing the liquid into a syringe, thus of course securing only very finely divided germs which could pass through a small needle.

These experiments, taken in conjunction with the many cases already noted in which accidental infection with tuberculosis in man can undoubtedly be traced to the bovine germ, are further evidence of the greater vir-

ulence rather than the decreased virulence of the bovine germ for man.

We have also thought it well to try again the effect of tuberculin made from bovine cultures upon tuberculous cattle and also on man. We selected animals which on previous injections had shown a characteristic reaction with the tuberculin obtained from human cultures. These same animals injected with tuberculin prepared in exactly the same method as that used in the preparation of tuberculin from human cultures, the same sized doses being used, showed as equally characteristic reactions as if the animals had been tested with the ordinary tuberculin. Some cases in man in which the presence of tuberculosis was undoubted were also tested for us at several of the hospitals in this city. The reactions corresponded to those which are obtained when tuberculin from human tuberculosis cultures is used. In this direction again, therefore, there would seem to be no difference between the human and bovine tuberculin. We have also had tested some animals with tuberculin prepared from cultures of the horse, swine, dog and avian tubercle bacilli. These germs had been grown upon exactly the same sort of media as that used for the preparation of tuberculin from the human and bovine germs. Exactly the same method of preparing the tuberculin was followed in all cases, and the product obtained was diluted in the same way. The injection with the tuberculin prepared from the swine and dog germs gave a characteristic reaction upon animals that had a number of months before responded to the tests with the tuberculin obtained from human cultures. The tuberculin from the avian cultures did not produce a marked reaction, although a slight one was noted, while that from the horse tubercle germ produced no reaction. These latter tests with tuberculin, however, can be regarded as preliminary only, and the failure of the horse tuberculin to produce a reaction may perhaps be attributed to the fact that the disease in the animal tested had been arrested.

These preliminary results are published now for the purpose of showing that experiments point to a greater virulence of the bovine tubercle bacilli for man rather than a decreased virulence. As will be seen later in a publication from this bureau, the apparent morphologic differences between the human and bovine bacilli when grown upon artificial culture media are not greater than the morphologic differences seen in the bovine bacilli obtained from the different organs of the same animal.

Lartigau has well described the great variation in the virulence of human tubercle bacilli derived from man, depending on the character of the tuberculosis. The variations and morphologic differences noted are no greater than those which would be naturally noticed in any plant that has become accustomed to changed conditions.

TRIPLE ECTOPIC GESTATION.¹

BY

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The following case is unusual enough to have a place in medical literature:

CASE.—The patient, Mrs. Mary C., aged 34, married, was first seen with the family physician, Dr. William P. Morrison, of this city, on June 19, 1901, and the following history was elicited: The patient had had good health until eight years previous, when, after a miscarriage, she developed uterine trouble, complaining of pain in the back and of other evidences of a pelvic inflammatory condition. Her first pregnancy had resulted in the birth of a full-term child. Following this she had five miscarriages, the last normal pregnancy having been about two years before. She had not menstruated for over six

¹ Read before the Philadelphia County Medical Society, October 23, 1901.

weeks when first seen by her family physician on June 12, and the last menstruation was very scanty, the flow lasting but a day and being less in amount than usual. She gave him a history of having been seized by acute abdominal pain, followed by faintness, while on the street just after making a misstep from curb to the street. For two days pain in the abdomen persisted, and marked tenderness was present. However, at the end of the second day her condition was fairly good and she

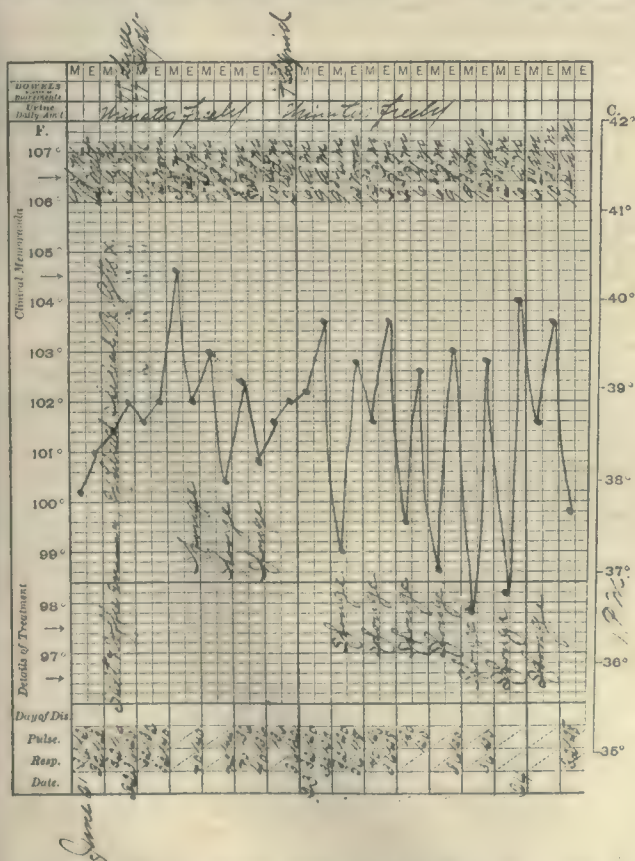


was given some solid food. Later the temperature rose, severe pain and tenderness over the abdomen returned, and the symptoms increased in intensity until June 19, when I was called in. At this time the examination showed that the uterus was enlarged and softened; a general boggy sensation was present in the posterior and lateral vaginal fornices, and the temperature was elevated about 2° above the normal. From the history and the physical signs a diagnosis of ruptured ectopic gestation

umbilicus and the pubes. As soon as the peritoneum was opened, a large amount of dark fluid blood escaped. The abdomen was literally filled with masses of black blood clot, and the first handful brought out had upon it a part of the ruptured tubal sac and the three perfectly-formed fetuses herewith exhibited. The gestation had occurred in the right tube, and the rupture did not involve the cornu of the uterus, which was slightly enlarged and retrodisplaced. The left tube was inflamed and adherent, but intact. The ruptured sac with the blood clots was quickly removed and the pedicle ligated with catgut. The patient was very much shocked at this time, and it was only by the aid of the skilful and rapid intravenous transfusion performed by Dr. Righter that the operation could be completed. The abdominal cavity was thoroughly irrigated with normal salt solution and a large quantity of this permitted to remain therein. An iodoform gauze drain was introduced and the upper part of the incision closed with interrupted silk-wormgut sutures. The patient's condition at the conclusion of the operation was unfavorable, and although large stimulating doses of strychnin and atropin had been given in addition to the saline transfusion, the pulse was just perceptible at the wrist. Her temperature on the second day was 104.6° with a pulse of 140. The bowels moved freely on the second and third days. In spite of stimulation, sponging and hypodermoclysis she gradually grew worse and died of peritonitis at 1 p. m., June 24. No autopsy was permitted.

The three fetuses removed and herewith presented are as perfectly formed as we could expect in the second month of gestation. The limbs project from the bodies, and the fingers, including the differentiated thumb, and the toes, are well defined. The external organs of generation are not definitely differentiated.

Many cases have been reported of combined intra-uterine and extrauterine gestation, and several cases have been noted of double ectopic gestation. It is quite possible that some of the cases reported as double ectopic gestation were really single, for hematosalpinx is not infrequent, affecting the tube not occupied by the ovum. This case I believe to be one of the most unusual of the genetic anomalies. The only similar case that I have been able to find on record is one reported by Sanger, of Leipsic,¹ of a triple ectopic gestation in which there was twin pregnancy in the wall of the uterus and a third ovum at the fimbriated end of the right tube. Careful examination showed this to be a case of intramural twin pregnancy at the point of entrance of the tube into the uterus, while at the abdominal end of the same tube there was another ovum, the whole being an example of triple unilateral ectopic gestation. The case here reported may be classified as a true unilateral triple tubal gestation, as the interstitial structure of the uterus was uninvolved.



was made, with possible infection of the intraperitoneal hematocoele. Immediate operation was advised, but arrangements could not be made until two days later, June 21.

Operation.—The operation was performed at the patient's home. The ether was administered by Dr. Charles S. Barnes. I was assisted by Drs. William F. Morrison and H. M. Righter. After the preparation of the abdomen and vagina, incision was made in the anterior abdominal wall, midway between the

THE THERAPEUTIC VALUE OF HYPNOTISM.

BY

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The study of hypnotism has been much hampered by the fact that it had its modern origin in charlatantry, as its forbears had theirs in superstition and credulity. Mesmer, from whose time it is customary to date modern hypnotism, or as he called it animal magnetism, was, whatever else, a charlatan. Boastful, arrogant and credulous he seized an opportunity to take in gold. He may have deceived himself; he certainly deceived others. The theatricality of his performances and the character of the man made soberminded and sane people hesitate to listen to his claims and for many years a subject worthy of most serious study was neglected. Even to this day notwithstanding the popular interest in the matter and the great mass of material that has been

¹ *Centralblatt für Gynecology*, 1893.

² Read at the meeting of the Northern Medical Association, December 13, 1901.

written the majority of distinguished physicians have carefully abstained from writing upon it. A large part of the literature has been composed by enthusiasts striving to prove a thesis, not by skeptics whose single purpose was to find the truth. In France alone, under the influence of Liebault, Charcot, Bernheim and a few others, has hypnotism played a very serious part in scientific study. The cause of this is probably racial, a man's mental and emotional tendencies and his opinions depending more upon his stock than on his faculty of reason.

Notwithstanding all the difficulties met in studying hypnotism the following seem to be established facts: Certain people after looking fixedly at a near object; after having passes made over them; when made to hold on to any object alleged to possess hypnotic power; or in obedience to a mere command to sleep, may have a convulsion, pass into a trance or cataleptic state, or become somnambulist or lethargic. The percentage of susceptible persons varies with race, age, character, and surroundings. Patients in institutions in which hypnotism is used on a large scale all the time seem to be or are more susceptible than others. Unkind critics say that this is because of complaisance on the part of the patients and a desire to please the doctors. Others say that familiarity with the condition removes the fear that many people have of it and hence one of the elements that prevents its successful production is removed. It is probable that unconscious imitation is an element. There is some divergence of opinion as to the type of people most susceptible. All are agreed that the idiotic and insane can almost never be hypnotized. Some hold that only the hysteric are susceptible, that indeed susceptibility proves hysteria, therefore is itself hysteria. In my own experience apathetically hysteric people are the most susceptible, but I have seen people apparently entirely healthy who were very susceptible. Susceptibility grows with practice and a person difficult to influence at first may after training become somnambulist at command. Frequent and long-continued hypnotization may injure the subject and if, as sometimes happens, she is a silly, foolish person to start with may make her still sillier and still more foolish and may put notions in her head that were better out. Frequent hypnotization may bring to the surface hysteria in persons in whom before it had only been potentially existent and not active and may cause serious emotional and mental disturbances. For obvious reasons a woman should never be hypnotized in the absence of witnesses.

As to what takes place in the brain causing somnambulism, lethargy and the other symptoms we are entirely ignorant. There are plenty of hypotheses but knowledge is scant. Certain alleged facts which at one time played a large part in the mesmeric world have been disproven. According to Mesmer a fluid, animal magnetism, emanated from him and directly influenced the subject operated upon. He claimed he could transmit this fluid to trees and other objects which then became agents with hypnotizing power. The term animal magnetism may have been chosen because magnetism and electricity in general were being very much studied then and magnetism was a very mysterious thing and one which would appeal to the general public. It may have been based honestly on argument by analogy, the quack foundation of many theories. When more serious-minded men than Mesmer came to study the question it was shown that the hypothetic fluid was unnecessary; was a fifth wheel; that the personality of the operator played no part; that a machine, for example a revolving mirror, was quite as efficacious, and that in fact the subject hypnotized himself.

With these few and brief preliminary statements I pass on to the proper subject of the paper—the therapeutic value of hypnotism. The question is beset with difficulties. No problem that confronts a physician is more difficult than the value of any given therapeutic

measure. Even in studying the effects of material agents, drugs, in organic diseases the factors influencing the course of disease, independently of treatment, are so numerous that it is often difficult to separate them from the effects of treatment. In general, acute diseases tend to recovery; chronic diseases tend to continue. Too often has the claim been made that because 50 or 100 successive patients have recovered under the use of some drug, the drug cured. We all have seen this, and within the past few years a certain treatment for one of the acute fevers had quite a vogue based on mistaken diagnosis and the overlooked tendency of acute fevers to get well. If it is difficult to determine the effects of drugs on the human body it is still more difficult to determine the effects of an immaterial agent such as hypnotism. It was hoped at one time that hypnotism would be of great value as an anesthetic during surgical operations. Several men, among them Esdaile, of whose honesty there is no doubt, reported many cases of serious operations successfully performed without the patient suffering any pain. Many hopes were built on these reports. The subject aroused great popular interest. Many began to wonder whether in that great, advancing, and scientific nineteenth century a new law had been discovered—began to wonder if consciousness could be abolished by a flip of the finger and pain made to cease at the word of command. Was there a new and scientific exorcism—a new way to cast out devils or perhaps put them in. All the hopes and all the fears turned out largely vain. As time passed the accounts of successful operations grew fewer and fewer and finally almost ceased until in recent years only now and then, and here and there over the whole world do we read such. Put to the practical test by many men in many cases the thing failed. Why? Not because it is impossible to produce sleep by the artificial means we call hypnotism, nor because the reporters were all liars, but mainly because the number of susceptible people is so small. A cracked skull can not wait to be trephined till its owner has gone through a course of schooling in hypnotism. One reason why the earlier reports were so favorable is that so soon as it becomes known that a man is especially interested in hypnotism he begins to be besieged by the believers in all forms of modern occultism, not a few of whom make most excellent subjects. Hence a man who makes hypnotism a specialty will have more successes than the surgeon who smiles at it. Not only are the men who study hypnotism besieged by the genuine believers in modern occultism and transcendental science, so-called, but also by ladies and gentlemen a trifle shady in character, not very poor actors, not averse to earning their living in an easy way and whose consciences are not strongly pricked by deceiving the investigator if by so doing they can make themselves interesting. Finally the data are not all trustworthy. A few years ago, in an article pretendedly written for physicians, it was stated that a very serious operation had just been performed on a hypnotized woman by a distinguished surgeon at one of the largest hospitals in the country. As a matter of fact, no operation had been performed or attempted under hypnotism.

In organic disease hypnotism is practically of no therapeutic value. I have never seen any symptom caused by organic disease of any organ cured or even ameliorated by any method of hypnotic procedure. I have seen, as we all have, functional symptoms that were associated with or accompanied organic disease, relieved. But even here much care is necessary in drawing conclusions. For example, a recent writer reports a case of brain syphilis in which, after the occurrence of convulsions, headache, which formerly had been very severe, ceased after the use of hypnosis. The writer of the paper ignores the fact that in brain syphilis it is not unusual for headache to cease after a convulsive or paralytic incident. He mistook for a result of hypnotism a natural event in the history of the case.

Another reports a case of organic hemiplegia with aphasia in which, during the long continued use of hypnotism the aphasia slowly made a great improvement. Here, too, as a careful reading of the history shows, the partial clearing up of the aphasia was a natural event in the course of the disease, and was not due in any way to treatment. These are only examples. Medical literature contains many similar ones.

Putting to one side the organic diseases, there remains a large body of functional affections. In them the greatest number of cures are alleged and are found. Of the functional diseases, two great classes are the stamping ground of medical and nonmedical hypnotists, the psychoses and the neuroses. It is in hysteria and morbid emotionalism that we find the great recorded cures. If, then, they are even only occasionally cured by hypnotism, it is interesting to try to discover how it occurs. If it is difficult to determine the action of drugs in organic disease, it is still more difficult to measure the curative effect of hypnotism in hysteria. In the first place the diagnosis is not always easy. It does not simulate, but it does caricature other diseases. It may show symptoms referable to any organ. It may suddenly pass away or rather any of its symptoms may suddenly disappear and leave not a trace behind, independently of treatment. Sometimes its symptoms are dramatic and its victims extremely emotional. Sometimes, but by no means always, it lessens the moral sense of the afflicted, and makes it impossible to accept their statements as absolutely accurate. In it, as in emotionalism, without the stigmas of hysteria, there is often a hyperesthesia of the feelings. To determine the method and amount of therapeutic effect from any agent in conditions like these requires extreme skill, care, and skepticism. It is interesting that these same conditions are sometimes cured or apparently cured by all the various forms of what we call generically, faith cure. Certain methods of frank quackery do as much. For example, one well-advertised apparatus consists of a bit of metal and a string. The string is fastened to the body and the alleged healing influence passes from the metal even to the very soul. There are not a few people in the world who honestly believe that the metal and string have cured them of incurable diseases. That hypnotism and faith cure, when they have any therapeutic influence, relieve the same class of diseases is important. It means that there must be some identity between the two agents, and there is. In hysteria and in morbid emotionalism there is frequently an extreme susceptibility to suggestion, a willingness to accept ideas. On this and not on the hypnotism itself, except in so far as hypnotism sometimes increases susceptibility to suggestion, hangs whatever success there is in hypnotic therapeutics. Suggestion in medicine is no new thing. It is as old as Hippocrates. It is practised in every nursery when a mother blows upon a child's squeezed finger to take the pain away. The doctor who scares his patients by a mournful countenance and a lugubrious voice, will have a high deathrate. He who can control and influence them for good, who can make them accept suggestions for cure, will relieve many. Hypnotism is the mere garment in which for the time being suggestion has been clothed. It is for the most part unnecessary in carrying out suggestive therapeutics. A less flamboyant dress usually makes a better impression. I do not wish it to be supposed that the treatment of hysteria is simple, that all one has to do is to say to his patient you are well, and have her then and there get well. Far from it. Success means attention to detail, a knowledge of the character and personality of the patient and care. Suggestion is only one of the elements of treatment.

Some authors grossly exaggerate the percentage of cures following hypnotism. Such cures are not frequent compared with the number of sick, and not infrequently they do not stay cured. I wish to emphasize again the possible harmful influence of hypnotism. As said before,

it weakens the will if persistently used, and often leads to the unhealthy stimulation of an already morbid imagination.

Quite a little has been written about its usefulness in education, and some writers seem to think that all the dumb little boys can be made geniuses, and all the vicious imps little angels by its influence. It has been tried and found wanting. It will not make brain cells grow fat on barren soil, nor create a conscience out of a moral vacuum. Continued hypnotism injures the young, but suggestion is the tool of every wise schoolmaster.

THE PERSONAL ELEMENTS OF ERROR IN THERAPEUTICS.¹

BY

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In exact sciences like mixed mathematics and chemistry allowance is made for the personal element of error. Although therapeutics cannot be compared in exactness with these sciences, yet this element is ignored. The following factors enter into the creation of this personal element of error in therapeutics: (1) The influence of notions regarding diagnostic data; (2) the confused belief in differential diagnosis which centers on typical in place of atypical cases; (3) the confusion of diseases under a nosologic label in place of the recognition of complex symptoms; (4) the uncertain views regarding prognosis resulting from the nonrecognition of remissions; (5) the influence of the so-called reflex origin of disease; (6) the failure to recognize alternations of mental and nervous states with other physical disorders; (7) the nonrecognition of mimicry of organic disorders by neurasthenia and hysteria; (8) ignoring the environment in which therapeutic observations are made and the effect of this environment on the mentality of the physician; (9) a mental bias in favor of certain medicinal preparations; (10) the notion that it is only necessary to remove the primary cause to cure the morbid condition; (11) a false conception of the action of micro-organisms.

Diagnosis, not merely of the disease, but of the condition of the patient at the time of its onset, and the variation in symptoms influenced by the constitution of the patient, his age, and his surroundings when attacked contains an enormous element of error. This is evident in the numerous cures reported from time to time of serious constitutional disorders by remedies that in other hands prove to be totally inert. Nowhere is this so manifest as in psychiatry and neurology. Here unscientific and crude diagnosis leads to remarkable recoveries in quackish hands. Subsidence of excitement due to hallucinations and delusions is too often regarded as an expression of their disappearance through medicinal treatment. For example, the newspapers announce that paranoia has been cured by the use of a certain lymph. Paranoia is a deep-seated psychosis arising as a rule from congenital malformation of the brain or of its neurons. It may appear, however, as secondary to marked neurasthenia produced by sunstroke, traumatism, the essential fevers, and exceptionally extreme autointoxication, there being in all these cases a marked disorder or disease of the associating fibers, which cannot be removed by any medicinal agent or by any form of treatment. An error in diagnosis resulting from the tendencies of these very logical lunatics to dissimulate their delusions and hallucinations for their own purposes leads the unskilled in psychiatry to assume they have recovered.

¹ Read before the meeting of the Mississippi Valley Medical Association at Put-in-Bay, September 13, 1901.

On the other hand, since many imperative conceptions and obsessions are the product of paranoia, these are confused with the similar symptoms of neurasthenia, and their disappearance is therefore regarded as a cure of paranoia.

There is often a commercial element behind these diagnoses, which are made most frequently by charlatans and sectarians, especially by the newspaper specimens. A ludicrous illustration of this occurred in a disciple of Hahnemann, who carried on for years an acrimonious discussion in a country weekly, of what he termed "allopathy." The man diagnosed more rare diseases in a small suburban town in a fortnight than Europe and America combined had seen in decades. Concerning this individual a homeopathic journal remarked: "We know all about his 'tuberculinum' and his famous 'discoveries' that antedate Pasteur's and antidote Koch's. We know all about his 'grip microbes.' We all know that he saw on the slide of his microscope, some minute air-bubbles which he named microbes. We all know that those air-bubbles had a peculiar appearance to him because of his want of familiarity with the microscope, and his want of an appliance to correct the chromatic aberration of his lens and the chronic aberration of his mind." Recently this discoverer became a rival to "Schlatter the Healer." He claimed that all his "cures" were due to spiritual influence and not to the high potencies to which he had previously attributed them. At one time his erratic career as a statistician was checked by a health board's threat of a fine for not reporting 450 cases of diphtheria which he claimed to have cured in a suburb of 1,000 population. This man was not simply mendacious, but had made a scientific use of his imagination in wandering from the hackneyed limits of the actual for commercial purposes.

This element underlies pathology as well as diagnosis, as evidenced by the alleged wonderful cures of reflex neuroses unknown to neurology. In many of these instances recovery has resulted not through any reflex action of the remedy, but simply through the removal of temporary autointoxication produced by the disease. The belief in the reflex nature, however, vitiates the results of the surgeon who neglects preliminary, as well as postoperative dietetic and other treatment. From this neglect results the frequent cases of insanity and neurasthenia. This is especially true of cases in which operation has been indicated, and has been assumed sufficient to effect a complete recovery. If the patients recover from the neurasthenia or insanity, the beneficial results are attributed to the operation. If they do not, the operation has been successful but the neurasthenia or insanity is charged to other and later causes. Another strongly marked personal element of error in therapeutics as related to diagnosis, is that arising from ignoring through ignorance or prejudice, remissions in constitutional disorders. The great neuroses, like locomotor ataxia, parietic dementia, multiple cerebral sclerosis, etc., have periods of remission during which the patient seems to the average observer to have regained his former health. Many of these remissions are called "cures" by the advertising specialists, Christian scientists, the miracle workers, as well as physicians biased by the reflex notion, or by intense faith in some medicinal or surgical procedure. It is obvious that a physician who does not recognize remissions will have an enormous number of cures compared with the physician who does.

The influence of erroneous notions regarding prognosis and the failure to distinguish between viability, comparatively good health, and total recovery, strongly dominates the abandonment of medicinal procedures, and too often leads to the adoption of quackish methods, or of useless surgery for relief. In many instances it has caused death through the physical and mental depression produced by the unwise announcement of a fatal prog-

nosis. In the first half of the nineteenth century many a patient with a cardiac murmur, now regarded as remediable or compensable, died as the result of the fatal prediction which recognized the murmur and led to the prediction of doom. Like a child with a new toy, the profession, with the first developments of auscultation and percussion, delighted in detecting murmurs and rales, but the constitutional effects of these were neglected. The first stage of improvement in medical precision has been to lay undue stress on a particular organ or symptom and exalt it at the expense of the rest of the constitution. The result has been quackish "cures" and fatal prognoses. Hundreds of patients with cardiac, renal, hepatic, or nervous diseases, who are now given a long life with comparatively good health were, in the first two decades of the nineteenth century, doomed to death through erroneous prognoses by the so-called exact diagnosticians of the day. Patients with cardiac disease, who are now treated with success by gymnastic exercises carefully regulated, were, in the fifties, doomed to shiver at approaching death on the slightest exertion. The false theory that symptoms alone should not be treated even though they were all that imperiled life, aided this error. "Hope kept alive is," as Oliver Wendell Holmes so wisely said, "the quack's chief source of income." A personal element of error akin to this, is that arising from the failure to recognize the alternation of mental and nervous states with physical disorders. This error occurs very frequently, not only in connection with epilepsy, most "cures" of which consist of the replacement of a motor explosion by a condition of irritability, suspicion, stupidity, or nocturnal nervous and mental disorders; but also in diabetes, in which the glycosuria often alternates with mental, nerve, or skin disorders, in cardiac disease, in asthma, in many dermatoses, in gout, tuberculosis, and Bright's disease, in which cyclic albuminuria is often an illustration.

Another great element of error is dependent upon the mimicry by neurasthenia and hysteria of so many seemingly organic disorders. There being few constitutional disorders which are not simulated by hysteria and neurasthenia. This is due, in part, to the popular medical notion that hysteria is simply malingering and that neurasthenia is not an organic disease, but is purely functional like the "neuroses" of the older nosologists. Both hysteria and neurasthenia produce secondary states of autointoxication which give a decided organic semblance to their symptoms. Another element of error arises from the environment in which therapeutic observations are made, and the effects of this environment on the mentality of the physician. This occurs not only in general practice, but likewise in hospitals, and even in "rest cure" practice in which the physician is supposed to exercise the greatest possible individual supervision. One of the greatest apostles of the "rest cure" did not discover the untoward effects of bromids in epilepsy and other neuroses until 30 years after they had been pointed out by neurologists the world over. Here the error was due to relying upon the trained nurse for observation, and accepting her results unanalyzed and unsupervised without question. Furthermore, it is a singular illustration of the undue influence of authority in increasing the prevalence of this error, that a prominent American therapist, who had written a work on epilepsy, never discovered the untoward effects of the bromids despite the copious American, Danish, French, German, Hungarian, Italian, and Russian literature on the subject until the "apostle of the rest cure" before mentioned, reported cases. The general practitioner is of necessity biased because of the uncertain factors of administration and observation with which he has to deal, on the part of the family. The nurse of the general hospital is too often so surgically or quackishly biased as to fail to notice aught but the assumed general effect of a remedy. The physician who relies upon her

observation has generally a broken reed to lean upon, so far as knowledge of therapeutic results is concerned.

In addition to these elements of personal error in therapeutics arising from diagnosis either of the disorder itself or of its symptoms, a very serious element is added from a bias in favor of certain preparations. Since the tablet triturate and allied solid preparation fad has arisen, certain defects are apparent in the operation of remedies which had hitherto passed muster in liquid forms. To a certain extent the same is true of the attempt to supplement liquid preparations by alkaloids, glucosids, etc. It is a singular fact that with this attempt to employ only the solids in therapy comes an increased recognition of the value of water taken internally as a therapeutic agent. The increasing use of water has partly concealed the erroneous results due to the use of solids.

The errors, however, are exceedingly numerous, and some of them dangerous. The cases of the sudden effects of apparently innocuous doses from absorption of many doses at once have had two effects, namely: Remedies which when properly used were destitute of danger have been regarded as dangerously uncertain in their action, or when the repeated doses of tablets have passed through the intestine unchanged, have been regarded as entirely destitute of effect. The use of watery infusions of drugs revealed therapeutic virtues which have seemingly vanished since the reign of tablet and solid preparations. The bias in favor of the tablet and solid preparations has arisen from an attempt to compete with sectarians and also from an attempt to appear in line with so-called advanced therapeutics. With this fad necessarily comes the use of the disease label in place of the careful analysis of symptoms.

Another element of error has arisen from the use of copyrighted compounds of unknown composition. These in many instances have occasioned the drug habits whose origin seems inexplicable. The routine prescription of these has led to the treatment of the patient's diagnosis of his own case rather than the disease itself, and has caused the repetition of prescriptions for unknown compounds, which has resulted in "habits," and this, by the way, is one great cause for the occurrence of drug addictions as a secondary consequence of neurasthenia.

The bias in favor of disease labels, rather than the analyzed symptom complex, has resulted in a similar personal element of error in the domain of therapeutics proper. Since therapeutic agents called "nervines" are applicable to nervous diseases they are prescribed by many practitioners for nervous diseases, irrespective of the nature of these and with a complete disregard for nerve physiology and pathology. The most notorious instance of this is the widespread use of the bromids, chloral hydrate, the synthetic hypnotics, and analgesics in nervous diseases of all kinds, with a naturally resultant damage to nervous systems far greater in amount than any benefit derived. Indeed the effects of chloral hydrate, the bromids, the synthetic hypnotics, etc., are often regarded as the effects of the disease. Very frequently such patients recover under Christian Science, Dowieism, etc., simply because the drug intoxication whose effects had not been recognized, is removed. The same personal elements of error occur in connection with the antipyretics. It is now very generally recognized that cardiac depression from the coal-tar product is often more dangerous to life than the exhaustion produced by fevers. The words antipyretic and pyrexia still dominate the mental processes of a number of practitioners to such an extent that many therapeutic failures in fevers with their many dangerous secondary results can be charged to this domination. To a certain extent the integrity of the smaller bloodvessels is sometimes affected by fevers, especially when these are accompanied by the toxins of bacteria. It is to this last condition especially that early cerebral arterial atheroma

often owes its origin. Given this condition, together with increased arterial tension and cardiac strain, military aneurysms could readily result from the employment of coal-tar antipyretics. These serious results, however, are usually charged to the fever and not to the remedy.

While very potent for therapeutic good, and also for advance in pathology, bacteriology has introduced a serious, dangerous and mentally lazy personal element of error into therapeutics. Under the influence of the misleading old axiom "stop the cause and the effect ceases," bacteriologic therapeutics has been pushed to a wild absurdity. This old axiom being a sophism which is more like truth than truth itself, has created much false science not only in medicine but elsewhere. The operation of the primary cause in the universe always sets in action secondary causes, whose effects continue long after the primary effects have disappeared. The conception that it was only necessary to remove the primary cause has so dominated medical and surgical therapeutics that it has become the most adored fetish of the average practitioner. The advent of the germ theory led to a most tremendous use of this excuse by the mentally indolent. Despite the fact that the germ sets in action secondary causes and that it was itself affected by the culture medium furnished by the body, all that was considered necessary for treatment of germ diseases was the use of an antiseptic remedy. It is now known that the toxin produced by bacteria is infinitely more serious in its effects than the bacteria themselves. Indeed, it is exceedingly probable that when the toxin is lacking in quality and quantity the leukocyte unaided can dispose of bacteria. This is why nearly every healthy mouth contains pathogenic bacteria without evil results. There is reason, moreover, to believe that the destruction of pathogenic bacteria cannot be accomplished without the destruction of nonpathogenic and even useful microbes. The natural *Bacillus aerogenes lactis* of milk is destroyed by sterilization and Pasteurization. In consequence, as Bienstock has shown, the anaerobic microbe of putrefaction attacks milk in the human intestine, producing very toxic products, as a consequence of successful destruction of this *Bacillus aerogenes lactis*. Despite all these facts, the treatment of tuberculosis, pneumonia, and all germ diseases on the antiseptic plan is widely urged and much followed. Until the personal element of error arising from the mixture of the misleading old axiom as to causation with mild bacteriologic and antiseptic theorizing ceases to dominate the mind of the average practitioner, such absurd treatments will continue to be exploited, especially by persons with a commercial tendency. These elements of error must be eliminated from therapeutics before it can attain the authority which recent advances in chemistry, pharmacology, and physiology justify it in assuming.

PRACTICAL OFFICE METHODS OF DIAGNOSIS, WITH SPECIAL REFERENCE TO THE RÖNTGEN RAY.¹

BY

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I have the honor and pleasure to address you this evening upon a subject of unusual interest. At least it will seem so to you when in no distant future you will be standing before your first patient. Then will arise that perennial question which must be answered anew for each case, so long as you live and practice: *What is the matter with this man?*

You will not, I hope, be satisfied with the answers which seemed complete to our medical forefathers. Later methods and larger resources make ceaseless demands for

¹ Read before the Students' Medical Society of the University of Michigan, Ann Arbor, March 22, 1901.

better and better work. When you go forth from this great university you will find yourself in competition with men who for the most part do not perform or depend upon any laboratory methods beyond the nitric acid test for albumin and the Fehling's reaction for sugar. You will be met with the repeated assertion that the busy practitioner cannot take the time to fuss with blood and sputum and stomach contents, and the x-ray. Such processes, it is reiterated, are the work of a specialist. To refer such examinations to a specialist is doubtless the best plan for a physician who has a large practice, but no laboratory training and no special office facilities. Even the fully trained diagnostician may in time delegate much of this work to an assistant. But a young man starting in practice cannot win his way by referring patients to a specialist in diagnosis, and neither will he find it profitable to employ a laboratory assistant. In truth, diagnosis should never be made or called a specialty. Diagnosis and treatment are one and inseparable.

You must, therefore, begin by doing your own auscultation and percussion, making your own laboratory examinations, and from the work of your own eyes, ears, and fingers, forming your own judgments. Having begun in this excellent manner, it is to be hoped that you will continue thus to the end of the chapter.

How well you will succeed must depend largely upon

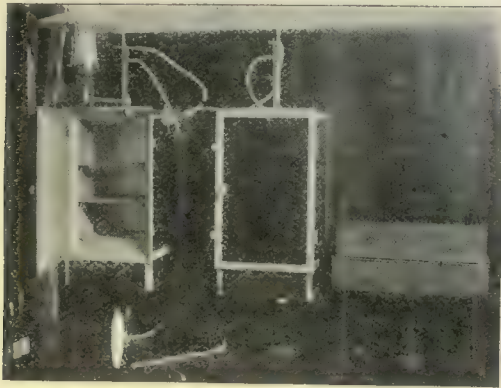


Fig. 1.—Corner of private laboratory. One thermostat for low temperatures, one thermostat for high temperatures, and a steam sterilizer. See description in text.

the equipment and arrangement of your office. You must be able to work quickly; time is of extreme importance in the practice of medicine. You must obtain reliable results; mistakes are ruinous. You must therefore have the necessary training, the necessary appliances, and the best possible adaptation of your office space. Instruments, solutions, stains, cover-glasses, etc., must never fail to be in instant readiness.

No student is allowed to escape from the Medical Department of Michigan University without the best laboratory training in this country, if not in the world. A few of you, however, may not feel like putting much capital into office fixtures and apparatus. But much capital is not needed. A microscope is simply indispensable and is expensive. Many other things, however, can be obtained at small cost. For example, instead of buying an incubator for \$150, you may obtain one as I got mine, namely, by drawing the plan of a simple one and having a tinsmith nearby make it for you. You thus become acquainted with the tinsmith. This incubator cost me \$6.00. It is made of galvanized iron and answers every purpose. I painted it myself. This sterilizer is another example of simplicity and small expense. It is of copper and cost \$5.00. The top and bottom provide sterile trays and may be fitted together, thus, to make a sterile instrument box. It is long enough to hold a pair of obstetric forceps. (See illustration 1.)

It is not too much to say that your future success will depend greatly on the way in which you spend the first six months of a patientless existence after you hang out your sign. This is the time to perfect your office arrangements. If they are good, you will be able to prepare sputum and examine it for tubercle bacilli in five minutes. If no bacilli, or only a very few are present, then a longer time is of course required. It is a good rule not to spend over fifteen minutes with any one specimen, but to have the patient bring in a second or a third sample on different days. The blood can be obtained and the hemoglobin estimated by the Gower or the Dare instrument in two minutes, and the volume of corpuscles by the hematocrit in three minutes. Cover-glasses may be spread with blood, fixed, stained, and examined in from 10 to 20 minutes. The Widal serum reaction of typhoid fever need never take over 30 minutes, and when pronounced, not over ten. A practical and reliable way of gathering blood for the Widal test is to drop the blood upon white filter paper. No time is then required for the blood to dry. The stomach contents can be obtained from a patient in five minutes, and examined in fifteen minutes, not counting the time in the thermostat. It takes but a minute or two to swab a throat, inoculate a culture tube, and place it in the incubator; and it takes about ten minutes to examine the growth 10 or 16 hours later. A complete examination of urine may be made in twenty minutes. But for clinical purposes a complete examination rarely is necessary, and a much shorter time usually suffices. If you find it advisable to obtain the urine separately from each kidney by the Kelly catheter or the Harris segregator more time is of course required, but it is well spent, and in most cases is cheerfully paid for.

Many other examinations such as the cutting and mounting of sections, the electrical testing of nerve and muscle, lumbar puncture, transillumination of the stomach, and the application of the tuberculin test to human patients, have a more restricted field and consume much more time. But have them within the bounds of possibility.

We may see from these examples that time is not a bar to the employment of such methods, and the fee which may be justly charged will make such work an important source of your professional income. Accuracy of results, however, must not be sacrificed for the sake of a few minutes. Time is a valuable, but not the most valuable, consideration.

I will forego further details concerning laboratory processes, so as to speak more at length of a form of office examination which is but just emerging from the experimental into the practical state. This is the examination by the Röntgen rays. I am personally convinced of its exceeding value, and of its practicability in the ordinary run of daily general office work.

I understand, of course, that you are acquainted with the primary facts concerning electric currents, induction coils, static machines, Tesla transformers, Crookes' tubes, fluorescent screens, dry-plates and skiagrams. Time also prevents any consideration of the history or of the rapidly augmenting literature of the x-ray. I cannot, however, pass over the names of Williams of Boston, Stubbert of Loomis Sanitarium, and Abrams of San Francisco, without saying that they are the men in this country who have been the most active in developing the x-ray examination of the chest, its most important use in medical diagnosis.

For the sake of directness in speaking, I will assume that some of you expect to use the Röntgen rays in practice. It is no more difficult to master than the microscope. It can be turned on and off with precisely the same ease as the ordinary incandescent light. Less time and trouble is required to prepare a patient for an x-ray examination than for auscultation and percussion, inasmuch as the clothing does not as a rule interfere, excepting perhaps the steel bars of corsets, buttons and various

articles in vest pockets. The noise need never be more than a low hum, and there is nothing to frighten even a child, unless it be the darkening of the room. Reasonable care makes an x-ray examination free from any kind of danger. No one is afraid of a lighted candle, and yet if the hand be placed close enough to a candle flame and held there long enough the skin will be burned. It is essentially the same with a Crookes' tube, excepting that a candle flame will produce a burn in a few seconds, and it takes an hour or more to produce an x-ray burn. In the four years of my daily experience with the x-ray I have never seen any harm whatever result from its use. However, long-time and repeated exposure will undoubtedly produce in some cases severe burns, or even a white gangrene of the skin. If the tube be kept at least six inches from the patient and the exposure be not allowed to exceed one-half an hour, no harm can possibly be done. As a matter of fact for ordinary screen examinations the patient is three or four feet from the tube, and when dry plates are used the exposure need never exceed 10 minutes for any part of the body.

The wide range of the medical and surgical application of the Röntgen rays is scarcely equaled by the microscope. In fractures and dislocations an exact diagnosis can be made without manipulation of the parts. No amount of swelling interferes. Any loose fragments may be detected. Any time after the fracture has been set the bones may be examined without removing bandages or splints. (Plaster casts may be used, but metallic splints are objectionable.) A surgeon may thus examine his case to make sure that the parts are in proper position any time before it is too late to reset the fracture. The bones may be adjusted while in view before the x-ray tube. Later, the advance in bony union can be observed and the time when union is complete may be ascertained. In a dislocation the prognosis may depend on whether or not a line of fracture runs into the joint, or an epiphysis has been separated. When bones overlap, one bone may be seen through the other.

Bullets, shot, glass, needles, etc., in any part of the body, imbedded in muscle or bone, or lying within the skull, can be seen and accurately located. Likewise, foreign bodies lodged in the nasal cavities, trachea, esophagus, stomach or intestines may be observed in situ. In many cases when desirable the foreign body may be removed under direct inspection.

In pathologic bodies and tumors it is of increasing importance. Stones in the kidneys, ureter or bladder can be skiagraphed with exceedingly valuable results. Osteosarcomas, dermoids containing bones or teeth, and all osseous growths may be studied upon the skiagraphic plate. Gallstones have in a few cases been successfully pictured.

In malformations and deformities, defective skeletal development or ossification, congenital dislocations, spinal curvature, talipes, diseased joints, the different diagnoses in ankylosis and contracture, and diseases attended by a hardening or softening of bony structure, such as chronic otitis, tuberculosis, rickets and osteomalacia—all of these are subjects for an x-ray examination. The narrow cavity of a bone and the finer fibrillary structure of osseous tissue may be observed in skiagraphs taken with tubes of proper penetrating power.

In obstetrics, pregnancy, whether extra-uterine or normal, may be detected as soon as the bones of the fetus have sufficiently ossified. Ossification begins first in the vertebrae during the third or fourth month.

In dentistry we find that buried roots, unerupted wisdom teeth, etc., may be discovered. The cause of an obstinate facial neuralgia may thus be disclosed.

Pulmonary and pleural affections form subjects especially favorable for the x-ray. Infiltrations, con-

solidations, cavities, emphysema, pleural thickening and effusions, and the movements of the diaphragm, can be seen and measured. Tuberculosis, pneumonia, asthma, infarct, gangrene, tumors, cysts, pleurisy, empyema and pneumothorax may thus be examined.

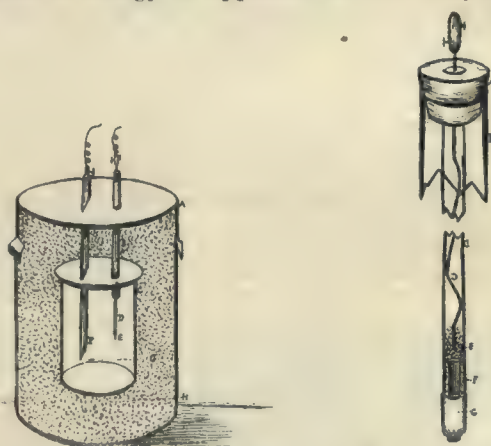
The size, shape and position of the heart can be exactly traced. Pericardial effusion, even of small amount, can be diagnosticated. Under the fluoroscope the surgeon can see and guide the aspirating needle into the pericardial sac. Thoracic aneurism can be discovered whether or not symptoms are present.

Within the skull dense brain tumors and meningeal clots have been successfully portrayed.

X-ray therapeutics deserve mention. Lupus has been treated by x-ray applications with conspicuous success.¹

You must have an efficient piece of apparatus. What kind of apparatus will best fill our requirements? My unhesitating advice is to choose a simple induction coil. It will enable you to use the most power. It is not likely to get out of order. It is the most easily portable. It is the least expensive in the long run.

Power is the most important consideration. You cannot get something out of nothing. The law of the conservation of energy is applicable to the x-ray as to the



Wehnelt Interrupter.—a, small keg; b, large glass tube; c, large battery jar; d, small glass tube; e, iridioplatinum point; f, lead plate; g, sulfuric acid, 1 part; water, 5 parts; h, sawdust.

Iridioplatinum Electrode—(For Wehnelt Interrupter.) a, cork to hold small glass tube in place; b, large glass tube (see cut of Wehnelt Interrupter); c, small glass tube; d, copper wire bent so as to hold its place in the glass tube; e, mercury to make connections; f, iridioplatinum wire; g, rubber tube to make a tight fit for wire; h, projecting point of iridioplatinum.

steam engine. A powerful x-ray cannot be produced without a powerful current. It is pitiable to see so many physicians investing \$400 or \$500 in a static machine, and expecting to do practical x-ray work. A smaller sum will buy a powerful coil. A static machine of sufficient size will undoubtedly produce good x-ray effects, but the size required is very much greater than that usually advertised for combined x-ray and therapeutic effect. Many a physician has been led astray by that ignis fatuus of the static machine, *therapeutic effect*.

There are structural reasons why a static machine can never equal a coil as an exciter of a Crookes' tube. Moreover, it is about 20 times more bulky.

The Tesla transformer unfortunately yields an alternating discharge, and secondary currents. It is noisy, complicated, easily deranged and expensive.

The simple induction coil has been enormously increased in efficiency since Röntgen's discovery. This is mainly due to improvements in the interrupter, that most vital part of a coil. The make and break apparatus has a coil at its mercy. For x-ray work the interruptions must be quick, sharp and complete, without sparking at the make and break points. Your whole

¹ X-ray therapeutics has made extraordinary advances since this paper was read. Skin affections, from superfluous hair to cancer, are being treated, with interesting results.

success in working with a coil will depend upon your management of the interrupter.

The most elaborate and ingenious mechanic devices have been constructed to fill these requirements. In all, however, a large condenser is required to absorb the make and break spark and thus augment the induction spark in length and volume. It is now two years ago that Dr. Wehnelt of Charlottenburg, Germany, made a remarkable rediscovery. In the place of any mechanic interrupter he connected, in the primary circuit of a coil, a simple sulfuric acid battery cell, having one element a large lead plate, and the other a small platinum point. When a current of at least 40 volts was turned on, a torrent of sparks leaped across the induction terminals. So quick, sharp and complete were the interruptions that any condenser became superfluous. So rapid were they that their number in a second had to be estimated by a tuning fork. This was rendered possible by the musical note which the Wehnelt break produces.

To one accustomed to working with a mechanic make and break, the results of Wehnelt's electrolytic interrupter are something terrific. The coil is transformed into a high frequency apparatus of extraordinary power. If the secondary induction terminals of a 12 inch coil are brought within three or four inches of each other, the volley of sparks becomes a solid bar of flame apparently the size of a lead pencil. A piece of paper held in this flaming arc is instantly set on fire and charred. Is it any wonder that such a current sent through a Crookes' tube will yield x-rays of the highest order of efficiency?

An ordinary tube, however, may be quickly ruined. This tube which I hold before you was the first tube which I tried with the Wehnelt break. In a few seconds, before I could turn off the current, the platinum anode, one of the most infusible of metals, began to sputter like a watch spring burning in oxygen, and I found a hole in the anode where the cathode stream is focused upon it, as sunlight is focused by a lens. I will pass this tube around as a warning to be careful with your tubes. After this I had a tube made to order with a very heavy platinum plate for an anode, which I am still using. When the tube is worn out I have this platinum plate used in a new tube. This in time is a matter of considerable economy. A special tube with vacuum regulator is now made in Germany for the Wehnelt break. It is costly, but very strong and stable, and has a block of carbon composition in the place of platinum. I have found that this tube, even at the lowest vacuum productive of x-rays, will take safely any amount of current which can be generated by a 12 inch coil. It is therefore a tube of almost ideal efficiency. It is at low vacuum that platinum is melted and tubes ruined.

A point of great value in regard to the Wehnelt break is that it enables the physician to operate his coil from the ordinary incandescent circuit, whether it be the direct or alternating current. This is an immense advantage because many towns have only the alternating, and also because the x-rays can thus be turned on or off, as before stated, with the same ease as the incandescent bulb. It is always ready, it is moderate in cost, and it is free from the care and annoyance which primary batteries entail. Storage batteries are, of course, impossible without a direct current for charging purposes.

Any of you can make his own Wehnelt interrupter. Here as an example is one which I made out of a jar that previously contained bichlorid gauze. There is nothing about it to cost over 50 cents, excepting a small piece of iridio-platinum wire, such as dentists use for pins in artificial teeth. I will pass this around. The construction is apparent on examination. The jar should be nearly filled with water five parts and sulfuric acid one part. If you use the ordinary alternating current of 116 volts you will need a platinum wire tip the diameter of a No. 7 wire nail. A steel nail can be used, but it rapidly disin-

tegrates. Iridio-platinum is the hardest and at the same time the most infusible substance obtainable. It is therefore the best for the electrolytic break. I have not, however, heard of its ever before having been used.

There are a number of important modifications of the electrolytic interrupter, but time will not permit their consideration.

The noise of the Wehnelt break can be almost wholly smothered by imbedding the jar in a small keg of sawdust. If the largest size battery jar is used, the fluid remains sufficiently cool to allow of the longest run that would ever be required. A Wehnelt interrupter thus properly set up requires no attention for months, excepting to renew the platinum points.

An inexpensive and simple device like this, which at a single stroke shears the induction coil of all mechanic accessories, breaks and condensers, has not met with the unqualified approval of instrument manufacturers. I have, in my possession, letters and catalogs from makers condemning it as impracticable and insufficient. No advertisements in America set forth its advantages. But do not be deceived by more pretentious apparatus. The electrolytic interrupter has marked an era in the practical application of the x-ray.

In connection with a dynamo current it is advisable to have in the circuit some kind of an adjustable resistance, as a current controller. You can buy a good rheostat for \$20.00, or you can make one as easily as you made a Wehnelt. Here is one which cost me nothing, inasmuch as the elements were taken from some worn out dry cells which were knocking about the office. By raising and lowering the rod of carbon in a weak salt solution, the current passing through the Crookes' tube is under complete control.

The Crookes' tube is as sensitive and as freaky as a child. Sometimes it won't play. It must be humored. It is the current which must be whipped into submission. The personal whims of a tube are nearly all expressed in terms of vacuum. And you must learn to understand this language of the vacuum if you propose to have business relations with a tube. The fluorescent screen is an interpreter.

A tube of low vacuum will yield x-rays with small powers of penetration. With such a vacuum the rays may easily penetrate the flesh of the hand, but not the bones. This will leave the x-ray image of the bones very black and distinct in contrast with the flesh. This is a well-known fact of such importance that it will bear repetition. If now we use a high vacuum tube we may obtain rays which penetrate the bones almost as easily as the flesh. This leaves very little contrast between flesh and bone; and the image of the bones will be faint. But details of bone structure may now be seen, and if a needle or a bullet were imbedded in either flesh or bone, it would be revealed with extreme distinctness.

In the chest we are dealing with soft tissues, easily penetrated, such as the lungs and heart. We must therefore use the lowest vacuum which will give a working illumination of the screen. We may thus secure the greatest possible contrast between tissues of small density. We may then see, beautifully delineated, a slight pulmonary infiltration which rays of a high vacuum would entirely wash out.

Do not imagine for a moment that because a low vacuum tube should be used for chest work, therefore a small coil will answer. Low vacuum rays are not necessarily weak rays. That depends upon the power of your current. A large coil and heavy amperage are required to produce from a low vacuum tube that brilliant flood of x-rays which will bring out the heart and diaphragm in sharp contrast and differentiate a light alteration in the density of lung or pleura.

The same facts apply to the examination for renal calculi. We need a powerful flood of x-rays, which will quickly affect the photographic film, and which will

easily penetrate the flesh, but which will not readily penetrate the calculus. The diagnosis may then be a certainty. This is the point which Leonard of Philadelphia has insisted upon very justly, and he is entitled to priority in its application to kidney stones. The same point in its application to the lungs was fully explained in a paper of mine read before the Kalamazoo Academy of Medicine in August, 1898. This is a point, however, which must have been very early forced upon the notice of every practical worker with the x-ray.

Details too faint or delicate to be seen upon the fluoroscopic screen may be pictured by photographic methods, just as an astronomer, by means of the sensitive plate, can catch the image of stars invisible to the naked eye. There is no special x-ray plate. The so-called x-ray plate is simply a thick-filmed, slow-timed plate. Personally, I believe that the best results may be obtained with the regular photographic stock plate, known as the non-halation plate. This is a double-coated plate, with one fast and one slow film. Leave your developing entirely to an experienced photographer, and you will be saved much time and trouble.

You are of course aware that x-ray plates are inclosed in light-tight envelopes, so that they may be handled

easily. But do not buy plates which are already wrapped. A slight fogging is almost sure to be present. Keep your plates in a photographic dark room, a few only being put in wrappers and kept in the office for immediate use. But do not keep your plates in the same room with your Crookes' tube. Boxes, doors, cupboards ordinary partitions are all easily penetrated by the x-rays; and your plates will be ruined in a few minutes. Trust only a thick



Fig. 2.—Taking a skiagraph. The patient lies upon the skiagraphic plate. The Crookes' tube is held above the patient by means of a support which admits of every possible adjustment of the tube. This tube holder is a common incandescent bulb holder adapted to x-ray purposes. When not in use it may be pushed up out of the way, tube and all, and is thus in constant readiness.

brick partition, or a heavy lead box.

In exposing plates you must take the greatest possible care to have your tube, plate and patient perfectly motionless. The slightest movement in either will blur your picture. Much movement may entirely erase the x-ray image. Thus a bullet or a renal calculus may escape detection. The reason is simple. Let us suppose that a man has been shot in the abdomen and has been brought to you for x-ray examination. We will further suppose that you have a static machine that would require at least 20 or 30 minutes to give the plate the proper exposure. Your patient will be lying upon the plate and the x-ray tube will be fixed above him. After five or six minutes the peristaltic movement of the irritated intestine will move the bullet. Other movements are imparted by labored breathing or coughing, and when the plate is developed no bullet can be seen. Why? When the bullet moved it rested over a portion of the plate already affected by the rays. The spot over which it first rested is now exposed to the rays and will be darkened like the rest of the plate. A few movements like this equal to the diameter of the bullet may entirely erase its image. The same facts apply to a stone in the kidney. The kidney moves regularly with the diaphragmatic breathing. Occasionally a deep breath gives a considerable range of motion. A small stone

may thus easily be missed. It is obvious that in these cases the abdomen must be very tightly bandaged so as to make the patient use the costal type of breathing. In the case of foreign bodies within the intestines, or among them, a hypodermic of morphin should be given. If during the exposure the patient moves, coughs hard or vomits, the current should at once be turned off. The plates may be useful, although faint. (See illustration 2.)

The overwhelming advantage of powerful apparatus, so that short exposures only are required, is thus perceived. It is here, too, that one of the numerous advantages of the Wehnelt interrupter may be realized. X-rays are generated only during each interruption of the current. The greater the number of breaks and makes in the minute the shorter the exposure needed. The ordinary mechanic break ranges from 300 to 10,000 in a minute. The very best and latest mechanic break, the mercury jet interrupter, gives from 100 to 50,000 per minute. But the Wehnelt interrupter has the extraordinary range of from 720 to 102,000 interruptions in a minute. It allows, therefore, less than one-half the time of exposure required by the mercury jet interrupter, and less than one-tenth the time ordinarily required by the breaks with which the best American coils are equipped. All this is vital to a busy physician, who with a waiting-room full of patients could not call an x-ray wholly practical if he had to consume half an hour in making a single exposure.

It is not the dryplate, however, but the fluorescent screen which makes the x-ray of the highest value in the examination of the chest. The pulsations of the heart and the constant respiratory movements of the diaphragm, ribs and lung tissues, which serve only to blur or erase the image upon the plate, become with the screen very important factors in a diagnosis. The screen allows us to examine our patient front and back, standing up or lying down; whereas a plate can give but a single point of view, is far more expensive, and requires a delay for development. Even if the time comes when instantaneous skiagraphs are possible, the screen will remain preeminently the instrument for medical diagnosis. (See illustration 3.)

So important an instrument deserves a careful consideration. If you can possibly afford it, purchase a screen of sufficient size to take in the entire chest of a full-grown man.

Sixteen by 18 inches will do this. Do not think of using a screen of calcium tungstate. If you can get a large screen, have it made to order, and specify the following points:

1. It must be made of pure crystals of the best barium-platino-cyanid, finely pulverized.
2. The barium-platino-cyanid layer should be of sufficient thickness to give a maximum density to the fluoroscopic image.
3. The screen must be absolutely free from phosphorescence. That is, when the x-rays are turned off, the illumination of the screen must instantly and completely cease.
4. The fluorescence of the screen should be perfectly uniform throughout. (This is an obvious necessity in a large screen for viewing the entire chest.)

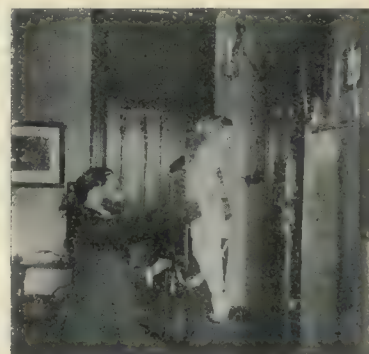


Fig. 3.—Fluoroscopic examination of chest. The screen is of sufficient size to take in the entire chest. Between the patient and the tube is held the skiagrapher, my device for measuring the density of chest shadows. Observe that the tube holder for skiagraphic work is pushed up out of the way, but is always ready for immediate use.

5. The backing upon which the cyanid crystals are fixed must not perceptibly obstruct the rays. (Paper seems to be the best.)

6. The construction must be such that the cyanid layer will not curl, warp, crack or otherwise deteriorate excepting by the natural process of time.

7. The finished screen must be so mounted that moisture, vapors and gases are excluded.

8. It must be sent c. o. d., subject to examination and approval.

First-class screens are made in America, and cost 25 cents a square inch.

A large screen is best mounted in a picture frame; a small one is best handled as an ordinary fluoroscope. You can mount your screen yourself. The frame should be of thoroughly seasoned walnut or redwood, because these woods will not easily shrink or warp. The glass front should be double thick and free from scratches, air bubbles or any defects whatever. The backing to the frame may be of very heavy paper board, or better, of thin whitewood, free from knots, and evenly pervious to the rays when carefully examined by a fluoroscope. Its pores should be filled with shellac. All joints, and the line of contact between glass and frame should be filled and sealed with melted paraffin. You will need some kind of a screen holder. This illustrates my appliance. The screen holder is nothing but an ordinary double dictionary holder, with these two bent rods added. Have your frame so that you can slip in a second glass front or a transparent paper upon which you can trace off your fluoroscopic image during an examination, as a record of your case.

For successful work with a screen you must be able to darken your office completely in the daytime or else do all your fluoroscopic work in the evening. By a simple arrangement of curtains my own private office may be made perfectly dark in one minute. You should also enclose your tube so as to shut out the phosphorescent glow from that source. If the retina of the eyes is not now accustomed to the darkness, you must wait a few moments until it is, or the best fluorescence of the screen will be like a gas jet in daylight. There should be no flickering of the tube to confuse your vision. Here becomes apparent another great excellence of the Wehnelt break. Its interruptions are of such extreme frequency that the illumination of the screen is the perfection of steadiness.

The ordinary x-ray negative or print of the chest such as you see here is of course a projection of all the thoracic shadows upon a plain surface. But stereoscopic x-ray negatives may easily be taken, and may even be made into slides for a stereopticon. The perspective effect is something startling. I have a reduced copy of two cases here which I will pass around presently. They were sent to me by Dr. Hugh Walsham of London. Mr. Mackenzie Davidson of London, has perfected a stereoscopic fluoroscope whereby we may see the fluoroscopic image stand out before us with the perspective and proportions which can not be rivalled by any printed illustration, autopsy or anatomic preparation. A perfect stereoscopic fluoroscope is the ultimate ideal of clinical skiascopy.

But you cannot carry your Röntgen apparatus with you on your calls. You cannot use it on a tenth of your office cases. You must not look upon it as a means to supplant the regular physical examination. You must not lose respect for the diagnostic resources which lie in the eyes, ears and fingers of the humblest practitioner. Simple inspection, palpation, percussion and auscultation open to the examiner a range of signs and symptoms which the x-ray cannot equal. But such is the supremacy of the eye, and such the importance of things seen that, even after a careful physical examination, the skiascopic image comes like a revelation.

You are now ready for the examination of a patient. I would be glad to begin with the x-ray appearances of

the normal chest and study with you the skiascopic signs in all the diseases of the body which are open to an x-ray examination, but a single paper cannot allow this. It would require a course of lectures as well as actual demonstrations on patients to give you anything like a working knowledge of this subject. The best general work for the student and practitioner is "The Röntgen Rays in Medical Work," by Dr. David Walsh of London. The third edition will soon be out. You should not miss the brilliant papers of Williams of Boston, or the valuable mass of material in the London "Archives of the Röntgen Ray." There is a condensed record of my own x-ray studies of the chest in a paper entitled "Skiascopy of the Respiratory Organs," published in the *Philadelphia Monthly Medical Journal*, of March, 1899. Also a description of a new instrument for measuring pulmonary shadows and movements, in a paper under the title of "The Skiameter," printed in the *Philadelphia Medical Journal*, January 6, 1900. While the technical features discussed are the least interesting part of the subject, they are vitally important preliminaries to any work to be done with the x-ray.

A CASE OF SOCALLED MALIGNANT (STAPHYLOCOCCUS) CARBUNCLE OF THE UPPER LIP FOLLOWED BY PYEMIA.

BY

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The following instance of staphylococcus carbuncle of the upper lip, which I have had the opportunity to study bacteriologically and histologically, has so definite a history and clinical course that it corresponds very well in its general application to a well-planned and successful animal experiment.

C. D., 23 years old, a barber by occupation, entered Professor Bevan's service in the Presbyterian Hospital of Chicago, on February 7, 1901, and died February 8, at 11.15 p.m.

So much of his history as could be obtained is as follows: About a week before his admission he extracted a "dead hair" from his upper lip. A few hours later he noticed a redness and swelling of the lip, and by the next day this had reached a considerable size. The swelling increased rapidly and extended to the right side of the face and eye. Three days after the onset he noticed pain in the left side and shoulder. This remained constant and the patient could not lie on the left side on account of pain. He now complained of paroxysms of pain in various parts of the body but had no special point of tenderness.

Physical examination: The upper lip is swollen and projects so as to cover the lower. There are a few crusts on the left side of the lip with pus under them. The mucous surface of the lip is black. The whole face is swollen, most marked on the right side.

The heart is negative so far as can be discovered during its rapid action and the harsh, difficult breathing. The lungs show dullness over the lower right lobe anteriorly and posteriorly. The right lung is duller on percussion in front than the left. Harsh breathing over the lower right lobe and in places over both lungs behind. Friction rub heard on both sides in the intraaxillary regions.

Temperature, 101.4°. Pulse, 112. Respiration, 36. Multiple incisions were made in the upper lip, the blood flowing from these being very dark in color. Hot boric acid dressings were applied every hour for several hours. These were replaced by hot 2% carbolic dressings every 2 hours.

Calomel and magnesium sulfate were administered on entrance, followed by morphin, strychnin and whisky every 3 hours during the day. The diet consisted of milk, broth, soup, and egg-nog.

The temperature, pulse and respirations increased steadily; the bowel movements were dark yellow and only partly formed.

The urine on the second day was of a reddish color, slightly turbid, of acid reaction, specific gravity 1.029, and contained a considerable amount of albumin, and hyalin and granular casts. The blood-count showed 5,400 whites. The patient did not rest well; was somewhat delirious and during the day got out of bed; tore off the dressings frequently; picked at the bed clothes and talked almost incessantly. Towards evening he perspired freely and at 11.00 p.m. the temperature reached 108.2°

Oxygen and normal salt solution were given but he died at 11.15 p.m.

The postmortem examination was held at 10 o'clock the next morning by Dr. L. Hektoen.

Anatomic Diagnosis.—Acute diffuse purulent and necrotic staphylococcus inflammation of upper lip and adjacent parts of face; multiple abscesses and hemorrhagic pneumonic areas in the lungs; double fibrinopurulent pleuritis; beginning pericarditis; pericardial ecchymoses; abscess in the spleen; acute splenic swelling; cloudy swelling of kidneys and liver; persistent thymus.

The body is that of a well developed, fairly well nourished, man of about 23 years. Rigor mortis is well marked; the body is still warm in parts; there is some posterior lividity. There are no other special external changes except in the face. This is of the brunet type, with features full and well rounded. A pilary growth of several days duration may be seen on the lips and chin. Swelling on the right side is so great that the right eye is closed. The upper lip is greatly swollen and projects above the lower. At its mucocutaneous junction is a slit extending transversely almost from one angle of the mouth to the other. Just above this the skin is necrotic for a distance of $\frac{1}{2}$ inch, and is of a blackish color, presenting a charred appearance. A similar, though smaller, patch may be seen at the left angle of the mouth. Above the transverse slit are 2 or 3 others about $\frac{1}{2}$ inches in length and about $\frac{1}{4}$ inch apart, extending transversely on each side of the nasolabial fossa. When the lip is incised a greenish yellow purulent matter exudes. The mucous surface of the upper lip is soft and covered by a mucopurulent exudate. The lower lip is considerably swollen, but shows no necrotic areas. The anterior nares are filled by a frothy mucopurulent secretion. Ill-defined, subcutaneous, hemorrhagic areas, about the size of a pea, are diffusely scattered about the cheeks and chin in the region of the mouth, and also further down on the front and sides of the neck. The abdominal cavity is empty; the peritoneum smooth; there are no adhesions. The diaphragm reaches to the fifth rib on both sides. Both pleural cavities are obliterated by recent fibrous adhesions, and among these adhesions are collections of turbid fluid. There is a seropurulent infiltration of the tissues of the anterior mediastinum. The pericardium is smooth; it contains an increased amount of slightly turbid fluid. There are small subepicardial ecchymoses here and there. The thyroid gland is symmetric; it is large and rather soft. There are well marked remnants of the thymus in the anterior mediastinum over the trachea. The mucous membrane of the tongue, pharynx and esophagus are normal. The tonsils are somewhat swollen but firm and fibrous. The follicles on the back of the tongue are prominent. The mucous membrane of the larynx and trachea is red and congested. The lymph-glands in the neck are swollen, edematous, and reddish in color. The left lung is covered by fibrinous flakes; there are numerous large and small subpleural hemorrhages. Under the larger pleural hemorrhages the lung substance is congested, somewhat hemorrhagic, and in some places are rough yellow softened areas. Elsewhere the lung is crepitant, edematous and congested. There are also areas of hemorrhage deeper down in the lung substance. The right lung is similar to the left; it has some fibrinous areas over the lower lobe, this lobe being compressed. The heart is of normal size; the myocardium is uniformly firm; the ventricles contain soft clotted masses, especially the right. The aorta is smooth throughout. The spleen is rather large, soft and red; the follicles are distinct; it contains an oval abscess the size of a pea. The liver is a little larger than normal; there are yellow, irregular areas on the surface; the lobular markings are indistinct. The pancreas is normal in size and in appearance on the cut surface. The kidneys are of normal size; the capsules free; cortical markings distinct; cortex somewhat swollen; glomerules distinct. The jugular vein on the right side is free.

BACTERIOLOGIC EXAMINATION.

Smears:

Lip.—Cocci in groups; stain by Gram.

Heart's Blood.—Cocci, occurring singly, in pairs, and in clusters; stain by Gram.

Pleural Exudate.—Staphylococci; stain by Gram; Streptococcus longus and brevis; stain by Gram; diplococci (resembling pneumococci); stain by Gram. Long and short bacilli and a branching thread fungus. No tubercle bacilli.

Cultures.—(Made at autopsy 12 hours after death.)

Pure growth of Staphylococcus pyogenes aureus from the lip, heart's blood, pleural exudate, lung, liver and spleen. No cultures made from kidney. Plating the pleural exudate resulted in failure to separate the various organisms—nothing but the Staphylococcus aureus, and a few colonies of a short nonmotile bacillus were grown.

HISTOPATHOLOGY.

Pieces of tissue were hardened in Zenker's fluid and imbedded in celloidin. Sections from the lip and lung were stained with hematoxylin and eosin, by Gram-Weigert's, and the eosin and methylene-blue method; sections from the other organs with hematoxylin and eosin.

Upper Lip (Piece from buccal surface).—The mucosa has completely disappeared. The submucosa is covered by a layer of homogeneously granular debris which contains the remains of a few leukocytes and diffuse collections of staphylococci, which stain by Gram's method. Beneath this, the glandular and periglandular tissue, is the seat of a dense cellular infiltration. Here and there, in these areas, are diffuse collections of staphylococci which have caused foci of necrosis in the cells surrounding them. In places the glandular acini and their ducts have been completely obliterated by inflammatory infiltrations, showing foci of necrosis. This necrotic submucous tissue is separated from the muscular layer by a stratum of connective tissue, which contains bloodvessels and nerves of considerable size. There is but little cellular infiltration, but this layer and the looser connective tissue about it apparently show a condition corresponding to the intensely edematous condition of the lip, for the connective tissue fibers are torn apart, leaving wide channels between them, and where the structure is normally looser, the fibrillas form an anastomosing network which somewhat resembles that of elastic tissue. The muscular tissue is slightly involved in the inflammatory process and its outer (cutaneous) surface is covered by a cellular debris containing cocci—showing that the inflammatory process in the subcutaneous tissue extended down to the muscular layer. Throughout the section the bloodvessels show extreme congestion. With eosin and methylene-blue, the cells in the infiltrated area are seen to be polynuclear, transitional, eosinophilous, and large and small mononuclear leukocytes; and mingled with these are a large number of erythrocytes in various stages of preservation, connective tissue corpuscles, and cells with nuclei resembling those found in the epithelial cells of mucous glands. The protoplasm of some of the leukocytes contains hyalin, spheric and ovoid bodies (varying from minute granules to about one fourth the size of the nucleus) which stain intensely with eosin. Many of these bodies may be seen lying apparently free in the seminecrotic areas of infiltration.

Heart: (1) The papillary muscle shows areas of segmentation. There is a marked contrast between the fibers in the segmented and nonsegmented areas; in the nonsegmented areas the fibers are attenuated, their nuclei elongated, no cement substance is visible, and the nuclei and transverse striations are separated from each other by a greater interval than in the segmented areas—in which the fibers are two or more times as thick as normally, their nuclei short and thick—sometimes almost cubic in shape—and the transverse striations very close together. The cement substance in the segmented areas in which complete separation of the cellular elements has not occurred, appears as two parallel lines of a dark reddish color, separated from each other by a narrow line of cleavage. Where complete separation and diastasis of the individual cells has taken place, the cement substance may be seen at the ends of the segments as a band of dark reddish color, as if it were swollen and altered chemically in such a way as to take both the acid and basic stains.

(2) The heart wall does not show any special changes, but the bloodvessels are congested, and in one of these is a mycotic embolus consisting of a rounded mass of granular matter and red blood-cells containing clumps of staphylococci. The epicardium is covered by a thin layer of red blood-corpuscles, and the subepicardial vessels are congested.

Lung.—The bloodvessels in the pleura show extreme congestion and the pleura itself is covered by a thick layer of fibrinopurulent material. This is composed of many layers of narrow, sinuous bands of fibrin, which hold between them, and are separated by accumulations of polymorphonuclear leukocytes and round cells. Here and there the infiltrations are dense, and necrotic areas containing collections of cocci may be seen. In the lung substance itself the bloodvessels are extremely congested and here and there in a bloodvessel of considerable size or in a capillary are mycotic emboli similar to those described in the heart wall. Most of the alveoli are completely obliterated by the hemorrhagic and leukocytic extravasations and the remaining ones are emphysematous. In the immediate neighborhood of the embolic masses the alveoli are filled by an exudate which in places is composed chiefly of erythrocytes and in other places mainly of leukocytes. In these areas are masses of cocci, which stain by Gram's method. One of these, composed wholly of cocci, is a mould of some small branching vessel. Further out the process seems to be a more pneumonic one—the alveoli being filled by granular matter resembling fibrin, erythrocytes, leukocytes, carrier cells containing coal pigment and degenerated epithelium. The bronchi are more or less filled by a cellular exudate and desquamated epithelium.

Kidney.—The bloodvessels everywhere show great congestion. In the cortex and labyrinth the glomerules are congested. The cells lining the convoluted and collecting tubules show cloudy swelling, which is most marked in the convoluted tubules. The medulla is affected to a less degree, but many of the tubules contain masses of granular debris.

Liver.—The hepatic cells show slight cloudy swelling, the cells being somewhat granular, but the nuclei stain well. A considerable amount of greenish granular pigment lies near the center of the cells.

Pancreas.—The cells lining the acini are granular and the nuclei stain very faintly. The larger bloodvessels and the

intralobular capillaries are congested and there is some hemorrhagic extravasation into the intralobular connective tissue.

Spleen.—There is great congestion, and masses of cocci are seen lying about in the pulp.

General Considerations.—As pointed out by D. W. Graham,¹ "the names anthrax and malignant pustule should no longer be used interchangeably with carbuncle. The former term should only be applied to that disease occurring in the lower animals—sometimes communicated to man—and caused by the anthrax bacillus. That carbuncle is a disease of microbic origin was pointed out by Garré, Bockhart, Baum, and others. The micro-organism most often found is the *Staphylococcus aureus*. In the minority of cases there are present also *Staphylococcus albus* and *Streptococcus pyogenes*, or these two with the former, but always outnumbered by it."

Although it bears the name "carbuncle," most of the characteristic features of a carbuncle, in the accepted sense of the term, are absent. This difference is due to the anatomic nature of the lip, where there are no columnae adiposae and bands of fibrous tissue binding the skin down to the muscular fascia, as there are, for instance, in the skin of the back (Warren).

It is usually accompanied by profound constitutional disturbance, and the prognosis is extremely grave on account of the liability to thrombosis and embolism. Thrombosis and embolism are especially apt to occur in the upper lip on account of its great vascularity. Inflammation of the parts results in extreme congestion and edematous infiltration of the tissues. This produces great swelling, and by mechanical pressure on the thin-walled veins, slows the circulation and favors thrombosis. Suppurative phlebitis soon results in infected thrombi, detached portions of which travel through the venous circulation as mycotic emboli.

Traveling from such a focus they lodge in the capillaries of the lungs and elsewhere. Emboli small enough to pass the capillaries of the lungs may eventually lodge in any of the organs, skin, or long bones.

Thrombosis of the facial vein is a frequent complication, and may result in extension to the sinuses of the dura matter; the ophthalmic and middle meningeal vein may be involved, or the process may even extend to the jugular vein.

Charles A. Powers,² thinks that the danger is not from the bacteriologic form of infection, but from its location. However, the virulence of the infective agent and the date at which treatment is instituted must certainly influence the prognosis and treatment.

G. F. Masterson,³ reported 2 cases in women past 70, in which simple fomentations brought about rapid recovery. This expectant plan of treatment, however, is a poor one. It gave Paget a mortality of over 93%.

In 2 cases reported by König and C. A. Altmann,⁴ multiple injections of 5% carbolic acid produced rapid improvement.

Charles A. Powers,² reports 3 cases which came under treatment at an early date. Cultures made from one of these cases showed a pure growth of the *Staphylococcus aureus*. In all 3 cases excision of the necrotic areas and packing with iodoform gauze resulted in rapid recovery.

Winiwater reports 2 cases in which he approached the carbuncle through the mucous membrane, excised all diseased tissue, and packed with iodoform gauze. These patients made good recoveries without visible scars.

After thrombosis and embolism have occurred, treatment at the present date is unsuccessful. The ideal management of such cases lies with the future. Recently Dr. Max Neisser and Dr. Friedrich Wechsberg⁵ have isolated the staphylo toxin. With a proper bacteriologic diagnosis established, antistaphylococcus serum or this combined with antistreptococcus serum might prove a valuable aid to surgical intervention.

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- ¹ Journal American Medical Association, 1894, xxii, 572-574.
- ² Philadelphia Medical Journal, 1901, vii, 303.
- ³ British Medical Journal, London, 1885, i, 1154 and 1246.
- ⁴ Australasian Medical Gazette, Sydney, 1894, vii, 261.
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SPECIAL ARTICLE

ADDRESS TO NURSES.¹

BY

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of Washington, D.C.,

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In contradistinction to those evil forces in the world which weaken and wreck life, are those beneficent forces which strengthen and maintain life. It is greatly to your credit that you have chosen a calling so closely identified with a profession which showers blessings upon mankind—the glorious profession of medicine. You stand at the side of the physician, ready to carry out his directions and to aid him in his efforts to lessen the burden of pain and to preserve life. You are to be congratulated! But while you are thus enlisted in that noble army which pursues disease to its uttermost stronghold and which battles bravely with death itself, and while you help to hold aloft its banner, you must have full realization of your individual duty and responsibility, for you should strive to be the perfect soldier. A great profession has great responsibilities, and a close association with it for a lifetime can only mean that they have been fully met. The careless, the indifferent, the halfhearted, the unwilling can have no permanent place in the ranks of a profession which fights man's deadliest enemy—disease—and in which a slight mistake may cause the greatest of human calamities. When reviewing all professions in their practical workings we are impressed with the fact that success can only be attained in each case by the possession of a firm faith in the truth of its principles, by a strict obedience to its rules and regulations, by a realization of personal responsibility, and by a continual striving to live up to its ideals and uphold its best traditions. One must regard his life's work seriously, and be prepared at all times to do his full duty. In this way only can we fight the good fight and accomplish something. Obedience, or subjection to discipline, is inseparably connected with faith or belief, and upon unflinching faithfulness in the performance of duty success of individual effort depends. You graduates, in your life work, should have faith in the doctor, and you should be faithful in carrying out any duty he assigns you. The efficiency of any great organization is based upon its harmony of action, upon perfection of discipline, and implicit obedience to command. In the lives and deeds of those who strive to defend and save the world from moral evil, and of those who strive to defend and save a nation from its enemies, we see this obedience and discipline splendidly exemplified. In the submission to authority and endurance of privation by the austere members of religious orders, and by the determined followers of the flag, you young women have a true guide to efficiency in your future labors, for you also are defenders and fighters, and must be ready to sacrifice and to endure.

Since my whole life has been spent in a military atmosphere, I may speak generally of the soldier and sailor with the idea of impressing upon you the importance of discipline or obedience, a realization of responsibility, and a striving for courageous thought and action. But I shall also, in passing, draw upon a few examples from other sources—examples familiar to every one, but which I think may be well for you to bear in mind this evening. The relation of the nurse to the physician in charge of a case is practically the same as that of the sailor or soldier to his commanding officer, or that of the

¹ Address delivered at Commencement of the Nursing School, Polyclinic Hospital, Philadelphia, Pa.

commanding officer to his nation. In drawing up rules and regulations governing military bodies it has long been recognized by all nations that since so much depends upon the soldier's devotion to duty, the most severe punishment must be meted out for any offense which impairs the efficiency of their organization. In the case of a soldier on post, during his two hours' duty he may have a whole army at risk; therefore, should he be found asleep, or off guard, the penalty is death. The same way with regard to an officer transmitting or conveying an order. If the order is not carried correctly, he is in disgrace, court-martialed, dismissed, and at times put to death. This is also true of an officer commanding a fleet or squadron, or of a general commanding an army. The whole of his best efforts of life belong to his country; his life's blood is not too much. For an error of judgment only, the English admiral, Byng, of distinguished and courageous ancestry, and himself a brave and worthy man, was shot to death over a century and a half ago; and so it has been for all time with the bearer of arms who, from one cause or another, fails to fill the gap.

On account of the responsible position that the nurse holds, she should consider that her first law, like the soldier or sailor, is to obey. Her fidelity should be as the fidelity of the needle to the magnetic pole. As true as the stars and planets in space are to the attraction of gravity, or to the orbits, so true should she be to her trust; for otherwise, just as there would be a crash of worlds, grinding all to cosmic dust, so there would be disaster and death to the precious lives entrusted to her care.

In the records of the armies and navies the world over, there are a host of examples of unswerving obedience to command, and heroic self-sacrifice; perhaps the charge of the "Noble Six Hundred" comes most readily to one's mind. Recently, in South Africa, the "Black Watch," unflinchingly followed their leader General Wauchope into a trap of death, and fell by scores, with him, martyrs to duty. I remember while in London many years ago seeing a picture of a British ship which sunk with all on board. The picture represents her as she was going down. The marine guard is on deck, in brilliant red, ending a series of quick maneuvers executed under such harrowing circumstances, by presenting arms to death. It is little over a month since the British torpedo boat destroyer *Cobra* went down with her commander, Lieutenant Smith, standing with folded arms on the bridge. I need scarcely mention those heroic instances in the history of our own nation when obedience to the call of duty, and upholding the traditions of the military service, gained undying fame. It was Commander Craven of the *Tecumseh*, during the Civil War, who, by insisting upon the pilot leaving the pilot house before him, when his ship was destroyed by a torpedo, died as gallantly as any hero of that great conflict. And still earlier, Captain Herndon, commander of the passenger steamer *Central America*, when the ship sprung a leak in a raging sea and violent gale, saw to it that every woman and child on board was put off in the small boats; and then calmly met his death, together with his crew and hundreds of the male passengers. The single act of Captain Rowan, of the army, at the outbreak of the Spanish-American War, of carrying a message from President McKinley to General Garcia in Cuba, has been immortalized in Mr. Hubbard's "A Message to Garcia," now known in almost every household throughout the land. Such is the tribute that should be paid to the soldier who unquestioningly and instantly obeys orders. And we have other examples of obedience and fidelity: Abraham of old would sacrifice his first-born; and we all know the beautiful story of Ruth and Naomi. In his greatest tragedy, Shakespeare shows us a devoted Kent who supports the shadow of a King to the bitter end, and then wishes that he himself may follow. Shakespeare also makes the aged Adam, in "As You Like It," when about to leave the roof that had sheltered him in his declining years and start on an unknown journey, say—

"Master, go on, and I will follow thee
To the last gasp, with truth and loyalty,"

which he actually did till he sank down, fainting of hunger and weakness, in the forest. Scott portrays the father of Effie Dean, surrendering an erring daughter to the scaffold and the hangman in deference to his faith and ideas of duty. Some of you

may have heard of the old Scotch tale of a mother going to the hiding place of her son, who had been caught stealing, and crying: "Come out Jamie! Don't keep the master waiting! Come out and be hanged!"

We do not, in thus making obedience the prime virtue, maintain that those in authority can commit no wrong, nor that the blood of martyrs is not, sometimes, seemingly spilled in vain; for the possibility of human error cannot be eliminated. But when obedience to orders will result in a blunder in one instance, it will result in rightful action in a thousand instances. Therefore, I would urge upon you the necessity for absolute obedience, since without a practical faith, which must be changeless, your efforts will be as nought. After all, it is the idea of duty and faithfulness that is the supreme end, and following this idea undeviatingly, right or wrong, can only serve to ennoble mankind. This idea is embodied in the single line:—"Be thou faithful unto death, and I will give thee a crown of life!"

It is a false notion to consider the soldier a mere machine, just because he is drilled to the point of instinctive obedience. In an emergency he can be depended upon to individually think and act all the more efficiently for his training. It is not for a moment to be supposed that in time of accident or emergency, when there is no one else present but you to take the responsibility you should be thought incapable of correct and decisive action just because you submit entirely to the doctor's authority when he is in charge. On the contrary, the fact that you have strictly obeyed his orders in somewhat similar situations will make you all the more qualified to assume responsibility when it is imperative that you should. Not only this, but the doctor himself depends to a great extent upon the intelligence and judgment of the nurse to carry out properly his instructions however much in detail they may be given. Just as modern military science demands for its efficiency a certain amount of technical knowledge and training in all its branches, so does the science of medicine demand the specially trained and skilled nurse. Furthermore, I may say as a final word on unqualified obedience, that the exceptional case when you may have to act independently, in a grave crisis, will only serve to confirm, by your realization of the delicacy and danger of the situation and awful responsibility involved, the necessity of the general rule for carrying out orders to the very letter. It may be well also, for the nurse to bear in mind that the doctor himself has to obey the principles and established practice of medicine; and that he, like his assistants, is bound by the honor and discipline of his profession. In the discharge of his duty, and in his submission to hardship, he will ever strive to show the proper example to his assistants.

In citing cases of heroism and fidelity, I have not referred to the records of your own profession in which courageous devotion to duty, under stress and strain in the hospital ward, amidst contagion or the horrors of war or appalling catastrophe have won for it a place upon the tablets of fame. For I know you seek inspiration from such annals and need no one to tell you of those heroic instances which are the pride of your calling. (I cannot forbear from mentioning, parenthetically, the tribute which Doctor Mynter, according to the public prints, paid to the nurses attending President McKinley. He said that there was not one of them who would not have gladly taken Mr. McKinley's place).

But I will, at the risk of touching upon a point of which you doubtless now thoroughly appreciate the importance, say a word as to your uniform. Be proud of your distinguishing garb, since around it now cluster all the traditions of your profession, and since around it in the future will gather the memory of your own victories. No soldier with a record would part with his uniform since it is associated with his manliest efforts, and in the same way the nurse entering the field should try to live up to hers, and regard it as that which some day will be a badge of proven efficiency and of tried courage. While it is the heroic examples, and ideals, that are continually drilled into the armies and navies of all nations which go to make up our heroes, after all, habits of manhood are what actually mold them and strengthen their fiber. You need not expect to have the efficiency and courage of the tried campaigner until you have stood again and again the shock of bat-

tle, that is to say, have made ample experience in your life-work. The profession of arms needs no vindication for its existence, which rests in the fact that for the defense and preservation of a nation the life energies and often life's blood of numberless brave men have to be given, and though the doctor and nurse win renown on the battlefield and in the hospital tents, there is no greater instance of the victories of peace than that gained by the whole medical profession. The work of its members is to reduce the world's misery and to increase human happiness; and it is a glorious testimony to the worth of mankind to see with what willingness they accomplish their arduous mission. The fidelity and courage demanded is of an exceedingly high type, and often akin to that of the martyr. When I look at you young women sitting before me tonight, and realize that no one would voluntarily select this profession were they not actuated by the most serious and lofty motives, I hope that you will always remember the worthiness of your vocation. I hope that you will naturally seek those positions, which, while they enable you to successfully make your living, serve to promote the best interests of the nation and humanity. In these days of over-civilization and no little artificiality, there is, unfortunately, too great a tendency upon the part of some people of leisure toward self-indulgence. Imbued with the false notion that it is a mark of culture and superiority to be sickly and delicate, they think that they require the constant attention of a nurse. The slipping into such "soft" positions can only lower your standard of efficiency. It will also help, by the encouragement upon your part of the excessive self-indulgence of misguided people, to sap the vitality of the nation. Such cases, besides being, no doubt, universally condemned by the medical profession on account of their national significance, are unworthy of your steel. A word on your greatest successes. They can be only attained by your striving to be worthy and useful. It is not for the miserable pittance that the American volunteer leaves his house and home, his mother, brother, sister, and perhaps bride; but for the good of the entire nation, for the honor and glory—even to sacrifice his life's blood that the volunteer goes to the front. In the same way, the incentive for mere money-making will not be enough for the attainment of your full efficiency. You should strive to develop the best that is in you, and should seek every field that will serve to increase your usefulness and make you prepared to do your full duty. By this means only can you achieve the greatest success, and have a life full of interest and happiness. Your profession is progressive and cannot stand still, and you must not consider that now you have graduated your days of study and practical training are over. They have just begun. You must keep pace with the modifications which the advancement in medicine makes in the methods and practice of your profession. But I would caution you, as dealing with human life, to be careful of adopting methods just because they may be new, which of itself is no recommendation; and to hold on to the tried and true till it is absolutely clear that their use is no longer wise.

"Be not the first by whom the new is tried,
Nor yet the last to lay the old aside."

It is needless for me to say that you will learn from actual experience in your future days of labor that which no books can teach nor advice can impart. Cherish such knowledge; it represents your essential value, your practical ability, as a nurse.

As to the practical side of your labors: No one can question the validity of feeling, for it reveals a new world and new truths, and spurs us on to greater and grander deeds than would be otherwise possible. But since the most of your lifework will be cast on purely practical lines, and any undue indulgence in emotion is entirely out of place (it being, of course, incompatible with clear thought, deliberate action and maximum efficiency generally), it is most important that you practice self-control and keep constantly before you your nearest duty. You must give *real* assistance to the doctor whenever called upon, and do everything that is necessary for the welfare of the patient at the appointed time. Throughout the night watches at the bedside of anguish, or amidst the scenes of hospital horror following some frightful disaster, you must strive to keep a

stout heart, a clear head and a steady hand. You must mark with the thermometer the fever's glow; you will be called upon to note the minutes and seconds of time of the pulsebeats and the heartbeats, even until they cease in death. Since you will move much amidst death, you will in a great measure become accustomed to its solemnity and impressiveness; and you will, when a case ends fatally, learn to promptly and placidly turn to the living under your care and watch and minister to them with renewed zeal and devotion. This is as it should be, for when science and humanity have done their duty, and both physician and nurse feel that no step was left untaken which might have helped to save the patient, there may be well asked in a sense, with Paul, "O, grave, where is thy victory?"

Recently the fell blow of a coward's hand struck down a great and beloved chief and moved this nation to its depths with sadness and sorrow. But with a realization of the necessity for following that injunction which through life William McKinley ever enforced upon it, the nation, led by a brave and worthy successor, resolutely turned away from the bier to master the problems before it and to face its future. Those wonderful words, "duty" and "destiny," have especial significance for the medical profession, whose labors for the sick must never cease, and whose noble destiny must be ever kept in view. It does not detract from what has been said as to the value of ideals and necessity for self-sacrifice when duty demands, to say that the nurse should, as a bread-winner, try to take good care of her own health, and that she should, between her busy hours, seek recreation and rational enjoyment of life. This is absolutely essential to the ready, cheerful worker; and there is no danger of her becoming prone to idleness and inefficiency since, if she wishes to stay in her profession she will have to strike the proper mean between leisure and labor. If she do this, and thus balance her life, she can gather all the more strength for her hours of exceeding trial, when they do come, which hours she will of course meet bravely. In a word, overwork, undue privation or hardship, or too much martyrdom, as a rule of life, defeat the object which they have in view. Apart from the personal risk involved when dealing with disease, the pursuit of the medical profession is inseparable from excessive toil, irregular hours, loss of time, sleep, and even bodily ailment. The fact that a great number of doctors and nurses actually stand during a life career such hardship and privation can only be explained, in great part, by their having learned that cardinal rule for practical success, to balance their forces and, if possible, not to overdo it. If they did overdo it it is fearful to think of what would become of the tens and thousands of the world's sick.

But what of the nurse as a woman, and of woman as a nurse?

It is by the exercise of that womanly tenderness, patience, and sympathy, which, when medicine seems to lag, often coax back life and hope to the sick room and help the physician to effect a cure—that the nurse may excel, and give proof of her worth and fidelity. It has been said of woman's mission that she is—

"* * * born to nurse,
And to soothe, and to solace, to help and to heal,
The sick world that leans on her."

If this is woman, what may we not expect of her when she adds to these natural virtues, the knowledge, skill and training of science? What may we not expect of the professional nurse?

Summing up the principal points whose importance I would impress upon you tonight, they are: Be obedient and faithful; be earnest and courageous; be alert and practical, and, first and last, be women.

Microbe of Cancer.—Dr. Doyen, of Paris, has announced in a recent lecture that he has observed in cancerous tumors a microbe which he names *Micrococcus neoformans*. In experimenting with it he succeeded in producing in a cancerous patient a reaction resembling the effects produced in tuberculosis subjects by Professor Koch's tuberculin—that is, tending to prevent a return of the cancerous growth. He purposes the continuation of his experiments, as he claims nothing conclusive as yet.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

December 28, 1901. [Vol. XXXVII, No. 26.]

1. Food Products From Diseased Animals. D. E. SALMON.
2. Tuberculosis in the Middle States and Its Curability. JOHN A. ROBISON.
3. The Biologic Test for Semen. C. G. FARNUM.

1.—Food Products from Diseased Animals.—Federal inspection, with the exception of trichina inspection, is not done for commercial reasons, but to protect public health, and inspectors should not be selected for political reasons. All animals within two weeks of parturition are condemned, as the meat is inferior. Much meat is condemned on account of bruises and injuries, and some on account of parasites. The most dangerous is the echinococcus, which is becoming more common here. The trichina is very common, and it is impossible to protect from it by inspection; cooking must be relied on. Scabies, Texas fever, hog cholera, swine plague, tuberculosis and actinomycosis are other common diseases. Tuberculosis here is only 5% against 40% to 50% abroad. Local slaughterhouses have little if any inspection, and most of the diseased meat is sent to them. Greater efforts should be made to secure a purer food supply. Those who are working for it need the aid of the whole medical profession. [H.M.]

2.—See AMERICAN MEDICINE, Vol. I, No. 12, page 545.

3.—Biologic Test of Semen.—The results of intraperitoneal injections of rabbits with semen or testicular emulsions of the dog, bull or man are reported, and the conclusions are that blood serums of animals treated with different semens and testicular emulsions contain precipitins which probably are specific. That the substance which gives rise to the precipitin is contained in the semen itself and not in the blood serum or its derivatives seems probable from the absence of precipitate in the human serum to which is added the serum of a rabbit treated with human semen. [H.M.]

Boston Medical and Surgical Journal

December 26, 1901. [Vol. CXLV, No. 26.]

1. Some Surgical Tendencies from a Medical Point of View. REGINALD H. FITZ.
2. Successful Operation Upon a Case of Brain Abscess Following Suppurative Middle Ear Disease. FREDERICK L. JACK.
3. Study of the Aphasia Persisting During Convalescence after Evacuation of Brain Abscess. GEORGE L. WALTON.
4. Congenital Elevation of the Shoulder. A Report of Two Cases Illustrating the Two Types of the Deformity, Treated by Operation. JOEL E. GOLDTHWAIT and CHARLES F. PAINTER.

1.—See abstract under Medical News.

2.—Brain Abscess Following Suppurative Middle Ear Disease.—Jack reports the case. A man of 25 had suffered from trouble with the left ear for 3 years. There had been more or less discharge for the past year. During the past 6 weeks he had suffered from frontal headache. There was mastoid tenderness. A mastoid operation was done and necrosed bone and pus removed and the lateral sinus was exposed for one inch. The dura was normal in color and there was no bulging, hence it was not opened. For a few days the patient's symptoms improved, but on the eighth day he passed into coma. The wound was opened up, the dura opened and several ounces of pus and necrotic tissue removed. Under proper after treatment the patient made a good recovery. [A.B.C.]

3.—Aphasia After Brain Abscess.—In a review of the reported cases of optic brain abscess the brief statements regarding speech defect all point toward impaired function of the auditory word center and its connections. Following the 34 questions suggested by Bastian the details of the examination of Dr. Jack's patient are recorded. The form of aphasia was Bastian's amnesia verbalis, resulting from lowered activity of the auditory word center, and his commissural amnesia from defective transmission of spinuli, including a break in the connection between the auditory and kinesthetic center. It is possible that the center was not involved in the encephalitis and the moderate word deafness was due to impaired conduction. That the patient could not use spontaneous speech perfectly was probably caused by interruption of the fibers connecting

the temporal lobe with Broca's convolution. Difficulty in reading aloud is explained by interruption of fibers between the visual and auditory center. The case tends to corroborate the view that there is no writing center in which are stored up the kinesthetic memories of written words and capable of stimulation independent of Broca's convolution. The inability to write in this case was absolutely coincident with the inability to talk. There was complete recovery. [H.M.]

4.—Congenital Elevation of the Shoulder.—Two cases are reported with details of the operations. In one the position was due to imperfect development of certain muscles perhaps following injury during birth. In the other there was a distinct articulation between the upper angle of the scapula and the seventh cervical vertebra. Improvement in appearance and practically normal function followed operation. [H.M.]

5.—Tubal Pregnancy.—C. H. Hare reports a case of pregnancy in the fimbriated end of the right tube, with pus in both tubes and small cysts on both ovaries. The left tube was removed, the right tube and both ovaries resected. The patient was apparently on the way to recovery when on the eighth day pulmonary embolus occurred followed by a second embolus and death on the eleventh day. In this case the existence of the tubal pregnancy was not suspected before the operation, and it was certainly determined only by pathologic examination of the part removed. Hare reviews a number of interesting cases recorded by other authors. [W.K.]

Medical Record.

December 28, 1901. [Vol. 60, No. 26.]

1. The Neurotic Indications of Presenility. ALLAN McLANE HAMILTON.
2. Clinical Report of a Second Series of 12 Cases Benefited by Bottini's Prostatotomy. RAMON GUITERAS.
3. On the Transmission of Yellow Fever by Vessels and Its Bearing Upon Quarantine Regulations. EDMOND SOUCHON.

1.—Neurotic Indications of Presenility.—The first warnings of "break-down" are subjective and come earlier among Americans than more stable peoples owing to fiercer competition, overeating, insufficient exercise, abuse of alcohol, tobacco and medicines. Hardened vessels, premature baldness, arcus senilis and usually the presence of albumin and casts, show an advanced condition in which it is too late to do much. Commencing nervous disturbances invariably indicate beginning vascular degeneration. The pulse has an instability shown only by taking tracings at different times in the day varying with the hyperemia of the brain. Cerebral irritation due to flushes of hyperemia in an ischemic brain is an evidence of presenility. Hypochondriasis develops from the introspection accompanying limitation of mental power. Indisposition for exertion and impairment of memory are other symptoms. A peculiar headache sometimes develops resembling the angiospastic form of migraine and cramps due to cerebrospinal ischemia and subjective vertigo from progressive occlusion of the vessels may be present. Presenile insomnia is usually dependent on an irritable brain. Agents such as excesses of any sort, must be avoided that produce rapid and repeated determination of blood to the brain. In the habituated absolute abstinence is sometimes bad. The judicious use of hot saline baths is generally beneficial. [H.M.]

2.—Bottini's Prostatotomy.—Guiteras reports another series of 12 cases operated on by the Bottini method. Five of the patients had a nephritis, and in these invariably the reactionary symptoms were more severe. All the patients operated upon were benefited except one, and in this case the amount of residual urine was diminished very materially, but the patient suffered from incontinence due, he claimed, to operation. A reduction of the amount of residual urine, while a great improvement, from the surgeon's standpoint does not always relieve the frequent urination and burning sensation due, probably, to a cystitis. The obstruction being removed, the practitioner is apt to think complete restoration should follow, but this is often not realized, because a persistent former chronic cystitis has caused interstitial changes in the bladder-wall, which often prevents a complete return to the normal. On the whole, however, the author strongly favors the operation in suitable cases. [A.B.C.]

3.—Yellow Fever and Quarantine.—In reply to Doty's paper published in the *Record* of October 26, advocating release from quarantine of vessels which have been five days on the trip without developing yellow fever. Souchon cites a number of cases in which the disease developed after that interval at southern ports, and he holds that passengers at northern ports who might go South after landing should be detained five days after the disinfection of the ship. [H.M.]

New York Medical Journal.

December 21, 1901. [Vol. LXXIV, No. 25.]

1. The Correction of Deformities Following Osteitis of the Knee. WISNER R. TOWNSEND.
2. On the Feasibility and Management of a Hygienic Cure of Pulmonary Tuberculosis Outside of Closed Sanatoriums. CHARLES L. MINOR. (To be concluded.)
3. The Treatment of Abortion. HELEN HUGHES.
4. Amygdalotomy Rash. EDGAR A. FORSYTH.

1.—See AMERICAN MEDICINE, Vol. II, No. 18, p. 679.

3.—The treatment of abortion is discussed by Hughes. The tampon is considered the most efficient agent to stimulate uterine contractions and control the hemorrhage. The management of an actual case is given in detail. A rectal enema should precede the application of the tampon, but the vagina should not be douched unless there are special indications. The after-treatment is such as is used in anemia following hemorrhage. Incomplete abortion calls for the removal of the offending material, thorough cleansing of the uterus with a blunt curet, followed by the hot creolin douche. Now dry out by packing with strips of iodoform gauze, which can at once be removed; pack the vagina lightly with sterilized gauze, and apply a vulvar pad. The following mixture is recommended for the restlessness and sleeplessness following:

Morphin	1/2 grain
Chloral hydrate	10 grains
Sodium bromid	10 grains
Water	2 ounces

[C.A.O.]

4.—Amygdalotomy Rash.—The rash generally appears on the second or third day after operation, and may be papular, roseolar or erythematous in type. It generally appears on the neck, chest and abdomen; sometimes it extends to the face or extremities, and lasts from two to five days. After reaching its maximum intensity it rapidly disappears. Some cases terminate in desquamation; in some there is severe itching; there is very little constitutional disturbance, and the temperature is only one or two degrees above normal. Forsyth reports one case following the removal of the pharyngeal tonsil in a boy of 11. A 4% solution of cocaine was used, and every precaution taken to prevent infection. The second day after operation a rash appeared on the face, neck and chest, and the temperature rose to slightly above normal. The boy was thought to have scarlet fever, but in two days all symptoms had disappeared. The author has been unable to find any reference to this rash except in the writings of Lennox Browne and Wyatt Wingrave. [C.A.O.]

Medical News.

December 28, 1901. [Vol. LXXIX, No. 26.]

1. Some Surgical Tendencies From a Medical Point of View. REGINALD H. FITZ.
2. Treatment of Lobar Pneumonia. CHARLES G. STOCKTON.
3. On the Role of the Prostate Gland in Gonorrhea. FREDERIC BIERHOFF.
4. The Neurotic Element in Infantile Eczema. JEROME KINGSBURY.

1.—Surgical Tendencies from a Medical Point of View.—Fitz presents a table of the frequency and result of exploratory laparotomies at the Massachusetts General Hospital from 1890 to 1900, and concludes that except in specially selected cases it is an operation which carries a very decided immediate risk to the life of the patient and a very considerable doubt as to the degree of relief from the symptoms. The methods of surgery are so much harsher than those of medicine, it may be questioned whether too many operations are not performed for the relief of suffering and prolongation of life. In malignant disease of the alimentary tract the statistics of the hospital show a

mortality of 72% within six months of operation and a life of suffering for many of the rest. Intracranial and kidney tumors offer but slight encouragement to surgical treatment, and reported success in Graves' disease is probably attributable to a lack of agreement as to what should be thus designated. Surgical treatment of malignant lymphoma is also to be disputed. [A.B.C.]

2.—Treatment of Lobar Pneumonia.—The self-limited character of the disease casts a doubt on the results of any special treatment. Various types are briefly noted. Treatment must be directed first to the toxemia. There is always a point of least resistance, and this is usually the heart. The blood-making organs, the liver or the kidneys, may be so crippled that a second toxemia develops, or the nervous system may be so injured that rest is impossible. The need of a calomel purge is universal, while congestion may be further relieved by magnesium or sodium sulfate occasionally. Elimination through the skin is aided by mustard foot bath, followed by sponging, promoting diaphoresis and stimulating the cutaneous circulation. A purge and foot bath relieve excessive circulatory activity also. For lowered blood-pressure and adynamia, strychnin, increased from $\frac{1}{32}$ to $\frac{1}{16}$ of a grain every two or four hours, is best, though other cardiac stimulants are sometimes indicated. Unpleasant effects can be avoided by minute doses of opium. Treatment should be arranged to interfere as little as possible with rest, and sleep should be favored with ice-bag to head, chloralamid or Donis powder. The local process sometimes outweighs in importance the systemic. Cases in which hepatization is delayed are apt to be more toxic. With symptoms of loss of tissue tone denoting approaching consolidation of the second lung the process may be delayed by taking four to six ounces of blood from the arm, followed by dry cupping. Counterirritation hastens resolution. [H.M.]

3.—The Prostate Gland in Gonorrhea.—Bierhoff states that in the vast majority of cases of specific posterior urethritis there is also a prostatitis; and he quotes various authorities as to the prevalence of posterior urethritis when an anterior urethritis exists. Figures here vary exceedingly—some putting the percentage as high as 93. The cause of the extension of the disease from the anterior to the posterior urethra is, in the author's opinion, largely due to a congestion of the membranous urethra and the prostate, and the causes for this congestion may be many. He believes the modern germicides used to combat gonorrhea, particularly protargol, will greatly lessen the number of cases of posterior urethritis and hence prostatitis. The treatment for this condition is not only irrigation of the urethra with the customary solutions, but also the massage of the prostate. This the author considers very important. The general systemic condition must of course be looked after. [A.B.C.]

4.—The Neurotic Element in Infantile Eczema.—The reflex neuroses causing the disease are gastrointestinal, sexual and local nerve irritations. Of the latter teething is the most striking, but is less important than irritation from the alimentary tract. Regimen and medication must be continued even after the rash has disappeared, and in nurslings the mother's habits must be regulated, and excessive tea and beer and ale-drinking prohibited. Treatment of phinosis and removal of calcified smegma will often be followed by marked improvements. [H.M.]

Philadelphia Medical Journal.

December 28, 1901. [Vol. 8, No. 26.]

1. Medical Care and Treatment of Inebriety. T. D. CROTHERS.
2. The Typhoid Spine. WILLIAM J. TAYLOR.
3. Abstract of a Paper, "A Review of the Subject of Actinomycosis—with Report of a Case of Actinomycosis Abdominalis." A. VANDERVEER. ARTHUR W. ELTING.
4. Cystic Liver. ISRAEL CLEAVER.
5. The Relation of the Middle Turbinate Body to Chronic Diseases. CHARLES H. BAKER.
6. The Relation of the Sympathetic Nervous System to Functional Amblyopia. HARRY S. PEARSE.

1.—Treatment of Inebriety.—In order to obtain a satisfactory plan of treatment Crothers advises a thorough study in every case of: The present condition, the organic and functional derangements of digestion, nutrition, and also of the brain and nervous system; the use of alcohol and other drugs and their

effect on the nerves and brain; the determination whether the drug and alcoholic condition at first is only a symptom or an active causation; and, what neuroses and heredity are the active or latent factors in the history of the case. The first treatment is preliminary and should begin with a warm bath and thorough rubbing to counteract the vasomotor palsies of the arteries. After the bath, a saline or mercurial cathartic and copious draughts of warm or acid waters. For the nerve paralysis and irritation, he deems the bromids best, giving large doses of 100 grains at a time. All alcohol is immediately withdrawn, and should collapse and acute delirium follow, some form of a concealed preparation of opium is administered, usually the deodorized tincture in cinchona bark infusions. Many inebriates are curable, while others are more or less benefited by exact scientific care. [F.C.H.]

2.—Typhoid Spine.—Taylor classifies this very painful sequel of typhoid fever into, the true perispondylitis of Gibney; a painful condition of the muscles of the spine, resulting from a mechanical strain or injury and which is not a perispondylitis; and, the hypersensitive neurasthenic painful spine, which is merely a neurosis, and, consequently, not based upon the same pathologic findings. The author believes this condition is distinctly a surgical sequel. [F.C.H.]

3.—Actinomycosis.—Vanderveer and Elting believe potassium iodid possesses certain qualities which produce a favorable result. [F.C.H.]

4.—Cystic Liver.—Cleaver reports a case of cystic liver, with a description of the specimen, which is of interest on account of its rarity. [F.C.H.]

5.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 499.

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Function of the Liver.—Albu reported in the *Berliner klinische Wochenschrift*, last winter, some observations made on a patient with a biliary fistula of nine years' standing, to which reference was already made in a previous editorial on "The Antitoxic Action of Bile." These observations are in line with other studies and with well established knowledge about the liver which has, for some reason, failed to receive general attention. In the administration of drugs acting on the liver it is well to remember that this gland is not the manufacturer of a digestive secretion of great value, as has long been held. Acting analogously to the ductless glands, the liver has an important function in the intermediate steps of metabolism, performing a sort of secondary, intrasanguineous digestion of carbohydrates and proteids and changing earlier forms of nitrogenous waste into urea and uric acid. There is no more puzzling liquid in the body than bile. It contains two salts, the glycocholate and the taurocholate of sodium, which are secretions, both chemically and functionally; it contains a substance which is waste matter and which is excreted, *i. e.*, removed unchanged from the blood, and yet which is very nearly harmless—cholesterin; it contains various forms of pigments abstracted from the splenic blood, which are waste material and quite poisonous; its alkaline carbonates are useful in the intestine, and it also contains some nitrogenous waste, not well analyzed, not great in quantity, but highly poisonous. For example, Bouchard estimates that the renal elimination, if retained, would prove lethal in a little over twenty-four hours; the hepatic in about nine hours. Clinically, because of vicarious elimination probably, we know that a total suppression of urine may last for several days under some circumstances. Complete stoppage of the bile ducts may also be tolerated for a considerable period, but here there is an obvious elimination of reabsorbed bile through the kidneys. Suppression of bile is not clinically recognizable, at least not so definitely that we can say when it begins. Partial disability of either kidneys or liver may exist in a recog-

nizable degree for years without producing very marked symptoms, in comparison with the theoretic seriousness of the condition.

Albu's case is one of several that show that the wasting of bile through a fistula is of very little moment; in other words, bile is an excretion of very great importance, a secretion of almost no real value. Undoubtedly, the alkalies have a useful function in neutralizing the acid of gastric digestion, but as the alkaline and all other solid ingredients of bile diminish markedly after a fistula has existed for a few days, it is evident that the pancreatic and intestinal juices can provide for this function. Experiments have shown that the so-called biliary salts aid the absorption of fats, but as the pancreatic juice contains the real fat-splitting ferment—which has recently been demonstrated by F. Volhard in the gastric juice also—it is obvious that nothing contained in bile is absolutely necessary to the proper assimilation of fats. Moreover, fats are normally taken in less amount than either of the other great groups of organic foods and they can be replaced by carbohydrates and proteids, almost completely. Bile has enjoyed a reputation as intestinal antiseptic, although its proneness to putrefaction is obvious on the simplest experiment. The mistake is partly due to the fact that bile, like any other bulky liquid, stimulates peristalsis and that, with diminished peristalsis, there is more opportunity for intestinal putrefaction. The real explanation, however, is this: Most clinical conditions in which bile is absent from the intestine, are due to stoppage of the bile duct, either by duodenitis, which tends to occlude the pancreatic duct also or by a calculus or other obstacle, low enough to press on the pancreatic duct.

The moral to be drawn by the therapist is that bile is primarily an excretion, a toxic substance which must be eliminated, and only secondarily a digestive secretion. Thus, the old-fashioned idea of sweeping out inspissated bile, though literally incorrect, contains a germ of truth. Albu corroborates the previous reports that fat increases the formation of bile. This is in accordance with the general dietetic rule that any food encourages the secretions which aids in its digestion while a relatively unmixed diet discourages the secretions not concerned with its preparation for absorption.

The Diagnosis of Adherent Pericardium and of Tricuspid Lesions.—In a very able article by W. Türk,¹ the author points out the similarity in the circulatory disturbances produced by adherent pericardium and that those caused by tricuspid regurgitation. In both of these the brunt of the loss of compensation seems to fall upon the abdomen, thorax, and face, the edema resembling in distribution that of renal disease. Edema of the legs is not a conspicuous phenomenon, as a rule. The causes for these peculiarities are discussed. Cyanosis is a prominent symptom, and increases upon slight exertion. The existence of cyanosis, hydrothorax, ascites, and edema of the face and sternal regions, would suggest either adherent pericardium or a tricuspid lesion. Reference is made to Pick's pericarditic pseudocirrhosis, which Türk does not consider a separate clinical entity. [D.R.]

Amusia, together with a Case of Instrumental Amusia in Beginning Progressive Paralysis.—Julius Donath² believes that the memory picture of every melody, every text, and the power to sing, to play, etc., occupy separate areas in the brain. This explains the peculiar forms of amusia that have been recorded, and which the author quotes. He also relates the history of a cretinoid child of 2½ years, which, although idiotic, knew over 50 melodies, without, however, being able to sing any words. The case of instrumental amusia which he reports is as follows: An illiterate gypsy musician of about 39, while at supper, suddenly lost his speech. When asked to play, he could play only a single piece and a few chords besides; and, no matter what he was asked for, he played only these selections. He was perfectly aphasic, and was

¹ Wiener klinische Wochenschrift, October 3, 1901.

² Wiener klinische Wochenschrift, October 3, 1901.

unable to imitate words or songs. He could not play the pieces that were played before him, even though they had formerly been familiar to him. In time, the ability to speak and to play on the violin returned. The preservation of the power to play perfectly a single selection may be explained, the author believes, by assuming the intactness of the area in which the memory of this piece is stored. [D.R.]

The Value of Methodic Deep Breathing, Especially in Seasickness.—Kaufmann¹ emphasizes the value of deep breathing against sea sickness, as recently advocated by Heinz. He also believes that it is of use in checking epistaxis, hiccup, and nausea in general. [D.R.]

Lavage of the Organism in Experimental Tetanic Infection.—Tonzig's² experiments were made upon rabbits. His conclusions are: (1) That lavage of the organism by the introduction into the peritoneal cavity of physiologic salt solution does not always lead to a favorable result; (2) that the virus of tetanus does not appear to act while circulating in the body, but by fixing itself upon the tissue elements; (3) that when the introduction of the toxin is not brought about in a fulminating manner, systemic lavage may retard the onset of symptoms and of death. The method, therefore, cannot be depended upon, but may be resorted to before serum therapy can be instituted. [D.R.]

A Case of Epilepsy with Preservation of Consciousness During the Attack.—Diehl's³ patient, an alcoholic of 26, without hysteric stigmas, and who had for some time been epileptic, seemed to remember what had transpired just before and during the convulsion. [D.R.]

Statistic Contributions to the Spread of Tuberculosis.—Gottstein's⁴ article is intended as a reply to Koch's startling contention that the bovine tubercle bacillus is harmless for man. The author finds that while tuberculosis has diminished in adults, it has not materially changed in persons under the age of twenty, and it would even appear that there is an increase in the mortality among infants. If in both cases tuberculosis were brought about in the same way that in which it is supposed to be brought about in adults, the mortality curves ought to follow the same laws. Inasmuch as they do not do so, there must be a difference between the etiology of tuberculosis in children and that in adults; there must be another source for the infection in children, and it is simplest to assume that this is in part connected with the use of milk containing tubercle bacilli. There has been a decrease in the infant mortality from tuberculosis since 1894, attributable, Gottstein believes, to the better care in the milk supply. [D.R.]

Medical Aspect of Gastric Cancer.—J. W. Bell⁵ discusses the symptoms of gastric carcinoma and the methods employed in making a physical examination. In estimating the amount of hydrochloric acid he uses a comparative color test. On adding dimethylamidoazobenzol to a small quantity of the filtered stomach contents containing hydrochloric acid a striking color reaction, consisting of a cherry-red color, varying in tint with the amount of hydrochloric acid is present in the stomach filtrate. The color is based on the amount of free hydrochloric acid contained in the stomach filtrate, and is not influenced by the combined hydrochloric acid present. This would seem fatal to the value of the test as a means of estimating the entire amount of hydrochloric acid secreted, but this apparent weakness of the test is overcome by furnishing the patient a nonprotein test-meal, consisting of two ounces of rice-cake and a glass of water, thereby preventing the acid from entering into combination. A series of test-tubes is so arranged as to form a permanent and convenient color-scale with which to compare the filtered stomach contents to be tested. Two cases are also reported illustrating some of the difficulties of diagnosis. [C.A.O.]

Congenital Absence of the Abdominal Muscles.—Osler⁶ reports an interesting case of a child of 6 with practically no abdominal muscles, a condition of which only two cases are on record. Dr. Bardeen comments on the phenomenon as fol-

lows: "Under normal conditions the growth of the abdominal musculature into the Membrana reunions, the early covering of the abdominal cavity is preceded by the formation of a vascular plexus supplied from below by the epigastric artery. It is possible that an abnormal arrangement of the bloodvessels in the embryo prevented the formation of this plexus, and impeded the growth of the abdominal musculature, and that at the same time circulating disturbances gave rise to the abnormal conditions found in the bladder and ureters." [C.S.D.]

A Family Form of Epistaxis.—Dr. Osler¹ reports a rare case of the association of epistaxis with multiple telangiectases of the nasal and other mucous membranes and of the skin, occurring in many members of the same family. Only one other case is recorded. [C.S.D.]

Epidemic Cerebrospinal Meningitis in Infants.—Morse² reports three cases which he has chosen from a series, because they represent so well three types of the disease as it occurs in infancy. All were proved bacteriologically by autopsy or lumbar puncture. He believes Kernig's symptom to be of great importance in diagnosis, but too much reliance must not be placed on its absence in infancy. [F.H.C.]

Malarial Hemoglobinuria.—Lerch³ emphasizes the fact that malarial infection has in all cases preceded the hemoglobinuria. The various diseases in which blood is found in the urine are enumerated. An explanation is offered to account for the failure of the occurrence of hemoglobinuria at times in places in which the estivoautumnal prevails, and for the fact that in certain regions only certain individuals are attacked. When confronted with a case of malarial hemoglobinuria, the first question to settle is, whether the hemoglobinuric paroxysm represents merely a symptom of active malaria or whether it is of postmalarial origin. This can be promptly accomplished by a microscopic examination of the blood. Quinin has no curative influence on the hemoglobinuria, it only destroys the plasmodia. Continuous administration of this drug is injurious, and a fever that does not yield to a proper administration of quinin in a few days is not due to plasmodia, but is postmalarial, toxic or inflammatory, or both in character with a few exceptions. The various methods of treatment which he has found of value are detailed. [F.C.H.]

Diphtheria Epidemic.—Leighton⁴ reports an epidemic of 21 cases which occurred in Montclair, N. J., a remarkably healthy municipality of 1,400 inhabitants. There were no patients younger than 6 years, while 50% of those affected were adults. There was one common relation among all the cases, and that was the milk supply. In every case the family obtained milk from one dairy, and in no case did these families purchase milk from any other. The dairy was inspected, and the throats of the 50 dairy hands examined. All were normal except 2, and on the following morning cultures from these 2 throats showed the presence of *Bacillus diphtheriae*. As a result of this investigation the dairy was quarantined by the State Board of Health. The occurrence of the cases ceased while apparently in the full tide of the epidemic and 2 days after the dairy was closed. There were 34 cases in the surrounding towns, the families being supplied by the same dairy. [F.C.H.]

Constipation.—Leadsworth,⁵ in discussing the treatment of this too frequently rebellious condition, calls attention to the "graduated enema." This is administered as follows: Beginning with three pints of water at a temperature about that of the body, the amount of warm water introduced each day is diminished by $\frac{1}{2}$ a pint, $\frac{1}{2}$ pint of cold water being added, making the total amount of the fluid $\frac{1}{2}$ pint less each day. At the end of 12 days the enema consists of 4 ounces of cold water. In the majority of cases the decrease in temperature will compensate in stimulating effect for the diminished quantity, so that the bowel is thus brought to a more natural state and weaned from the necessity of distention with warm water in order to provoke an evacuating movement. The graduated enema is exceedingly useful in overcoming the enema habit. [F.C.H.]

¹ Münchener medicinische Wochenschrift, October 15, 1901.

² Münchener medicinische Wochenschrift, October 8, 1901.

³ Münchener medicinische Wochenschrift, October 8, 1901.

⁴ Münchener medicinische Wochenschrift, October 8, 1901.

⁵ Northwestern Lancet, October 15, 1901.

⁶ Bulletin of Johns Hopkins Hospital, November, 1901.

¹ Bulletin of Johns Hopkins Hospital, November, 1901.

² Annals of Gynecology and Pediatrics, October, 1901.

³ New Orleans Medical and Surgical Journal, November, 1901.

⁴ Pediatrics, November, 1901.

⁵ St. Paul Medical Journal, November, 1901.

Smallpox.—Bracken¹ reviews the various recent epidemics which have occurred in this country, endeavoring to trace the source of infection in each. He emphasizes the necessity of vaccination, isolation and disinfection in suppressing smallpox. [F.C.H.]

Spasmodic Torticollis.—The most commonly held theory of the position of the lesion is that it is in the cortex cerebri—in the centers for the movements of the head. The etiologic importance of frequently repeated muscular contractions in the production of the disease is emphasized by Hamann.² The most frequent combination with sternomastoid spasm is that of spasm of the opposite splenius. The trapezius, complexus, trachelomastoid, obliqui recti capitis postici, platysma and even the scaleni may become involved. Nonsurgical measures at any rate in advanced cases are useless. Excision of at least an inch of the spinal accessory nerve is necessary. By this procedure cases in which the sternomastoid is the only muscle involved can be cured. When in addition the splenius and other muscles of the neck are involved, it is necessary to excise their nerves also. The method of reaching these nerves is given in detail. Experience has shown that such an operation, even if bilateral, does not lead to interference with the movements of the head, nor does it cause an inability to hold the head erect, and there is a good chance of obtaining a cure or at least an improvement. [C.A.O.]

Widal's Reaction in Children.—Thursfield³ has made a thorough scientific study of this reaction in over 100 cases, and thinks the following claims justifiable. In children's diseases a positive Widal reaction is trustworthy evidence of the presence of typhoid fever; that a negative reaction later than the tenth day of an illness is strong but not absolutely convincing evidence of the absence of typhoid fever, and that repeated negative reactions are trustworthy evidence that the case is not typhoid at all. [F.C.H.]

Movable or Floating Kidney a Cause of Acute and Chronic Painful Dyspepsia.—MacGregor⁴ points out that a systematic examination of the abdomen in cases of painful indigestion will frequently disclose, especially in women, that the cause of the dyspepsia is not in the stomach itself, but that the interference with the functions of this organ is due to the wanderings of a dislocated kidney. Except in those cases in which the dislocation interferes with the functions of the kidney itself, no symptom points directly to the nephroptosis. Thus it is not readily thought that the kidney is a cause of an attack of jaundice with nausea and severe pain in the epigastrium, and that a dislocated kidney may give rise to symptoms suggesting carcinoma of the stomach; yet such illustrative cases are reported. Treatment by the pad and bandage, though not always satisfactory, is usually serviceable, and in none of the reported cases was it deemed necessary to recommend operation. [A.O.J.K.]

The Frequency and Diagnosis of the Flint Murmur in Aortic Insufficiency.—Thayer,⁵ from a review of the literature and a study of the statistics of the Johns Hopkins Hospital, concludes that one may be justified in saying that in uncomplicated aortic insufficiency a rumbling, echoing, presystolic, or midsystolic murmur limited to the region of the apex of the heart is very common, occurring when carefully looked for in fully half of the cases. The characters of this murmur are in no way different from that commonly observed in true mitral stenosis, with the exception of the fact that it is usually of moderate intensity. It is, however, rarely associated with a tapping systolic impulse and a tapping first sound, which are the rule in mitral obstruction, while the pulse is large and characteristic of the uncomplicated aortic insufficiency. In the absence of these signs and with a large pulse, the functional character of an apex presystolic murmur in aortic insufficiency may be suspected, especially in cases in which there is no history of acute infectious processes such as are ordinarily associated with endocarditis, and in which there is evidence of well marked arteriosclerosis. A Flint murmur, however, may be

associated with many of the clinical features of a true organic mitral obstruction. [A.O.J.K.]

Acute Leukemia Presenting Interesting Features.—Stewart¹ reports the case of a woman of 29, debilitated since the birth of her last child (three months prior to observation), who was admitted to the hospital with spongy, hemorrhagic gums, looseness of the teeth, fetid breath, furred tongue, an anemic appearance, a tendency to nosebleed, and leukopenia (on several examinations of the blood), whence the diagnosis of scurvy. Appropriate treatment for scurvy being ordered, but little further attention was paid her until she was well advanced into what appeared to be an attack of typhoid fever. Four weeks after admission to the hospital the leukocytes numbered 89,600 and two days later, 102,000, the large mononuclear cells predominating. A few days later death ensued. Examination of the tissues revealed the case to be an undoubted case of lymphatic leukemia of the large mononuclear type. After a discussion of the clinical and pathologic features of the case, the opinion is expressed that the leukemia was but in its incipency when the patient was admitted to the hospital; that it has a very acute onset with the gradual rise in temperature suggestive of typhoid fever; that the earlier conditions represented a blood dyscrasia allied to scurvy, upon which the very acute and fatal leukemia was subsequently engrafted. [A.O.J.K.]

The Blood-count at High Altitudes.—Campbell and Hoagland,² as the result of a series of investigations, conclude that the blood-count increases as we ascend (without exertion) at the rate of 50,000 corpuscles per cubic centimeter of blood per thousand feet. The pulse rate increases in the same ratio as the blood-count, the count rising as the pulse rises, and in like proportion falling when the pulse falls, showing that the heart seeks to overcome the changes brought about by the lessened barometric pressure. The increase is not a true multiplication of the blood corpuscles, but is due to a changed vasomotor condition in the peripheral vessels incident to diminished barometric pressure. This condition of vasomotor control of circulation and blood-count was demonstrated experimentally by showing that the count can be increased or diminished by any means that will dilate or contract the peripheral capillaries, by experiments upon rabbits, and by the return of the blood to normal upon descent from the high altitude. The dilation of the external capillaries (skin and lungs) would not account for all the increase, but with this dilation there is another effect of diminished barometric pressure—diminished arterial tension, and resulting temporary stasis in the dilated capillaries. In the course of time nature seeks to adjust an equilibrium in the economy of those who live at high altitudes. The heart becomes more forcible by the strengthening of its muscles, and the circulation becomes more equitable. Hence the gradual decline in the blood-count of those who have remained for some time at a high altitude. The want of increase in hemoglobin in proportion to the increase of blood-count in ascents is accounted for by the fact that the blood corpuscles, the carriers of the hemoglobin, are not increased at once in high altitudes. After remaining some time at a high altitude the true increase in blood corpuscles takes place, and with it the increase in hemoglobin. [A.O.J.K.]

Mastitis Complicating Typhoid Fever.—David, Patterson and Hewlett³ report a case of bilateral mastitis complicating typhoid fever. Bacteriologic examination of the pus from the left breast revealed the typhoid bacillus. [A.O.J.K.]

Uncinariosis (Ankylostomiasis) is defined by Claytor⁴ to be a chronic disease due to infection by a small thread-worm known as the *Uncinaria diodenalis* (*Ankylostoma duodenalis*) that is characterized clinically by intense anemia, dyspnea, weakness, gastrointestinal disturbances, and in advanced cases by edema of the face and extremities, and serous effusions into the cavities of the body. Reference is made to the increasing prevalence of the disease in this country, to its history, to the biologic characteristics of the parasite, to the morbid anatomy, symptoms, diagnosis and treatment of the disease. An illustrative case is reported. [A.O.J.K.]

¹ St. Paul Medical Journal, November, 1901.

² Buffalo Medical Journal, December, 1901.

³ Pediatrics, October, 15, 1901.

⁴ Lancet, December 14, 1901.

⁵ American Journal Medical Sciences, November, 1901.

¹ American Journal Medical Sciences, November, 1901.

² American Journal Medical Sciences, November, 1901.

³ American Journal Medical Sciences, December, 1901.

⁴ American Journal Medical Sciences, January, 1902.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

Anesthesia by Chloroform, Ether, or Cocain.—So long as people die under anesthesia during operation so long the subject will be of general interest, and we offer no apologies for frequent reference to it in these columns. A better example of medical conservatism can hardly be found than is shown in the choice between the two great anesthetics, chloroform and ether. For many years it must have been evident to any one looking into the matter carefully that ether is the generally safer anesthetic, but convenience, the fact that chloroform is pleasanter to take and less disagreeable in its after effects, and, above all, habit, have seemed to blind English and Continental surgeons to that more important consideration—the greater danger to human life. To be sure, the danger of general anesthesia even by chloroform is very slight, but are we justified in taking even a slight risk when human life is concerned? There has been a gradual change in favor of ether both in England and on the Continent for several years. In a number of the best-known German clinics, including those of Kocher, König and Mikulicz, ether is the usual anesthetic, and there are indications that ether will be adopted in many others. In the *Lancet*, November 16, 1901, Sir William Banks publishes some general impressions about chloroform and ether obtained from his observation of the use of these anesthetics in 34 years' surgical practice, including several thousand anesthetics. He states that though formerly he used chloroform almost exclusively, he now prefers ether. In reporting his results as anesthetist to the London Hospital, Frederic W. Hewett stated that in 1897 he administered chloroform only 677 times in 6,657 cases, or somewhat oftener than once in ten cases.

It is now usually admitted, even in Boston, that chloroform is indicated under certain conditions, but that for general use ether should be chosen. Of late years local anesthesia by means of cocain has come into competition with the general anesthetics in major operations, and some surgeons have performed a truly surprising number of operations in this way. In a most thorough paper by Mikulicz, read at the German Surgical Congress and reported in our columns, he mentions the large number of major operations recently performed in the clinic at Breslau under local anesthesia. From 1896 to 1900, 5,765 operations were performed with inhalation anesthesia as against 2,649 under local anesthesia, in the proportion of only a little over two to one. Moreover, the number of major operations performed under local anesthesia has been steadily increasing from year to year. Mikulicz's paper, which is published in full in the "*Verhandlungen der Deutschen Gesellschaft für Chirurgie*," vol. XXX, 1901, is one of the best on anesthesia which has appeared in recent years, and we venture again to call attention to some of the points which he emphasizes. He believes that at present in most cases the question should not be as to the choice between chloroform and ether but as to between a general and a local anesthetic. If a general anesthetic must be administered he favors ether, as against his practice of several years ago. He also calls attention to the use of cocain in combination with general anesthesia; for example, in abdominal operations the abdomen may be opened under infiltration anesthesia and a general anesthetic given when it becomes necessary to handle the abdominal viscera, thus shortening the time of general anesthesia materially. He calls attention to the value in many operations of what he calls "half narcosis" by ether. This method is commonly known to us as primary ether anesthesia and is not used in minor cases nearly so frequently as seems desirable. Mikulicz has used spinal anesthesia in 40 cases, but believes that the question is not yet settled in just what cases this method is advisable. This is also the opinion of Bier, who deserves the greatest credit for

the introduction of this method. Both Mikulicz and Banks emphasize the importance of a skilled anesthetist and the teaching of anesthesia methods.

The facts which seem to us of greatest importance given in these interesting papers are as to the greater possibilities of local anesthesia in cases which have been operated upon in past years under general anesthesia.

Second, the value of spinal anesthesia. Those who have had most experience feel that this method has a definite and important field of usefulness, but the more conservative seem to believe also that the method is not yet perfected or the results well understood. The experience of Legnen (*Semaine Médicale*, November 13, 1901), who has recently lost two cases on the operating table from the effects of spinal anesthesia, should lead us to hesitate about using it indiscriminately.

Third, the choice of general anesthetics; while we believe that ether is safer in most cases, chloroform has its uses, and the conservatism which leads to the use of either anesthetic in all cases is dangerous. And lastly, the importance of teaching on the subject of anesthetics, which has been so strangely neglected. Nearly every student of medicine will in time have to administer anesthesia without any one of experience to assist him. Yet for years men who have never once given general anesthetics have received their diplomas and have never had the least practical instruction as to their administration. This matter is of practical importance and is at least as valuable as much of the theoretic instruction imparted at didactic lectures.

Genital Tuberculosis, with a Report of Two Cases of Spermatocystectomy by the Suprapubic, Retrocystic, Extraperitoneal Method.—Hugh H. Young¹ reports the case of a man of 62 who had been in good general health until 10 years ago. Since then he had had a cough, with considerable expectoration. Following an attack of retention of urine two years previously, he had always had slight difficulty in urination. Six months ago he noticed a small swelling on the left side of the scrotum, which gradually increased in size. Careful examination of the urine did not reveal the presence of tubercle bacilli or other bacteria. By rectal examination the prostate and seminal vesicles were found to be enlarged. The vas deferens was also enlarged up to the inguinal canal. A transverse incision was made through the rectus muscle just above the umbilicus to secure more room and the peritoneum was separated away from the bladder beginning at the vertex and continuing down the posterior wall. The ureters had been previously catheterized to prevent injury. The vasa deferentia and seminal vesicles were isolated and were removed by cutting through the upper half of the prostate. A small tuberculous ulcer of the posterior wall of the bladder was also excised and the bladder completely closed. Gauze was packed about the bladder and a catheter was left in the urethra. The operation lasted about 2½ hours, little blood was lost and the patient's condition was very good. He continued to do well for five days, then became jaundiced, his cough was much aggravated and he gradually lost strength and died of exhaustion the eighteenth day after operation. At the necropsy nothing sufficient to account for death was found in the region of the bladder. There was an abscess of the left lung, with quite extensive pleuritic adhesions.

In a second case a negro of 30 came under observation for enlargement of the testicles. He had had gonorrhea three times, the last attack three years previously. Two years ago his left epididymis became enlarged. The swelling ruptured after three weeks and thick pus escaped. The sinus persisted and continued to discharge pus intermittently until the time of operation. Ten days previous to the time when first seen, the right testicle began to swell, and after 24 hours an abscess ruptured and a large amount of pus escaped. On examination the vasa deferentia were found much indurated and nodulated. No bacteria were found in the urine, though there was an abundance of pus. On cystoscopic examination patches of hyper-

¹ *Annals of Surgery*, November, 1901.

emia were found, but no definite ulceration. There was decided enlargement of the right seminal vesicle. The left vesicle was not as large, but was very hard. The operation was carried out in a manner similar to that in the previous case. Four weeks after the operation patient was up and about, there being only a small fistula in the suprapubic wound. Symptoms of general tuberculosis developed, however, and the patient died with extensive miliary tuberculosis five months later. Young has gone over the literature of the subject in a very thorough manner, tabulating 34 cases of this kind in which a more or less similar operation has been performed. The ultimate results have been followed for a greater or less length of time in 20 cases; there were five deaths, four recurrences of the disease, and 10 of the patients were reported well. Only eight cases were followed for over one year, and of these two died of pulmonary tuberculosis, two had perineal fistula and four were cured. Young states that a study of the literature with the ultimate results reported have somewhat changed his views upon this subject, and he is not entirely satisfied as to the advisability of attacking tuberculous vesicles. The remarkable disappearance of extensive tuberculosis of the prostate, seminal vesicles, bladder, kidney and lungs, which may follow the simple removal of foci in the testicles seems abundantly proven. Hence Young believes that operations upon the seminal vesicles and prostate should be done only after the removal of the testicular foci has failed to arrest the progress of the disease in these organs. Serious involvement of distant parts does not seem to contraindicate the operation. [M.B.T.]

Excision of a Cervical Rib.—F. Kammerer¹ reports the case of a woman of 35 who had suffered for two years from pain and weakness in her left arm. Her arm had begun to trouble her eight years previously, and she had had occasional attacks of hoarseness which were not caused by inflammation of the respiratory passages. She had feelings of pins and needles in her left hand, and gradually developed shooting pains which extended through the arm to the shoulder. Later on there was inability to fully extend the left elbow. The pains finally became so severe that the patient could not sleep at night. In the left supraclavicular region was a slight bulging. A hard tumor could be felt the size of a walnut. It was impossible to determine its osseous attachments. Pressure on the tumor caused pain radiating to the finger tips. The left extremity was decidedly atrophied. Sensation was intact, the pulse could be felt in the axillary artery, but not at the wrist. The diagnosis rested between an exostosis and a supernumerary rib. An incision was made parallel to the border of the trapezius muscle; from the center of this another incision was carried to the inner third of the clavicle. The tumor proved to be a rib taking its origin from the vertebral column and extending forward toward the sternum beneath the brachial plexus and subclavian artery. It was not difficult to expose the posterior portion of the rib, and after hooking the plexus and drawing it forward the rib was divided and removed. Gradual improvement followed the operation. The pain subsided in about 4 weeks, and after 3½ months the patient's arm was restored from a condition of complete uselessness to almost a normal condition. Kammerer discusses the literature of this subject quite thoroughly. [M.B.T.]

Rectal Transplantation.—John D. Rushmore² had brought to him a man of 39 who had suffered a severe lacerated wound of the rectum by being gored by a steer. The wound extended through the sphincter backward and forward into the perineum. Six operations were undertaken at different hospitals for the relief of the condition of incontinence which resulted and none of them had been successful. An incision was made from about ¼ inch outside the anus following the natal cleft to the sacrococcygeal articulation. The coccyx was removed and the rectum was freed from surrounding soft parts. It was then brought to the upper angle of the wound and sutured in place with silk stitches. This transplantation of the rectum and anus was unlike an artificial anus in that the rectal pouch and anus were not excised. The rectal pouch remained with the bottom 3 inches below the

transplanted anus, and the wall folded on itself formed a thick valve. Since the operation the patient's bowels have moved but once or twice during the morning and he has been relieved of his disgusting condition and enabled to resume his occupation. [M.B.T.]

Intestinal Trouble Following Appendicitis.—Lucius W. Hotchkiss¹ reports 3 cases. A man of 26 had an acute attack of perforative appendicitis, for which appendectomy was performed. Symptoms of obstruction developed 16 days after the operation. The old operation wound was opened, a thin band from the right free edge of the omentum was found to be constricting the ileum in the vicinity of the appendix and was divided. An eventful recovery followed.

In a second case a boy of 14 had an attack of acute appendicitis with fibrinopurulent peritonitis for which appendectomy was performed. Acute obstruction of the bowels developed on the ninth day after operation and median celiotomy was performed. A kink was found in the small intestine caused by adhesions which completely obliterated the lumen of the intestine. This was liberated and the wound closed. An uneventful recovery followed.

In a third case a man of 24 suffered from an attack of acute suppurative appendicitis for which appendectomy was performed. Acute obstruction resulted 2 weeks later. A median incision was made and the lower part of the ileum was found to be obstructed by a thick fibrinous band. The intestines were so distended that it was found necessary to incise into the lumen and evacuate a large amount of fluid and gas before the obstruction could be relieved. The vitality of the intestine in the region of the obstruction was evidently poor, but the patient was in a desperate condition and the tissues were too friable to permit of easy suture. Hence the wound was closed. Eight days after the second operation fecal fistula developed and after 3 weeks a third operation was undertaken, in which the small intestine was freed in the region of the fistula, several inches were resected and end-to-end anastomosis was performed. A good recovery eventually followed.

The diagnosis in these cases is not always easy, it being doubtful whether the condition is one of postoperative ileus which will yield to gastric lavage, salines and high enemas or progressive general peritonitis. In cases of doubt immediate operation by median incision rather than through the old wound is advised. Fecal vomiting should not be awaited. If the condition is recognized early and promptly relieved the results are almost uniformly good. The following measures were carried out in the operations reported and are highly commended: The free use of saline solution, whether into the subcutaneous tissue, the rectum or the veins, as a guard against extreme shock during and after the operation. Free incision of overdilated coils of intestine for the relief of pressure on the diaphragm and disturbance of respiration and circulation and to drain away large quantities of fluids and gases from the intestine. Closure of the abdominal wound without attempt to drain the peritoneum, perhaps leaving considerable saline solution to assist the intestines in their rearrangement. The postoperative treatment is of vital importance. Stomach lavage, early and repeated use of saline purgatives of concentrated solution, the persistent use of high enemas, the passage of the rectal tube for relief of gas and absolute abstention from the use of morphia are the essentials. [M.B.T.]

Foreign Bodies Accidentally Left in the Abdominal Cavity.—August Schachner² has collected reports of 155 cases of this kind, of which brief abstracts are given. Among the conclusions which he draws from a study of these cases and from his own experience are the following: He believes that foreign substances will continue to be unintentionally left in the abdominal cavity as long as surgery is practised, and that the recorded cases do not represent the true frequency of the accident. Such foreign bodies may escape through the point of least resistance, whether by the intestines or imperfectly united wounds. In other cases they remain without any special symptoms for years. In certain cases they cause symptoms which vary, depending upon the size, sterility and character of

¹ Annals of Surgery, November, 1901.

² Annals of Surgery, November, 1901.

¹ Annals of Surgery, November, 1901.

² Annals of Surgery, November, 1901.

the body. These accidents are caused usually by some emergency during the operation. They may be the result of a defective system of antiseptics or a dangerous degree of complexity. The plan of attaching tapes to pads and instruments to prevent their being left in the abdominal cavity has proved fallible. The smallest number of pads, sponges and instruments possible should be used, and account should be taken of them at the end of the operation. The surgeon can only hope to reduce these accidents by the observance of simplicity, system and watchfulness. [M.B.T.]

Intestinal Obstruction.—Joseph Preindisberger¹ reports the case of a child of six who had been suffering for six days with symptoms of intestinal obstruction. The general condition was quite bad, but an operation was undertaken and invagination in the region of the ileocecal valve was found to have occurred. The invaginated part included a portion of the cecum itself, together with the appendix. The appendix was resected after reduction of the invagination, and for a time the child did well. On the eighth day symptoms of ileus again developed and a second operation was performed. There was an extensive intussusception beginning at the ileocecal region and extending to the descending colon. The child was much collapsed at the time of operation and died 30 hours later.

In a second case a child of 15 had been suffering for five days from symptoms of intestinal obstruction. At the operation two bands of omentum were found crossing some loops of small intestine under the right lobe of the liver. The incarcerated intestine was freed, but owing to the bad condition of the child, death occurred the same evening.

In a third case a man of 65 had been suffering from symptoms of obstruction for five days. At the operation a volvulus of the sigmoid flexure was found. This was relieved and an uneventful recovery followed. [M.B.T.]

Nephrectomy, Nephrolithotomy and Lithotomy.—Jesop² discusses nephrectomy in children, and after performing this operation in 11 instances, all resulting fatally—only one living 2½ years—he condemns the operation as useless. With the same operation in adults his success has been much greater. He has removed the kidney from an adult for various causes, in 11 instances, with a mortality of 37½%. Five of these were operated upon by the transperitoneal method, four dying. In the remainder the lumbar incision was used. No kidney should be removed transperitoneally if in a septic condition. In regard to nephrolithotomy the author's views have radically changed in the past few years, *i. e.*, since he commenced to deliver the kidney through the wound, splitting it open freely if necessary to reach the stone. Resorting to this method, two serious dangers are avoided—hemorrhage and lumbar urinary fistula. The old and preeminent operation of lateral lithotomy and lithotomy has almost entirely been supplanted by litholapaxy and suprapubic lithotomy. [A.B.C.]

Strangulated hernia is discussed by Jones,³ and the most frequent causes of death given as follows: Without operation, shock; with or without operation, general peritonitis by continuity from the infected sac and hernia; general peritonitis, from leakage of feces; general peritonitis from sloughing of intestine returned by taxis or after incision; paresis without sloughing, of portion returned, resulting in ileus, septic peritonitis; general septicemia, and sometimes fatal hemorrhages into the bowel; asphyxia, in portions of the intestine at a distance from the hernia, with necrotic ulcers, also resulting in systemic infection, ileus, septic peritonitis and fatal hemorrhage; with operation, accidental injury to intestine; accidental soiling of peritoneum from infection present before operation; added shock; hemorrhage; anesthesia; intestinal obstruction from postoperative adhesions; failure of anastomosis; artificial anus and operation for closure of artificial anus. A case is reported by the author, and discussions follow by Sears and Beahan. [C.A.O.]

Nephrolithiasis.—Ransohoff⁴ calls attention to phases of diagnosis and the indications for operative treatment. The

symptoms are divided into two groups: (1) Those due to the supposed passage of the stone through the ureter; and (2) those due to processes constantly at work in the kidney because of its containing a stone—a condition of chronic nephrolithiasis. The tenderness elicited in renal colic by bimanual examination of the kidney is almost a distinguishing feature, even if an enlargement cannot be felt. Pain spontaneous in character or elicited by pressure, changes recognizable in the urine and the frequency of its expulsion, and the general symptoms indicative of progressive septic changes in the kidney before it has come to palpable enlargement, are the chief component elements in this group. There is persistent microscopic hematuria. The relative number of white cells is important, since in aseptic nephrolithiasis they are few, whereas in the tuberculous they are always numerous. Nephrolithotomy is the operation recommended by the author. The stone is removed through an incision in the substance or pelvis of the kidney, the pedicle being compressed by padded clamp, or preferably by rubber tubing held by forceps. When the kidney is enlarged and sacculated nephrotomy and drainage should be adopted. [C.A.O.]

Noma.—Blumer and MacFarlane¹ give a good review of the literature, and report 16 cases of noma, a disease characterized by rapidly developing gangrenous sloughing and frightful destruction of tissue. The 16 cases reported followed an epidemic of measles. The mouth alone was affected in 4 cases; the mouth and other parts, the ear and vulva in 3 cases; the vulva alone in 2 cases, and the vulva and other parts in 7 cases; the rectum alone in 3 cases, and the rectum and other parts in 5 cases. Five of the children with noma had also pneumonia, and all died; of the 11 children with noma and no other complications all recovered. The ages of the children ranged from 3 to 12 years. As a result of their investigations and of a review of the literature, the writers conclude that noma, while originating in all probability as a simple infection, is always in its later stages a mixed infection, and that while it is probably not always due to the same organism, it is most frequently due to a long threadlike organism of the leptothrix type, which does not grow on ordinary culture media. Krahn's assumption that it is due to mouth organisms is negated by finding similar organisms in noma of the genitalia. [A.O.J.K.]

Raynaud's Disease.—Beck² reports a case of Raynaud's disease, illustrated with photographs and radiographs that go to show that the tissue changes in this disease are not confined to the soft tissues, but also involve the bones. [A.O.J.K.]

The Clinical Value of Blood Examinations in Appendicitis.—DaCosta,³ from a study of the blood examinations in 118 cases of appendicitis, concludes that the average case of appendicitis before operation shows a loss of about 30% of hemoglobin and of more than half a million erythrocytes per cubic millimeter. Occasionally the anemia is of a grade so high that it appears to constitute in itself a serious complication and to raise a doubt as to the safety of surgical interference should the latter otherwise be indicated. Doubts on this score, however, have not been justified by the records of the cases included in this series. Moderate leukocytosis may occur both in the absence and in the presence of an abscess and its consequences. It accompanied about 35% of nonpurulent, and 90% of purulent cases. Leukocyte counts ranging between 10,000 and 15,000 or 17,000 cannot be depended upon to reflect the nature of the local lesion, since this degree of increase may be found both in mild catarrhal and in purulent cases. Counts of 20,000 or more almost invariably indicate the presence of pus, gangrene or general peritonitis, one or all. Leukocytosis may be absent both in trivial catarrhal and in fulminant cases, as well as in forms of circumscribed abscess. In operative cases thorough evacuation of the abscess is followed within a few days by a decline to normal in the number of the leukocytes, provided that the recovery of the patient is uneventful. Persistence of a leukocytosis after the third or fourth day following the operation may usually be attributed either to undrained pus pockets, to general peritonitis, or to both of these factors. [A.O.J.K.]

¹ Wiener klinische Wochenschrift, November 7, 1901.

² British Medical Journal, December 14, 1901.

³ Buffalo Medical Journal, December, 1901.

⁴ Cincinnati Lancet-Clinic, October, 12, 1901.

¹ American Journal Medical Sciences, November, 1901.

² American Journal Medical Sciences, November, 1901.

³ American Journal Medical Sciences, November, 1901.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Prolongation of Pregnancy.—Many years ago (1816) Sir Charles Clark, when giving evidence before the House of Commons, said that he had never yet seen a single instance in which the laws of nature had been changed, believing the law of nature to be that parturition should take place forty weeks after conception; but Dame Nature frequently avails herself of a feminine prerogative and becomes at times fickle and erratic. Many physiologic functions, such as dentition, puberty, or menstruation vary as to the time of occurrence. We have recently seen a case in the practice of a Philadelphia physician in which a child was born with two well-developed teeth in the lower jaw. Louis XIV, le Grand Monarque, was accredited with having the same number at his birth, and Haller has collected nineteen cases of children born with teeth. So many times Nature delights in surprising us with the curious and anomalous. Prolonged pregnancies are interesting from the medico-legal as well as the scientific standpoint. Although the normal duration of pregnancy is about 275 days from the cessation of the last menstrual period, yet reliable observers have reported instances in which the time was prolonged much beyond this. Taussig (*Amer. Jour. Obstet.*, October, 1901) has collected 61 cases of partus serotinus which are well authenticated, and he quotes from Issmer some interesting conclusions in regard to the influences which tend to prolong gestation. Issmer finds that the duration of pregnancy increases with each child until the ninth, and then there is again a decrease. The age of the mother is also an important factor, as every pregnancy up to the thirty-fifth year of the mother's life is four or five days longer than the previous one. The social condition plays a part, as it has been found by Pinard that of 1,000 pregnancies among working women, 51% were concluded before 280 days had elapsed, whereas of 1,000 women without active occupation, only 34% were delivered before 280 days. These figures show the influence of rest upon the lengthening of pregnancy. Women who have been vaginally examined are on an average confined 5.2 days sooner than those not examined. Issmer has also found that the average duration of pregnancy in 912 strong women was 278.6 days; in 288 weak ones, 276.8 days. In Taussig's patient, labor began 323 days after the beginning of her last menstruation. The longest pregnancy cited by him was reported by Puppe, the child being encephalic, and the estimated duration being 348 days. From the medico-legal standpoint, very contradictory evidence has been given by distinguished obstetricians. In the United States, authorities have generally upheld the view that gestation may be prolonged, and it has been judicially decided that it may last 317 days. The period of gestation is frequently a matter of judicial inquiry, particularly in bastardy proceedings, and in controversies among heirs affecting legitimacy; but as Baker, in a presentation of this subject from a legal standpoint has said, "The light of the courts in this matter is reflected light, and physicians must determine the matter; and if the space between the maximum and minimum periods hitherto allowed is shown to be too long or too short, the courts will readily follow the truth as it is made manifest." The civil code of France provides that 300 days shall constitute the longest period of the legitimacy of an infant; the Scottish law 300 days; and Prussian 301 days. However apocryphal some of the cases reported may be, yet it is probably true that in about 6% of pregnant women the duration of pregnancy is over 300 days; and Von Winckel's statistics show that prolongation occurs in 11% from 302 to 322 days. In view of the fact that the worst instances of dystocia occur in such cases, it is probably a good rule never to permit pregnancy to continue more than two weeks beyond the

normal limit, as the careful induction of labor will be less dangerous than a further continuance of the state of pregnancy.

Metamorphosis of the Decidual Tissue in the Peritoneum.—Chr. Stravoskiadis¹ has reached the conclusion that the metamorphic changes in the decidua originate during pregnancy, but are also to be observed after delivery; that in the second month after delivery the previously existing decidual growths become strongly vascular, edematous and even cystic in character: and in the superficial layer of the peritoneum there may be found, in circumscribed areas more or less extensive, the same changes, the tissue loosened and edematous, or thickened and hyalin, with very often a calcareous secretion. When these conditions are found, they indicate a previous pregnancy and hence may have a diagnostic value. [w.k.]

Origin of Tubal Rupture.—Otto Lindenthal² discusses at length the causes of tubal rupture, and from his investigations concludes that after the death of the fetus the Langerhans cells, the descendants of the chorion epithelium, increase by proliferation, and in a manner consume or waste the muscular wall of the tube, thus giving rise to the tubal rupture which is so often followed by fatal hemorrhage. [w.k.]

Malignant Chorionepithelioma of the Vagina.—H. Schmitz³ gives the history of a case of abortion in the seventh week of pregnancy with removal by curet of the remnants of the chorion. About two weeks afterward persistent hemorrhage led the physician to the use of tampons, when two knots or swellings were observed upon the vaginal wall. Examination showed that the hemorrhage was from these knots, and not from the uterus, which was entirely normal, as subsequent microscopic examination of scrapings proved. On the contrary, the tissue of these vaginal swellings contained the characteristic cells of chorionepithelioma, and this was evidently an instance of a primary affection of the vagina. Schmitz believes that either during pregnancy or delivery tufts of chorion were transferred to the vagina, and, becoming embedded in the tissue, developed into malignant epithelioma. The proper treatment for such a case is thorough excision of the growths at an early stage, thus effecting a permanent cure without interfering with the uterus. Cases thus treated have as yet suffered no recurrence. [w.k.]

Pregnancy Sneezing.—Karl Heil⁴ gives the history of Frau L., who soon after the beginning of pregnancy was subject to frequent and violent spasms of sneezing. After a few weeks these brought on nasal hemorrhage followed by spontaneous abortion, but without any severe hemorrhage and with undisturbed convalescence. Two months later a second pregnancy was again the cause of spasmodic fits of sneezing. Fearing a like result, Heil treated the nasal mucosa with cocaine, especially the septum. Repetition of this application diminished and finally entirely relieved the sneezing. He believes that in these cases pregnancy causes a circulatory disturbance, resulting in hyperemia of the nasal mucosa, which induces sneezing, and at length there results rupture of the nasal vessels with hemorrhage, and a consequent reaction upon the genital organs, sometimes producing abortion. [w.k.]

Créde's Preparations of Silver in Gynecology and Obstetrics.—Gustav Woyer⁵ in his experience has obtained excellent results from the use of itrol (*Argentum citricum*) and collargolum, the so-called soluble silver, in the treatment of uterine gonorrhea, suppurating urethritis, and fistula. After cleansing the vagina and cervical canal with itrol solution, sticks of itrol (itrol 2.5, ceræ albae 1.5, ol. cacao 9.0 for 30 sticks 3.4 cm. in length) are introduced into the cervix and kept in position by tampons. This treatment brought rapid cure of uterine gonorrhea and suppurating urethritis. Woyer also reports three cases of puerperal sepsis successfully treated with Créde's ointment. When other remedies had failed he resorted to this, in the first case making five applications in the space of ten hours, the rubbing upon the inner surface of the thigh, the upper arm and the thorax, continuing about half an hour each time, the parts having been previously carefully disinfected

¹ Wiener klinische Wochenschrift, October 10, 1901.² Wiener klinische Wochenschrift, October 10, 1901.³ Wiener klinische Wochenschrift, October 31, 1901.⁴ Münchener medizinische Wochenschrift, October 29, 1901.⁵ Münchener Medizinische Wochenschrift, October 15, 1901.

with warm water, soap, and alcohol. He began the use of the ointment in much doubt, and was greatly surprised at the rapid improvement, the fall in temperature, the slower pulse, and final, complete recovery of the patient. In the third case, in addition to the ointment, because of the offensive uterine discharge, capsules of argentum colloidal were introduced by means of hydrophile gauze strips into the uterine cavity and allowed to remain 48 hours. In the cases reported the improvement and recovery followed so closely and rapidly upon the use of Credé's medication that Woyer was convinced of its efficacy, and hopes to incite his colleagues to make similar experiments. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Eclectic and "Irregular" Medication. Comparative Investigation Proposed.—The *Eclectic Medical Gleaner* takes umbrage at the citation by this department of Benjamin Rush's advice to his students to learn "even of quacks and old women," and challenges us to name a drug commonly prescribed by physicians of what it terms our "school," the use of which was not originally learned from quacks, old women, aborigines, or irregular practitioners. Our archeologic knowledge is not sufficient to trace the absolute origin of the use of any special drug, and doubtless those not derived from one of the sources specified are few. It is a matter of little moment, however, that curare and nux vomica were arrow poisons of savages, or that the Peruvian Indians discovered the virtues of cinchona and coca, or that most of the indigenous medicinal plants of America have been left to the eclectic school to develop as medicaments; the matter of real moment is to collate, systematize and free from admixed error whatever knowledge of the remedial virtues of drugs or of physical procedures, or of psychic influences, may exist among any class of learned or unlearned persons anywhere, and in this work we hope to have a share.

The *Gleaner* likewise takes exception, more vigorously than elegantly, to our remark that "truthful reports of trustworthy experience" are to be found among the crude and uncritical reports of irregular practitioners. The retort that we did not refer to that journal would be easy—but only partially true. Our words, however, were not intended to be offensive—we should be sorry to give offense to any honest person, however much we may differ from his opinion. Most of the reports we find in sectarian journals are obviously crude and painfully uncritical, yet doubtless they are intended to be truthful, and we believe many of them to be trustworthy. At all events we purpose quoting from time to time some of their recommendations as to the uses of particular drugs and as to the treatment of special conditions. These quotations will have to be largely in the words of the writers, as the terms and descriptions employed are not susceptible of adequate abstracting in the language of acknowledged science. They will relate in most part to drugs not commonly used by those practitioners with whose methods we are familiar—that is to say, the so-called "regular physicians." (We dislike that word "regular" as much as our eclectic friend does, and should prefer to say simply "physicians"—i. e., those who reject the limitations of any and all sectarian designation). We are not to be considered as endorsing the views presented (for we endorse nothing cited in this column, unless we explicitly so state), but merely as considering the matter worthy of attention, and of laboratory or clinical investigation under suitable circumstances. What are the physiologic or toxic powers of any drug, or what reactions any drug may induce in the normal or diseased organism, or what dosage is necessary to produce therapeutic or toxic actions or reactions, are

matters not susceptible of affirmation or denial *a priori*. They must be determined, if at all, *a posteriori*, as the result of accurate and critical study. That small or even minute doses of certain substances may be powerful, adrenalin and hyoscin sufficiently evidence. That very large doses are sometimes needed to produce the results desired, iron and quinin may illustrate. That a drug may apparently differ qualitatively in its action when used in small doses, from that manifested when it is used in large doses, there is much evidence both bedside and laboratory. When we consider that the dose is quickly diluted by the circulating blood, the difference between $\frac{1}{10}$ grain and $\frac{1}{20}$ grain of strychnin does not seem very great, yet whoever has had occasion to give the drug hypodermically in cases of actual or threatened collapse is aware that this small difference is of importance. Consideration of the differences in chemic composition between nicotin and quinin does not obviously indicate that the former will be lethal if used in a quantity that in the case of the latter will ordinarily fail to be appreciably active. Nor is it known why even minute doses of quinin will in some persons produce all sorts of alarming symptoms, as, for instance, a case of which we have knowledge, in which less than $\frac{1}{4}$ grain has quickly induced in a child a delirious condition, accompanied with fever and scarlatiniform rash. Perhaps advancing chemistry and advancing physiology may one day give us data upon which to predict accurately the effect of drugs. This has indeed been measurably accomplished in a very few instances; but on the whole we are still dependent upon experience—for laboratory investigations are merely specialized experiences—and, in most cases, upon clinical experience chiefly. It is therefore wise to enlarge our experience in every direction, and especially to subject to the test of controlled and critical observation the actions of drugs alleged by those who have employed them to have produced definite effects upon the normal or diseased human being. The theories held by these observers as to drug actions and the guiding principles of therapy, are not material. What are to be made known if possible are the facts. For such tests to have comparative value the clinical investigations should at first be conducted so far as possible along the lines laid down by the reporters quoted, and in such doses as the latter employ. Owing to the failure of reporters to discriminate critically among various pathologic conditions, widely differing etiologically and in their morbid anatomy and morbid physiology, it may be difficult to follow the lines indicated; but this becomes a matter of individual judgment and experience. Laboratory experience, of course, follows its own laws, and its results are to be utilized in accordance with such settled principles as may apply in the given case.

We shall be glad to hear from any of our readers upon the subject.

The Heart After Articular Rheumatism.—F. Parkes Weber (Cohen's "Physiologic Therapeutics," Vol. IV.), emphasizes the fact that prolonged rest—that is, rest in bed—is of the first importance, not only during the active stages of the disease, but for a considerable period afterward. After sufficient time, however, has been allowed for this complete rest a change of climate often is advisable before the patient is allowed to resume the ordinary mode of life. During summer, a dry, sheltered locality of moderate elevation, not too hot and not too cold, will be suitable, and during winter a warm, dry climate, such as the Western Riviera or Egypt. In the United States, Lakewood, New Jersey, Hot Springs, Virginia, Santa Barbara, and Redlands, California, are types of the winter resorts available in various sections of the country. If the convalescence is very slow, and if, in spite of prolonged rest, the heart remains weak and irritable, with or without valvular complications, a course of treatment by thermal effervescent baths, such as those of Nauheim, may be recommended; the treatment should be carried out in a suitable climate, either with baths of a natural effervescent mineral water or with an

Method of Application.—The galvanic current should be used during the intermenstrual periods. Intrauterine, intravaginal, or intrarectal electrodes should be employed as the negative pole (unless the seat of the pain is the uterus, when the intrauterine pole should be positive), and the opposite pole, in the form of a clay pad, should so be placed that the painful portion of the pelvis shall be in the direct line of the circuit. A current of from 50 to 75 or 100 milliamperes should be employed for from five to ten minutes on every second day throughout the intermenstrual period. I have frequently seen

Cupric Electrolysis in Tuberculous Laryngitis.—Cupric electrolysis is applied by means of a laryngeal electrode to which a small bulb of chemically pure copper is attached. This bulb is applied directly to the diseased area under full illumination from the laryngeal mirror. In cases in which direct laryngoscopy (Kirstein's method) is practicable, a short and slightly curved electrode is used, thus facilitating the application. The larynx should first be anesthetized with a 10% solution of cocaine or eucain. The copper electrode is connected with the positive pole, the dispersing electrode being applied to the neck. The application is to be repeated every second day. From one to three milliamperes should be used for five minutes at each sitting. The advantages claimed in the application of electrolysis in the treatment of laryngeal tuberculosis may be repeated as follows: (1) There is no real destruction of the tissues, and there is no laceration of any of the surfaces, which might form a point of entrance for new pathogenic germs for reinfection, as is the case with the method of curetment, and, to a certain extent, also with the electrocautery and with simple electrolysis. The cure is effected by the healthy reaction of the tissues, in the same manner in which we often see specific lesions heal when the system is under the influence of mercurials. (2) In the cases that I have treated with this method there has been absolutely no reaction or hemorrhage following the application, a point of great importance with tuberculous patients. (3) It does not demand the high degree of manipulative skill required for curetment or for the manipulation of the electrocautery in the larynx, and is especially simple when direct laryngoscopy can be used. (4) This method is applicable in all stages of laryngeal tuberculosis.—SCHEPPEGREGILL in Jacoby's "Electrotherapy," Vol. I.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended December 27, 1901:

SMALLPOX—UNITED STATES.			Cases	Deaths
California :	San Francisco.....	Dec. 8-15.....	1	
Illinois :	Chicago.....	Dec. 14-21.....	2	
Indiana :	Evansville.....	Dec. 14-21.....	4	
Iowa :	Clinton.....	Dec. 14-21.....	2	
Louisiana :	New Orleans.....	Dec. 14-21.....	1	
	Shreveport.....	Dec. 14-31.....	5	
Massachusetts :	Boston.....	Dec. 14-21.....	41	12
	Cambridge.....	Dec. 14-21.....	3	
	Gloucester.....	Dec. 14-21.....	2	
	Lowell.....	Dec. 14-21.....	6	1
	Halden.....	Dec. 14-21.....	3	
	Somerville.....	Dec. 18-20.....	1	
Michigan :	Grand Rapids.....	Dec. 14-21.....	1	
Minnesota :	Minneapolis.....	Dec. 7-14.....	7	
Nebraska :	Omaha.....	Dec. 14-21.....	13	
New Hampshire :	Nashua.....	Dec. 14-21.....	1	
New Jersey :	Camden.....	Dec. 14-21.....	15	
	Newark.....	Dec. 14-21.....	24	12
New York :	New York.....	Dec. 14-21.....	12	1
Ohio :	Ashtabula.....	Dec. 14-21.....	1	
	Cincinnati.....	Dec. 18-20.....	11	
	Cleveland.....	Dec. 14-21.....	1	
	Massillon.....	Dec. 7-14.....	1	
Pennsylvania :	Lebanon.....	Dec. 14-21.....	7	
	Philadelphia.....	Dec. 14-21.....	76	10

South Carolina:	Greenville.....	Dec. 7-14.....	2
Tennessee:	Memphis.....	Dec. 14-21.....	2
Utah:	Salt Lake City.....	Dec. 14-21.....	2
Vermont:	Burlington.....	Sept. 28-Dec. 21.....	55
Wisconsin:	Green Bay.....	Dec. 15-22.....	7
	Milwaukee.....	Dec. 14-21.....	1

SMALLPOX—FOREIGN.

Austria:	Prague.....	Nov. 23-Dec. 7.....	7
Belgium:	Antwerp.....	Nov. 23-30.....	3
	Ghent.....	Nov. 30-Dec. 7.....	3
Canada:	Halifax.....	Dec. 7-21.....	21
	St. John.....	Dec. 7-21.....	11
	Windsor.....	Dec. 14-21.....	1
	Winnipeg.....	Dec. 7-14.....	4
Colombia:	Cartagena.....	Nov. 23-30.....	2
	Panama.....	Dec. 9-16.....	25
France:	Paris.....	Nov. 30-Dec. 7.....	1
Great Britain:	Glasgow.....	Dec. 6-13.....	4
	Liverpool.....	Nov. 3-Dec. 7.....	5
	London.....	Nov. 30-Dec. 7.....	474
India:	Calcutta.....	Nov. 16-23.....	3
	Madras.....	Nov. 15-30.....	2
Italy:	Naples.....	Nov. 23-30.....	16
Russia:	Moscow.....	Nov. 16-30.....	23
	Odessa.....	Nov. 23-Dec. 7.....	22
	St. Petersburg.....	Nov. 23-30.....	8
	Warsaw.....	Nov. 16-23.....	1
Spain:	Corunna.....	Nov. 30-Dec. 7.....	1

YELLOW FEVER.

British West Indies:	St. Lucia.....	Dec. 2-6.....	8	6
Mexico:	Vera Cruz.....	Dec. 1-14.....	29	15

CHOLERA.

Cuba:	Havana.....	Nov. 29.....	1	death from S. S. Buenos Aires.
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India:	Bombay.....	Nov. 19-26.....	4
	Calcutta.....	Nov. 16-23.....	76
	Madras.....	Nov. 15-22.....	27
Straits Settlements:	Singapore.....	Oct. 27-Nov. 2.....	3

PLAGUE—INSULAR.

Hawaiian Islands:	Honolulu.....	Dec. 5.....	1
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PLAGUE—FOREIGN.

India:	Bombay.....	Nov. 19-26.....	358
	Calcutta.....	Nov. 16-23.....	48
	Karachi.....	Nov. 10-17.....	71
	Batoun.....	Nov. 30.....	1
Russia:	Constantinople.....	Nov. 20-27.....	1
Turkey:			

Changes in the Medical Corps of the U. S. Army for the week ended December 21, 1901:

RAFFERTY, Major OGDEN, surgeon, is assigned to duty as attending surgeon and medical superintendent of the Army transport service in San Francisco, Cal., vice Major. Robert J. Gibson, surgeon, relieved.

MORRIS, Major EDWARD R., surgeon, will proceed to Angel Island, Cal., and report at the discharge camp on that island for duty as camp surgeon.

SILER, Contract Surgeon JOSEPH F., is relieved from temporary duty at the Army General Hospital, Presidio of San Francisco, Cal., and will proceed to his home, New York, for annulment of contract.

VAN DUSEN, First Lieutenant JAMES W., now at San Francisco, Cal., will proceed to Columbus Barracks for duty.

TAYLOR, Major BLAIR D., surgeon, granted leave for one month.

The following named surgeons are detailed to represent the medical department of the Army at the meeting of the Pan-American Sanitary Congress, to be held in the city of Havana, Cuba, February 15, 1902: Major William C. Gorgas, Major Jefferson R. Kean.

HOOPER, Captain VERNON J., assistant surgeon, having tendered his resignation, is honorably discharged to take effect December 31.

WAHL, Contract Surgeon HUGO A., now at San Francisco, Cal., is relieved from further duty in the division of the Philippines, and will proceed to Fort Strong for duty.

VAN DUSEN, First Lieutenant JAMES W., assistant surgeon, granted leave for one month.

ANDERSON, Captain CHARLES, assistant surgeon, leave on surgeon's certificate granted, is extended one month, October 26.

ANDERSON, Captain CHARLES, assistant surgeon, is honorably discharged to take effect February 19. He will proceed to his home.

BAKER, First Lieutenant DAVID, assistant surgeon, is relieved from further duty in the department of California, and upon the expiration of the sick leave granted him December 6, will report at Fort McPherson for duty.

DEATON, Contract Surgeon U. S. GRANT, will proceed to Columbus, O., for annulment of contract.

GRABENSTATTER, Contract Surgeon GEORGE W., will proceed from Buffalo, N. Y., to San Francisco, Cal., and report for transportation to the Philippine Islands for duty.

PORTER, Contract Surgeon ELIAS H., granted leave for two months.

Changes in the Medical Corps of the U. S. Navy, for the week ended December 28, 1901:

ORVIN, Passed Assistant Surgeon R. T., ordered to the Michigan as relief of Passed Assistant Surgeon W. B. Grove—December 23.

GROVE, W. B., passed assistant surgeon, detached from the Michigan and ordered home to wait orders.

COWAN, Pharmacist J., ordered to the Boston Navy Yard.

ROTHGANGER, Surgeon O., detached from the Naval Hospital New York, and ordered to the San Francisco, January 2—December 26.

Changes in the Medical Corps of the U. S. Marine-Hospital Service, for the week ended December 26, 1901:

GREENE, J. B., passed assistant surgeon, to proceed to Plattsburg, N. Y., for special temporary duty—December 20, 1901.

ANDERSON, J. F., assistant surgeon, granted leave of absence for 30 days from December 27, 1901—December 26, 1901.

PIERCE, C. C., assistant surgeon, granted leave of absence for 7 days from December 23, 1901—December 20, 1901.

BULLARD, J. T., acting assistant surgeon, granted leave of absence for 10 days from December 3, 1901—December 17, 1901.

DUFFY, FRANCIS, acting assistant surgeon, granted leave of absence for 3 days from December 23, 1901—December 24, 1901.

GIBSON, L. P., acting assistant surgeon, granted leave of absence for 10 days from December 3, 1901—December 17, 1901.

MCGINNIS, R. H., acting assistant surgeon, granted leave of absence for 8 days from December 24, 1901—December 17, 1901.

MCISAAC, F. C., acting assistant surgeon, granted leave of absence for 23 days from December 22, 1901—December 17, 1901.

RODMAN, J. C., acting assistant surgeon, granted leave of absence for 6 days from December 23, 1901—December 23, 1901.

KOLB, W. W., hospital steward, granted leave of absence for 26 days from January 4, 1902—December 23, 1901.

Board Convened.

Board convened to meet at Washington, D. C., December 29, 1901, for the purpose of making a physical examination of Chief Engineer W. J. Philipps of the Revenue Cutter Service. Detail for the Board: Surgeon G. T. Vaughan, Chairman; Assistant Surgeon B. S. Warren, Recorder.

AMERICAN MEDICINE

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"The United States Health Service."—A bill has been introduced in the House and in the Senate at Washington by which it is proposed to change the name of the Marine-Hospital Service to that of the United States Health Service. It has long been recognized that the present title does not adequately or correctly indicate the duties and work of the Marine-Hospital Service. It is in fact at the present time a Public Health Service. Its marine hospitals and relief stations, treating annually some 56,000 seamen, and affording the best possible opportunities for maintaining the professional excellence of the corps, would give strength, as now, to the public health service. Its enforcement of quarantine regulations, domestic, insular and in foreign ports; its management of epidemics; the medical inspection of immigrants; its publication of sanitary reports and statistics from all parts of the world, and the scientific investigations which it is continually pursuing—all are transactions distinctively in the interest of the public health. It has imposed upon it by law the enforcement of quarantine regulations and the scientific investigation of all matters relating to the public health. In reality the plan outlined in the bill only endorses an evolution which has already in large part taken place. It practically complies with the resolutions passed by the American Medical Association and by the National Conference of State Boards of Health. It provides not only a bureau, but what is more, a service whose ramifications extend even to our insular possessions and to foreign ports. It utilizes the experience and the functions acquired through 100 years of slow but steady growth of the Marine-Hospital Service. It also provides additional international measures relating to public health. These, by reason of the modern growth of commerce and telegraphic communication, will be much more important in the near future than they have ever been in the past. The interests of the United States can be better subserved under this new title and dignity.

The profession as consultant in national health concerns, was also distinctly foreshadowed in the establishment of a yellow fever institute in connection with the work of the Marine-Hospital Service, as set forth in our editorial columns, issue of October 5. The similar decision by the New York City Health Department again illustrates the crystallization of public

sentiment upon the subject and the recognition of the fact that the health of the people is one of the most profound concerns of civilization. The extension of the work of the Public Health Service as indicated by the new bills introduced in Congress, to which we have alluded, is of extreme significance in this direction. It will give an opportunity, which we doubt not will be eagerly utilized by Surgeon-General Wyman, to invite further cooperation upon the part of physicians generally. We hope these will not fail to respond, for nothing is of more importance to us as a profession, and to the health of the entire nation, than this of professional advice to those in authority and of common work with such in their labors.

In this connection we note that provision is made for bringing the laboratory now provided for by law into relations with the scientific work of the Army, the Navy, and the Department of Agriculture; also with the scientific laboratories in different parts of the country. Some association of this kind between the Departments in Washington and the laboratories conducted by the general profession has long been desired.

A section of the bill provides for the only new appointments contemplated by this bill, but they are appointments made necessary by the act of the last Congress in providing for a hygienic laboratory for the investigation of matters relating to the public health, and under the terms of this section choice may be made of men skilled in the respective branches mentioned who by reason of age beyond the limit (30 years) required for admission into the regular corps, could not be received therein. It gives to these men the privileges and protection of an established Service, without promotion or requirements other than those for which they are appointed.

The United States Health Service and State Boards of Health.—In the bill providing for a National Health Service there is provision made for what has long been desired, namely, some cooperation between the national and state authorities. This would bring the two classes of service into much closer affiliation and cooperation, and would tend to strengthen the State Boards of Health in their relations with municipal and local boards, which at present are frequently unsatisfactory. Having authority of law the Surgeon-General

would be enabled, when necessity arises, to call together, not necessarily the health authorities of all the states, but of such as may have a direct or pressing interest in the matter calling for the convention. Should necessity arise for a convocation of all, the authority is provided. With regard to the collection and publication of vital statistics, it is believed that after the adoption of uniform blanks the pride of each state health organization will prompt it to see that the necessary reports are made to insure their publication in the national health bulletins published by the Service.

The military nature of the proposed United States Health Service will greatly enhance the effectiveness of its work. Under the terms of the bill there would be no interference with the personnel of the medical department of the army, either in appointments, promotions, or functions, for under existing law no officer of the Health Service would have any right to issue any order to any medical officer of the army. This provision would thus greatly strengthen the Health Service in its work and would also provide what might prove to be very timely aid in case of threatened or actual war, the officers of the service being required in the examinations for promotions to show a proficiency in military hygiene. The commissioned medical corps, 108 in number, is nearly one-third the total number of commissioned medical officers now in the army. These officers are only appointed after as thorough an examination as that required for the army and are especially trained in sanitary work, and being located in all sections of the country and our insular possessions would be available for immediate service if required at a given point. The duties of a regular commissioned officer at a given Marine Hospital station could be temporarily supplied, as has been frequently the case in epidemics, by acting assistant surgeons appointed for temporary duty. In addition to the 108 commissioned officers, there are about 180 acting assistant surgeons, making the medical corps, in toto, very nearly 300.

International Sanitary Agreement.—The Pan-American conference now in session in Mexico City, through its Committee on International Sanitary Regulations, recommends an international quarantine, first, one of inspection or observation, and second, one of detention and disinfection. Prohibitory quarantine on new manufactured merchandise is to be abolished, other regulations reduced to a minimum, and cooperation with municipal or local authorities encouraged. The proper authorities are to be notified of the existence of the highly contagious diseases. An International Sanitary Committee is to be established, and a general convention of representatives of health and quarantine organizations is to be held every two years, the first to be called by the President of the United States, at Washington, in one year. The Executive Board of five members, our Surgeon-General of the Marine Hospital, chairman, ex officio, will maintain a permanent International Sanitary Bureau at Washington. If these plans are heartily endorsed by the conference, and by the respective governments, and if the provisions are realized in a thoroughgoing manner,

yellow fever, bubonic plague, cholera, smallpox, etc., will soon be eradicated from the American continent.

In re toxic amblyopia, a Washington correspondent has called our attention to two interesting government reports relating to an application for a pension for blindness due to bilateral optic atrophy. The facts in the case are as follows:

A private in the volunteer infantry in the late war with Spain filed, in November, 1898, a claim for pension, setting forth that while in the line of duty at Santiago de Cuba he contracted what was known as "mountain fever," which was followed by dysentery and later by pneumonia. While in bed with the pneumonia his sight began to fail, and since that time he had become totally blind. The claim was approved, subject to the elimination by the medical referee of all disability the result of alcohol.

The applicant had told several persons that about a month after his return from Cuba, while still ill, he took by mistake in label, on account of his dimmed sight, several teaspoonsful of wood alcohol which he thought was whiskey. Being mixed with considerable water and sugar it was not noticed, although the patient stated that it was immediately ejected. Sight continued to grow dimmer until the third day, when he awoke totally blind. Upon this statement the Medical Division of the Pension Bureau made an effort to establish the fact that the blindness was not the result of the malaria or heat prostration acquired in the line of duty, but was due to the ingestion of wood alcohol. With this end in view a report (No. 117, Department of the Interior, October 31, 1899) was prepared, thoroughly reviewing the medical history of the case, with an epitome of the available literature of both malarial and wood alcohol blindness, with the history of a case of the latter from the records of the Navy Department. It was concluded that the case of the applicant resembled closely those due to the ingestion of wood alcohol, and that it had few if any features in common with those due to malarial poisoning.

From this adverse action an appeal was entered, and the Committee on Pensions made a careful review of the records in the case, including the reports of the specialists employed by the government to examine the soldier, and that of an American medical authority on the subject of malarial blindness. In their report (No. 1,584, House of Representatives, Fifty-sixth Congress, first session) they gave the opinion that the adverse action upon the claim was unwarranted. Although the case was admittedly a close one and not without adverse features, still they believed that the doubts were not too great to be resolved in the claimant's favor.

A summary of the medical history of the case is: Malarial fever in July; another attack in August; another attack early in September; commencing failure of vision in the middle of September; a severe attack in the last days of September; sight lost rapidly during the early part of October; total blindness within a week; and optic atrophy well recognized in November. There were no profound cerebral or nervous symptoms such as generally accompany malarial cases with visual disturb-

ances; there were none of the other sequels common to severe malaria, and there was no reestablishment of the *partial* loss of vision under antimalarial medication, as is usual in malarial amblyopia.

Quinin neuritis is hardly a possibility in the case. Although the patient took from 18 to 27 grains of quinin a day for four consecutive weeks while in Cuba, several weeks elapsed between this period and the appearance of the eye symptoms, whereas quinin usually produces its effects immediately.

The case is of unusual interest, particularly on account of the lack of available information on cases of permanent blindness from malarial infection developing under similar circumstances and in the same manner. Another feature in connection with the case is, that of the 75,000 soldiers in Cuba and in the South, this was the only claim for pension on account of blindness from malarial fever, while it is well known that thousands of the men were profoundly affected by the disease.

The profession as consultant for Boards of Health is the proposition of Dr. Lederle, of the New York Board of Health. Eleven of the leading physicians of the city have been appointed by the new Health Commissioner—not himself a physician, moreover—to advise him and the Board. This method of eliminating “politics” from the Board and of securing the highest expert advice upon administrative and scientific matters pertaining to the public health is altogether admirable and should be imitated in every American city. The physicians thus called upon to give gratuitously of their time and labor in the public service can ill afford the sacrifice, but in no other way can the profession do such noble duty in precisely the manner of its traditions and instincts. The plan also has the inestimable advantage of bringing together the profession and the community, between whom there should be the most perfect accord and goodwill. It will in this way lessen the stupid and malevolent hatred of so many antis against us, a hatred amounting to monomania and utterly without warrant. A large number of the antis are open to conviction, and by the method described the opposition to medical men and medical science in the hordes of quacks and of the patent-medicine syndicates may be overcome. In no better way can the evils of obviabie disease and premature death be prevented. New York City is grappling heroically with its civic, social and medical problems in such a spirit as to warm the hearts and rouse the hopes of every humanitarian. If every city of the United States would do the same!

What is the Practice of Medicine?—Upon the answer of this question will depend the health of the community, and the elimination of the legal protection of quackery. We are generally coming to the conviction that it is not so much the enactment of new laws that is needed, as the proper interpretation and the enforcement of laws already upon the statute books. According to any common sense or legal interpretation of the term “medicine” the word must mean *the cure, prevention, or alleviation of disease*. We are glad to see that Judge Green, of the criminal court of Birmingham, has decided

that such a definition is valid, that the nonuse of drugs is no exception, and that osteopathy is the practice of medicine. A test-case was also recently decided in a similar way in New York City in which an “astrologer” was found guilty of practising medicine, although he gave no drugs, wrote no prescription, and did not call himself doctor. But he made a diagnosis, applied “magnetism,” and professed to cure. He was fined \$250. As many as 300 bills relating to medicine were proposed in the last New York legislature, most of them bad and foolish.

A quarter century growth and progress of the Public Health Service is illustrated by the statistics of the Marine-Hospital Service. At present nearly four times the number of patients are treated as compared with 1875. The office force in the Bureau is nine times as great; twelve times as many letters are written and received; the amount annually disbursed from all the appropriations is nearly four times as great. All the National administration and quarantine stations, including the quarantine service in Hawaii and Porto Rico, have been imposed on the service since 1875 by law, and also the medical examination of immigrants. By executive order the quarantine service in Cuba and the Philippines was assigned to this same service. The annual report for 1899, which was one of the most active years in the history of the service, shows that 650 physicians, 38 hospital stewards and 2,312 employes were under command of the Surgeon-General, and that more than 600,000 persons were under the official surveillance of the service, in its various hospitals, immigration and quarantine stations, detention camps, etc.

The Carnegie Institution is the name of the Corporation endowed by Mr. Carnegie with \$10,000,000, and organized last week at the State Department. The fund will be under the charge of a Board of Trustees. Among the six incorporators we are glad to find the name of Dr. J. S. Billings, a fact that we trust foreshadows the participation of scientific medicine in the plans of the founder. In a general way the institution is designed to promote original research in science, literature, and art. More specifically the objects are said to be:—

“To conduct, endow and assist investigation in any department of scientific literature or art, and to this end to cooperate with governments, universities, colleges, technical schools, learned societies and individuals.

“To appoint committees of experts to direct special lines of research.

“To publish and distribute documents, to conduct lectures and to hold meetings.

“To acquire and maintain a library and, in general, to do and perform all things necessary to promote the objects of the institution.”

A health victory in Chicago is chronicled in the October Report of the Department of Health by Dr. Reynolds. The average October mortality from 1881 to 1900 inclusive was 15.27, but for October, 1901, it was 12.25, or almost 20% lower than the previous 20-year average. Moreover, the decrease was due to a lessened number of deaths among those under 5 years of age.

"The rate of infantile mortality," says Arthur News-holme, "is regarded as a most reliable test of the sanitary condition of a district." The month was also that of the lowest weekly mortality ever recorded by the Bureau. During the week ended October 19 there were only 370 deaths from all causes reported—a figure which gives an annual rate of 10.95 per 1,000 of population. The lowest weekly rates during the previous five years were 11.04 for the week ended November 10, 1900, 11.28, week ended October 29, 1898; 11.72, week ended November 27, 1897; 12.12, week ended November 25, 1899, and 12.20, week ended November 7, 1896—an average of 11.67, or 6.5% higher than the rate for the week of October 19, 1901. Dr. Reynolds must be careful about such splendid results; in Buffalo the same kind of work has brought down upon another great life-saver the wrath of the politicians—a shame to the city, a crime against its citizens and an outrage upon the profession.

Public Clinical Laboratories.—A clinical laboratory has been organized in Detroit on the corporation plan, many of the physicians and public-spirited citizens taking stock in the enterprise. Its object is to make examinations of all kinds for physicians, and to give courses in laboratory technic; beside this, it offers facilities for original research. It can hardly be doubted that it will meet with success, in view of the growing necessity for laboratory examinations. There is also a clinical laboratory in Philadelphia, in which, for a consideration, examinations of specimens of various kinds are made. The rise of such institutions in different parts of the country is an index of the growth of the scientific spirit in medicine.

Another Gift for the Cause of Preventive Medicine.—The newspapers say that an endowment of \$1,000,000 has been given by Mr. and Mrs. Harold McCormick, of Chicago, to found a medical institution which will be known as the Memorial Institute for Infectious Diseases. It will be a tribute to the memory of their little son, John Rockefeller McCormick, who died of scarlet fever a year ago. At present provision has been made only for experimental work, covering a period of five years. We trust the report is true, for nothing but good can come of all endowments made with such ends in view. This instance suggests the difference between Oriental and Occidental mental habit. When affliction and death strike the Eastern mind, dominated as it is by fatalism, there is no reaction except submission. No attempt is made to prevent future tragedies, no questioning as to their necessity. Why millions of such horrors should have failed to arouse the mind from its lethargy is a psychologic enigma. But when the child of an American parent dies there quickly arises the query, How can I prevent this bitterness from occurring to other parents in future? Thus is born Preventive Medicine, the most precious thing of our civilization.

Professional Neglect of Professional Journals.—The *Gynecological and Obstetrical Journal* has discontinued publication, and in the last number its publisher

and editor, Dr. J. Duncan Emmet, tells us plainly enough why he has been forced to do so. He says 5,000 physicians have not paid their subscriptions, and over \$30,000 have been lost in this way during the last ten years. Dr. Emmet has fought a long battle for journals, professionally owned and supported, and it is with profound regret that we learn of his partial and temporary failure. That it is in truth not entirely a failure is emphasized by Dr. Emmet himself. But the lessons to every honorable member of our guild should be taken to heart and should result in immediate action:

1. Subscribe for journals owned by physicians and conducted solely for professional interests.
2. Work with your colleagues and friends to this end.
3. Pay your subscriptions promptly.

In this way only can professional unity and reform be secured.

A Remedy for the Commission Evil.—The division of fees between consultant and family physician and the auctioneering of his case by the general physician among rival surgeons and specialists, is an evil that flourishes to such a degree that it can no longer be ignored. If not stopped it will surely undermine all professional ethics and *esprit de corps* and bring us as a whole to irremediable disgrace. The remedy plainly lies in the hands of medical societies. Let them expel a member who is convicted. When the shameless transaction exists it cannot be long hidden and evidence of guilt can easily be secured. The House of Delegates of the American Medical Association at its next meeting should come to some determination upon this subject and should set the example for all smaller and less powerful organizations. A decisive command upon the part of our National Society would constitute the beginning of the end of this professional scandal.

"How to Use a Medical Library" is the title of an article by Dr. Bayard Holmes in the January number of *Medical Libraries*, and the subject is one that he has long been interested in. "We often hear the practitioner speak of his experience," says Dr. Holmes, "but it is the privilege of any medical student to utilize the experience of the whole medical profession." This is to be done by knowing how to use medical libraries. In this and other articles Dr. Holmes describes the methods of thus collating the experience of the profession. It is indeed a pity that we have not more and better medical libraries, and that so few know how to derive the greatest benefit from those we have. Knowledge thus gained has the most direct and certain influence in professional success.

The Eddyite and the Jaguar.—It has always seemed strange that to those Eddyists who have not parted with all their common sense it should not have occurred to test scientifically the validity of their faith that all disease is nonexistent or imagined. For instance, in drunkenness the intoxication and the delirium tremens should at once yield to the Eddystic incantation. Failing to see the significance of this suggestion a Chicago follower of the "mother," has tried a more strin-

gent test upon a jaguar at the "zoo," which had long been a great sufferer from rheumatism. With Mrs. Eddy's book beneath his arm a devotee attempted the animal's cure both before the cage and by absent treatment. The results are awaited with interest, but it should be remembered that cold objective facts are hard upon fine theories.

EDITORIAL ECHOES

Medical Statesmen.—Let us encourage a race of fairly-paid medical statesmen, and then medicine will shortly occupy a place in public esteem and sociologic influence that is otherwise absolutely unattainable. In South and Central America, and on the continent of Europe, physicians frequently play the highest parts in public affairs, greatly to the benefit of the nation and to the standing of the profession of medicine. The same thing can be done in the United States if physicians are willing to follow the suggestions herein outlined. We must find a proper place for the term "Medical Statesman."—[*Journal American Medical Association.*]

Smallpox in St. Pancras, London.—All the cases of smallpox under five years of age were unvaccinated, and of these 19 out of 23 died. Under ten all were unvaccinated except one, and of 42 there were 29 deaths, all among the unvaccinated. Out of a total of 81 children under 15, 57 were unvaccinated, and of these 38 died, while of 24 vaccinated children 23 recovered. The figures show that the protective influence of vaccination diminishes progressively after childhood, but at every age the unvaccinated cases show a vastly higher mortality than the vaccinated. Two deaths occurred among revaccinated persons, revaccination having been performed, in one six, and in the other seven years ago. It is a significant fact that no instance has occurred of the occurrence of smallpox among the immense numbers of those who have recently been revaccinated at a time when they may be assumed to have been free from infection. With regard to the relative severity of the attacks it is mentioned that the confluent and hemorrhagic forms occurred in 23% of the vaccinated and in 73% of the unvaccinated, and, as in all other epidemics, the measure of protection appeared to be in direct proportion to the number and area of the scars.—[*The Medical Press.*]

The Public Health and the Profession.—The medical profession, and, in fact, no profession, can attain and maintain a high position among a people unless it is founded upon great principles of service to the great mass of humanity. Selfishness and bigotry are qualities that will retard the growth of a body of men, just as it destroys the individual; while liberality, public spirit and devotion to the general good of humanity will bring hosts of loyal hearts to the support of our profession, just as similar qualities bring hosts of friends to the individual who possesses them. The first step to the exaltation of the profession is to put it behind a great movement for the bettering of the health conditions of the country. Sanitation of cities, the purification of the water supply, regulation of food matters, are great fields demanding the skilled training and the integrity of the profession. These matters are today controlled by large corporations, who buy politicians, and the people go unprotected. The medical profession is especially adapted to do this sort of work, unhampered by fears as to what politicians will do, can speak clearly and frankly, and the people will find the remedies. The American people once properly informed of the abuses to which they are subjected can be trusted not only to remedy the

evil, but they will give credit to the men who point out the evils.—[Dr. C. K. Fleming, in *Denver Medical Times.*]

The Advertising Doctor.—The medical profession cannot hope to wage successful war against the advertising quack until the public is made to understand why the charlatan advertises and why the honest physician does not. The atmosphere of mystery with which Christian scientists, magnetic healers, and the like, surround themselves, affords sufficient protection from the criticism which would be likely to have weight with their feeble-minded followers. But not so secure is the self-styled eminent universal specialist, who depends for his success upon lying, and often obscene, advertisements, the absurdity of which can be demonstrated in a way that will convince even the densest intellect. With him the sun of prosperity will have forever set when it becomes a matter of common knowledge that his object in publishing lists of symptoms (which he knows the lay mind cannot properly interpret) is to mislead the imaginative and credulous into believing themselves to be the victims of disease, and that in publishing his absurd claims to superior skill and knowledge he deliberately sacrifices both honor and self-respect for cash. Even now the majority of intelligent laymen understand that the doctor who advertises in the usual way is at once a disgusting egotist and a designing scoundrel, whose privilege to impose upon the ignorant members of society should be taken from him by due process of law.—[*Texas Medical Journal.*]

The Physiologic Basis of Pulmonary Tuberculosis.—The *Medical Press* thinks the recent researches of Drs. Robin and Binet are epoch-making. These authors find that the "respiratory ventilation," *i. e.*, the volume of respiration, is immensely increased in consumptive patients, and even in those suffering from other forms of tuberculosis than the pulmonary type. The fact that these phenomena are present in a marked degree from the very earliest stage, even in what is described as the prae-tuberculous period, invests the discovery with extreme importance from the point of view of diagnosis, because we are thus placed in possession of a means of forecasting the advent of phthisis long before any objective physical signs can possibly be detected. Nor does this exhaust the scope of the interesting discovery. It is found that three-quarters of the offspring of tuberculous parents exhibit the peculiarity, apart from tuberculous infection, and in conditions such as rheumatism, which are supposed to be antagonistic to consumption, the respiratory exchanges are uniformly below the normal. It would therefore appear highly probable that this state of exaggerated respiratory activity, *per se*, constitutes a favorable soil for tuberculous infection. This view confirms in a curious way the Hippocratic maxim that "phthisis is a consumption," since it is the slow combustion of the organism by too active respiratory changes, plus the gradual deprivation of mineral elements on the part of the tissues, that creates the special liability to infection. These new facts cannot but profoundly modify current opinions on the pathogeny of phthisis. Obviously, the bacillus does not play the predominant role, since for its successful invasion a suitable soil is indispensable. This, of course, is no new theorem; practical physicians have always recognized and acted upon the principle that treatment must be directed to the patient rather than to the disease; but the idea that we must restrain rather than stimulate hematosis is not without considerable bearing. Life in the fresh air, viewed from this point of view, is a rest; it reduces the strain on the pulmonary tissues, just as breathing an atmosphere of oxygen might be expected to do. In any case, the whole subject will have to be reconsidered in order to adjust our views to the facts now brought to light.

AMERICAN NEWS AND NOTES.

GENERAL.

Mexican Quarantine Raised.—The United States Marine-Hospital Service and the Texas State Board of Health have raised permanently the quarantine against Mexican Gulf ports.

Pasteur Treatment.—The Mexican National Board of Health reports in its last bulletin that since 1888, when the Pasteur treatment of hydrophobia was introduced there, 4,000 persons had been treated with a total mortality of only 3 per 1,000.

Military Hospitals.—Captain John S. Kulp, of the Medical Department of the Army, in discussing military hospitals, states that they differ from the civil in almost every particular of patient, administration and personnel. The commanding officer has greater authority and heavier responsibility than has the ordinary medical superintendent. Special training is consequently required in military medicine, and the efforts of the Association of Military Surgeons in this direction are to be highly commended.

Health Regulations.—The old ordinance of the Board of Health preventing the sale of unwholesome food in the cities of Washington and Georgetown will probably be revised by taking out the names of the two cities and inserting District of Columbia in their place. The attorney for the District states that the new amendment to the health regulation to prevent the use of leaky and defective sewers in the District is in accordance with the law, and therefore it will probably be adopted. This imposes a fine on any person who deposits refuse or any other matter in plumbing fixtures connecting with the public sewage system when it is known the plumbing is defective or obstructed.

Food and Nutrition.—Congress has been asked to increase their annual appropriation of \$20,000 to \$30,000 for the investigation of food and nutrition. It has been shown that the investigation has spread until it embraces the work of scientists all over the country, and that it now touches a greater number of persons than any series of experiments on a scientific subject ever before promulgated in America. The experiments have to do with the composition, digestibility and nutritive value of our common foods; also the kinds, amounts and costs of food actually bought and sold by the people of different classes. The object of the increased appropriation is to extend the investigation along certain lines; for instance, dietaries of farmers, rural and urban workers, studies as to the utilization of nutrition investigation in our public institutions, also studies in regard to the supply and consumption of food by the people of the tropics with special reference to those inhabiting our colonial possessions.

Obituary.—JAMES SNYDER MACKIE, of Newark, N. J., December 30, aged 77. He was United States commissioner to Bolivia and Chili during President Lincoln's administration and for several years was in charge of the government bureau of South American republics. SHANNON McRILL, at Victoria, Ill., December 21, aged 31; ALFRED A. SUTTON, of Jacksonville, Fla.; OSCAR D. ABBOTT, of Manchester, N. H., one of the leading physicians of the state, January 1; JOHN BELL, of Benton Harbor, the highest ranking Knight of Pythias in the world, and one of the best-known physicians in southwestern Michigan, December 30; DUNCAN McLEOD, of Detroit, Mich., December 29; Dr. SPEICHER, of Mexico, Ind., January 1, aged 41; F. M. CRONIN, of Lancaster, Wis., December 26, aged 55; GEORGE E. McNEILL, of Battle Creek, Mich., December 30, aged 55; ALAN W. READ, of Philadelphia, dentist to King Christian IX of Denmark, at Copenhagen, December 29; ELIZABETH DARBY, at Providence, R. I., January 1; ORRIN E. MINOR, of Noank, Conn., December 22; JOHN B. FELLA, of Toledo, Ohio, December 14, aged 67; GREEN R. PRICE, of Waco, Ga., December 20; HIRAM LEONARD IVES, at the Samaritan Hospital, Troy, N. Y., December 17, aged 62; LORETTA J. PETTIT BAIRD, of Rushmore, Minn., December 17; CONRAD J. CROUNSE, of Clarksville, N. Y., December 12, aged 79; ANDREW GILROY, of Jewett City, Conn., December 12, aged 38; ELIAS P. ILEFF, of Newark, N. J., December 22; WILEY ELIAS GAINES, of Mayo, Fla., December 15; EVERETT J. WHITEHEAD, of Columbus, Ohio, at Kaneth, Va., December 17, aged 42; PETER MEHRING, of Portage des Sioux, December 19, aged 59; JOHN W. RUNCIE, of Fort Branch, Ind., December 17, aged 74; ROBERT W. MURPHY, of San Francisco, Cal., December 7, aged 80; LEVI M. DIXON, of Nevada, Mo., December 11; BENJAMIN F. KIBLER, of Dayton, Va., December 8; CALER DU HADWAY, of Jerseyville, Ill., December 21, aged 68. He is said to have discovered the anesthetic properties of carbolic acid: WILLIAM E. BOWMAN, of Elkhart, Ind., December 18, aged 38; FRED JAMES PERRY, of Fort Atkinson, Wis., December 19, aged 36; NELSON E. JONES, of Circleville, Ohio, December 15, aged 80; SALMON HUDSON, of Medina, Ohio, December 11, aged 81; JAMES W. SMITH, of Wellington, Ohio, December 10, aged 80; PETER DRAVER, of Hartford City, Ind., December 20, aged 61; DANIEL McFARLANE, of Keola, Iowa, December 10, aged 60; RO-

BERT W. TATE, of Chadbourne, N. C., November 29; GEORGE W. AKARD, at Weatherford, Texas, December 19; WILLIAM S. BARRICKMAN, of Fairfield, Ill., December 17; CLINTON S. CHASE, of Detroit, December 15, aged 70; C. H. KERMOTT, of Fort Totten, N. D., December 11, aged 65; JOHN R. MCCOY, of Bloomington, Ill., December 29; J. F. McLAUGHLIN, of Chicago, December 29, aged 45; ROYAL B. PRESCOTT, of Nashua, N. H., January 2, aged 63; CHARLES J. BARNUM, one of the house physicians of the Boston City Hospital, January 2, aged 21; CHARLES HARBORDT, a native of Belleville, Ill., in Mexico; WILLIAM AUGUSTUS PIERREPONT, of New York, January 6, aged 46; D. E. DOWNEY, of Chicago, president of the Illinois Medical Association of Homeopathy, January 5.

EASTERN STATES.

Osteopathy.—A bill legalizing and regularizing osteopaths as a part of the medical profession is reported as now pending in the New York State Legislature. The main feature of the bill is that a law shall be enacted forcing the Board of Regents to grant certificates to all osteopaths who successfully pass the regular examination given to all medical students, with the exception of that in materia medica. It is stated that osteopaths are very hopeful that the bill will pass.

Tuberculosis and Insurance.—The Connecticut county health officers experience difficulty in enforcing the laws requiring undertakers to make prompt returns to local health officers of deaths from tuberculosis. The undertakers claim that the fault rests with physicians who in some instances, where industrial insurance companies have insured the life of the deceased for small amounts, fill out the death certificate with pneumonia in order to avoid complicating the insurance claim. Fearing a business loss, the undertakers do not dispute the certificate, and the physician makes the false return relying on the insurance to secure his fees.

Massachusetts General Hospital.—Building operations have been commenced on the large building for the out-patient of the Massachusetts General Hospital in Boston. When complete it will probably be the most complete building of its kind in the world. It will have three stories and a basement. On each floor will be large waiting rooms. In the basement will be located the examining room, apothecary's room, toilet and fan rooms, baths, gymnasium and orthopedic department. The first floor will be almost entirely devoted to men's medical, surgical, and genitourinary departments; there will also be an amphitheatre that will seat 180 students. On the second floor will be the women's medical and surgical and children's departments. Provision will be made for the practical use in the hospital of the x-ray in the treatment of cancer and skin diseases.

Massachusetts State Hospital.—In the report of the trustees of the State Hospital at Tewksbury, special stress is laid upon the good results obtained in the isolation hospital for tuberculosis. There were 311 patients admitted, of these in 8 cases the disease was checked, in 151 the patients improved, 48 were not improved, and 104 died. The advantage to other patients in the institution by thus isolating the tuberculous cannot be fully estimated, but greater security is felt in caring for those sick from other diseases. The enormous amount of work accomplished in the institution is shown in the report that during the year 3,360 persons were admitted. The largest number under care at any one time was 1,620, and the smallest 1,168, the weekly average being 1,346, or 96 greater than that of last year. Work has commenced on the asylum, which will accommodate 100 insane men. The J. L. Burt estate has been added to the land belonging to the institution. An appropriation is asked for the construction of a building for surgical operations, an additional building for insane women, also means for the sanitary disposal of the sewage. It is requested that a law be enacted allowing autopsies in all cases in which the knowledge thus gained would contribute to the advancement of medical science.

NEW YORK.

Somatopathist Arrested.—Julius A. Ward, D.D., who recently brought suit for the recovery of \$90 against the wife of a lawyer for treating her according to the principles of somatopathy, a system of which he declares himself the originator, lost his suit, the court judging that as he was not a physician he was not entitled to a medical fee. He has been arrested since on a warrant obtained by the counsel for the County Medical Society, charging him with violation of the law by practising medicine without being legally qualified to do so.

A Medical Advisory Board of 12 prominent New York physicians has been appointed by the Board of Health. Prof. Charles F. Chandler of Columbia University is consulting sanitarian. The other members are: Dr. Edward G. Janeway, Dr. Joseph D. Bryant, Dr. T. Mitchell Prudden, Dr. William M. Folk, Dr. A. Jacobi, Dr. John Winters Brannan, Dr. Richard H. Derby, Dr. L. Emmet Holt, Dr. Alexander Smith, Dr. Francis P. Kinnicutt, and Dr. Henry P. Loomis. The board has chosen Dr. Herman M. Biggs as medical advisor. They will all serve gratuitously.

New Marriage Law.—The common-law marriage which has been recognized as legal in New York since 1809, will hereafter be considered invalid. A new law acknowledging marriage by civil contract and practically annulling common-law marriage, became operative January 1, 1902. According to this law a marriage is legal if entered into through a written agreement signed by both persons in the presence of at least two witnesses who will certify to the same. It must be acknowledged before a notary and then be filed within six months by the county clerk. Such a contract or a certified copy will be presumptive evidence of a marriage.

Medical Bills.—During the past year there were nearly 300 medical bills introduced in the New York Legislature. One of the most important duties of the State Medical Association will be to guard against the bad or foolish bills which are sure to be introduced in future. It is stated that Assemblyman Bell's "Anti-Christian Science" bill, which was defeated in the Legislature last year, will not be revived by the organizations of the medical profession. If the decision in a test case which was recently rendered in the Court of Special Sessions can be made a precedent on which to base subsequent proceedings, it is thought that all that Assemblyman Bell's measure of last year was designed to accomplish can be effected without a new statute. The test case is entitled, "The People (on complaint of Medical Society of the County of New York) vs. Louis L. Marvin." It was heard on September 20, by Justice Holbrook, presiding, and Justices Hinsdale and Jerome, associates, William Walker, the complaining witness, testified that Marvin, who then called himself an astrologer, had given him electric treatment and charged for it. The noteworthy feature of the case was that the defendant gave no drugs, wrote no prescription, and did not use the title of "Doctor." Because he professed to cure, made a diagnosis, applied "magnetism," and charged money for it, court found him guilty of practising medicine without registration and fined him \$250.

PHILADELPHIA, PENNSYLVANIA, ETC.

Philadelphia College of Physicians.—The various officers and committees of the College of Physicians were appointed January 1, 1901. Dr. Horatio C. Wood was elected president, and Dr. Arthur V. Meigs, vice-president.

Protest Against Veterinary Hospital.—Citizens living in the vicinity of the site for the proposed veterinary hospital to be built by the University of Pennsylvania at Thirtieth and Spruce streets, have petitioned the Attorney-General for permission to use the name of the State in proceedings to restrain the establishment and maintenance of such a hospital which they claim would be a public nuisance.

Treatment for Tuberculosis.—Dr. John V. Shoemaker is the promoter of a new scheme to afford the 500 victims of pulmonary tuberculosis at the Blockley Almshouse opportunity to obtain all the benefits of fresh air and perfect ventilation. He has now under consideration plans to build eight glass pavilions. The City Council has appropriated \$80,000 for their construction, and Dr. Shoemaker has \$4,000 for their equipment with the electrical appliances necessary to establish his method for treatment of the disease. The pavilions will have steel frames, glass walls and roofs. The walls and roofs will be in sections hanging on pivots, so that they may be readily opened and closed to afford perfect ventilation.

SOUTHERN STATES.

First-aid.—The nine emergency cases for the use of the Baltimore health wardens, three of whom are detailed to each station house, have been provided. They contain lint, bandages, various drugs, stimulants, restoratives and appliances that can be used in an emergency. Many victims of accidents are taken to the station houses, and until now there has been no means by which they could receive effective medical assistance.

New Hospital.—The Tuskegee, Ala., Institute Hospital, a part of the Normal and Industrial Institute, with capacity for 40 patients and well equipped as to operating room and laboratories, was opened recently for the use of the school's sick and for special cases. This is the only hospital in the state where colored people have free access. The Nurses' Training School has a three years' course for educated colored women who desire this training.

Druggist Fined.—A druggist in Chattanooga, Tenn., has been fined \$25 for selling cocaine to hundreds of people, mostly negroes, in the town who have developed the cocaine habit. Similar conditions are said to exist in Knoxville, Nashville, Memphis and other cities of the state. The board of pharmacy is pushing a movement to stop the sale. The state now provides a heavy penalty for the selling of cocaine without a prescription from a reputable physician.

State Aid for the Insane.—At a recent meeting of the board of managers of the Springfield State Hospital of Maryland the plan was promulgated to have the state, by levying a direct tax, provide for the care and maintenance of the insane as the most effective and economic method of treating such patients. There are now 405 patients in the institution, and

new buildings are needed to accommodate the increasing number applying for admission, and to separate the female epileptics from the other insane.

WESTERN STATES.

Soldiers Poisoned.—Recently 80 soldiers of Company F, Eighteenth Infantry, which is stationed at Cheyenne, Wyo., became violently ill while eating their breakfast. Examination of the food partaken of showed that poison was contained in the beef.

Fasting as a Cure.—Total abstinence from food as a panacea for bodily ills has gained a number of adherents in California and five persons have completed fasts varying from 17 to 42 days, undertaken for gastric troubles and rheumatism, with reported cures.

Violations of the Smoke Ordinance.—In view of the fact that there has been much complaint in regard to the remittance of fines imposed on violators of the smoke ordinance, the Mayor of Chicago has decided that hereafter all fines must be paid. Although it is impossible to avoid the emission of some smoke, still it is thought that if those who have charge of furnaces are made to pay the fine for an excessive volume they will be careful for a longer time than when they are let off on the payment of costs.

Experiments in Hypnotism.—A member of a Chicago school of hypnotism has obtained the consent of the Board of Children's Guardians at Terre Haute, Ind., to make hypnotic experiments on the children in the home maintained by the board. Children who have been taken from the most depraved and vicious surroundings will be the subjects. The operator claims that by the force of suggestion he can inculcate in the children the desire for better things and gradually train their minds so that they will develop into good men and women.

Deafness in Childhood.—A thorough and systematic report, prepared for the census department of Washington by Prof. Allen E. Reed of the Institution for the Deaf in Indianapolis, shows that of the 452 pupils who have at one time or another since 1890 been under instruction at the institution, 169 are congenitally deaf, 271 are adventitious, 10 are feeble-minded and 2 dumb, but in full possession of hearing. One-third of the 452 have been taught by the speech method; the rest by the manual or sign language. The deafness of one-third of these speech-taught pupils is congenital and that of the rest adventitious, from which it is concluded that the great majority of those deaf and dumb from birth cannot be taught by means of speech.

Scarlet Fever Investigation.—The Memorial Institute for Infectious Diseases at Springfield, Ill., was incorporated January 3. This has been founded and endowed generously by Mr. and Mrs. Harold McCormick in memory of their son, John Rockefeller McCormick, who died just a year ago of scarlet fever. At present the research will be devoted exclusively to the study of scarlet fever and the work carried on in temporary quarters in Rush Medical College under the direction of Dr. Ludvig Hektoen, as it has no building of its own. It is intended later to house the institution and to extend the scope of its enquiry to the inclusion of all that its name indicates. The trustees selected are Drs. Frank Billings, Christian Fenger, Ludvig Hektoen and Mr. Charles L. Hutchinson.

Women's Medical School Closed.—The abolition of the Women's Medical School of Northwestern University has been decided upon by the trustees of the University after a consideration of two years. The school was founded 30 years ago by W. H. Byford and in 1891 was consolidated with Northwestern University. The cost of the school has been increasing for several years until the University was compelled to appropriate \$25,000 a year to cover the difference between the school's receipts and disbursements. One of the trustees, James H. Raymond, in speaking of its abolition, is reported to have said, "It is impossible to make a doctor of a woman. Women cannot grasp the chemie and pharmacologic laboratory work, the intricacies of surgery, or the minute work of dissecting. In our women's medical department we do not get as high a class of scholarship as is set by the other colleges in the university." The students in the Women's Medical School numbered over 70, among them Princess Bamba Dhuleep Singh.

CANADA.

The General Hospital, Kingston, Ont., has received a bequest of \$1,000 for its Elevation Fund by the will of the late Mrs. Nicol, wife of Prof. Nicol, of the School of Mines.

Compulsory Vaccination.—The board of health of the province of Quebec has decreed that any person who cannot show proof that he has been successfully vaccinated or has had smallpox within seven years, or unless he can establish that either he has been unsuccessfully vaccinated within six months, or that he has not been because his health would not permit, will be liable to a fine of \$5 and an extra \$1 for each day of delay in being done. A certificate of such vaccination must be furnished when required to the executive officer of municipal sanitary authority. Provision is made for free vaccination and for penalties for false certificates.

FOREIGN NEWS AND NOTES

GENERAL.

Obituary.—Dr. POHL and Dr. BERTRAM in Magdeburg, December; Dr. LAUENSTEIN, in Göttingen, December; HERMANN LÖHLEIN, of Giessen, a prominent gynecologist who first introduced pelvic measurements.

Sale of Quinin.—The sale of quinin in India is regulated by the English government. It is sold at the rate of 10 grains for one cent, or 48 cents an ounce retail. In Bengal alone 1,440,000 five-grain packets are sold annually. The government imported \$250,000 worth of quinin a year until its cultivation was introduced. There are now 4,000,000 cinchona trees in Bengal, and extensive plantations are found throughout the whole country.

GREAT BRITAIN.

Free Spectacles.—London has what is known as a spectacle mission, for those who cannot afford to buy spectacles for themselves. On certain days each month the applicants repair to the headquarters of the mission for their spectacles. It is said the mission performs its work well, testing eyes thoroughly and giving glasses of proper strength.

The smallpox epidemic in London shows no abatement and the daily average of new cases is about 40 and more than 750 cases are reported in the city. Yet London, despite the fact that it is the chosen home for the world's outcasts, keeps a lower deathrate than Birmingham, Liverpool, or Manchester. During the year, 1901, the average deathrate, in a population of over 4,500,000, was 17.4 per 1,000. The aggregate deaths were 79,601, which is 9,874 fewer than the average for the last ten years. During the first half year there were 7,438 fewer deaths than usual.

New Tuberculosis Sanitarium.—King Edward has recently received from Sir Ernest Cassel, a merchant and financier, the sum of £200,000 (about \$1,000,000) to be devoted to charitable or utilitarian purposes. His Majesty has decided to use the money for the erection of a tuberculosis sanitarium in which the open-air treatment will be adopted, and which shall be situated within easy distance of London. The institution will contain 100 beds, 12 of which will be used exclusively by wealthy patients, the rest will be for those who can only pay a small amount. There will be an expenditure of £800 of the fund in prizes for the best essays and plans for a model sanitarium. The competition will be open to medical men of all nationalities.

CONTINENTAL EUROPE.

Appeal Against Vivisection.—It is reported that a communication from Baron v. Scholz, of Berlin, former Prime Minister of Prussia and friend of Kaiser Wilhelm I, has been sent to Andrew Carnegie begging him to insure himself an enduring place in the history of humanity by heading a great international crusade against vivisection.

Substitute for Esophagus.—At a recent meeting of the Physicians' Society, of Vienna, a young physician gave a demonstration of an invention designed as a substitute for the esophagus, which obviates the disadvantages of the liquid injection device. It connects part of the esophagus with the stomach by a tube across the chest, and thus food is conveyed from the mouth to the stomach direct. The apparatus is worn under the clothes, and allows for both mastication and swallowing.

Cancer Investigation.—The Institute for Experimental Therapeutics, in Frankfort, Germany, begun in November, 1901, an investigation relating to the etiology of cancerous diseases, and considerable sums of money have been placed at the disposal of the institute by private persons. The work of the institute is so extensive that only a limited portion of its attention can be turned to this subject. It is hoped that through the investigations made here and in the Pasteur Institute in Paris, and in that of Buffalo, some definite scientific result may be attained concerning this baffling problem.

Open-air Treatment.—The report of the imperial health office of Germany shows that the success of this treatment in that country has caused the erection of a large number of establishments—60, with 5,000 beds, in the spring of 1901. In almost half the cases the patients had been sick for less than a year before applying for admission to the institution. The average duration of treatment was 92.4 days for each patient. Data as to the final results show that of each 100 patients treated 87.7% were discharged as cured or improved; 8.8% left unimproved; 3.1% were worse, and 1 of 1% died. The favorable results were in part due to a careful selection of cases suitable for treatment in the institution.

SOCIETY REPORTS

THE WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING, HELD IN CHICAGO, DECEMBER 18 AND 19, 1901.

[Concluded from page 9.]

The Use of the Gallbladder as a Suspensory Ligament for Prolapsed Liver.—The presidential address was delivered by A. F. Jonas, of Omaha, Nebraska, who said that the liver was sometimes displaced downwards to a considerable degree; that there was usually modified function and a well-defined clinical picture belonging to this change of position. He related a case diagnosed as biliary calculi in the gallbladder and movable right kidney. Cholecystotomy and nephrorrhaphy were recommended and agreed to by the patient. On entering the abdominal cavity the gallbladder was easily found, and several calculi could be felt through its walls. The displaced and movable kidney could be made out. The liver could be held in place by little effort, particularly when an ordinary amount of traction was made on the gallbladder, so the question presented, why not use the gallbladder as a suspensory ligament? Accordingly, it was sutured in the uppermost part of the wound, snugly against the costal arch, the sutures passing through the gallbladder wall, the parietal peritoneum and muscles. Before closing the peritoneal cavity an exploration was made for the movable kidney, but it had receded to its normal position, and could not be displaced. Subsequently several examinations were made. No displacement of the kidney could be made out, although she assumed several positions, straining in various ways. It was evident that the descended kidney was dependent on descent of the liver. In this case, unfortunately, it was not ascertained whether there was associated a downward displacement of the stomach and colon. The author concluded: (1) The cause of hepatoptosis consisted in a modification of one or more of its normal supports, or an increase in the size and weight of the liver; (2) it was impossible for the liver to descend without producing a descent of the hollow abdominal viscera; (3) the utilization of the gallbladder as a suspensory ligament to maintain and hold in its normal position a prolapsed liver, together with certain other abdominal organs, seemed practical.

Heart Suture.—Dr. B. Merrill Ricketts, of Cincinnati, Ohio, referred to malposition, displacement and malformation of the heart, and then detailed a series of experiments which he had conducted on animals with reference to suturing the heart. He stated that there were 27 cases of suture of the heart for wounds in human beings reported up to the present time, with recovery in 7 instances. In this work it was necessary to use a suture that was longer lived than ordinary catgut, and he had employed kangaroo-tendon in ligating the coronary arteries and fine silk sutures in the walls of the heart. The sutures should be applied in systole of the heart and not during its expansion. Certain hearts were softer than others; they broke down under the use of forceps, and forceps should not be used in this work. The indications for suturing the heart had to be worked out; but it was interesting to see how readily the chest could be opened with the right kind of forceps. He had used a kind of pruning forceps in his experimental work. He had opened the chest, reached the heart and sutured it in 40 seconds (?) and he did not think it would require much more time to do this in the human being. The aspirator should not be used for anything about the heart, because injury to the coronary arteries would often result in hemorrhage and death. The time had arrived when surgeons should no longer hesitate to open the chest for injuries of the lung and of the heart in cases of emergency.

Fracture of the Metacarpal Bones, and Oblique Fracture, Simple or Compound, of the Forearm.—Dr. W. W. Grant, of Denver, Colorado, spoke of the application of Buck's extension in the treatment of fractures of the femur to fractures of the forearm and hand, although the application was as appropriate in certain inflammatory conditions of the wrist and elbow joints. He then detailed a case in which the second and third metacarpal bones were fractured near the metacarpophalangeal articulation; the third had a second fracture near the proximal end, and the fourth metacarpal also near the wrist was fractured; the ulnar artery was severed at the wrist, and the pisiform and cuneiform bones so badly damaged that they were removed. He obtained a very good result in this case.

Total Extirpation of the Prostate Gland Through a Median Incision in the Perineum.—Dr. Alexander Hugh Ferguson, of Chicago, claimed that his results were better than he had ever secured by the suprapubic route. (1) It was the most direct route to the organ, and that the prostate could be removed without injuring any important structure; (2) the operation was easily performed. In all those cases in which the gland had been repeatedly inflamed it made it more difficult to operate, but not as difficult even then to remove the prostate from below as to do the suprapubic operation; (3) the removal of the gland piece by piece enabled the surgeon to work through a small opening and prevented the bruising of

the surrounding parts by the finger which was accompanied with the removal of the gland *en masse* through the perineum; (4) hemorrhage was avoided so long as one was careful to work within the capsule. The hemorrhage in suprapubic prostatectomy or in the combined method was often very alarming. On one occasion he had to leave pressure forceps on bloodvessels and pack the bladder tightly with gauze 24 hours. The patient narrowly escaped death from both hemorrhage and sepsis. Perineal drainage after suprapubic prostatectomy was not as complete as when the prostate was attacked from below.

Symptoms, Signs, Diagnosis, Prognosis and Palliative Treatment of Hypertrophy of the Prostate.—Lewis Schooler, of Des Moines, Iowa, said the palliative treatment was divided into (a) massage; (b) aspiration; (c) catheterization; (d) dilation, and (e) cystotomy. In considering all of the above methods, none were intended to be radical; none were calculated to remove the cause. All were intended to partially, at least, restore functional activity and to produce results sufficiently satisfactory to prevent the need of more radical procedures, and until within the last five years they were the best that the profession possessed. The dissatisfaction with them was clearly shown by the constant aim to discover something that would give better results. In a few cases they had served the purpose well, and in the future would be resorted to in very few selected cases. But the better knowledge of the anatomy of the prostate gland and its pathology called for an advance in therapeutic resources that did something more than to secure relief with a constant menace to the life of patients through infection as well as a method that did not require eternal vigilance and a knowledge of the fact that the life of the individual depended upon the mechanics of artificial urination.

The Pathology and Etiology of Prostatic Hypertrophy and Suprapubic Drainage as a Method of Treatment.—Dr. A. C. Bernays, of St. Louis, Mo., said suprapubic cystotomy was an operation which found its application in stone in the bladder, tumors and growths, hypertrophy of the prostate, foreign bodies, exploration of the bladder, and drainage of the bladder. It was a recognized and successful method of treatment in all of these conditions. The technic varied with the object in view. Some ten years ago the speaker had the notion that suprapubic drainage would cure prostatic hypertrophy. He reasoned that by the drain he could give complete physiologic and mechanic rest to the bladder, he could prevent the unrest due to alternate filling and emptying of that viscus. He had hoped that the hypertrophied prostate, under the influence of rest, would undergo absorption and atrophy, and that a decrease in size which might be permanent would take place. In this latter hope he was doomed to disappointment. In all cases of hypertrophy of the prostate in which he made free permanent drainage for from three to ten weeks the urine became normal in color, the cystitis was much improved, and in some cases entirely cured. He was convinced that as a radical cure of prostatic hypertrophy the suprapubic drainage was a failure.

Suprapubic Prostatectomy.—Dr. C. H. Mayo, of Rochester, Minn., said prostatic surgery had developed from suprapubic cystotomy. Statistics should only be considered in a general way, as representing the developing stage of prostatic surgery. One-half of the enlarged prostates could be reached either from above or below equally well, one-fourth better from above and one-fourth better from below, and a few would require a combined operation. The method of operation was influenced by the condition of the gland, and by other known and oftentimes unknown conditions. The lateral lobes were glandular and encapsulated; the middle might be glandular and encapsulated, or a muscular bar, or hypertrophy of mucous glands and bladder tissue. Of known conditions which influenced one's choice, the fleshy individual with thick perineum, long prostatic urethra, and high-lying prostate was one for suprapubic or combined operation. Those with stone present and enlarged prostate were best made from above. Of unknown conditions which influenced one's choice, he had cases of symptomatic stone not found by search and emergency operations made in the country. These were the cases in which the suprapubic incision was the most satisfactory. Those with cystitis and old or acute secondary changes in the testes would often improve after castration. There was still a large class of prostatic sufferers in whom there were no symptoms of stone, little or no cystitis, and short perineal distance in which a perineal operation was unquestionably the better method.

The Indications and Limitations for the Bottini Operation.—Dr. Louis E. Schmidt, of Chicago, after discussing at length the indications and limitations of this operation, concludes that good results of the Bottini operation will depend (1) on the correct selection of cases, (2) on the proper technic of the operation and proper after care, (3) the immediate correction of errors or mishaps.

How Shall We Treat Sepsis Following Labor and Abortion?—Dr. W. O. Henry, of Omaha, Neb., took the ground, first, that it was important to remember sometimes malarial and other fevers followed closely upon abortion and labor, and all such cases should be carefully distinguished from true puerperal sepsis; but having once fully determined that infection has really occurred along the genital tract only one line of treatment was justifiable in the present state of our knowledge. Although he admitted the different varieties of

infection, yet since it was both unsafe and impractical at the present time to wait for bacteriologic examination, and since, further, the treatment he recommended was safe, practical, curative, and within the reach of every physician, he insisted upon its universal adoption. He summarized as follows: 1. Remove early with the finger, sharp curet and flushing all debris, decidua, bloodclots and sloughing tissue which may be infected from the uterus and from all raw surfaces in the cervix, vagina and vulva. 2. Dry all of these raw surfaces and freely apply to them 95% carbolic acid, washing away the surplus acid with sterile water. 3. Unless hemorrhage requires, leave no tubes nor packing of any kind in either the vagina or uterus. 4. Have simply carbolized 2% vaginal douche used twice a day thereafter. 5. Open the bowels freely with calomel, $\frac{1}{2}$ gr. every hour for 4 hours, then follow with Rochelle salts, until sufficient action has occurred. 6. Give quinin, 3 gr. every 4 hours, followed by tincture of chlorid of iron, 15 drops, in water. 7. Give good nourishment with milk, eggs and stimulants every 4 hours. 8. Let this be the routine early treatment and hysterectomy will be rarely required. 9. When fixation of uterus occurs and infiltration takes place in Douglas cul de sac or the broad ligaments, or when the tubes or ovaries fill with pus in acute cases, open promptly and drain through the vagina. 10. If multiple abscesses occur in the uterine wall, or the walls become badly infected, or if necessary to get perfect drainage for a badly-infected pelvic cavity, remove the uterus and all else necessary by the vaginal route. The abdominal route is dangerous in all acute cases, and is seldom, if ever, justifiable.

A New Method of Anchoring the Kidney.—Byron G. Davis, of Omaha, Neb., described this method. The incision extended from the lower rib to near the crest of the ilium, a hand's breadth to the right of the spinous processes of the vertebrae. The fatty capsule was reached just anterior to the outer border of the quadratus lumborum, and was opened and a large part of it trimmed away. The kidney was pushed into place by a cylindric pad placed under the abdomen. When the kidney was well exposed, an incision was made through the proper capsule from one process below the upper pole to a point two cm. above the lower pole. This incision was placed vertically on the posterior surface near the convex border. The capsule was stripped loose from the kidney substance from a distance of three-fourths inch anteriorly and posteriorly to the incision of the capsule. From the upper and lower extremities of the vertical incision a perpendicular incision three-fourths inch long was made through the capsule, this giving two flaps of capsule three-fourths inch wide by about two and one-half inches long. Next a strip the thickness of one's little finger of the other border of the quadratus lumborum muscle was split off from the remainder of the muscle, the fibers being separated by the handle of the scalpel. This separation extended from the muscular attachment to the twelfth rib downward for two and one-half inches, or the slit in the muscle was made as long as the length of the capsular flaps before described. Next, an artery forceps was passed through the slit in the muscle, made to grasp the free border of the posterior flap of the kidney capsule and then withdrawn, bringing the flap of the kidney capsule through the slit in the muscle. The two capsular flaps were next brought together over the bundle of muscular fibers, thus isolated from the border of the quadratus lumborum, and stitched together with a running suture of fine chromic catgut, the needle being allowed to penetrate the muscular bundle at two or three places. The lumbar wound was next closed by tier sutures of catgut, the skin wound being closed with horsehair.

Intestinal Obstruction from Meckel's Diverticulum.—A. E. Halstead, of Chicago, presented the following summary of all cases in the literature that were accessible to him: Total number of cases reviewed, 72; males, 45; females, 17; sex noted in only 62; result noted in 65; deaths, 44; recoveries, 21; percentage of mortality, 67.6; percentage of recovery, 32.4; cases operated upon, 55; death in cases operated upon, 27; no operation in 17; percentages of death in cases operated, 49.0; attachment or nonattachment of diverticulum or diverticular ligament, mentioned in 66; point of attachment noted in 44; to mesentery in 21; to umbilicus in 14; not determined in 3; diverticulum attached, 47; and diverticulum free, 19.

Grave Abdominal Injuries Without External Evidences of Traumatism.—R. Harvey Reed, of Rock Springs, Wyoming, said that from reading the literature, together with his own experience, he was led to the conclusion that it was the surgeon's duty to make an exploratory incision in all cases where there was grave doubt as to the real nature of an injury, and particularly so when the constitutional symptoms pointed to a condition more serious than was indicated by either the subjective or objective symptoms, provided the physical condition of the patient was such as to warrant such an operative procedure.

Immediate Effects of Intestinal Exposure.—A. W. Abbott, of Minneapolis, Minn., from his experimental work, concluded that in operations where the intestines were exposed the loss of water was unimportant, except in so far as it influenced the loss of heat and the drying of the surface; that the loss of heat was very important, as it temporarily placed the temperature of the intestines below the safety line of vital action, and secondarily the heat of the whole body below that which should be continuously maintained; that the drying of

the peritoneum was so decided that it must disturb to some extent the anatomic relations and the resisting and recuperating power of that membrane; that the loss of heat and the drying process must suspend for an undetermined period some of the physiologic functions of the peritoneum, and influence, to a degree as yet unknown, pathologic conditions. These conclusions the modern surgeon had reached clinically, in a general way, as shown by a short incision, protection pads, a minimum exposure of the peritoneum, and short time operations. The writer believed that the exposure of the peritoneum should be the subject of a more critical study and that this should be supplemented by extended experiments on the later effects, especially in their relation to peritonitis and adhesions.

Our Hospitals.—Dr. H. D. Niles, of Salt Lake City, Utah, said it was very evident to the minds of physicians familiar with the situation that the methods and management that had served hospitals so well when their purpose was limited to the care of the sick within their walls would not suffice if the hospitals were to meet present needs and fulfill their possibilities as a great system of scientific institutions distributed throughout this country, where not only the favored few, but the whole profession, with all the sick entrusted to their care, might feel the results and participate in the benefits. So long as a hospital measured its own usefulness by the number of patients treated, the standing of each member of the staff would be estimated largely by the size of his personal following; and the commercial spirit would rule both the institution and the individual to the exclusion or great detriment of scientific work. If the profession was ever to secure a voice, it should formulate and adopt a business code that should not only meet the highest requirements of the ethics of the profession, but at the same time command the respect and win the confidence and support of the twentieth century public.

Surgery of Spina Bifida.—Van Buren Knott, of Sioux City, Iowa, discussed the varieties of spina bifida, the clinical features, diagnosis, prognosis, and treatment. After reporting four cases, he drew the following conclusions: "(1) Owing to the distressing nature of the affection, the high mortality should not prevent attempts at surgical relief; (2) meningoceles, meningomyeloceles, and syringomyeloceles may be considerably benefited by operation; (3) the improvement in function cannot with certainty be estimated before operation, and pronounced evidences of nervous disturbance are not a contraindication to excision; (4) asepsis is absolutely essential and although difficult to secure, may be maintained by exercising extreme care; (5) the plan of having the suture lines of the meninges and the overlying tissues on different planes, will in the majority of instances, prevent leakage of cerebrospinal fluid; (6) the suggestion of Pearson to prevent the escape of this fluid during a prolonged operation by stuffing the canal with gauze is valuable; (7) large bony defects may be effectually closed by muscle much easier than by osteoplastic methods; (8) it is not necessary to keep the child off its back during the healing of the wound, as is frequently advised; (9) children with hydrocephalus accompanying spina bifida should not be subjected to operation."

The following officers were elected for the ensuing year: President, Dr. James E. Moore, Minneapolis, Minn.; first vice-president, Dr. J. R. Hollowbush, Rock Island, Ill.; second vice-president, Dr. W. W. Grant, Denver, Col.; secretary-treasurer, Dr. George H. Simmons, Chicago. St. Joseph, Mo., was selected as the place for holding the next annual meeting; time, December 29 and 30, 1902.

Capital punishment by carbon oxid is advocated by Berthelot, the French chemist, who, after discussing the merits and demerits of the systems in vogue, pronounces in favor of this as used for the destruction of stray dogs. He says this is a quiet and painless death, and one that does not shock the sensibilities.

Tuberculosis Cure.—Dr. Barre, of Paris, communicates to the French Academy of Medicine his experiments with a porridge made from a flour prepared from germinated rye which he administered to 35 tuberculous patients suffering from all degrees of the disease in the Lariboisiere Hospital and Hotel Dieu. No other food nor medicine of any kind was given during the treatment, with the result that 34% of the patients have been discharged as cured, while in 54% a noteworthy improvement has taken place.

Life-Saving.—The Lincoln Park police force of Chicago, consisting of 21 men, has been drilled in the work of saving lives and instructed also as to the course to take in accidents where persons are severely injured. Telephones will be installed at intervals along the lake shore, so that alarms of accidents in the water can be reported to headquarters. A system of small life-saving stations along the north shore, within the limits of Lincoln Park will be instituted. Old police-houses now used in the park probably will be pressed into service. These will be placed $\frac{1}{2}$ of a mile apart, and medicine and appliances for caring for injured or half drowned persons will be kept within them. In winter it is proposed that a small stove be installed in each little house for warming of any person injured or otherwise disabled who is being cared for by a policeman. Each policeman will be provided with a small pocket medicine case.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

NEW VULSELLUM AND DOUBLE TENACULUM FORCEPS—AN ABDOMINAL RETRACTOR FOR OPERATIONS IN THE TRENDELENBERG POSITION.¹

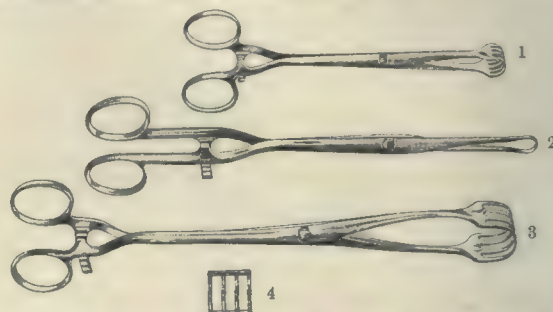
BY

FRANCIS D. DONOGHUE, M.D.,

of Boston, Mass.,

Instructor in Operative Surgery, Tufts Medical School.

In showing these vulsellum and tenaculum forceps I wish to call attention to their difference from others now in use, which are more or less unsatisfactory from their constant tendency to tear soft tissues. This tendency, caused by the tapering shape of the hooks in the old forceps, has been in a great measure overcome by a slight change. The hook portion of



1.—Seven-inch vulsellum forceps. 2.—Ten-inch tenaculum forceps. 3.—Eleven-inch vulsellum forceps. 4.—Principle of hoop.

the new forceps has been made round and of the same size from base of hook to within $\frac{1}{2}$ of an inch of point, where it is beveled on the side to meet the opposite hook. This gives a maximum amount of holding and a minimum amount of cutting surface, after the principle of a hernia needle. The vulsellum forceps are made in two sizes, an 11-inch, to be used in operations upon large uterine tumors, and a 7-inch forceps for smaller tumors or ventral fixations. The double tenaculum forceps is 10 inches long and is designed to take the place in gynecology of the old bullet forceps.

The retractors which I devised about three years ago are shown again, simply to explain how they should be used. They were designed and are only suitable for pelvic operations in which the Trendelenburg position is used. They are made in four sizes, from $2\frac{1}{2}$ to 6 inches in width. The widest retractor that the incision will permit should be used and held in the lower angle and at right angles to the long axis of the incision. Used in this way the retractor is easily held in position, either by an assistant or by a piece of bandage tied to the handle and carried over the foot of the table and tied.



Abdominal retractor for Trendelenburg position.

The advantages of these retractors are: that they do not tend to slip into or out of the incision; there is the same amount of retraction at all points, and the curve in which you work is always the same. They are not useful as an all-round retractor, and used in any other manner than the one indicated will be found unsatisfactory.

¹ Read at meeting of Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, Boston, October 23, 1901.

SILVER WIRE SMOOTHLY BRAZED TO THE BUTT OF A STEEL NEEDLE A CONVENIENT SUTURE FOR CERTAIN PLASTIC OPERATIONS.

BY

J. RILUS EASTMAN, M.D., B.Sc.,
of Indianapolis, Ind.

When silver wire is used for suturing it is usually attached to a straight or curved needle by simply bending back one end of the wire after it is passed through the eye. It may be introduced somewhat more easily by using a needle armed with a loop of silk thread, with which the wire suture is drawn into position. The free ends of the sutures are then twisted, quilled or shotted or secured by glass beads, lead buttons or pins, according to the degree of tension, and the character and location of the wound.

If thick wire be threaded indirectly through the eye and doubled back ward upon itself there will be formed at the necessarily broad butt-end of the needle an awkward lump. To jerkily draw this lump through delicate tissues, like those of the soft palate or the lip of a young infant, must in the nature of things, cause tearing and contusion which detract from the usefulness of the suture. The jerking of the lump of wire through the tissues becomes especially disagreeable after one or more sutures have been introduced and secured, the likelihood of loosening or displacing such already adjusted sutures being considerable. The entrance and erratic excursions of the loop of wire produce an unnecessarily large skin opening and stitch canal, and predispose to infection and consequent "cutting out" of the suture.

To obviate these difficulties, I have used in hare-lip, cleft palate and similar operations, a No. 24 standard gauge silver wire suture, 18 inches in length, to one end of which is attached with silver solder, after annealing of both metals, a full or half-curved steel needle. This gives a perfectly smooth joint which may be drawn through delicate tissues without adding unnecessary laceration to that produced by the needle point, and which does not catch abruptly at the skin. In most cases 18 inches of wire will suffice for a half dozen sutures, a piece of the desired length being cut from the distal end of the wire after each introduction of the needle. The needle, after the sutures have been thus cut away, may be rearmed with wire or discarded.

Some years ago there was introduced to the profession a silver wire needle with a hollow threaded butt, into which a wire suture might be screwed and fastened. This needle has not come into general use for the reasons that its butt, though beveled in both directions, is much larger in diameter than the wire which it admits, and its attachment to the wire is insecure.

Silver wire is generally recognized as a useful suture material. It is easily sterilizable. Moreover, it has been repeatedly demonstrated that metallic silver has an inhibitory effect upon the growth of bacteria. A properly prepared silver wire suture is, therefore, not simply aseptic, but more or less "antiseptic." It will hardly be disputed that the marvelous success of J. Marion Sims in his historic work in vesicovaginal fistula was due in great measure to his use of silver wire. It should be remembered that Sims' operations were made at a time when little was known of pus microbes and the means of their destruction.

Silver wire is unirritating and strong. If it is sterilized by heat, as by boiling in soda solution—with instruments—the metal becomes annealed and is thus rendered soft and pliable, and less liable to break when twisted. Silver wire may be easily shotted, and is therefore especially useful in closing wounds in mucous cavities, as the mouth, rectum and vagina, where clumsy knots like those of silkwormgut are apt to produce irritation. Such a shotted wire suture is easily removable since the shot is not apt to be obscured by the swollen tissues, and is easily seized with forceps and cut from the wire.

After the suture has been introduced and cut off to the desired length, the ends are passed each through a perforated shot. One shot is clamped and the other is "shirred," or drawn along the wire to the skin with moderate firmness, to bring the wound edges together, and then compressed. The ends of the wire suture should be cut "flush" with the surface of the shot. The malleability of silver enables the surgeon to give to the wire suture any desired bend. This is impossible with a silkwormgut suture which, wherever possible, assumes the form of a ring. This disposition of silkwormgut to shape itself, owing to its "springiness," into a ring, is not infrequently responsible for the first laceration of the tissues, which results in complete "cutting out" of the suture. In plastic operations upon the portio vaginalis uteri and perineum, in the closure of harelip and cleft palate, and in many other operations when it is desirable to leave strong sutures "in situ" for a considerable time, silver wire is adaptable. Its strength and the ease with which it may be shotted or secured with lead plates, makes it useful for tension sutures in abdominal wall sewing, in the uniting of large and gaping wounds in which much traction is required, as after amputation of the breast, in the coaptation of large muscular masses as in amputation of the thigh, in the eradication of dead spaces, suturing of the patella, and in all operations in which the approximation of the walls by means of deep through and through suturing is required. (Bryant.) When it is desired to use sutures of relaxation, there being difficulty in bringing the edges of a wound together, thick silver wire may be employed to transfer the tension from the healing margin to tissues further away, the edges being thereby relaxed and the pressure diffused over a greater area.

Silver wire is perhaps not the most suitable material for buried sutures. It is, of course, nonabsorbable, and may, therefore, lead to sinus formation. The tolerance of the tissues for silver wire is greater, however, than is commonly supposed.

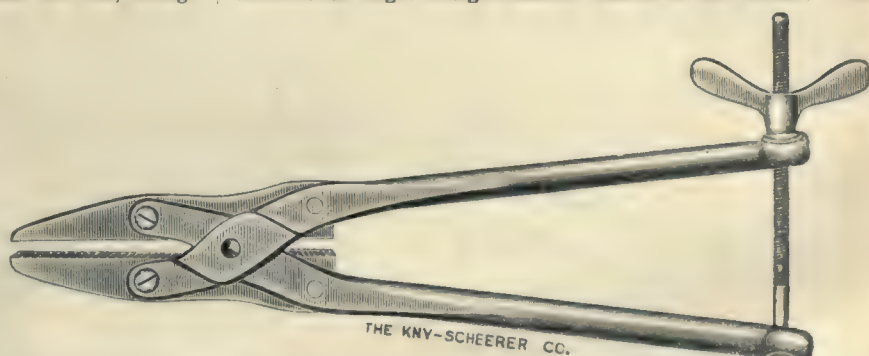
AN IMPROVED ANGIOTRIBE.

BY

CHARLES G. CHILD, JR., M.D.

of New York City.

In presenting the following instrument to the profession, it is with the hope that it may find favor with the general surgeon, as well as with the gynecologist, though more especially designed for the latter. Certainly the most rational method of accomplishing hemostasis is by sealing the end of the vessel without leaving a foreign material behind in the wound. This



we have been doing for years with the smaller vessels, when simple compression with the artery-clamp has been found sufficient to permanently control the hemorrhage, but only recently since the introduction by Tuffier, Doyen, and others of their large, powerful clamps have we adopted it in dealing with the larger vessels and with tissue *en masse*. It is by reason of several serious objections to the use of their angiotribes that I have been led to design a new instrument, and as the inventor of an instrument is seldom its perfecter, I trust they, and the profession, will accept what, in my experience has been a great improvement.

By a parallel action of the blades, an equal compression of all tissue within their grasp is secured, and there is no squeez-

ing out of partially compressed tissue at their extremity, with a tendency to secondary bleeding, as was the case with the scissors-acting jaws of the old instruments. The amount of pressure secured by the double system of leverage is $12\frac{1}{2}$ pounds at the blades for each pound applied at the handles which, by the use of the thumbscrew can be raised to 130 pounds, thereby giving an approximate force of 1,625 pounds, which has proved amply sufficient. The much lighter construction, its weight being only $1\frac{1}{2}$ pounds, as contrasted with 4 pounds for Tuffier's instrument, and $2\frac{1}{2}$ for Doyen's, and 2 for Thumin's, gives a greater compactness that very much facilitates working in small cavities, making it particularly valuable for vaginal and rectal work in which the high application of ligatures is oftentimes attended with great difficulty.

"A NEW OBSTETRIC INSTRUMENT."

To the Editor of AMERICAN MEDICINE:—Not to weary you with comments on "a new obstetric instrument" I ask your indulgence for a few words in reply to the cheap "saw" recommended by Dr. George A. Coble in your issue of December 7. The doctor advises the cutting in the finger nail of the index finger two or three notches, thereby forming a saw, two or three strokes of which on the distended amniotic membrane will cause a rupture.

With all due respect to that renowned teacher, Professor Parvin, to whom credit for this "instrument" is given, I can not agree that it is at all practicable. In the first place a finger nail allowed to grow long enough to accommodate this notching can not be rendered clean. All abdominal surgeons and obstetricians will testify that the most difficult part of the hand to get surgically clean is the finger nail and the subungual space, and by cutting the nails short this can be accomplished much more readily. If an obstetrician sees many cases and can accomplish the satisfactory cleansing of the nail upon which this saw is cut he might use it, but if his cases are two or three days apart his nail will certainly break, the notches of his saw will catch upon the clothes and prove very inconvenient, in desperation he will cut the nail short, and unless he provides himself with a knitting needle, his next case of resisting membranes will occur before he has had a chance to grow another saw. We still believe the knitting needle the best device suggested for this purpose.

HENRY ENOS TULEY.

BLEEDING IN ECLAMPSIA.

BY

J. Y. DALE M.D.,

of Lemont, Pa.

To the Editor of AMERICAN MEDICINE:—On November 9 I was called to see a robust young married woman who was in the sixth month of her first pregnancy. At 1 o'clock p. m., half an hour before my visit, she had a convulsion. I found her lying on a sofa; pulse full and regular, not excited; complained of agonizing pain in her head, and said she had been dizzy with headache for a day or two; had vomited after the convulsion; bowels moved freely twice during the forenoon; extremities and face were slightly edematous. I gave her a large dose of chloral and potassium bromid, and had her put to bed. The second convulsion occurred at 2 p. m., after which she was given a hypodermic injection of morphia, $\frac{1}{2}$ grain, with atropia $\frac{1}{16}$ grain, and the chloral and bromid mixture was repeated. Her legs and arms were very cold and numb; used friction and applied warmth to them, with cold to her head. She had a third convulsion at 3 p. m. After that chloroform was administered by inhalation; several times the tendons of her wrists became tense, but by increasing the chloroform they promptly relaxed. My neighbor, Dr. T. S. Christ was sent for, and arrived at 4.45 p. m. I proposed venesection, to which he agreed. While we were discussing the case the chloroform was omitted, and in a few minutes the fourth convulsion came on, which, like the others, was typical and very severe. So soon as the patient was sufficiently quiet I bled her from the left arm to the extent of about a pint. At first the blood flowed sluggishly, and was very dark in color, and after standing an hour the entire quantity was firmly clotted, with no serum. There was no return of the convulsions after the bleeding; the head became cooler, with lessened pain; and the extremities gradually grew warm. An examination of

the first sample of urine that could be obtained showed it to be highly albuminous. A mercurial purgative was given in the evening; and by the use of diuretics, with a restricted diet, convalescence was rapid.

On November 19, labor set in, and the patient was delivered of a still-born male fetus, which had evidently been dead for a number of days, as the cranial bones were loose in the scalp; the tissues were macerated; the epidermis of the legs and arms was off in patches, and the umbilical cord was black.

The day before her attack of convulsions, while sweeping a porch, she suddenly became unconscious and fell off the porch to the ground, a distance of three feet, subsequent to which time she had felt no motion, and she attributed the death of her infant to probable injuries sustained by this fall.

A PLEA FOR THE MORE GENERAL USE OF THE ACTIVE PRINCIPLES OF VEGETABLE DRUGS.

BY

GEORGE E. BLACKHAN, M.D.,

of Dunkirk, N. Y.

In the early stages of its development the science of medicine, like all other sciences, had to depend upon vague and inaccurate knowledge. The early physician described fever as essentially increased bodily temperature, the "calor preternaturalis" of Galen, without attempting to indicate the degree more accurately than by such vague expressions as "high" or "low." The physician of today accurately observes the exact temperature of the tenth part of a degree. The older physicians recognized the importance of the pulse, and by means of the trained sense of touch noted its rapidity and strove to recognize its peculiarities. Today the sphygmograph records with mechanic accuracy every variation of pulsation and gives us information of which our predecessors were necessarily ignorant.

We are no longer content with simple microscopic examinations of the sputum, the urine, the blood, etc., but the microscope, the test tube, the culture plate and the chemic balance are all valuable aids in examining every secretion, excretion, solid and fluid of the body to obtain exact and accurate information so that our diagnosis may be founded upon data of precision.

Anatomy, physiology, pathology and diagnosis, all rest upon firm foundations, ascertained by accurate observations. Therapeutics alone lag behind in the old ruts of inaccuracy and guess-work. To illustrate, if we prescribe a given quantity of some standard tincture, say tinct. Opil, we do not prescribe a drug of definite strength and properties, of well-defined and certain physiologic power, but merely a given quantity of alcohol holding in solution variable quantities of a large number of basic, acid and neutral substances of widely different and often antagonistic properties. Prof. Bartholow, in his *Materia Medica*, says: "The proportion of morphin in Turkey opium should not be less than 10%, and, in good specimens, may reach 15%. Pseudomorphin occurs in the minute quantity of .02. The proportion of codein varies from .2% to .8%. Thebain and papaverin exist in Turkey opium in about the proportion of 1%. Narcotin is found in considerable quantities in different varieties of opium, and ranges in amount from 1.5% to 10%." It might reasonably be expected that the therapeutic results would differ with the composition of the tincture used, but it hardly seems scientific to administer solutions differing so widely, though bearing the same name, and expect from them uniform results. But how are we to know whether the sample of Tincture Opir which the patient is taking is made from opium containing say 1.5% or 10% of narcotin?

Again, let us consider pilocarpin. The crude drug contains two alkaloids, pilocarpin and jaborin, which are mutually antagonistic. Bartholow says: "Jaborin, in its effect on the heart, lungs, pupils and salivary glands, is identical with atropin. In the whole range of physiologic antagonism there is none more complete than that existing between atropin and pilocarpin. * * *

¹ Read at the annual meeting of the Dunkirk and Fredonia Medical Society, Hotel Columbia, Fredonia, N. Y., December 13, 1899.

tion and the sweat-glands is so completely antagonized by laborin, it is in a high degree important, in prescribing the former, to secure a specimen free from the latter."

One might go through the pharmacopeia and show that many of the standard tinctures and fluid extracts are not standard at all, but, even when made with the greatest skill and most scrupulous honesty in exact conformity to the official processes, are but varying and uncertain mixtures of more or less antagonistic drugs, whose action in any given case no one can predict with any certainty. It is true that an attempt to remedy this state of affairs has been made in the so-called standardization of tinctures, etc., whereby the proportion of the chief active principle (as the morphia in Tinct. Opii) is determined and brought to a standard value. This is good, so far as it goes, but it does not take into account the varying proportions of other active principles contained in the crude drug which may be either antagonists or synergists of the one for which the tincture is standardized, or may have other and totally different physiologic effects, and may increase, diminish or modify its effects accordingly. It would seem that the exhibition of such uncertain compounds is closely akin to the famous method of determining the edibility of fungi, viz., "Gather, cook and eat them. If you live they were mushrooms, if you die they were toadstools."

Precision in using drugs is impossible, and perhaps it is no great wonder that there has grown up among the profession a tendency to therapeutic nihilism, having no faith in the efficacy of drugs, but regarding the whole duty of the doctor as done, when with the aid of the thermometer, microscope, test-tube, culture-plate, etc., he has made a scientifically accurate diagnosis one day and verified it at the necropsy a few days later. In order to counteract this tendency it is essential that what has been done and is being done along this line should be accepted and utilized more generally by the profession at large. Modern chemistry has demonstrated that as the physiologic and therapeutic properties of tinctures and fluid extracts are dependent upon the active principles contained in them, it is possible to isolate these and then use them in their pure state either singly or in such combination as we may choose, thus obtaining remedies of definite strength and uniform action, the effects of which may be fairly predicted.

Many practitioners, however, hesitate to avail themselves of such precision because such drugs are powerful poisons and therefore dangerous. The practitioner who does not hesitate to give an uncertain quantity of aconitin in the form of Tinct. Acont. Rad., dreads to give the chemically pure drug in definite quantity, because Prof. H. C. Wood, in his "Materia Medica, Therapeutics and Toxicology," has given his *ipse dixit* thus:

"On account of its intense activity aconitia should not be given internally."

Few of even the most conservative physicians would care to go back to the administration of "Jesuit's Bark" when a few grains of its active principle "Quinia," or one of its salts would accomplish the same purpose more certainly and more agreeably, or do they depend upon crude opium as an analgesic when one of the salts of morphia is available. Why, then, should we hesitate to replace the crude drugs, tinctures, and fluid extracts of the pharmacopeia with the isolated active principles, or their salts, as fast as these are obtainable? If the crude drug contains more than one such active principle then it is all the more important that each should be isolated, its properties and doses ascertained, and that it be used when indicated rather than to depend upon the chance of getting its proper effects when given in conjunction with the other constituents of the crude drug from which it is obtained.

I would summarize the advantages of the active principles, or their salts, as remedies are as follows:

1. *Precision.* Being definite chemie compounds, their composition must always be the same and their action uniform.

2. *Portability.* Being active principles, stripped of gum, coloring matter and other extraneous matters, the dose is necessarily comparatively small, and a larger number of doses can be carried in the same space.

3. *Safety.* This is a result of their definite composition and uniform strength.

4. *Effectiveness.* The smaller dose is more readily absorbed, and therefore more quickly and certainly effective.

5. *Palatability.* This is perhaps a point of minor importance, yet not to be disregarded. On account of the smallness of the dose it can be effectually concealed in a tiny granule which can be readily swallowed by the most fastidious.

ECLAMPSIA TERMINATING IN PUERPERAL MANIA.

BY

J. W. WARD, A.M., M.D.,

of Oil City, Pa.

President Oil City Academy of Medicine.

Mrs. A. M. W., aged 30, a multipara, 7½ months pregnant, had a convulsion about 10 o'clock a. m. July 28. Dr. G. W. Magee was called and gave her calomel 2 gr. and a hypodermic of morphia sulf. ½ gr. with directions that she be given a tablespoonful of saturated solution of epsom salts every hour. Then being compelled to leave town for the day he asked me to take charge of her. At 3 o'clock p. m. she had another more severe convulsion in which she bit her tongue badly. When I saw her a few minutes afterward she was in a state of coma, pulse 130, full and bounding; pupils slightly contracted; skin dry and hot. She had mustard plasters on her feet and calves. There were no audible fetal heart sounds; cervix dilated far enough to admit three fingers. She had not retained any of the salts; had been semidelirious all day and had complained of a distressing headache before the convulsion. Her bowels had not moved, nor had she urinated for 12 hours. An ounce of saturated epsom salts solution was administered at once, and by catheter a half pint of porter-colored urine was drawn. It was normal in reaction, sp. gr. 1.030; and on boiling it turned into a lardlike substance. Afterward on examination with Fehling's solution it turned in succession violet, red, and purple. While examining the urine and while the priests were observing the religious rites of the dying at her bedside, she had another convulsion beginning with twitching in the muscles of her eyes, followed by awful spasmodic movements of the face and then of the body. I immediately pushed her tongue back into her mouth with my fingers and held a handkerchief saturated with chloroform to her nose. So soon as the convulsion terminated, half a dram of fluid extract of veratrum viride was given hypodermically followed by an enema of a half a pint of saturated solution of epsom salts containing two ounces of glycerin and two drams of turpentine. An attendant held the nates together while a tub of hot water and blankets were prepared for a hot pack. About 20 minutes after the hypodermic of veratrum, a great elimination occurred. She now suddenly began to speak French, her native tongue, and to try to get out of bed. Then she sung, swore, yelled, and struggled in acute mania requiring the combined efforts of her husband, the priest and myself to keep her in bed. During the struggle she began a violent vomiting and purging and the bag of water burst. Her pulse dropped to 50, and she now began to perspire freely in the double blankets in which we wrapped her to restrain her maniacal struggles; the vomiting, perspiring, and purging continued constantly for three hours until about 7 o'clock, when I left for supper; returning about 8.30 and finding her still semidelirious and very nervous. I gave her ½ grain hyoscin hydrobromate which controlled her so that by morning she was quiet and rational.

About noon a 7 months' female fetus was born, slightly macerated, evidently dead for a couple of days. The patient's convalescence was uncomplicated. Her sister was at the time confined in an insane asylum in which her mother had previously died.

VACCINATION SHIELD.

BY

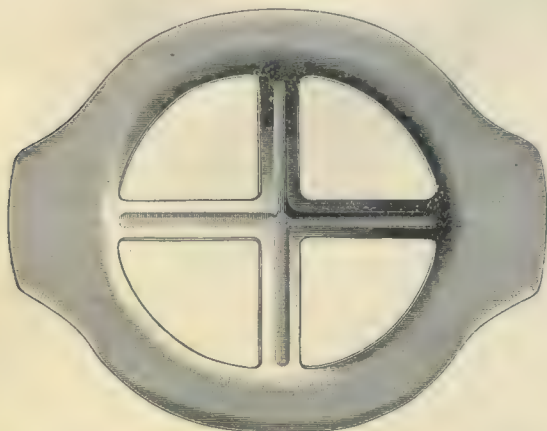
C. P. FRANKLIN, M.D.,

of Philadelphia.

After repeated and increasing trouble with irritated, inflamed, and infected arms, due to the existing forms of vaccination shield, the idea of what a vaccination shield should be has, during the course of the last 10,000 vaccinations, been gradually evolved, until the form described below and shown in the woodcut has been reached. I feel that this shield will meet all the conditions imposed upon such an important accessory to a perfect vaccination. A shield may be a source of comfort, protection, and satisfaction, but if not suitable it may be productive of distress, irritation, and even infection. The objections urged against the present forms in use have been obviated in that described below.

The shield is made of aluminum, six centimeters in diam-

eter to the outer edge of its flange, which latter is curved so that it presents no sharp edges, but a broad, smooth surface to the arm, and is extended at each end into a tab or projection by which it is fastened to the arm with short, narrow strips of plaster. The central part, or dome, is $4\frac{1}{2}$ centimeters in diameter, and raised above its base one centimeter, being composed of two ribs, crossing at right angles, each rib being strength-



ened by a beading or groove, so that it will stand any amount of ordinary pressure.

The advantages of this shield are lightness, durability, adaptability; being of annealed metal, it can be readily curved to fit the contour of the part vaccinated; cleanliness, as it can be washed and sterilized as often as necessary; nonirritating, for, owing to its large openings and air spaces, it does not confine the wound, and is accessible for inspection without disturbing it.

OBSTRUCTION OF THE PYLORUS CAUSED BY ADHESION TO THE LIVER.

BY

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of Pittsburg, Pa.

Mr. R., aged 56, had been complaining for four months of quite severe pains in the epigastric region and vomiting of food. He had lost 30 pounds in weight, was too weak to leave his bed, and required an opiate to relieve his pain. The liver was contracted, the absolute dulness being two inches in the nipple line, and pressure over the epigastrium gave a feeling of resistance. The patient would neither consent to have his stomach contents taken for examination, nor would he submit to an exploratory incision, and died in about two months after I first saw him.

The necropsy showed that beside the cirrhosis of the liver the pylorus was firmly adherent to the edge of the left lobe of the liver. There was no thickening of the pylorus, and no evidence either of ulcer or carcinoma. The adhesion of the pylorus to the liver must have been the cause of his pain, as well as of his death by starvation, for no other pathologic condition could be found to account for either.

"CHANCRE OF THE TONSIL."

BY

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of San Francisco, Cal.

To the Editor of AMERICAN MEDICINE:—I was interested in Dr. Rhodes' article, "Chancre of the Tonsil," published in your issue of December 14. The report of a typical case occurring in my practice about 12 years ago, may be of interest for statistical purposes:

Mr. X. was given a supper by a few male friends. Under the stimulus of champagne a late adjournment was had to a nearby house of easy virtue. Mr. X. accompanied the others, but declined to indulge in sexual intercourse. About five weeks

later a very painful condition of the throat developed. Being summoned to attend him, I found the left tonsil swollen, hard and much injected with a deep ragged ulcer at its most prominent part. The glands at the angle of the jaw were indurated and tender. I began local treatment with iodized phenol and astringent sprays. Improvement was discouragingly slow, and I was much puzzled until about the fifteenth day, when I discovered a suspicious-looking reddish spot on the forehead. Stripping the patient, I found a well-marked syphilitic rash, but no sign of a local sore about the genitals. As soon as I informed the patient of the character of his illness he promptly acknowledged an episode which would account for the condition. The dermal symptoms proved to be very severe and obstinate, several large papules breaking down into deep ulcers. Falling of the hair was excessive. The chancre was weeks in healing, notwithstanding active mercurial treatment. Every form of syphiloderm was present at some time in the case, and the skin cleared only after about eight months' assiduous treatment. The patient was aged about 50 years, was an excessive smoker, and indulged in alcoholic drinks somewhat freely. He has begotten two healthy children since his recovery, and is now a vigorous man.

TRIONAL FATALITIES.

To the Editor of AMERICAN MEDICINE:—A few days ago an article came to my attention which appeared in the issue of your valued journal for November 9. This article, which I do not believe does justice either to your journal or to ourselves, is by Dr. Archibald Church, of Chicago, and is entitled "Trional Fatalities." The very heading would lead one to believe that trional was a very poisonous drug, but, as a matter of fact, what the author calls an appalling array of cases of poisoning resolves itself into less than a dozen reported cases. When you consider that trional is one of the most popular remedies at the present time, and has been employed, I may say without exaggeration, in hundreds of thousands of cases, I think that this small number of fatalities would rather argue against the author's contention that trional is a poisonous drug. Besides, it is necessary to bear in mind that in many of these instances the drug was employed recklessly and not according to the directions which have been laid down by authorities. It has always been explicitly stated in such literature as has been published by the manufacturers that trional should not be given continuously for long periods, but that its administration should be interrupted for a number of days, or alternated with other hypnotics. Furthermore, that during its continued use alkalies should be given systematically. If these directions are disregarded, I think it only just to attribute any accidents that may arise not to the drug but to its careless use.

The case reported by Dr. Church is an argument in favor of the truth of these statements. His patient took trional, in doses of 10 to 30 grains, continuously from November, 1900, up to a short time before his death, in April, 1901. This clearly shows that the patient was perfectly ignorant of the right method of the administration of the drug. Later I find it stated that the patient took large doses of bromin, so that he became affected with bromism, but this condition is entirely ignored in determining the cause of death, the entire blame being placed upon trional, which, it must be remembered, was discontinued over a week before death occurred. The only sign of supposed trional poisoning was the appearance of hematuria, and it is distinctly stated that this disappeared 48 hours after the withdrawal of the drug. This in itself would show that it could not have inflicted any severe damage. An unbiased study of the case clearly reveals that the patient was a confirmed invalid, presenting cardiac and pulmonary lesions; a man whose nervous system had been completely exhausted by mental overwork. To attribute his death to trional poisoning appears to us utterly illogic, since with equal justice it may be pointed out that he was suffering from the depressing effects of the bromids.

While we recognize that an editor is not responsible for the views of his contributors, at the same time the article by Dr. Church is one based upon false reasoning, and should not be allowed to discredit a drug which, because of its irrational employment in his case, is condemned by him as poisonous.

H. SCHWEITZER, M.D.

ORIGINAL ARTICLES

THE OPERATIVE CURE OF PROCIDENTIA UTERI.¹

BY

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In order to avoid confusion, before discussing the operative treatment of procidentia uteri, the definition of this condition and its etiology should be given. The older authors classify it as being of the first, second or third degree. The first degree includes cases in which the uterus occupies a slightly lower position in the pelvis than normal. The second degree includes cases in which the cervix uteri approaches the introitus vulvæ. In these cases usually the uterus is retroverted. The third degree includes cases in which the cervix has escaped from the vulva, and in which the vagina is more or less completely inverted. From the standpoint of etiology and from that of treatment, procidentia of the first degree is essentially different from procidentia of the second and third degrees. It is better to classify such cases as descensus uteri. In this paper all references to this class of cases will be omitted.

From the standpoint of etiology, all causes which lessen the supporting power of the pelvic floor, which increase the weight of the uterus, or which increase intraabdominal pressure, may produce procidentia uteri. Practically in my experience procidentia is almost invariably caused by laceration of the pelvic floor in labor. I have notes of but a single case in which it was caused purely by increase in intraabdominal pressure, that of a single woman whose occupation caused her to carry heavy burdens daily for a number of years. By the increase of intraabdominal pressure the uterus was eventually forced down until the cervix projected beyond the vulva. Therefore, practically this cause has little to do with causing procidentia, although undoubtedly it aggravates cases produced by other causes. I have seen a few cases in which the uterus was forced down by the weight of tumors, usually fibroid. This factor is also of but little practical moment. Certainly in more than 95% of cases, procidentia is produced by laceration or overstretching of the pelvic floor in labor. These preliminary considerations are necessary to indicate that all cases of descensus uteri produced by tight lacing and by relaxation of the normal supports of the uterus from poor health are ruled out as belonging to an entirely different class of cases. Cases of retroversion of the uterus with slight descensus, and cases of hypertrophic elongation of the cervix, whether supravaginal or infravaginal, are likewise excluded.

Prolapsus uteri should be regarded as a hernia of the pelvic contents, primarily induced by the partial or total loss of the supporting function of the sacral segment of pelvic floor, and not as a mere displacement of the uterus. A realization of this fact, and also of the teaching of Schulze concerning the factors normally engaged in maintaining the uterus in its proper position, are necessary for an adequate conception of the problems which present themselves in the cure of procidentia uteri.

I have notes of 130 cases of procidentia uteri treated by operation. The results obtained in this series of cases and the experience gained in dealing with them are the basis of this paper. The results on the whole have been so satisfactory that I am decidedly optimistic concerning the prognosis of the operative cure of procidentia. Contrary to the opinion expressed by various writers, it is my experience that the same operations are applicable to the cure of almost every case, slight modifications in

detail being necessary to meet special indications. In typical cases of average severity the method followed is to curet the uterus, to amputate the cervix, to resect the anterior vaginal wall, to restore the integrity of the pelvic floor (perineorrhaphy) and to suspend the uterus from the anterior abdominal wall (suspensio uteri). By this series of operations the following objects are accomplished: The weight of the uterus is lessened, further involution of the uterus is promoted, the redundant overstretched anterior vaginal wall is resected, the supporting function of the sacral segment of the pelvic floor (perineum) is restored, and the prolapsed uterus is restored to approximately its normal position of antelexion, so that the force of intraabdominal pressure shall fall upon its posterior wall instead of upon the fundus or its anterior wall.

A few comments will indicate the estimation in which the various steps of the operation are held. *Curetting* is usually of but little importance. It is of distinct value in cases of hypertrophy of the uterus, especially when recent and when accompanied by hyperplasia of the endometrium.

Amputation of the cervix lessens the weight of the uterus, especially when the cervix is much hypertrophied from laceration or from hypertrophic elongation. It distinctly promotes involution of the uterus when this organ is much hypertrophied. Another important object accomplished by the amputation, especially in cases in which cystocele is a marked feature, is that the vagina is attached to the uterus at a higher level. When indicated the vagina can be attached to the uterus half an inch or more above its normal point of union.

Resection of the anterior vaginal wall serves to remove the redundant or overstretched anterior vaginal wall. The degree of redundancy of the anterior vaginal wall is very variable, and depends upon the extent of the cystocele present in the individual case. Resection of the anterior vaginal wall is a great advance upon the older operation of anterior colporrhaphy, because it removes the excess of tissue, and because the thick edges of the cut vagina unite firmly. The anterior vaginal wall left after this operation is much less apt to stretch out subsequently, than is true of that obtained by the older operation, in which merely a certain part of the mucous membrane was denuded, and the raw surface thus obtained was folded upon itself.

The restoration of the supporting function of the perineum or sacral segment of the pelvic floor is secured by means of a modified Emmet's perineorrhaphy. Special attention is devoted to rolling back the everted tissues of the rectocele and fastening the posterior vaginal wall to the levator ani muscles; and, what is of even more importance, to reattaching the vagina to the levator ani muscles, to suturing the anterior borders of these muscles to each other in front of the rectum, and to building up a firm introitus vaginæ. By this means the pubic segment of the pelvic floor is well supported.

The final step, *suspensio uteri*, restores the uterus to its position of antelexion and causes the ever present force of intraabdominal pressure to act as a conservative force instead of having it tend to reproduce the procidentia, as would be true were the uterus left retroverted.

In cases of less than average severity a less extensive series of operations may be sufficient. In those cases in which the pubic segment of the pelvic floor is prolapsed owing to the destruction of the perineum, and in which the uterus remains antelexed, it may be unnecessary to do more than resect the anterior vaginal wall and to restore the perineum. Such cases are not common.

In young women of childbearing age, in which the procidentia is not extreme, and in which the lateral and posterior attachments of the vagina have been but slightly loosened, after performing the series of plastic operations as indicated, shortening of the round ligaments may be substituted for hysterorrhaphy. In such cases this combination of operations has yielded excel-

¹ Read before Southern Surgical and Gynecological Society, Nov. 13, 1901.

lent results. In cases of moderate degree, in women of childbearing age, the substitution of Alexander's operation for hysterorrhaphy is to be recommended.

In resecting the anterior vaginal wall the tissue should be removed down to the bladder or to the loose connective tissue immediately under it. The tendency in performing this operation is to remove too much rather than too little tissue, so that the operator should carefully guard against this mistake. If too much tissue is removed laterally, the result is to lower the level of the anterior vaginal wall, and necessarily also the level of the floor of the bladder; and, what is of equal if not greater importance, so much of the lateral walls of the vagina are dragged forward toward the median line, that a sufficient amount of the vaginal wall is not left to construct a satisfactory perineum. The form of that part of the anterior vaginal wall to be resected must depend upon the degree of redundancy in the particular case. The two cardinal points to be borne in mind are that too much tissue must not be removed, and that as a result of the operation the anterior vaginal wall must not be foreshortened. Stoltz's operation, which foreshortens the anterior vaginal wall, drags the cervix forward, and thus favors the occurrence of retroversion of the uterus and the reproduction of the procidentia.

The perineal operation must be fitted to the individual case. When the laceration or overstretching of the pelvic floor is extreme, with marked separation of the levator muscles from each other or from the vagina and rectum; when rectocele is a prominent feature; or when more or less complete inversion of the vagina is present, with a detachment of the lateral as well as the posterior walls of the vagina, it is necessary to extend the lateral denudations much further up the two sulci than is true in cases in which the injury to the pelvic floor is of lesser degree. The extension of the denudations well up the sulci permits the reattachment of the everted posterior and lateral vaginal walls to the pelvic fasciae and levator muscles. Care devoted to this step in the operation greatly improves the results secured. Fixation of the uterus should be substituted for the suspension of that organ in women who have passed the childbearing age. This is especially true in cases of complete procidentia in which there is marked relaxation of the uterosacral ligaments and detachment of the vagina from the lateral walls of the pelvis and from the rectum.

The above series of operations entirely meets the indications anatomically and philosophically with two exceptions. In cases of more or less complete inversion of the vagina, with detachment of its walls, no provision is made for the reattachment of the lateral and posterior walls of the vagina in the upper third of this organ. Likewise no provision is made for the shortening of the uterosacral ligaments. It is in these two directions that improvement in the technic is possible. Fortunately the percentage of cases in which this defect will interfere with securing a satisfactory result is very small. A discussion of the present methods in use for shortening the uterosacral ligaments will be omitted, because my personal experience in this direction has been very limited.

The method which has been employed for some years in amputating the cervix is an eclectic one, which I shall describe in detail elsewhere. Special attention is devoted to securing a patulous external os.

In resecting the anterior vaginal wall a strip of vaginal wall is removed with scissors from a point in front of the cervix to one about half an inch behind the meatus urinarius. This strip is removed down to the vesical wall or to the loose connective tissue immediately beneath it. Each border of this opening is seized with forceps and the bladder is pushed away from the vagina with the finger, then the vaginal wall is resected. In closing the wound a special form of catgut suture, which I have called the "half-hitch continuous suture," is used. This enables one to rapidly close the wound in two layers without foreshortening it. The catgut sutures

are reinforced with one or more mattress sutures of silkwormgut.

The perineal operation has been described in "A Contribution to the Technique of Operations for the Cure of Laceration of the Pelvic Floor in Women," *American Gynecological and Obstetrical Journal*, 1897, April.

In performing suspensio uteri Kelly's technic is followed. When the question of childbearing can be ruled out the uterus is more firmly fixed to the abdominal wall. In the more extreme cases the temptation is strong to narrow the vagina unduly. This should be avoided, especially in elderly married women. After the menopause the vaginal walls are so inelastic that if unduly narrowed marital relations are impossible. A number of such cases have come under my observation. This unfortunate result is best avoided by making only a moderate resection of the anterior vaginal wall. When this is done a firm perineum and vaginal outlet can be built up without unduly narrowing the caliber of the vagina.

The use of chromicized catgut sutures for the amputation of the cervix and of cumol catgut sutures for the resection of the anterior vaginal wall is especially desirable. One or more tension sutures of silkworm-gut should be introduced in the anterior vaginal wall. By using absorbable instead of nonabsorbable suture material the removal of these sutures is avoided. Not only does the patient escape a painful experience, but without doubt not a few perineums will escape injury which may well be inflicted by traction upon the recently united perineum in the attempt to remove sutures from the cervix.

Total hysterectomy has been performed in three cases, twice by the vaginal and once by the abdominal route. I believe that hysterectomy has a very limited field of usefulness in the treatment of procidentia. To remove the uterus alone is useless, as the patient will still have a hernia of the pelvic contents; practically the only difference being that a scar will be present in the center of the projecting mass instead of the uterus which has been removed. When the procident uterus is cancerous (I have never seen such a case), when it contains fibroid tumors, or when it is enormously hypertrophied, hysterectomy is or may be indicated. When performed, the broad ligaments should be pulled through the vaginal opening and the vaginal walls should be stitched to the upper borders of the broad ligaments and round ligaments, so that these structures may serve as guy ropes to hold up the vagina. Immediately following this operation the usual plastic operations upon the posterior and anterior vaginal walls should be performed. Occasionally it may be desirable to substitute a supravaginal hysterectomy for a total hysterectomy, and to stitch the stump of the cervix to the abdominal wall. This operation will scarcely be indicated except in extreme cases of complete procidentia with inversion of the vagina and with extreme elongation of the supravaginal cervix.

The following table represents my experience in the operative treatment of procidentia uteri:

Plastic operation only,	42
Plastic operation and hysterorrhaphy,	67
Plastic operation and shortening the round ligaments,	10
Plastic operation and supravaginal hysterectomy, with fixation of the cervix to the anterior abdominal wall,	1
Plastic operation and vaginal fixation of the uterus,	2
Plastic operation and vaginal hysterectomy,	1
Vaginal hysterectomy,	1
Abdominal panhysterectomy,	1

In five cases other measures were adopted. The results, so far as known, have been that in two of the cases in which plastic operations only were performed a recurrence of the procidentia took place. Both these patients were successfully operated upon a second time with plastic operations and hysterorrhaphy. In one case in which a combination of plastic operation and hysterorrhaphy was employed the procidentia recurred.

This was operated upon a second time by repeating the plastic operation, performing supravaginal hysterectomy and fixing the stump of the cervix to the anterior abdominal wall. The result was entirely satisfactory. No other relapses are known.

GONORRHEAL VULVOVAGINITIS IN YOUNG CHILDREN.¹

BY

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The literature of gonorrheal infection in girls before puberty is decidedly meager compared with that devoted to gonorrhea in its other aspects. This lack is not commensurate with the importance of the disease itself, nor the frequency with which the physician meets it in private, and especially in dispensary practice.

Although the infectious nature of vulvovaginal discharges in young children may be found noted in the older text-books and in the literature, it cannot be said to have been considered as a true gonorrheal infection until after the appearance of the articles of Pott (1883), Cséri, Dusch and Spaeth (1889). While the proof, both clinical and microscopic, furnished by these observers should have been considered convincing, it cannot be said to have been accepted by the profession as a whole, that gonorrhea was the cause of the disease. We have but to compare the statements in such text-books as Smith's (1886) and Keating's *Cyclopaedia* (1890) and those to be found in Holt's text-book (1899) to see the changes in opinion regarding the exact nature of the disease. Again, if we consult such articles as Walker's, in which is reported 21 cases of rape in young children (1886), and Hatfield's, who reports, in the same year, a case of peritonitis following vulvovaginal discharge, we will see that these authors were quite unfamiliar with the methods of distinguishing between simple and specific inflammation.

The monographs of Koplik (1893) and Heiman (1895), whose careful clinical and experimental studies were conducted, and the results first published in this country, did much to disseminate the knowledge of the specific origin of the disease. Koplik considers vulvovaginitis as a common disease of childhood, and speaks of meeting, in six years, with more than 200 cases of mixed blenorrhoeas of the genitals (girls and boys). Heiman succeeded in obtaining pure cultures of the gonococcus of vulvovaginitis from chest serum agar, and after inoculations of a male urethra, cover-glass preparations of the pus showed typical gonococci, decolorized by Gram's method. The gonococcus was also cultivated and isolated.

Vulvovaginitis in children may be described as a catarrhal inflammation affecting the mucous membrane of the urethra, vulva and vagina. As in the adult, the remaining portions of the genitourinary tract may also become involved. Both in the simple and specific forms of the disease the chief characteristics are redness and swelling of the parts affected, the latter being bathed in copious secretions of thick, yellowish pus.

The simple nonspecific form of the disease may be dismissed with a few words. As commonly met in private practice, it is due, in the majority of cases, to lack of cleanliness on the part of the mother in her care of the genitals of the infant, or to neglect of older children in keeping the parts clean. Mothers who will give the minutest instructions to their children regarding the care of the teeth, will oftentimes, through ignorance or false modesty, neglect to instruct them in the care of

their genitals. As a result, the smegma abundantly secreted between the labial folds, even in young children, decomposes and sets up an irritation similar to balanitis in the male. Owing, however, to the different anatomic situations of the urethral orifices in the two sexes, and the liability of the vagina to be involved in the inflammatory process, and the inaccessibility of the cavity to ordinary washings, the course of the disease is apt to be considerably prolonged in the case of a young girl. I have found, usually, that if the parts are kept clean with a boracic acid solution, or even with boiled water, the discharges soon cease and a cure results. In neglected cases, however, when there are formations of crusts on the labia and resulting erosions from the irritating properties of the discharge, it may be necessary after the removal of these crusts to keep the parts smeared with some bland ointment like vaselin or zinc oxid.

Even if microscopic examination has failed to reveal the presence of the gonococcus, any genital discharge failing of cure by the simple treatment outlined above, should be looked upon as suspicious, and further attempts should be made to ascertain if it be not specific in its nature.

Gonorrheal vulvovaginitis in a young child is far from being an uncommon disease. During the past six months I have seen four cases of this affection where the microscopic examination of the purulent discharge left no doubt as to the nature of the disease. This in spite of the fact that the gynecologist is not consulted as frequently for this complaint as is the specialist in children's diseases.

Donnovan calls attention to the prevalence of specific vulvovaginitis among the little colored children in Baltimore. Of 12 brought to the clinic in one day, three, two girls aged four and five, and one boy, were suffering from the disease. Fischer examined the vaginal discharges of 59 children with vulvovaginitis, and found gonococci in 50. Cassel gives the result of his investigations in 80 cases of vulvovaginitis seen in his clinic during 21 months; 20 proved to be gonorrheal. In 26 children Cahen Brach found that the vulvovaginal discharge contained gonococci in all but one. While, of course, it is a disease which is met with much more frequently in the large cities, where the poor are herded together in tenements, and amid unhygienic surroundings it is by no means a rarity in the less thickly-settled districts, and I am convinced that a microscopic examination of the vaginal discharges in young girls would show the disease to be much more common than the general practitioner is wont to suspect.

Age.—The disease may occur at all ages up to puberty. Cnopf, in a recent article, estimates that it is twice as common below as above the age of six, and that girls are more frequently affected than boys. This statement would seem to be confirmed by Cassel's statistics, as 19 out of his 24 cases were in children under six. Epstein has reported cases in the newborn. Koblack reports an interesting case of an infant with gonorrheal ophthalmia which appeared on the fifth day, on the eleventh gonococci were found in the vaginal pus.

Etiology.—From the very nature of the disease under consideration it is always difficult and at times nearly impossible to ascertain the probable cause of the infection. However, it is pretty well agreed by those who have most carefully investigated this phase of the subject that in a large majority of cases specific vulvovaginitis arises from actual contact of the little patient with some infected person. Cnopf has pointed out the frequency with which it may be found that other members of the family, either sisters, brothers or governesses, with whom the child has been accustomed to sleep, are suffering from the infection. The disease may also be conveyed by means of sponges, towels, bed-linen, fever thermometers, unclean douche points, etc. The not uncommon practice of reciprocal handling of the genitals by young girls was found to be the cause in 1% of all

¹ Read before the Calhoun Co. Medical Society, Dec. 8, 1901.

cases; while, on the other hand, only 1% can be ascribed to immoral practices.

Fränkel, Dusch, Cahen Brach, Fischer, Cnopf and Sheffield have reported epidemics of specific vulvovaginitis occurring in different children's hospitals and asylums. In some instances the disease could be traced to a child who had been admitted to the institution with a vulvovaginal discharge.

Perhaps the most striking example of an epidemic of this description is reported by Skutch as occurring in the city of Posen, where 236 children from 6 to 14 years of age developed, in the course of 8 to 14 days, vulvovaginitis which, in the majority of cases, was proved to be gonorrheal. It was found that these children had made use of the same public bath and this was given as the most likely cause of the epidemic.

Rape seems to be responsible for only a small proportion of cases, although Walker, among others, reports cases due to this cause. It is interesting to note the observation of Spaeth, who found that 90% of the mothers of the children coming under his notice with specific vulvovaginitis had a constant leukorrheal discharge.

Bacteriology.—It is somewhat futile to pass in review the large amount of literature devoted to the proper methods for the isolation and recognition of the gonococcus. The ordinary staining of the smears with methylene blue solution and the decolorization by the method of Gram, together with the characteristic shape and groupings of the gonococci will suffice for all practical purposes. These methods can be made use of easily by the practitioner, while the more elaborate work of making pure cultures on serum media requires special apparatus and is far from being proved necessary.

Symptomatology.—The clinical signs in a majority of the cases are quite similar. The labia are red, swollen and glued together by sticky pus. The vestibule, edges of the hymen and mouth of the urethra are reddened, and erosions may be present on the surface of the mucosa. Pus can usually be seen issuing from the vaginal orifice; as in the adult the urethra is very frequently involved, giving rise to frequent and painful micturition. This involvement of the urethra, however, does not accord with Sheffield's experience, who found that in only 13 out of his 65 cases, were there severe symptoms referable to the urethra.

Owing to the columnar type of epithelium of the vaginal mucous membrane in the young child, we find that the vagina is much more the seat of the disease than in the adult. Fisher states that in one-third of his cases the ducts of the vulvovaginal glands and even the glands themselves were infected, and in one case an abscess resulted. Koplak makes the interesting statement that in all his cases examined by a small urethral speculum he found the cervix intensely inflamed, with pus issuing from the external os. The inguinal glands are frequently enlarged and buboes have been reported.

The subjective symptoms, except for a slight fever at the onset of the disease, are apt to be slight. In my experience the greatest discomfort of the patient is due to the pruritus, itching and irritation of the parts naturally increased by walking.

Course.—Unless energetically treated, the course of the disease is apt to be prolonged over weeks and even months. The gonococci lurk in the half-developed ducts and glands and folds of the vagina and are difficult to destroy. The urethra, as in the adult, is apt to show evidences of the disease, after its disappearance elsewhere.

Complications.—There may be severe complications in connection with specific vulvovaginitis. The tubes, ovaries and peritoneum may be involved in the pathologic process. According to Marx, in five cases pus has been found at autopsy in the tubes of young girls of from seven to nine years of age. While difficult of proof, it is not unlikely, as suggested by Currier, that many cases of undeveloped uteri resulting in dysmenorrhea

and sterility may be due to gonorrheal infection in infancy.

Quite a number of cases of peritonitis following a vulvovaginal catarrh, presumably of specific origin, have been reported by Loven, Hatfield, Huber, Sheffield and Mejia. Sheffield noted four cases of localized peritonitis among 65 cases. The impossibility of making satisfactory bimanual examination of the small patient suggests the advisability of more frequent rectal examinations in this disease in order to determine the amount of peritoneal involvement.

Probably purulent ophthalmia is the most frequent complication of vulvovaginitis. Cséri reports seven cases of this kind out of 26 cases of vulvo-vaginitis, and Weidmark observed 19 cases of this complication. This is common and serious enough to warrant the greatest exertion on the part of the physician in the way of prophylaxis. The mothers, or the child's caretakers, must be carefully instructed as to the danger of infection, in order to secure their cooperation.

Vignaudon has collected 11 cases of rheumatism following specific vulvovaginitis, and asserts that this complication is more common than is supposed. In 23 cases of rheumatism following gonorrhea in the child the wrist was affected in 8 and the ankle in 7. Fortunately ankylosis is not nearly so frequent in the child as in the adult. The only other complications to be noted are supuration of joints and atrophy of limbs.

Treatment.—To be of any avail, treatment must be energetic. In order to abate or prevent a recurrence of the redness and edema of the vulva and vestibule these parts must be kept clean by constant washings with sterilized water or a 5% solution of boracic acid. The parts should not be wiped, but should be douched off as frequently as may be required. The child will strenuously object to this, or, in fact, any mode of treatment, but the mother must be made to understand the necessity of carrying out the physician's orders if the disease is to be got under control.

I believe that in many cases the vaginitis is continued by the damming back of the purulent secretion because of the small opening in the hymen. The vagina in these cases is in reality an abscess sac, and this condition calls for drainage, just as does any pus cavity. Under these circumstances I administer chloroform and thoroughly dilate the vaginal orifice, wash out the vagina with a 1-1000 bichlorid solution, wipe it dry with cotton, and apply a 10% solution of argentic nitrate, or a 1% to 2% solution of protargol. The application is made best through a Kelly urethral speculum. After this slight operation the discharge will markedly decrease and the dilation of the parts will allow the passage of a soft rubber catheter or a small speculum with ease. Then applications of the above solutions can be applied without causing too much pain, and douches of bichlorid of protargol may be administered daily. The treatment, however, must be persisted in until repeated microscopic examinations have shown that the vagina and urethra are entirely free from germs. The only objection which can be raised to the dilation of the parts, under chloroform, and the establishment of good drainage, is that, by this mode of treatment, the signs of virginity are destroyed. But this objection is hardly valid, since the hymen is usually stretched and mutilated by the constant passage of the rubber catheter. Koplik has given up all kinds of treatment for the urethral complication, and finds that, after the vaginal discharge has been cured, the urethral affection will disappear. He finds that the introduction of urethral bougies, or applications to the meatus do more harm than good, because of the small size of the parts.

SUMMARY.

1. Vulvovaginitis in the young girl may be divided into simple and gonorrheal.
2. Simple catarrhal vaginitis is due, in a large

majority of cases, to lack of cleanliness, and subsides when the proper treatment is instituted.

3. Gonorrheal vulvovaginitis in young children is more common than is generally supposed. While more frequently met with amidst unhygienic surroundings in large cities, it is by no means a rarity in the less thickly settled districts.

4. Gonorrheal disease is more frequent below the age of six, it is more common in girls than in boys.

5. Specific vulvovaginitis in the large majority of cases arises from actual contact of the patient with some infected person. A study of the reported epidemics, however, shows that the disease may be spread by other means, such as a common bath, towels, bed-linen, etc.

6. The ordinary staining methods will prove satisfactory in making a differential diagnosis between specific and other forms of vulvovaginitis.

7. The parts affected in their order of frequency are the labia, urethra, vagina and cervix; the vagina is more frequently affected in the child than in the adult, owing to the character of its epithelium.

8. The tubes, ovaries, and peritoneum may be involved in the pathologic process. It is not improbable that certain diseases of adult life may be ascribed to gonorrheal infection in infancy.

9. Purulent ophthalmia and rheumatism are quite frequent complications. The strictest prophylaxis should be observed in order to avoid the former.

10. The treatment of specific vulvovaginitis must be energetic to be of any avail. Under certain conditions the vaginal orifice should be widely dilated and the vaginal pus cavity properly drained.

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REMOVAL FROM BLADDER, THROUGH THE CYSTOSCOPE, OF A NEEDLE WHICH HAD BEEN SWALLOWED NINE YEARS BEFORE.

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CASE.—Miss R. M., aged 25, unmarried, presented herself at my office February 19, 1901, complaining of bladder trouble. Her family history and past history were negative. She first menstruated at the age of 16, and since then more or less irregularly, generally about every two weeks.

Present illness.—In April, 1892, the patient was sitting in a room with her sister, and was engaged in sewing. Having run out of thread, she put the needle in her mouth, and just then her sister made a remark which made her laugh and she suddenly swallowed the needle. It went down without sticking in her throat and without causing any pain. She suffered no discomfort until a month later, when a dull, "sore" pain started in the lower part of her stomach. This pain was exaggerated on taking food, and was of a dull aching character. It

was not accompanied by nausea or vomiting, and when seen by her physician he said that she had "an abscess on the stomach." The pain remained in this region for some time, being more severe at times than at others. After a month or two she felt it lower down in the abdomen than at first. During this time she would often have intestinal cramps, but never nausea nor vomiting or any other intestinal disturbance. The bowels moved regularly; there was never any blood in the stools, but at times mucus was present. Menstruation began two weeks after she swallowed the needle. For the past eight years she has had convulsions, which come on at irregular intervals and still occur occasionally. Since swallowing the needle she has never been free from abdominal pain, but its point of localization has become progressively lower. The course followed was to the left of the median line, and did not reach the pelvis until two years ago, when it localized in the left ovarian region. At this time it became so severe that she consulted physicians in Baltimore who made a careful vaginal examination and told her that her ovaries were normal, but still the pain in the pelvis continued. About four months ago for the first time she had pain on urination. At first it was slight, but it gradually became more severe. It soon assumed a pricking character at the end of urination, and since then she has been convinced that the urinary trouble was due to the needle which she had swallowed nine years ago, and had long since forgotten. Two weeks ago she noticed blood in the urine for the first time; a small amount was also present one week ago. At present her urinary symptoms are: An increased frequency of urination, a continuous dull pain in the bladder, and a sharp sticking pain at the end of micturition. Her bladder has never been examined with an instrument and she stoutly denies ever having inserted anything into the urethra. Her general health has remained good; bowels are normal; appetite good. She has had no pain in the region of the left ovary for the last four months, and has had no other abdominal pain.

Examination.—Patient is a tall, slender, neurotic looking young woman, aged 25. Her tongue is not coated; mucous membranes are of good color; heart and lungs negative; abdomen negative; spleen and kidneys not palpable; liver not enlarged. The urine is a pale, straw color, and clear. On account of the patient's firm belief in the presence of a needle in her bladder it was determined to make an immediate cystoscopic examination. The bladder was filled with fluid and a Nitze cystoscope introduced. Immediately after introduction we saw on looking into the bladder a needle sticking into the bladder cavity on the right lateral wall of the bladder. The eye-end of the needle was free in the bladder cavity, while its point was imbedded in the wall. It was very much rusted, was quite large in size, and apparently about 2 cm. of the needle was free in the bladder cavity. There was no calculous incrustation about it. The bladder was perfectly normal in appearance and showed no inflammatory changes. The mucous membrane around the needle was swollen and puckered. The ureters were normal. An attempt was made to remove the needle by inserting a large pair of curved dressing forceps through the urethra by the side of the cystoscope. With this instrument the needle was caught, but in an attempt to dislodge it the end of the needle was broken off. It was grappled a second time and another small piece was broken off by the clamp without dislodging the needle. This manipulation was quite difficult on account of the fact that the clamp passed immediately in front of the cystoscopic prism, thus being greatly magnified, and its movements as a result being hard to control. The patient complained considerably of the pain so that it was decided to forego further attempt to remove it by this method. She was then sent to the Union Protestant Infirmary and on February 26, 1901, under ether anesthesia the needle was removed through a large Kelly cystoscope. The patient was placed in the knee-chest posture and a careful search of the bladder made, but we were unable at first to find the needle through the Kelly instrument. The Nitze instrument was then introduced and the needle found to be on the right anterolateral wall of the bladder, not far from the urethral opening. The Kelly instrument was then introduced and by forcibly directing its end to that portion the needle was finally seen. A slender alligator forceps which had been specially provided for this purpose was introduced, and the needle was easily withdrawn. The patient reacted from the operation well, suffered only slight inconvenience from her bladder for the next few days, and was discharged cured at the end of ten days. Her bladder symptoms had ceased entirely and there was apparently no infection present.

The above history as given by the patient was corroborated by her brother and sister, except as to the event of swallowing the needle. The girl at the time did not tell her sister of having swallowed the needle, but said that she had lost it. She now says that the fear of being operated upon for it was so great that she decided to deceive her sister, pretended to have lost the needle and began a search for it on the floor. The sister remembers the incident, and says that a careful search was made for it for a good while without finding it. She remembers

distinctly the severe stomach disturbance which began a month later, and the frequent, more or less continuous, abdominal pain which she has suffered during the past nine years. She is firmly convinced that the needle was swallowed by the patient nine years ago, and that its presence in the bladder is due to that event. The needle removed is preserved in two pieces; the largest being $1\frac{1}{2}$ inches long. The diameter is fairly large, and the surface is very much rusted and quite rough, though there is little loss of substance. The other piece which has been saved is that which was broken off at the second attempt to remove it with a clamp alongside of the Nitze cystoscope. It measures $\frac{1}{4}$ inch in length. The first piece broken off was probably about the same length. So that the entire length of the needle was about $1\frac{3}{4}$ inches.

The great frequency with which foreign bodies that have been introduced through the urethra, are found in the female bladder cause one to question at once the accuracy of the story given by our patient. A needle of this sort, however, would seem to be an article not likely to be used in masturbation. Furthermore, the history corresponding to a slow descent of the needle through the abdominal viscera, verified as it was by the brother and sister, certainly seemed worthy of credence, and it is no unusual thing to read, in both the scientific and lay presses, of the remarkable courses followed by swallowed needles; many more wonderful in extent than in the case cited above. I know of no other recorded case in which the needle has been found in the bladder, and removed by means of the cystoscope during life.

THE IMPROPRIETY OF CESAREAN SECTION IN PLACENTA PRÆVIA, WITH REMARKS ON A RATIONAL METHOD OF TREATMENT.

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The idea of lessening the dangers incident to mother and child from placenta prævia by performing cesarean section was promulgated about a decade ago, without meeting at that time with any noteworthy attention on the part of the profession. Recently this idea has been again taken up and discussed enthusiastically. Some authorities go so far as to claim that cesarean section in cases of placenta prævia is the only proper treatment from a surgical standpoint. At present this advice seems to be gaining ground, for the number of operated cases are on the increase. Studies which I made for my own information in connection with this question have led to conclusions so diametrically opposite to the above idea that a publication of them may not be without interest.

The following are the reports that I have been able to collect of cases of placenta prævia in which cesarean section has been performed:

Hypes and Hulbert¹ (St. Louis).—Result: Mother and child dead.

Sligh, J. M.²—Result: Mother died the day of operation, child died later.

Bernays, A. C.³—Result: Mother made perfect recovery, child died ten hours after operation.

Mattoli⁴ (Tolentino, Italy).—Result: Mother recovered, child died.

Lawson Tait.⁵—Result: Mother and child alive.

Donoghue, F. D.⁶—Result: Mother and child alive.

Hare, C. H.⁷—Result: Mother died 11 hours, child 3 days after operation.

Emory Lanphear.⁸—Removal of a uterus at the end of fourth month of pregnancy for infected placenta prævia. Mother recovered.

Gillette, W. J.⁹—Result: Mother and child alive.

A total of nine cases, in which six mothers and three children were saved. This number is too limited to

indicate any positive conclusions, but the results are not very encouraging. It is of some interest to note that in Mattoli's case the operation was performed as a last resort. He states that it was only done because he did not succeed by packing the vagina with gauze and because a colpeurynter was not at hand. Lawson Tait, Lanphear and Gillette performed Porro's radical operation on their patients, removing the uterus. I shall refer to this later.

The following authors deal with this question in a strictly theoretic manner: Hutson Ford,¹⁰ Palmer Dudley,¹¹ John W. Dewis,¹² G. M. Boyd,¹³ E. W. Lee,¹⁴ etc.

These writers advance a large number of different arguments to prove the advisability of cesarean section in treating placenta prævia. The most important of these may be summed up under the following three headings:

1. Cesarean section is a comparatively safe ("harmless") operation.

2. Placenta prævia has a higher mortality.

3. Even if the mortality of placenta prævia were not any higher than that of cesarean section, in order to save the life of the child the latter operation ought to be preferred to the usual treatment.

Other arguments of less importance will be mentioned and discussed later in the course of my deductions.

To investigate the respective dangers of cesarean section and placenta prævia I have collected all the statistics which were at my disposal, of both conditions, reported in recent German, English and American textbooks and journals. I would not venture to say that the lists given below are complete, but I can affirm that I have included without bias all data I was able to find. In order not to influence the reader for or against the results, I give the statistics with the authors' names arranged in alphabetic order:

CESAREAN SECTION.

1. Ahlfeld.¹⁵—He performed cesarean section in 11 cases, in four of which the mothers died (36%). He says: "If all cases of cesarean section really operated upon during late years, in or outside hospitals, would be published, I believe the mortality would be about 40%."

2. Bar (Paris).¹⁶—Mortality (in a well-managed hospital), 6.41%.

3. Barnes, Francourt.¹⁷—Mortality, 7.6%.

4. Baumm.¹⁸—In 10 cesarean sections he had two deaths (20%). He states: "I maintain that even today cesarean section is the most dangerous of all obstetric operations, giving, as it does, *ceteris paribus* the greatest mortality."

5. Braun, von Fernwald.¹⁹—In his own 74 cases the maternal mortality was 4.2%. Putting together the cases of Chrobak, Schauta, Leopold and Braun, he calculates a mortality of 5% to 6.5%.

6. Denny.²⁰—Nine cases of conservative cesarean section, with five deaths (55.5%).

7. Everke²¹ had in 37 operations a maternal mortality of 14%. In calculating, he excludes seven deaths as not caused by the operation itself, among these being a case in which the operation was performed outside the hospital under exceedingly unfavorable conditions (Am. Jour. of Obs., 1899).

8. Gummert.²²—Eleven cesarean sections without death (0%).

9. Hinschius.²³—Thirty cesarean sections with a mortality of 6.7%.

10. Hirst, Barton Cooke.²⁴—"In the hands of skilful operators the mortality of cesarean section may be perhaps below 5%, but in general practice the mortality of the operation remains high and will probably continue so. In America the mortality, according to Harris' statistics, ranges from 30% to 40%."

11. Huebl.²⁵—Thirty-five cases of conservative cesarean section with a mortality of 2.9%. (The cases are collected from different publications, which circumstance always means a too low percentage of mortality.)

12. Leopold.²⁶—"The cesarean section is not so simple an operation as claimed by Olshausen. Out of 93 cases I have lost eight (8.6%)."

13. Leopold and Haake.²⁷—Seventy-one conservative cesarean sections with a maternal mortality of 9.8%.

14. Olshausen and Veit.²⁸—"The mortality of cesarean section is, according to a compilation made by Frommel of 551 published cases, 19%. It is beyond doubt that this figure is too favorable, and this may be explained by the fact that very many of the unfavorable cases never see print."

15. Olshausen.²⁹—Twenty-nine cesarean sections, with two deaths (6.9%).

16. Riguoir.³⁰—Maternal mortality, 11%.
17. Runge.³¹—The mortality in cesarean section is about 10%.
18. Strebel.³²—Twelve cases; mortality, 8.3%.
19. Stroganoff (St. Petersburg).³³—The mortality of cesarean section is about 8% or 10%.
20. Weber.¹⁸—Ten cases with one death (10%).
21. Zweifel.²⁶—Fifty-five cesarean sections with a maternal mortality of 1.8%.

PLACENTA PRÆVIA.

1. Ahlfeld.¹⁵—In general practice about 25% of the women with placenta prævia die. The exceedingly favorable results in the maternity hospitals, on the other hand, prove the success which may be gained by proper treatment applied in time.
2. Amadei and Ferri.³³ (Milan).—One hundred cases of placenta prævia with five deaths. (There is included a case in which the patient died of pneumonia 18 days after delivery.)
3. Anderson.³⁴—Maternal mortality in placenta prævia is 5%.
4. Behm.³⁵—Fifty-two cases of placenta prævia, in his own practice, without any maternal death = 0%.
5. Blacker.³⁶—Twenty-two cases with a mortality of 4.5%.
6. Chrobak.³⁷—Two hundred and sixteen cases.—Maternal mortality 9.3%.
7. Driessen.²³—One hundred and twenty-five cases.—Maternal mortality 15%.
8. Fournier.³⁸—Seven cases without a death (0%).
9. Fry, Henry D.³⁹—Fourteen cases without a death (0%).
10. Galabin.⁴⁰—The mortality of placenta prævia to the mother is in Guy's Hospital (London) 16.1%.
11. Grandin, E. H.⁴¹—“Under the method of treatment advocated in *Obstetric Surgery* the prognosis of placenta prævia has improved greatly over that which older methods of treatment gave. The chances of the woman's life being saved may be placed at about 98%.” (That is, a mortality of 2%.)
12. Haentel.¹⁸—One hundred and twenty-three cases of placenta prævia with a maternal mortality of 8.1%.
13. Heimbucher.¹⁸—One hundred cases of placenta prævia with 11 deaths (in 8 of these unfavorable cases the patients were suffering at the time of the birth from nephritis, eclampsia, rupture of the uterus, or septic infection.)
14. Hirst.⁴²—Twenty-four cases of placenta prævia in his own practice without a death (0%). He thinks the usual mortality as to the mother is about 1%.
15. Juge, C.⁴³ (Paris).—Eleven cases of placenta prævia without maternal death (0%).
16. Keilmann.²³—Twenty-eight cases with three deaths (10.7%).
17. Lyle, Ranken.⁴⁵—Seventy-four cases with a maternal mortality of 5.4%.
18. von Neuner.⁴⁶—Sixty-two cases of placenta prævia in the maternity hospital of Helsingfors, with a mortality as to the mothers of 6.1%.
19. Noble, Ch.⁴²—The mortality to the mothers in cases of placenta prævia is about 5%.
20. Platzer.⁴⁷—Forty-six placenta prævia cases in the maternity hospital of Budapest with a maternal mortality of 8.7%.
21. Ribbins.²³—Sixty-three cases with a maternal mortality of 6.5%, and 35 cases with a mortality of 9.5%.
22. Runge.³¹—The mortality to the mother in placenta prævia is at present about 6%.
23. Siebert.⁴⁸—Maternity hospital in Greifswald, 24 cases with a maternal mortality of 16.8%.
24. Strassmann.⁴⁹—In 229 cases treated at the hospital the maternal mortality was 9.6%, in 100 cases in his own practice 5%.
25. Straatz.²³—Fifty-seven cases with a mortality of 2%.
26. Treub.⁵⁰—Forty-four cases in his own practice with a mortality to the mothers of 13.6%. He states that the cases of Braxton Hicks, Lomer, Hofmeier and Martin, show an average mortality of 9%.
27. University Clinic of Berlin.⁵¹—Four hundred and sixty-seven cases of placenta prævia gave a total mortality of 3.8%. (There is included one death from chloroform asphyxia.)
28. Veit.²³—He has no detailed notes; but he believes, that when placenta prævia cases were treated by plugging the vagina, one lost nearly all the patients, whereas now by performing bipolar version one loses only those who die from sepsis.
29. Welti.⁴⁴ reports the cases of Pinard (Paris) with a maternal mortality of 2.6%.
30. Zedler.⁴³—Sixteen cases of placenta prævia. In the patients treated at home the mortality was 22.2%, in those treated at the clinic 0%.

What do these two tables teach us? First of all we must not let these statistics deceive us, but must bear in mind that both show more favorable results than probably occur. We know the general practice of excluding the unfit cases in order to get better statistics, and that a large percentage of unfavorable cases are never published. Therefore statistics collected from medical literature are always unreliable. These deficiencies (the exclusion of unfit and the suppression of unfavorable cases) are evident in both tables, but perhaps in a less

degree in the second. Cases of cesarean section with unfavorable results are more liable to be kept secret. This operation is probably performed in the majority of cases on account of one of the so-called relative indications. If a patient dies after cesarean section, there is always a strong prejudice against the operator. But if a patient dies of placenta prævia, the practitioner is reconciled to the fatal issue, because, we regret to say, the popular impression regarding the prognosis in this condition is wrong and unjustifiably pessimistic, both among physicians and laymen (*vide* the view of Lawson Tait⁵, that more than 50% of these patients die). Furthermore, the statistics on placenta prævia embrace more frequently than those of cesarean section, the cases treated by the same doctor or at the same clinic, and are thus more reliable. On the other hand we must not forget that cases of cesarean section, in which fistulas between the uterus and the abdominal wall (as published by Everke, Woyer, Schmit, Howard Kelly, Werder and others), hernias, troublesome adhesions or similar pathologic conditions follow the operation, figure as “cured” patients in the statistics and reports. I will merely mention *en passant* the possibility of rupture of the cesarean section scar in the uterine wall during a subsequent pregnancy, as has been observed in several instances.

Taking into consideration these points, I think we can learn from these two tables that certainly the danger of cesarean section is far greater, and the danger of placenta prævia far less, than is generally believed, and that probably the prognosis of placenta prævia is better than that of cesarean section. Selecting the reports embracing the greatest number of cases of either category, we see that 551 cases of cesarean section (Olshausen-Veit) show a maternal mortality probably higher than 19%, whereas in 467 cases of placenta prævia (University clinic in Berlin) the mortality is 3.8% (including one death from chloroform asphyxia).

Even assuming that the mortality is about the same in both conditions, in my opinion we cannot expect the good results of the classic cesarean section in patients in whom this operation is performed on account of placenta prævia. The given postulate, namely, to operate upon these patients immediately after the diagnosis of placenta prævia has been made, and when their condition is still good, seems to me, cannot be generally fulfilled, because I consider the diagnosis of this pathologic condition, at the time of the first hemorrhage, very often quite difficult. Palmer Dudley, by stating that the diagnosis can be made even before any hemorrhage has occurred, simply by external palpation of the uterus, only proves his own remarkable skill in palpating. The same ability cannot and must not be expected of the general practitioner, who first sees these patients.

Hemorrhages occur during pregnancy from different causes. If there is a hemorrhage before the cervical canal is passable for the examining finger, a proper diagnosis is very difficult, and if the canal is passable the diagnosis is not necessarily easy. The tactile sense has to determine whether the soft, spongiform substance felt inside the internal orifice is simply a clot of blood or placental tissue or both. I have seen very famous obstetricians err in such cases. On account of this difficulty in diagnosis, a patient with placenta prævia is rarely admitted to a hospital, or comes under the care of an expert obstetrician, without having been previously examined by various midwives and doctors. From this we may infer: First, at the time the patient is placed in expert hands, she has lost a larger or smaller amount of blood and, therefore, is not in the desired unexhausted condition; and secondly, we have not the right to assume positively that the patient is in an aseptic condition. I wish to especially emphasize this latter point. All statistics show that the majority of placenta prævia patients die from sepsis and not from anemia. We may not be wrong in suggesting a connection between the fre-

quency of sepsis in these patients and the fact that as a rule repeated examinations by various individuals are made before the right diagnosis is established and a proper treatment instituted. The blood clots present an excellent culture medium for the germs introduced. Taking into consideration this circumstance, we must conclude that, according to the indications laid down for Saenger's conservative cesarean section, the majority of placenta prævia patients have to be excluded from this operation. Conservative cesarean section must be performed only on patients who are absolutely uninfected and aseptic. The brilliant results of some of the German clinics (referred to by many of the American authors) are solely due to a careful observance of this principle. I would like to state here that in Professor Schauta's clinic in Vienna, the indications are still more stringent. There, every parturient is considered unfit for a conservative cesarean section who has been examined by a midwife not personally known at the clinic to be absolutely and trustworthily clean and familiar with the rules of asepsis. For patients who show symptoms of infection, or who make one suspicious of infection (*e. g.*, if examined by a midwife not known to the clinic), only Porro's radical operation, with removal of the uterus, can be taken into consideration, if laparotomy is necessary. Lawson Tait, Lanphear, and Gillette treated their cases in this way, and it is noteworthy of mention that the mothers recovered. I shall now consider some minor arguments. Dewis predicts: "The time cannot be far distant when it will be considered necessary for the general practitioner, who does obstetric work, to be competent to do this operation—cesarean section."

Are we justified in expecting from these cases the same excellent results that have been obtained by Leopold and Everke, who are especially cited everywhere as examples?

Donoghue considers cesarean section preferable to the usual method. One of his arguments is: "For the successful performance of version, an obstetrician having the necessary experience is not so readily obtainable, (performance of at least 50 versions being considered sufficient experience.)" I do not think that very many will entertain this view. We must not forget that bipolar version is an operation which can be practised fairly well on an obstetric manikin.

Since transportation to a hospital of a patient suffering from placenta prævia means loss of time and, therefore, loss of blood, it is necessary to perform the cesarean section at the home of the patient, a circumstance which will often militate against a favorable outcome. (Consult the editorial, "Major Surgery Should be Done in Hospitals," in AMERICAN MEDICINE, June 15, 1901.) Another point against the usefulness of cesarean section in cases of placenta prævia is the following: In the many discussions as to whether bipolar version should be followed by prompt extraction in the interests of the child's life, the fact has always been emphasized that there is a considerable number of cases on record in which sudden death was caused by this practice. The hasty emptying of the uterus, thus removing the pressure on the abdominal bloodvessels, exercised by the weight of the pregnant uterus, causes secondarily a sudden anemia of the brain, which may prove fatal.

Summing up the foregoing statements I conclude:

1. We cannot expect to attain the excellent results of the classic cesarean section when this operation is performed on account of placenta prævia.

2. Granted that the mortality in placenta prævia cases treated by cesarean section is the same or less than that following the customary method by means of bipolar version, cesarean section with removal of the uterus (after Porro) should be performed in all cases in which infection is proved or suspected. This would mean a very radical treatment in the majority of cases of placenta prævia.

All these objections are only applicable to the advice

generally given as regards treatment of placenta prævia by means of cesarean section. Boyd, in his paper, confines the demand to cases of placenta prævia completa or partialis (not marginalis). It is a fact that the prognosis of placenta prævia completa (or centralis) is more unfavorable than of placenta prævia in general. And, it will be remembered, I considered placenta prævia in general. On reflection, it will be readily seen that Boyd's limitation is of slight practical use. An exact diagnosis, showing to which category of placenta prævia the case belongs cannot be made before the cervical canal is enlarged to a certain degree. This means the necessity of repeated examinations and the loss of a certain amount of blood. Thus a patient suffering from placenta prævia centralis is in an entirely different condition at the time the exact diagnosis is made, than is a parturient in whom on account of narrowness of the pelvis, the necessity of performing cesarean section has been established after only one examination weeks before.

The other main argument mentioned above is the advisability of cesarean section in the interests of the child's life. Saving the child's life should be one of the main tasks of the obstetrician, but it must not be forgotten that there is an indisputable rule that the mother's life ought to be valued higher than the child's. We cannot deny that the excellent results of the modern treatment of placenta prævia have been gained only at the expense of fetal life. We cannot deny that the result of this treatment in regard to fetal mortality is very unsatisfactory. It would be of very little interest to give here in detail all the different statistics on the fetal mortality which I was able to collect. I consider it sufficient to state that while some authors give low figures, between 30% to 40%, the majority find that the mortality is between 60% and 80%. Grandin says: "Under the method of treatment advocated in 'Obstetric Surgery' the prognosis of placenta prævia has improved greatly over that which older methods of treatment gave. The elective emptying of the uterus enables us to save nearly 90% of the infants, instead of losing the same number." . . . But this view, however, seems too optimistic.

Some authors recommend immediate extraction after bipolar version has been made. This procedure doubtless saves more fetal lives, but is not favored by the majority of obstetricians, as it apparently shows a greater mortality to the mothers.

Are we justified in expecting to save more infants when performing cesarean section in cases of placenta prævia? In my opinion the answer to this question is: Certainly not to the extent claimed by the authors recommending cesarean section.

First, we must not forget that the delivery of a child by cesarean section does not necessarily mean a living child. Riguor finds the mortality to the infants in cesarean section 7.68%; Olshausen-Veit (in the 551 cases collected by Frommel), 7.5%; Leopold and Haake, 4.2%; Bar, 5.59%; Francourt Barnes, 7.6%. In placenta prævia cases a still higher mortality is to be expected. The hemorrhage at the time of pregnancy or during labor means considerable harm to the fetus. Those born alive are usually poorly developed and always more or less anemic. And again their chances of living are decreased, because in the majority of cases of placenta prævia labor pains start prior to the normal terminus of pregnancy.

Ranken Lyle in 70 cases found the following figures:

28	children	born	at	full	term
5	"	"	"	8½	months
17	"	"	"	8	"
5	"	"	"	7½	"
9	"	"	"	7	"
5	"	"	"	6	"
1	child	"	"	5	"

Only 40% were born at full term.

Strassmann calculated out of 231 cases of placenta prævia in which he was able to get the necessary information:

Delivery at full term in 39%; premature birth in 42.8%; abortion (before the twenty-eighth week) in 18.2%.

These results are remarkably similar to those of Lyle. Therefore Strassmann concluded that no other method of treatment in placenta prævia can ever promise a reduction of the high fetal mortality to any considerable degree. Anderson also makes the prematurity of the majority of these infants responsible for the high mortality. Galabin emphasizes the fact that a considerable proportion of those born alive die within a few days. Von Neuner reports that nearly half the number of children born alive in 37.7% of his cases died a few days after delivery.

This fact must be taken into consideration, and therefore some of the authors—the majority have failed to do so—in recommending cesarean section as a proper method of treating placenta prævia, state that this operation is advisable only in cases in which pregnancy is so far advanced that there is a prospect of getting the child alive. Again, this advice, well founded from a theoretic standpoint, meets with great obstacles when carried out in practice. Especially in cases of placenta prævia a right calculation of the duration of pregnancy is often very difficult. Hemorrhages, occurring in the earliest stage of pregnancy, may make it impossible to determine the time of the last menstruation. (We know that these hemorrhages may occur at certain intervals and even simulate menstruation; many cases of seemingly uninterrupted menstruation during the course of pregnancy are later found to be cases of placenta prævia partialis or marginalis.) Furthermore, the position of the fundus uteri in many cases of placenta prævia cannot be used for the diagnosis as to the exact duration of pregnancy, because abnormal position of the fetus, as oblique and transverse presentation, is almost a typical complication. Even a careful observation of the action of the fetal heart will not allow a positive diagnosis as to the condition of the fetus. Thus both palpation and auscultation in a considerable number of cases of placenta prævia will fail to decide the question whether at the time of the proposed operation the fetus is alive and viable. This decision, however, is of the greatest importance when cesarean section is done, on account of a relative indication. A cesarean section performed in the interest of the child's life has, even with a perfect recovery of the mother, to be considered an absolute failure if the child is found dead or unviable. And this result we may expect in many cases in which cesarean section is performed on account of placenta prævia.

Summing up all the foregoing statements, I draw the following conclusions:

1. The results of cesarean section at large are worse than is usually stated.
2. In contradistinction, the results obtained by the usual treatment of placenta prævia are by far better than is generally believed.
3. There is every reason to expect that the results of cesarean section performed in cases of placenta prævia will be much worse than those of the classic operation.
4. If cesarean section as a means of treating placenta prævia is contemplated, Porro's radical operation, with extirpation of the uterus, according to the indications for this operation, may have to be performed in the majority of cases.
5. The treatment of placenta prævia by means of cesarean section does not seem to hold out promise of considerably augmenting the number of children saved.
6. A careful study of the published statistics shows that the most promising treatment of placenta prævia is the following:

In cases of deepseated placenta, or placenta prævia marginalis, hemorrhages but seldom occur before labor pains set in. These hemorrhages usually stop spontaneously during the course of birth. The head or breech, passing deeper into the pelvis, compresses the free, bleeding edge of the placenta. If the progress of the presenting head or breech is delayed, as

happens in multipara or when there is a slightly contracted pelvis, it can often be accelerated simply by artificially rupturing the membranes. This trifling operation sometimes suffices to stop the hemorrhage. If, however, the bleeding continues, while the head or breech is deep down in the pelvis, then—and then only—a tight tamponade of the vagina is indicated. The bleeding edge of the placenta is thus compressed between the fixed fetal part and the tampon. Under these circumstances we have a tampon that does not push off the placenta from the uterus, as is always the case when a tamponade is thoughtlessly introduced before the head or breech is fixed in the pelvis. The tampon has to be removed after a while in order not to retard the progress of the child. If the head is deep enough, and the cervical canal fully dilated, forceps can be applied. In cases of abnormal position of the child, as oblique or transverse presentation, or if the cord is prolapsed, etc., bipolar version, according to Braxton Hicks, should be performed so soon as two fingers can be passed into the cervical canal, i. e., the foot is simply pulled down in cases of breech presentation. In cases of placenta marginalis, at the time of any considerable bleeding, the cervical canal will usually allow the passage of two fingers. If it does not, it should be dilated by means of a colpeurynter. The turned fetus is pulled down until the knee of the child can be seen in the vulva. Then the thigh and breech press the edge of the placenta against the bony parts of the maternal pelvis and act as a tampon from above. From now on the expulsion of the fetus is left to the natural powers of the uterus. Forced extraction after the version has been performed should not be undertaken. A very deliberate and careful extraction may be attempted in some cases but only if there is a chance to save the life of the fetus. The best way is to fasten a ribbon to the child's foot, to the free end of which a weight of two pounds is attached. If this ribbon is placed over the foot of the bed, a continuous gentle traction is exerted upon the fetus. This traction guarantees the checking of the hemorrhage between labor pains and expedites the expulsion of the child without danger of producing a laceration.

In cases of placenta prævia centralis or completa the first hemorrhages often set in during pregnancy or in the early stage of labor. Sometimes the bleeding can be checked for a time by keeping the patient confined to her bed and applying douches of ice-cold water. If, after a trial, these procedures fail artificial delivery (abortion) should be induced immediately. If the cervical canal is still closed, it should be opened by means of Hegar's dilators until the introduction of a colpeurynter is possible. The bag is then filled with a 2% solution of lysol and its expulsion by uterine contraction awaited. Light, careful traction at the free end of the colpeurynter is permissible and this is best done by means of the two-pound weight. Immediately after the bag has passed through the cervix, bipolar version is performed, viz., in cases of breech presentation the foot is pulled down. In order to rupture the membranes an attempt should be made to reach the end of the placenta. A thorough search for it, however, is dangerous, as larger parts of the placenta may be torn off from the uterus. If the membranes can be reached, they are ruptured and the foot pulled through the opening. If they cannot be reached easily, the fingers penetrate the placental tissue and the foot is brought down through this hole. If at the time when the hemorrhages begin the cervix allows the introduction of two fingers a dilation is not necessary and bipolar version is immediately performed. The further treatment of the case is now exactly the same as described above for placenta prævia marginalis. In cases of placenta prævia centralis, even a careful manual extraction should not be attempted, as in these cases the lower segment of the uterus, where the placenta is attached, is exceedingly friable and the danger of rupture imminent. If version has been made, and the cervix has not been injured, the hemorrhage is always checked immediately.

None of these procedures demand, any extraordinary preparations or assistance, and any of them can be made without loss of time at the home of the patient, so soon as the diagnosis has been established.

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THE EFFECTS OF VENTROFIXATION AND OF VENTRAL SUSPENSION ON SUBSEQUENT PREGNANCY AND LABOR, WITH REPORT OF A CASE.¹

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Written strictly from the standpoint of practical obstetrics, this paper will attempt to present all the known essential facts, with the conclusions derived therefrom, bearing upon the obstetric phases of suspensio uteri and ventrofixation.

My experience has been limited to one case, and I am well aware that of itself it affords but a relative criterion for judgment. It is only by the careful analytic study of a large number of cases here, as elsewhere in medicine, that rational conclusions can be drawn. I therefore present this paper as a contribution to a very large subject, taking it for granted that the reports of all cases of such practical interest will be welcome contributions to a science essentially inductive. It is probably the general practitioner who, after all, sees most of the ultimate obstetric results; hence he is entitled to a hearing. A statement in Kelly's *Gynecology* would seem to signify that even this distinguished author and gynecologist has seen but one of his suspension patients in subsequent labor and in the puerperium.

Following is a report of the operation performed by Dr. George R. Fowler, the method that in which the urachus is utilized as the medium of suspension; the patient being the one I attended in confinement for Dr. George Drury, subsequent to the ventral suspension.

Mrs. C. S. Z., aged 21, housewife; admitted to the Brooklyn Hospital, January 26, 1896; discharged February 23, 1896.

Diagnosis.—Prolapsus uteri and hypertrophy of cervix.

Previous History.—One child, 1½ years old; abortion one year ago. In May of preceding year the uterus began to descend and since then the condition has grown rapidly worse.

Condition on Admission.—Cervix much hypertrophied and eroded; protrudes 1½ inch below vulva. Body of uterus enlarged.

Operation.—Lithotomy position, cervix amputated; Trendelenburg position, abdomen opened. Urachus, with a ribbon of peritoneum, separated from the edge of peritoneal incision for the length of the wound, beginning at the upper angle, the strip still remaining attached to the lower angle of the peritoneal incision. Uterus lifted up and two parallel incisions made on the posterior surface of the fundus at right angles to the long axis of the organ. A narrow-bladed Cleveland's ligature-carrier was passed through these incisions from behind forward and the blades of the instrument gently separated. The tip of the detached urachus, with its accompanying strip of peritoneum, was passed between the blades of the carrier and drawn through the loop of peritoneum formed on the pos-

terior surface of the fundus. The urachus and the peritoneum accompanying it were then included in the crossed sutures of silk wormgut which served to close the abdominal wound.

After Course.—Uneventful. First dressing was done on the eighteenth day. Union complete. Two days later the crossed sutures were removed and the patient allowed out of bed. On the twenty-fourth day, examination showed the uterus in normal [sic] position. Discharged, cured.

This woman became pregnant about a year and a half after the suspension, and, until falling in labor, suffered no pain whatever. There was very little early nausea. The abdomen protruded much more markedly than it ordinarily does. The uterus lay well forward, with the pseudocervix formed by its lower segment well retracted into the pelvis posteriorly, lying somewhat in relation to the promontory. Walls of vagina tense. Central portion of cervix retracted upwards, the peripheral edge being anchored down, as it were. Hence it felt to the examining finger somewhat as a hollow cone, with the apex toward the navel. A tongue of scar tissue was found running centrally down the anterior vaginal wall from the cervix, ½ inch broad at point of cervical origin, the apex terminating about an inch down.

She fell in labor, at full term, August 12, 1898, and its duration, until terminated by a median forceps operation, very cautiously performed, was about six hours. The indication for the application of the forceps was the stationary head, nature being clearly incompetent to deliver. The delivery was easily accomplished under chloroform anesthesia. The waters had ruptured early. No trouble with the placenta. The bladder was emptied by catheter of about two ounces of urine before applying the forceps.

The lower segment of the uterus presented no marked difference postpartum from its condition antepartum. The canal was very patulous before, during and after labor, and its dilation very rapid. Examination was no more difficult than under ordinary circumstances and there was no obstructing mass anteriorly. The position was L. O. A. Weight of child, seven pounds; diameters of head, normal.

When seen in April, 1901, no changes in the relations of the pelvic viscera had occurred. Vaginal walls still tense, feel of cervix the same. The uterus was at least in its normal plane, perhaps a little higher, and the patient in all respects comfortable. The body of the uterus was, however, very large, due, doubtless, to circulatory changes of somewhat the same nature as occur in prolapse—a straightening of veins ordinarily tortuous and without valves, resulting in a disturbance of the compensatory balance between the inflow of arterial blood and the outflow of venous blood. This will be recognized as being in accord with the teachings of the master, Emmet.

Dr. Fowler, who has performed this urachus operation many times, knows of only three other cases besides the one just described, in which pregnancy ensued. In one case there were some vesical symptoms, not, however, of a very serious nature, as the uterus rose above the brim. The labor was very smooth. In another, everything was practically normal from beginning to end. The third patient aborted.

The indications for these operations (ventrofixation and ventral suspension), with their various modifications, are given as retrodeviations, when otherwise incurable and causative of symptoms calling for relief, and procidentia uteri. The gynecologic objections to them have been the undoubted raising of the uterus above its normal plane, or prolapsus into the pelvis, as Emmet calls it, producing, according to him, the same circulatory disturbances, with all their evil effects, as prolapsus downward, and the opening of the abdomen, a formidable procedure in the minds of some. Noble dismisses them as theoretic and of little practical importance. Gynecologically, these operations are considered, by most authorities, both as regards performance and results, satisfactory in every way. It is those who ascribe all merit to plasties who think otherwise. Needless to say, there is a broad middle ground occupied by those who make each case a law unto itself, and are not governed by hard and fast rules.

The obstetric standpoint is a very different matter, and in this relation the status of the operations has not yet been definitely determined. Therefore, it is obvious that each new report adds something to our knowledge of the subject.

First, with reference to pregnancy. The difficulties met, according to Kelly and others, have been as follows:

1. Marked retraction of the scar, due to the tugging adherent uterus.

¹ Read before the Long Island Medical Society, May, 1901.

2. Constant pain in the hypogastrium.
3. As pregnancy advances the cervix retracts into the pelvis and may even become displaced posteriorly up into the abdominal cavity.
4. The anterior portion of the uterine body fails to expand and forms a large, fleshy, tumorous mass, obstructing the superior strait.
5. On the other hand, the posterior part of the uterus may become as thin as tissue paper.
6. Abortion or premature labor may come on spontaneously.
7. Persistent excessive nausea may be caused by traction on the scar.
8. Prolongation of the normal period of uterogestation occasionally occurs. Authentic cases are on record in which the child has been carried ten months.
9. There may be vesical symptoms as the uterus rises above the brim.

Now for the very practical questions: First, what is the nature and what the degree of obstetric risk run by a woman of childbearing age who submits to these operations and who subsequently becomes pregnant? and, second, what are the abnormal conditions, which may confront the practitioner, at term? By way of answer it may be stated that the difficulties during labor have been found to be that:

1. The labor may be powerless, owing to the inability of the thinned-out posterior uterine segment to expel the fetus.
2. The labor may be obstructed by the mass of tissue in the anterior uterine wall, as by a tumor.
3. The proper expansion of the cervix is hindered by its abnormal position high up, even in the abdomen.
4. Malpositions, particularly the breech and the transverse, are more frequent than the normal position.
5. The uterus in labor may tear loose from its moorings, with the consequent formation of a large hematoma at the point of rupture.
6. The uterus may have become sacculated above and beyond the obstruction caused by the thickened anterior wall, thus adding to the difficulties of extraction.
7. The uterus may rupture.

It has been observed that all the serious difficulties have occurred only when the methods of operating have produced widespread and dense attachment of the fundus to the abdominal wall, in other words, in the permanent fixations, accidental or designed. Practically all observers are agreed so far as this is concerned. Kelly's method might be characterized as temporary fixation first and suspension afterward, that is to say, only opposed peritoneal surfaces are included in the sutures, the resulting adhesions stretching out about two inches in a few weeks and giving a movable uterus, thus simulating nature. Of course the longer time after suspension that pregnancy can be avoided (say one year, at least) the better will be the chance for the formation of strong and permanent ligamentous bands and the better the ultimate gynecologic and obstetric results. Noble modifies Kelly, and claims an obstetric advantage, although admitting the gynecologic superiority of Kelly's operation. He passes the sutures through the anterior instead of the posterior face of the fundus, and also sutures the peritoneum higher up than does Kelly, thus giving a still more movable uterus and permitting a much more general development during pregnancy. Kelly, however, claims that it is necessary to secure intraabdominal pressure against the posterior part of the uterus instead of its summit or anterior face, thus keeping the uterus anteфлекed. Hence he chooses the posterior face of the fundus and the pressure acts favorably.

In a general way there are three methods in vogue: Kelly's, which has been briefly alluded to; Olshausen's, an operation which secures firm fixation of the anterior face of the fundus; and Leopold's, which secures still firmer attachment, the peritoneum of the fundus being scraped off. There are many modifications of these three.

In regard to the obstetric status of certain other operations of similar nature, but not identical with suspensio uteri, allusion is made to Alexander's or shortening of the round ligaments, with its modifications (?) by Palmer Dudley, Gilliam, Mann, Wylie and Baer, and to vaginal fixation after the methods of Dührssen and Mackenrodt. With reference to the first, Alexander's, there appears to be no evidence that the operation interferes in any way with pregnancy or labor, aside from some slight discomfort in the latter months, noticed in a few cases. As to the second, or vaginal hysterorrhaphy, this has a notoriously disastrous record, one-fourth of the pregnancies ending in abortions, and the literature is filled with reports of difficult forceps operations, craniotomies, versions and Porro operations. It is condemned by its results, and is unjustifiable in child-bearing women. As to the degree that Vineberg's and Goffe's operations overcome these objections, further observation of remote results will be necessary.

The gynecologic limitations of the operations for shortening the round ligaments—tumors, adhesions and inflammations—play little or no part in abdominal hysterorrhaphy, becoming, in fact, the indications for it, the latter operation suffering only by reason of obstetric bugbears, although it must be borne in mind that difficulties in labor will almost undoubtedly be finally reduced to a minimum by perfected technic. But at the present time, in operations for shortening the round ligaments, when feasible, the risks to the patient in case of pregnancy supervening are distinctly less than after ventrofixation or suspensio uteri. This is probably true not only of the Alexander operation proper, and of the various modifications (?) of it, but also of the method of Goldspohn, of Chicago, who broadens the field of the Alexander operation, in cases in which adhesions complicate, by breaking up the adhesions through the rings, and afterward closing by the Bassini method, thus avoiding the *direct* abdominal route adopted by several other operators in attempts to broaden the operation. The same may be said of the vaginal route, or postcolpotomy plus the Alexander. No matter what route is adopted or what method employed to shorten the round ligaments, the obstetric relations remain apparently practically the same.

This paper is not concerned with gynecologic "pros and cons," but is concerned entirely with obstetric results. Something might be said against Goldspohn's operation, but an attempt to consider the various operations in their gynecologic relations would be out of order in a purely obstetric paper, and cognizance of the claims made by various operators for their methods as well as of the objections urged against them must be assumed. All of them appear to have a large share of both friends and enemies. Familiarity with technic details must also be assumed.

Noble's review shows the obstetric results in 808 American cases of suspensio uteri and ventrofixation in which at least one ovary remained.

There were 198 operations in which both were removed. Among the 808 were 56 pregnancies, or 6.9%. Seven remained undelivered at the time of the collection of the statistics. Later reports show that no difficulties occurred in these seven remaining cases. There were six abortions, or 10.7%; 43 were delivered at full term or shortly before it. There were three deaths, of which two were not attributable to the operation one dying of heart disease before labor, the other becoming septic before operation owing to a dead ovum. Therefore but one death, Noble's Porro, a mortality of about 2%, occurred as a direct result of the manipulations made necessary by the conditions consequent upon the operation. The complications in labor were: Forceps 3, amputation of the pregnant uterus 1, retained placenta 2, sepsis before labor 1, heart disease 1, uncontrollable vomiting 1, induced labor 1.

The European statistics correspond closely to the American. Gordon, of Johns Hopkins, who has collected and collated them, gives the following (1896):

Out of 175 pregnancies there were 17 abortions (10%), 7 premature labors (4%), and 133 full-term labors. In 18 cases,

labor was complicated as follows: Artificial extraction, 2; forceps delivery, 8; version, 5; cesarean section, 3; deaths from labor, 2 (4%).

Following, in classified form, are the cases of J. Polak, of Brooklyn, presented as a special group. They are reported by themselves because of their great interest and value as constituting an unusually large individual experience, 9 having been carried through accouchement by the operator himself, and also because they form no part of Noble's statistics.

One hundred and fifty-three fixations and suspensions: 41 of the former and 112 of the latter. Twenty pregnancies are known to have gone to term. Two pregnancies occurred in same woman fixation series. Uncomplicated labors, with one exception. Considerable distress from dragging up of abdominal attachment during pregnancy. Of the 9 attended by Polak in subsequent confinement, 3 were in the suspension series and were cephalic, with deliveries unaided. The ninth, a fixation, with twins and a pendulous abdomen, gave some trouble. In this case the posterior wall was very thin.

A few difficult cases have occurred since the compilation of Noble's statistics which will be briefly alluded to:

1. One of Pilcher's, of Brooklyn, a case of sacculization of the pregnant uterus following ventrofixation; extraction very difficult, accomplished by manipulation and forceps; reported by Heaton.¹ The child was born dead, and the mother was in a state of shock for 6 hours; ultimate recovery.

2. One of Edebohl's, of Manhattan, a difficult and disastrous labor at term—transverse presentation, inability to deliver on account of the high posterior position of the cervix and an obstruction formed by the thickened anterior wall of uterus; rupture of the uterus; celiopanhysterectomy; death from sepsis.²

3. Two of Dickinson's, of Brooklyn, one ending in rupture and one in cesarean section. The latter case is interesting aside from the section because of the extreme displacement of the internal os, namely, to the third lumbar vertebra. This was a case following Kelly's suspension, which was done by the Baltimore operator himself, in which the adhesions did not stretch out, resulting in permanent fixation. The patient died of late shock. It was a twin pregnancy. There is a case recorded in which, under somewhat similar circumstances, both mother and child were saved by opening the abdomen about a month before the expected date of labor and freeing the uterus from the abdominal wall.

The rupture case followed a ventral fixation with intraabdominal shortening of the round ligaments and vaginal plastics, done by Mundé, of Manhattan. The patient had been under the care of several practitioners, who, in attempting to deliver by version and forceps, ruptured the uterus. In this case the thickened anterior wall was like a fibroid in its obstruction to the entering hand and the departing head. This woman died also.

Dickinson, having to do a laparotomy on one of Fowler's urachus cases, for some condition having nothing to do with the suspension and occurring a considerable time afterward, took advantage of the opportunity thus afforded to inspect the uterus and its attachment to the abdominal wall. He found what virtually amounted to a fixation. The question naturally arises, Does this always obtain?

Up to 1899, eight cesarean sections had been performed. What others, if any, besides Dickinson's, which was done in 1900, have since been performed, the writer is unable to state. Noble's statistics, it must be borne in mind, include all kinds of operations for both suspension and fixation, yet are by no means absolutely valueless on this account, as W. E. Ashton and some others believe. It is true, however, that Noble did not find it possible to distinguish between the results of the various methods except in a general way. The same is true of the European statistics.

Conclusions as to the influence of suspensio uteri and ventrofixation on fertility: Apparently they reduce fertility, for only 56 became pregnant out of 808. Yet it cannot be positively stated, Noble's dictum notwithstanding, that pregnancy is less liable to occur in women who have been subjected to these operations than in others, for, as R. Pomeroy, of Brooklyn, reminds us, other con-

ditions tending to reduce fertility are to be reckoned with in the class of cases requiring these operations.

Conclusions as to the influence of suspensio uteri and ventrofixation on abortion: There is no special tendency to induce abortion. Two occurred in the same woman; one after dancing, the other was criminal. The operation of suspensio uteri has been done twice during pregnancy, without abortion supervening, once by Kelly, and once by Fry of Washington.*

Practical obstetric conclusions: It may not be very scientific to attempt to draw conclusions of any kind from what data we have accumulated without attempting to consider suspension and fixation distinctly and separately, but it suffices for all practical obstetric purposes to consider them as one, distinguishing between them, as did Noble, only in a general way.

Passing over the difficulties that may be met during pregnancy, and also over such obstetric difficulties as inertia uteri, malpositions, etc., all of which have been alluded to, we will study for a moment the condition which, when present, constitutes the greatest obstetric danger, and because of which most of the other difficulties arise, namely, an obstructing mass of tissue formed by the anterior uterine wall. Serious or insuperable obstruction to labor may be produced, if the fundus and anterior wall of the uterus are imprisoned below the point of attachment between the uterus and the abdominal wall. Noble remarks that: "A careful inquiry into all the facts of the case makes it evident that the real obstetric danger to be feared as a result of suspensio uteri (and, of course, as a result of ventrofixation) is that the fundus and anterior wall of the uterus may become imprisoned below the point of suture to the abdominal wall, and thus be prevented from developing in the course of pregnancy. This entails two serious consequences: The first is that the posterior and lateral walls of the uterus must afford the necessary room, by their exaggerated development and overstretching, to accommodate the growing ovum; and the second is that the fundus and anterior wall of the uterus, hypertrophied by pregnancy, being imprisoned below the point of attachment to the anterior abdominal wall, may form a tumor blocking up the inlet of the pelvis. This occurred not only in two of my own cases, but in a number of others reported in the literature. It is important to determine whether this unfortunate condition is inherent in the operation, or whether it is dependent upon the technic employed in its performance."

Noble has given us the most critical study of the obstetric effects of ventrofixation and of ventral suspension, and he offers an important practical suggestion in the way of the management of these cases, which would, if followed out, probably obviate the higher grades of dystocia and all major obstetric operations for complete obstruction, such as puerperal hysterectomy; namely, that labor be induced at the eighth month if the cervix begins to be dragged up out of the pelvis, or if the anterior wall of the uterus constitutes a tumor at the brim. In this connection it might also be well for obstetric surgeons to bear in mind that the abdomen has been opened and the adhesions freed. Either method would be justifiable in the face of grave danger.

Plastics failing, it would seem that suspensio uteri, possibly after the manner of Kelly, who, although he has performed more than one-fourth of all the American operations reported, has had but two serious difficulties to follow, or one of the methods similar to suspension, such as Alexander's operation and the like, is infinitely preferable to permanent ventrofixation, however performed, except, of course, in old women or in those whose ovaries have been or must be ablated. In these classes of cases it becomes, perhaps, the operation of

¹American Gynecological and Obstetrical Journal, October, 1897.

²American Gynecological and Obstetrical Journal, December, 1896.

*A third case recently came to my notice. F. W. Johnson, of the Carney Hospital, Boston, is reported by J. O. Vogel (Boston Medical and Surgical Journal, March 21, 1901) to have suspended a uterus after the manner of Kelly at the third month of uterogestation, without abortion supervening.

choice. From an obstetric standpoint, ventrofixation may be considered as occupying an intermediate plane between vaginal fixation and ventral suspension. In this connection it should be said that one of the two difficult cases of labor following Kelly's operation, was one of his earliest, in which the uteroovarian ligaments were the mediums of suspension, and that permanent fixation occurred in this case because of extensive supuration. It was not his improved operation.

Finally, we may say that pregnancy and labor, as a rule, are uncomplicated. Between 85% and 90% have been absolutely normal; in about 2% delivery has been impossible by way of the natural passages; in the remaining cases the difficulties met have been overcome by the ordinary resources of obstetrics. Therefore we should not derive erroneous ideas because of the gravity of some of the reported cases. It may be truthfully said, leaving ventrofixation out of consideration, that the results of labor after suspensio uteri compare favorably with those observed under ordinary conditions; and even including ventrofixation, as Noble and Gordon do in their statistics, it may still be said that the obstetric results have been fairly comparable to those ordinarily met with. This, however, must be attributed more to good fortune than anything else, for we certainly have some good obstetric reasons for distrusting the operation of ventrofixation in child-bearing women.

THE TRUE VALUE OF LOCAL TREATMENT IN GYNECIC PRACTICE.

BY

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The true value of local treatment in pelvic disease is frequently underestimated. Too often in the anxiety to resort to operative interference, the physician neglects the employment of palliative measures. There is a class of gynecologic patients that apply for treatment, presenting cases in which surgical measures are not always indicated; or there may be positive contraindications, such as diabetes, nephritis or endocarditis, rendering the administration of an anesthetic inadvisable.

Local treatment may often be used with advantage prior to or after operations on the pelvic organs. The mere fact that an operation is performed, does not always signify that the patient is cured. We are all familiar with unpleasant postoperative sequels. Conservative operations may place the organs in a better condition, so that local treatment will restore the woman to health.

A large proportion of patients have metritis, parametritis, pelveoperitonitis and salpingitis, to a varying degree. Combined with these are displacements of the uterus and adnexa, causing chronic congestion or venous stasis of the pelvic organs, with reflex and constitutional symptoms. These various conditions may be markedly improved by local treatment, which aids resorption and relieves congestion. The constitutional treatment must not be neglected, as regards the anemia which may be present, or as regards any other existing disturbance.

Women suffering from pelvic inflammatory disease requiring surgical interference, oftentimes will not submit to the proffered operation. These patients are frequently relieved of their pains and distress, for a prolonged period, by systematic local treatments, and are thereby enabled to resume their routine duties, which is of prime importance to the housekeeper and business woman.

Prior to the institution of treatment, it is essential that a thorough bimanual examination be made, under anesthesia if necessary, to ascertain the condition, position and relationship of the pelvic contents. If a mal-

position of the uterus exists, especially a flexion, it should be corrected in order that there will be no interference with the circulation and drainage of the pelvic organs. If the retroflexed uterus is adherent, local treatment will be of little benefit, except to modify symptoms, until an operation is performed.

The various methods of local treatment are, by the use of (1) the tampon, (2) antiseptic and astringent applications, (3) vaginal douching, (4) high rectal injections, (5) pelvic massage, (6) local bloodletting, (7) atmocausis, and (8) the pessary.

1. The vaginal tampon. The materials that may be used for tampons are, absorbent cotton, sterilized gauze and sterilized lamb's wool. The best material is sterilized lamb's wool covered with a layer of absorbent cotton; because it is nonirritating, its draining properties are good, it is introduced and removed with little or no difficulty, and it retains its resiliency, even when wet, longer than any other material. When this tampon is employed, the cotton becomes saturated with the medicament, "while the nucleus of wool within gives the required degree of elasticity or resiliency, and serves also as a perfect medium for drainage." Never introduce a dry tampon, as it will invariably irritate the mucous membrane; this may be obviated by covering the tampon with boracic acid.

Tampons are used to apply medicaments, and for mechanical reasons. The medicament may be applied for the relief of pain, absorption of inflammatory products, as a counterirritant, or to contract relaxed tissues. Glycerin, owing to its dehydrating properties, is the best adjuvant to other drugs, and when combined with ichthyol, 15% to 25%, its value will be markedly enhanced. Boroglycerin will be found very useful in some cases. The combination of ichthyol and lanolin forms a very disagreeable ointment to handle, hence a preference for the glycerin mixture. Very often the mechanic effect of the tampon, by supporting the uterus, maintaining it in its normal position, relieves the congestion and pressure symptoms.

It is important to explain to the patient that a tampon has been inserted, as it is possible that she may not return for a second treatment, and the packing undergoing putrefaction, may produce sepsis. Beckwith¹ reports the case of a woman in whom a tampon had remained for 29 years, it having been introduced by a midwife without the knowledge of the patient. The tampon in this case had become incrustated with lime salts, which gave rise to hemorrhage from the excoriated vaginal mucous membrane.

2. The antiseptic and astringent applications of value are numerous. Churchill's tincture of iodine may be applied to the cervix and vaginal vault with advantage. In eroded os uteri, a 10% solution of nitrate of silver, or a 5% solution of sulfate of copper is indicated; acetic acid, to which 4% carbolic acid has been added, may be poured into the speculum and allowed to act for several minutes, this procedure being repeated daily for a few weeks. The reddened ulcerated patches gradually disappear as the pathologic cylindric epithelium is replaced by epidermoid cells.

3. The vaginal douche may be of hot water or of hot antiseptic solutions. If the chief aim of the injection is to combat inflammation and cause absorption of inflammatory exudates, plain hot water is the best, the temperature of which should be at least 110° F. At least one gallon should be used at each treatment. The douche must be prolonged, in order to secure its secondary contractile effect upon the bloodvessels. Occasionally hot water increases the pain and may be replaced by lukewarm water. Vaginal douches, in chronic cases are used, as a rule, night and morning; a fountain syringe is preferable, and the patient should be in the recumbent posture on a douche pan. For antiseptic douching, bichlorid of mercury $\frac{1}{1000}$, creolin, lysol, permanganate of potassium and carbolic acid, are of value.

4. High rectal injections are useful, because the fluid is carried higher in the pelvis and exerts its influence on the intrapelvic structures more effectually than do simple vaginal douches. It also tends to relieve constipation, which is so frequently present in these cases of pelvic disease.

5. Pelvic massage, so earnestly advocated by Thure, Brandt and others, has not proven satisfactory. Patients are unwilling to submit to the frequent and prolonged manipulations necessary to secure success by this method.

6. When the cervix is enlarged and congested, relief may be given by multiple punctures made under antiseptic precautions and the abstraction of a few drams of blood. The depleting effect of such "surgical leeching" is decidedly beneficial.

7. Schaeffer's² experience with atmocausis is as follows: "The application of steam to control hemorrhage is a most valuable addition to our therapeutic measures. It was first employed by Sneigrew, the instrumentarium being perfected by Pinkus. His observations show 'that it is as effective in obstinate endometritis as it is in inflammations of the myometrium. It is not advisable for one unskilled in gynecologic practice to make use of this method, especially if he is without assistance. It is as little adapted for ambulatory treatment as is curetment.'"

The instrumentarium is as follows: A tested boiler with safety-valve and thermometer; a rubber tube (tightly screwed to the boiler) rather thick and well wrapped, and a two-way intrauterine catheter with a discharge-tube for the steam returning from the uterine cavity. The catheter is covered with gauze or celluloid to protect the cervix from injury and subsequent stenosis. The pressure and temperature of the steam and the duration of its action must be gaged to suit the individual case. A cureted uterus, or one having a small cavity, must be treated more mildly, probably using only the zestocautery, *i. e.*, the closed catheter 105° to 112° C., for from 10 to 20 seconds; with a large cavity and a thickened endometrium, 110° to 115° C., for 15 seconds. If obliteration is desired, steam at 115° to 120° C. for from one-half to two minutes is to be employed; this may be repeated, whereas ordinarily the application should not be renewed until the next menstrual period has passed. Narcosis is not necessary, but is usually desirable; the same is true of assistance. The cervix must be dilated.

Atmocausis has been employed by some of the German surgeons with good success, but its use in this country has been exceedingly limited.

(8) In these days of multiple operations and brilliant surgery the pessary has fallen into disuse. It has been abused because improperly used. It has a definite place in the armamentarium of the physician. The function of this instrument is to maintain the replaced uterus in its proper position by a pulley-like action on the vaginal walls. It must be carefully fitted to the individual case, as any haphazard introduction will give rise to more discomfort than relief. The uterus must first be replaced into its normal position, if this is impossible the pessary is contraindicated. It is just as unsurgical to introduce a pessary when the uterus is in a malposition, as it would be to apply a truss to an unreduced hernia.

The selection of the pessary will depend upon the malposition of the uterus. The use of intrauterine pessaries should be unqualifiedly condemned. Montgomery³ calls attention to the fact that it is extremely important to induce the patient to realize that astringent injections should be avoided while the pessary is in situ, as they lead to the deposition of salts upon the pessary, which roughens its surface, increases the irritation and leads to further abrasion and ulceration of the vagina. Patients wearing a pessary should frequently use a cleansing douche, and should be kept under observation.

One difficulty in the employment of this instrument is that frequently extensive lacerations of the pelvic floor

are present, and the pessary cannot be retained in the vagina, being either extruded or displaced if the patient makes a straining effort. These patients should then pass from the domain of palliative treatment to that of surgical procedures. Bandler,⁴ of New York, believes that the results which he has obtained with thermal carbonated saline baths (which may be used in conjunction with local methods) justifies him in claiming for these baths a power of resorption too valuable to be underestimated; and they constitute a treatment which at the same time benefits the general condition to a decided degree.

It is clearly evident that a number of patients may obtain considerable relief by the use of these various local methods, when more radical procedures are inadvisable or impossible.

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CONGENITAL MALFORMATION OF THE VAGINA WITH REPORT OF CASES.

BY

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Works on anatomy and gynecology teach us that the female generative organs are formed from two tubes, known as the ducts of Müller and the Wolffian bodies. From the upper portion of the ducts of Müller, the fallopian tubes and uterine cornua are formed; from the middle portion the uterus is formed by the coalescence of the ducts and disappearance of the septum; the same process in the lower portion of the ducts forms the vagina. Any arrest of this process before it is entirely completed causes an anomaly of the organs in question. The two cases reported below are sufficiently rare for their report to be of interest.

CASE I.—A young woman, aged 21, of French parentage, with no history of uterine trouble until recently, slight dysmenorrhea shortly after puberty. I was called to treat an impending miscarriage. On passing the finger into the vagina which seemed well formed and normal, it was arrested by slipping into a blind pouch. The first idea that occurred to me was that I had discovered a double vagina. On further investigation this opening was found to be situated just behind the hymen on the posterior vaginal wall a little to the left of the median line. In size it was barely large enough to admit the tip of the little finger, and was seven-eighths of an inch in depth. The patient never had any discomfort from it, nor even knew of its existence until a short time ago.

CASE II.—Some time ago a young lady of 22, from Delaware, came to me and informed me of her engagement to be married. She thought she was not just like other girls, and wished me to tell her what to do. Of a neurotic temperament she was naturally very nervous over the matter of examination. Two attempts had to be made before it was satisfactory. A condition was found which is stated in Gould's "Anomalies and Curiosities of Medicine" to be one of the rarest, namely, a "hymen bisepatus"; that is, the hymen had two openings, one on each side, with a band one-quarter of an inch in width passing anteroposteriorly between them. Under cocaine this band was quickly snipped at each end with scissors, and the parts needed no further attention after the first dressing.

In Case I coalescence of the ducts of Müller had taken place from the uterus down, excepting only this small portion, seven-eighths of an inch in depth on the left side. Dr. Konikow, of Boston, in *AMERICAN MEDICINE* for August 17, 1901, reports a case similar to this one. In Case II there is a complete coalescence of the ducts and absorption of the dividing septum throughout their whole length from the uterus down, with the exception of the very lowest end of the septum which forms this bisecting band of the hymen. The condition in neither of these cases was serious enough to cause any discomfort; yet such malformations are rare, and are of interest in the study of the development of these organs.

DYSTOCIA FOLLOWING VENTROFIXATION.

BY

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While the operation which anchors the fundus of the uterus to the abdominal wall seems an ideal one so far as relieving the symptoms of the retrodisplacement or prolapse, still it can scarcely be considered a safe procedure in a woman who is capable of bearing children. Though a physician of but three years' experience I have seen three cases of labor with serious complications resulting from this operation.

The sole object in reporting these cases is that they may be of service to some one in the future in deciding which of the several operations advocated should be done on a woman who has not passed the menopause, or whom the operation does not render sterile, by removal or ligation of other pelvic organs. The first two cases were seen while a resident physician in Mercy Hospital, Pittsburg, Pa., in the service of Dr. X. O. Werder, who reported them to the American Association of Obstetricians and Gynecologists at Indianapolis, September 19 to 21, 1899, which report is printed in the *American Journal of Obstetrics and Diseases of Women and Children*, Vol. xl, No. 5, 1899. But a very brief history of these two cases will be given, simply that all three cases may be grouped together.

CASE I.—Mrs. M. Z., aged 37; mother of seven children, the youngest aged 10. On March 19, 1896, the following operations were performed: Curetment, anterior colporrhaphy, median celiotomy and ventrofixation.

When brought to the hospital, September 19, 1898, she had been in labor about a week, the pains having been severe only at intervals during this time. Vaginal examination without anesthesia was negative, the cervix not being palpable. Under chloroform the cervix was felt, backward and about eight inches from the vulva.

The association of prominent surgeons and obstetricians mentioned above was in session in Pittsburg at the time, and it was the opinion of several of its members that cesarean section was the only method of delivery. At 2 p.m. she was placed on the table for operation. In cleansing the vagina, the breech was felt presenting, and within a short time the fetus (dead and skin macerated in places) was delivered by the Weigand method for the aftercoming head. What happened between 11 a.m., the time of the last vaginal examination and 2 p.m., is an unsolved mystery, though Dr. Werder's supposition that the powerful contractions during the last two hours caused a rupture of some of the adhesions, releasing the imprisoned anterior uterine wall and permitting the cervix to descend into the sacral excavation seems to be the most satisfactory explanation.

CASE II.—Mrs. P., aged 24, married 10 months. In 1894 she gave birth to a child and soon afterward presented symptoms of uterine prolapse for relief of which she had plastic operations and a ventrofixation performed by a prominent surgeon. Labor began at 10.30 p.m., March 1, 1899. Examination under anesthesia showed cervix high up, very small and in a posterior position. Cervix could not be brought down. Admitted to Mercy Hospital at 7 p.m., March 2. Condition found as described above and no fetal part could be reached per vaginam. A Porro operation was performed at 9 p.m. and a living child extracted. The mother made an uneventful recovery. That the fixation operation was a marked success, the anterior wall of the uterus plainly demonstrated.

CASE III.—Mrs. S., aged 43, mother of four children, youngest aged 15. In 1894 "she had some tears repaired and the abdomen opened" by a gynecologist of Philadelphia. She knew nothing further about the operation, and the thought occurs that every operator should give some member of the patient's family if not the patients themselves, a written statement of the nature of the operation, for the good of his patient and his or her family physician hundreds of miles away, when there is not time to send to the specialist and have him hunt up old case books, and reply even by telegraph.

In 1897 she had a miscarriage at four months. December 7, 1901, patient being at full term, began to have labor pains with the expulsion of small quantities of amniotic fluid. This condition lasted until the night of December 10, when pains became strong and frequent. At 9 o'clock on the morning of December 11, I was asked to see the patient in consultation with the family physician, Dr. J. W. Rowe, to whom I am indebted for the privilege of reporting the case.

Examination showed a well-developed woman, somewhat exhausted by the suffering during the night. Just above the pubes a linear scar $2\frac{1}{2}$ inches in median line was found. The abdominal tumor revealed the head to the right and below.

The back could not be outlined and fetal heart sounds were not detected, though fetal movements had been seen and felt about 7 a.m. Nothing was discovered by vaginal examination without anesthesia, but under chloroform, with whole hand in the vagina, a small cervix admitting one finger through the external os, posteriorly and above the pelvic brim could be detected. No part of the fetus could be felt, neither could the cervix be brought down.

Recalling Cases I and II, a diagnosis of dystocia due to adherent fundus was made, and cesarean section seemed the only solution of the difficulty. Dr. Wm. M. Findley, who also saw the case, concurred in the diagnosis, and the necessity of operative interference.

The operation could not be done before two p.m., and by that time the patient was even more exhausted.

In making an effort to find the external urinary meatus in order to catheterize the patient just before the operation, the cervix was detected fully two inches lower than at the last examination before noon. Remembering the fortunate termination of Case I, it was hoped that this patient might have a similar good fortune, but faithful and persistent effort failed to bring down or dilate the cervix or to touch any part of the fetus. What made the cervix descend is another mystery, unless it was the change of position of the fetus, head being found in the median line, for no uterine contraction, however powerful, could have ruptured the adhesions which held the uterus to the abdominal wall. An incision about six inches long in median line was made, the uterus delivered, the broad ligaments firmly compressed, the uterus opened, and the child rapidly delivered. It made a feeble effort to cry, but died in a few minutes. A Porro section was performed, and while the operation lasted but 40 minutes, and the patient lost less blood than in a natural delivery, she succumbed to shock, just as the operation was completed, notwithstanding all possible stimulation, including normal salt solution subcutaneously and intravenously.

The fundus was found firmly adherent to the parietes by a dense adhesion two inches long and one wide, just above the pubes. The silkwormgut sutures were firmly imbedded in the adhesion. The cervix was drawn out to a length of possibly five inches almost in the shape of a narrow cone.

Pure Milk.—A bill to regulate the sale of milk and cream in the District of Columbia has been introduced by Senator Gallinger. This provides that no person shall sell or produce for sale milk or cream without complying with sanitary conditions prescribed by the health officer, and obtaining a permit from him. To carry out the recommendations of the health officer the Ashburn Company, with Senator William M. Stewart as president, has been organized, and has purchased a 2,000-acre farm in the rich dairy region of Virginia and put in a herd of several hundred high-bred milch cows, conducting the enterprise upon sanitary principles in every detail, feeding the cows the right food, giving them pure water, pumped from 200 feet beneath the surface, to drink, having the stables thoroughly clean, the milkmen in white jackets, and finally purifying the milk by means of a separator that deposits at the bottom any impurity that may have dropped into it.

Mosquitos and Disease.—H. D. Gouvea, who has had 30 years' practice in South America, states his convictions that the conditions under which yellow fever has been propagated in Rio de Janeiro and Sao Paulo have ever been such as to fulfil the requirements of the Finley theory. During an epidemic of yellow fever in the lower portion of Sao Paulo—the higher portion, free from stagnant pools and mosquitos, was exempt, and not a single case of transmission had ever been observed among the attendants of the yellow fever hospitals. A series of experiments made by Dr. J. C. Thompson, an English expert, at Hong Kong, who examined 31,390 mosquitos, has been reported by Surgeon Kerr and a chart furnished which gives the relative prevalence of malaria and Anopheles. The Anopheles curve reached its lowest point in February and its highest point in July. The malarial curve, based on the presence of the American troops in Hong Kong, also reached its lowest point in February and its highest in July.

Edible Fungi.—In view of the frequent recommendations and efforts of mycologists to extend the use of fungi as food more generally among the common people and of the sad fatalities which are often recorded by the newspapers in consequence of such use, it may not be amiss to quote a footnote from Dr. John C. Hemmeter's admirable book on "Diseases of the Intestines." "C. H. Peck (Report of New York State Botanist, 1895, page 113) has asserted that fungi contains a 'very nutritious and sustaining diet,' an opinion not confirmed by the careful experiments of Lafayette B. Mendel (*Jour. Phys.*, Vol. I, p. 225). Edible fungi contain from 75% to 90% of water and an average of total solids of only 10.5% and could contain as a possible maximum, only 3% proteid, which, according to my analysis of stools made with the Baes stool-sieve after weighed amounts of *Morehella esculenta* had been ingested, is not even utilized, and therefore appears difficult of extraction by the digestive process. I conclude, therefore, that fungi are simply a dietetic ballast and had best be excluded from the diet altogether.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

January 4, 1902. [Vol. XXXVIII, No. 1.]

1. The Specific and Nonspecific Lesions of the Brain Resulting from Syphilis and Their Influence Upon Diagnosis, Prognosis, and Treatment. J. T. ESKRIDGE.
2. Treatment of Neurasthenia. J. G. BILLER.
3. The Nervous Relations in Diseases of the Nutritive System. HENRY S. DRAYTON.
4. Living on Bread. ALEXANDER HAIG.
5. Metamorphosis Varians. WILLIAM H. DUDLEY.
6. A Plea for Greater Uniformity of Strength and Exactness in Our Medical Armamentarium. C. F. WAHRER.
7. Standardization of Crude Drugs and Galenic Preparations. ALBERT B. LYONS.
8. The Proper Management of the Tuberculous Lung. NORMAN BRIDGE.
9. The Nature and Histopathology of the Epipharyngeal Tonsil. NORVAL H. PIERCE.
10. The Röntgen Rays: In Differentiating Between Osteomyelitis, Osseous Cyst, Osteosarcoma and Other Osseous Lesions, with Skiagraphic Demonstrations. CARL BECK.
11. A Case of Relaxation of the Pubic Joints During Pregnancy. JOSEPH B. DE LEE.

1.—Specific and Nonspecific Brain Lesions From Syphilis.—The gumma, the typical specific lesion, differs from the ordinary products of inflammation in being less highly organized and in having a greater tendency to degeneration either by caseation and fibroid degeneration or by the latter alone. Gummas are commonly found at the base of the brain often on the cortex and occasionally in the pores. In the membranes the tendency to hyperplasia is very great. If treatment is begun before degeneration occurs there may be complete cure but it does not take long for compression of nervous tissue to impair function permanently, causing blindness, ocular paralysis, chronic basilar headache, etc. In inflammation of the pia the cortex is involved with degeneration of its arteries and while the specific exudate is comparatively slight the nonspecific lesions are extensive and destructive. Necrotic softening is caused by specific arteritis obliterans and periarthritis is followed by miliary aneurysms and hemorrhage. When degeneration has once occurred antisyphilitic treatment is useless. [H.M.]

2.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 541.

3.—The Nervous Relation in Diseases of Nutrition.—Our social and business habits, irregularities and excess of diet and nerve excitability cause most of our stomach troubles. The usefulness of the various ferments is limited. Certain test tube reactions may never occur in the stomach or be so modified as to be negative in result or may do harm. Recovery as a rule will occur with abandonment of the unnatural course of life. Rest as a factor in the treatment of diabetes is especially considered and it is suggested that the effect of codein is due to its calmative power. [H.M.]

4.—Living on Bread.—Haig gives three uric acid free diet lists and shows the advantages of that which consists mostly largely of bread. The habit of eating large quantities can be gradually acquired. The taking of fluids in excess of thirst to wash out the uric acid is condemned as resulting in dilation of the stomach, engorgement of the vessels and increase in dilation of the heart. The great point in using dry breadstuffs is their thorough mixing with saliva. This makes it possible for them to be eaten at irregular hours and between meals without dyspepsia. Another advantage is their slow digestion and metabolism, giving a steady supply of force and urea over a number of hours. The urea curve is contrasted with that of milk. The superior powers of endurance shown by grain-eating animals is noted as well as the earliest recurrence of hunger after a meat diet. [H.M.]

5.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 541.

6.—Uniformity in Drugs.—Insufficient attention is paid to the quality of medicines used. Natural variations are noted. Preparations should be used which are made according to some uniform standard by an honest manufacturer of drugs, such as alkaloids, glucosids and mineral derivations, that are reliable from their nature. The Association should appoint a committee to memorialize the one which revises the pharmacopeia to introduce surer methods in manufacture, and also to memorialize Congress to give us laws to protect the consumer of drugs. [H.M.]

7.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 494.

8.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 495.

9.—The Epipharyngeal Tonsil.—The literature relating to the organ from Hippocrates down is briefly reviewed, and its gross and microscopic anatomy are described at length. It is normally present in all individuals. Its function is uncertain, but its wide distribution in the animal kingdom, its embryologic connections, its identity with lymphoid stricture, elsewhere suggest that it has a function. Histology and experiments tend to class it with glands having an internal secretion. The relations of tuberculosis, syphilis and scrofulosis to adenoids is not etiologic. [H.M.]

10.—The Röntgen Rays.—Abscesses can be so well outlined that the technical steps of the operation can be definitely traced in advance. If but one focus shows no other region of the bone need be attacked. Necrosis and sequestra can be easily made out together with adhesion or exfoliation of the latter. In acute rheumatism and infection articular outlines are well marked. In chronic rheumatic processes the articular line appears irregular. In arthritis the contours appear indented and in places veiled. Deposits are recognizable as light shadows, as they consist of translucent uric acid salts. In arthritis deformans the osseous proliferations are well represented. In tuberculosis outlines appear diffuse, cloudy and shaggy; cheesy foci are translucent and the cortex looks gouged out. Periosteal sarcoma show spiculated trabeculas radiating from the surface. The soft myelogenous variety show absence of osseous tissue, except small fragments; the hard variety shows more osseous tissue, but its outlines are irregular. The alveolar and multiple type show the foci as light irregular shades, with thin walls and trabeculas. In osteoperiostitis the walls are irregular and spindle-shaped. In congenital syphilis ossified areas are recognized in the epiphyses and light areas in the diaphyses. The synostosis between epiphysis and diaphysis shows a marked line due to calcareous deposits. Gummas are light-shaded. There is the same bulging in osseous cyst, as in osteosarcoma. The line of the cortex is narrow and regular. The fluid center is translucent. Cuts illustrate many of these conditions. [H.M.]

11.—Relaxation of Pubic Joints in Pregnancy.—In the case reported, moderately extended movement of the thigh showed an up and down riding of the pubic ends of one-quarter inch. DeLee has almost always found some tenderness over the pubis in pregnancy, with a long groove between the bones with distinct motion on adduction and abduction of the thigh. The relation to position in parturition is noted. Ordinarily, the patient does not complain, but sometimes it causes pain referred to the pubic and sacroiliac joints, difficulty in locomotion, inability to rise from a sitting posture, reflected pain simulating neuralgia or even abdominal disorders. Nothing permanently benefits. Attention to diet and elimination, restricted exercise, stimulating liniments, may be tried. The pelvic girdle fails to benefit. The condition disappears on parturition. [H.M.]

Boston Medical and Surgical Journal

January 2, 1902. [Vol. CXLV, No. 1.]

1. Cases of Rupture of the Spinal Ligaments. CHARLES F. PAINTER and ROBERT B. OSGOOD.
2. The Treatment of Placenta Previa. FRANK A. HIGGINS.
3. Privileged Medical Communications. ARTHUR H. NICHOLS.
4. Traumatic Apnea or Asphyxia. H. L. BURELL and L. R. G. CRANDON.
5. Rendering First Aid in Railroad Wrecks. LUCIEN LOFTON.

1.—Rupture of Spinal Ligaments.—Four new cases are reported in which there was kyphosis without disease of the vertebrae; there were symptoms of pressure upon the cord relieved in the course of a few months by treatment with plaster or leather jacket. The history of the other cases on record are also presented, and seem to justify the conclusions that spinal ligaments may be ruptured without fracture or dislocation; nerve pressure symptoms may occur from simple flexion of the vertebral column; recovery requires prolonged rest in a position favoring repair thus pointing to rupture rather than fracture or dislocation; the force was generally one which, a priori, would be most likely to produce ligamentous

rupture, being from above downward upon a flexed vertebral column, or from below upward. [H.M.]

2.—Treatment of Placenta Prævia.—Higgins says that while in earlier years the maternal mortality from placenta prævia was from 20% to 30%, through modern mastery of aseptic and antiseptic conditions it has been reduced to from 5% to 10%. Out of 75 cases in the Boston Lying-in Hospital there were 8 deaths, or 10.6%. This was probably higher mortality than under normal conditions, since many of the patients had suffered from hemorrhages before being brought to the hospital. The fetal mortality in placenta prævia is from 50% to 60%. The proportion of premature births is 62%. This in itself is sufficient cause for the high infant mortality, since the mortality of premature infants is from 60% to 70% under the most favorable circumstances. The rational method of treating placenta prævia depends largely upon the circumstances of each case. Every patient after the appearance of the first hemorrhage, and the diagnosis has been established, should be put absolutely at rest and kept under most careful supervision. Before the fetus is viable or nearly so, unless the patient can be surrounded by proper safeguards, the induction of miscarriage is the only safe method and is practically without mortality to the mother if properly performed. After the viable period is reached, in the interest of the child it is advisable to defer delivery as long as possible with safety to the mother; but after the end of the seventh month, the only safe way is to terminate pregnancy as soon as the diagnosis is established, as after this time a hemorrhage may occur without warning severe enough to cause ultimate death. The best method of delivery is described, and then Higgins concludes that under favorable circumstances, in skilful hands, the mortality is below 5%; that abdominal section is rarely if ever indicated; that it does not even in favorable cases hold out a promise of better than 10% mortality; that its risks are much greater, and in unfavorable cases its mortality is prohibitive. In his opinion the only cases of placenta prævia in which cesarean section is ever justified are those at full term, with complete placenta prævia, with a rigid os and seen before the occurrence of any severe or dangerous hemorrhage, and with the mother and fetus in good condition. Such cases would offer the best opportunities and conditions for the recovery of both mother and child, would allow sufficient time for thorough preparation, and would, perhaps, be justified, and in the hands of experienced operators the mortality would be low, varying according to circumstances up to 10%; but in cesarean section for placenta prævia, under the unfavorable conditions in which it would generally have to be performed, the mortality would be 2 to 3 times greater. [W.K.]

3.—Privileged Medical Communications.—In civil and criminal actions, medical men, when best qualified to elucidate the truth, owe to the public a duty which may become paramount to all other obligations. Under English common law, which until recently prevailed throughout this country, it has been held their duty in order to prevent damage to the innocent to expose, when summoned, fraudulent attempts to exploit or conceal maladies or the effects of injuries. This has worked to the best administration of justice, and has proved of value in providing the main defence in some malpractice suits. Sentimental regard for the feelings of a few delinquents should not outweigh the interests of the mass of the community. The defects of the New York law are pointed out. In the interest of public morality certain evidence could be given in private before a referee. [H.M.]

4.—Traumatic Apnea or Asphyxia.—The case reported was one of compression of the chest for three minutes by jamming between a post and an electric car. Similar accidents are common in a struggling crowd, a number of which are noted. The punctate condition of the face, neck and chest is probably due to stasis of carbonized blood in dilated and temporarily paralyzed vessels, according to Ollivier. There is undoubted subconjunctival hemorrhage. The same conditions have been observed in women after prolonged labor, and in patients with epileptic and other convulsions. The first indication is for artificial respiration. Delayed treatment must be directed to combating shock. Nitroglycerin, atropin, strychnin, heat and quiet are suggested. [H.M.]

5.—First Aid in Railroad Wrecks.—Lofton recommends that every train's crew be drilled quarterly or oftener in the art of rendering first aid. The treatment of hemorrhage should be the cardinal feature. Prevention of infection and preservation of parts should be taught, also how and when to stimulate and to relieve pain. The contents of a surgical chest for each train are suggested. [H.M.]

Medical Record.

January, 4, 1902. [Vol. 61, No. 1.]

1. The Trial, Execution, Autopsy, and Mental Status of Leon F. Czolgosz, alias Fred Nieman, the Assassin of President McKinley. CARLOS F. MACDONALD.
2. The Postmortem Examination of Leon F. Czolgosz. EDWARD ANTHONY SPITZKA.
3. A Case of Facial Hemiatrophy. LOUIS F. FRANK.

1 and 2.—See AMERICAN MEDICINE, Vol. III, No. 1, p. 1.

3.—Facial Hemiatrophy.—Cases of idiopathic atrophy are very rare. The extent is variable. Sometimes only the skin is affected, usually the adipose tissue, muscles, and bones. Often the atrophy extends to the cartilages of the nose, the tongue, palate, uvula, and tonsils. It begins in youth and occurs oftener in females, and on the left side. Most observers admit that it is a trophoneurosis of the trigeminus, facial, and sympathetic, or a morbid condition of the gasserian ganglion and sphenopalatinum. In the case reported the atrophy was extensive. [H.M.]

New York Medical Journal.

December 28, 1901. [Vol. LXXIV, No. 26.]

1. The Prevention of Laceration of the Perineum in Labor. GEORGE B. TWITCHELL.
2. The Prevention of Laceration of the Perineum in Labor. MAURICE A. WALKER.
3. The Prevention of Laceration of the Perineum in Labor. J. L. ANDREWS.
4. A Retrospective Survey of Some of the Essential and Vital Principles Pertaining to Anorectal Anatomy, Physiology, Pathology, and Nomenclature: In an Effort Against the Present Attempts to Radically Change and Subvert Them. WILLIAM BODENHAMER.
5. Indications of Treatment in Cases of Uterine Myomas. GEORGE TUCKER HARRISON.

1, 2, 3.—The prevention of laceration of the perineum in labor is the subject of interesting essays by Twitchell, Walker and Andrews. In an occipitoanterior case Twitchell says that if, in the swinging of the head, as it extends it *slides* on the perineum, the space between the pubes and the fourchet will increase; on the other hand, if the head *does not slide* during this swing the opening will not increase and the perineum will follow the motion of the head. This causes a decided stretching of the perineum, but no increase in the size of the vulvar opening and a tear may result. Consequently it is of primary importance to keep in the vagina a lubricant to facilitate the normal extension. The natural lubricant is the best and should be preserved. Douches and digital examinations should be avoided except when their use is imperative. Walker discusses the subjective and objective measures necessary in retarding the descent of the head in cases in which the presenting part is out of the axis of the outlet and against the perineal body. He removes all aids to the action of the abdominal muscles and applies pressure directly to the presenting part. In the intervals between pains, the hand that has been used to retard, flex and push forward the head may be consigned to the duty of peeling back the perineum from the head, and delivery should take place after the pain has terminated, while everything is relaxed. Andrews urges the prevention of perineal laceration by (1) patiently and persistently endeavoring to bring the longest diameter of the presenting part in relation with the longest diameter of the outlet, and (2) securing perfect dilation of the soft parts at the outlet. For the correction of certain errors in mechanism, overflexion or overextension, the forceps, used properly, is the best means available. The authors are each in favor of the intelligent use of chloroform as a help in the prevention of laceration. [C.A.O.]

4.—Anorectal Anatomy.—Bodenhamer offers arguments against the theory of the so-called anorectal valves and their many diseases, and points out what he considers the pernicious effects which such a theory engenders. He gives the anatomy,

the physiology and the function of the plicae and the circular muscular fibers of the rectum and maintains that the plicae from their very cause, structure, disposition, arrangement and function are completely disqualified from executing the functions or the offices of valves. He says they do not encircle or occupy the whole caliber or circumference of the rectal tube and do not enclose it at any point, that their structure is precisely that of the mucosa, of which they are simply folds, and that their true function is to act as brakes to prevent a too sudden and rapid downward movement of certain gases and fluid feces. He states that this corrugated state of the redundant mucous coat of the rectum is caused solely by the tonic or voluntary contraction of the muscular fibers of the organ, and that the plicae thus formed may be completely effaced by distention or dilation. [C.A.O.]

5.—See AMERICAN MEDICINE, Vol. II, No. 20, p. 767.

Medical News.

January, 4 1902. [Vol. LXXX, No. 1.]

1. Sanitary Aspects of the Panama and Nicaragua Canals. GEORGE A. SOPER.
2. The Trial, Execution, Autopsy and Mental Status of Leon F. Czolgosz, the Assassin of President McKinley. CARLOS F. MACDONALD.
3. The Postmortem Examination of Leon F. Czolgosz. EDWARD ANTHONY SPITZKA.
4. A Report of 45 Unpublished Cases of Hemorrhage Treated by the Internal Administration of the Suprarenal Capsule. SAMUEL FLOERSHEIM.
5. Hysterie Hemiplegia Treated by Suggestion, with Report of a Case. HENRY LYLE WINTER.
6. The Requirements of Modern Surgery. J. H. CARSTENS.
7. On the Absorption of Alexins by Tubercle Bacilli. P. A. LEVENE.

1.—**The Isthmian Canals.**—The general geographic conditions in the isthmus are described, together with those of the two proposed routes, which are shown to be extremely unfavorable to health. In favor of Panama are a lesser rainfall, considerations of soil, topography, the nature of the engineering work required, the lesser number of men necessary, and hence greater ease in protecting their health, and after construction a short route reducing chances of infection and necessity for quarantining vessels which have passed through. An efficient sanitary department should be organized early so that measures for the prevention of disease may be carried on in harmony with the engineering projects. [H.M.]

2 and 3.—See AMERICAN MEDICINE, Vol. III, No. 1, p. 1.

4.—**Hemorrhage Treated by Suprarenal Capsule.**—Floersheim has had quicker results than from any other internal remedy, and it has proved safe in cases in which there were complications of disease of heart, lungs, kidney, etc. Five grains of the powder placed on the tongue and swallowed without water usually produces an effect within 10 minutes. Cases of hemoptysis, uterine hemorrhage and hematemeses are reported in detail. [H.M.]

5.—**Hysterie Hemiplegia Treated by Suggestion.**—In the case reported the working theory was that the paralysis was caused by retraction of the end-brushes of the sensorimotor (psychomotor) neurons, thus preventing the impulse from reaching the distinctly motor neurons. Cure was effected by hypnotic suggestion. "Psychical" is a better term than "hysterical" or "functional" for such forms of disease. If the profession would take cognizance of the "immaterial" side of human ills and proceed scientifically it might cure in a legitimate manner instead of letting these cases drift to the charlatans. [H.M.]

6.—**The Requirements of Modern Surgery.**—Carstens says the requirements of modern surgery are: (1) A patient brought to the highest state of resistance to microbic infection and made as clean as possible; (2) an operating-room, preferably a hospital, where everything has been thoroughly sterilized, this includes anesthetizers, assistants and nurses; (3) a surgeon who has a mechanical hand and has received a long and thorough training. [A.B.C.]

7.—**Absorption of Alexins by Tubercle Bacilli.**—The conditions attending the absorption of alexins by living and dead bacteria in general are stated, followed by the application to the study of artificial immunity in tuberculosis. The questions under investigation are: (1) Whether normal serums lose their

hemolytic power on digestion with dead tubercle bacilli; (2) what the hemolytic power of a given serum would be if treated with living bacilli; (3) if an animal should be found whose serum normally does not lose its hemolytic power on treatment with living bacilli, would the serum of a tuberculous animal act differently. There exists a "minimum" quantity of dead tubercle bacilli, which it is necessary to add in order to deprive serum of its hemolytic power. The same quantity of living bacilli have scarcely any effect, but in large quantities they diminish the hemolytic power. Attenuated cultures act like dead germs. Serum previously treated with extract of crushed tubercle bacilli loses its hemolytic power more readily than normal serum when treated with living virulent bacteria. [H.M.]

Philadelphia Medical Journal.

January 4, 1902. [Vol. 9, No. 1.]

1. Rheumatic Fever and Its Counterfeits. SIR DYCE DUCKWORTH.
2. The Trial, Execution, Autopsy, and Mental Status of Leon F. Czolgosz, alias Fred Nieman, the Assassin of President McKinley. CARLOS F. MACDONALD, with a Report of the Postmortem Examination. EDWARD ANTHONY SPITZKA.

1.—**Rheumatic Fever and Its Counterfeits.**—As stated by Duckworth, rheumatic fever must not be confounded with osteomyelitis, epiphysitis, necrosis of the bones in the joints involved, gonorrheal arthritis, or arthritis following influenza and other infectious diseases. [F.C.H.]

2.—See AMERICAN MEDICINE, Vol. III, No. 1, p. 1.

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The causation of phosphorus necrosis is the title of one of several interesting papers read in the discussion on diseases of occupations, at the last meeting of the British Medical Association. It has long been a matter of contention as to how phosphorus operates to produce "phossy jaw"; indeed, discussing this question, Legge, at the same meeting, stated that there has been no adequate explanation given of the reason why the continued inhalation of fumes of yellow phosphorus should limit itself to a local lesion of the maxillary bone. It is pointed out by Dearden, the author of the paper above alluded to, that there are two opinions as to how these fumes exert their evil office—one being that their influence is purely local, the other that the disease occurs as a local manifestation of a general disturbance of the system. Whereas many hold obstinately to the one or the other theory, Dearden adopts the wise middle course. He finds that there is something to be said on both sides of the question, and he supports his position with considerable vigor. He concurs with Lorinser in the opinion that the blood becomes surcharged with phosphorus, which has an affinity for, and lessens the power of resistance to local injury of bone, the local injury in the case of the jawbone being supplied through the medium of a carious tooth. The purely local theory finds its chief support in the supposed absence of a special phosphorus cachexia and the lack of general symptoms, and in the invariable presence in a sufferer with phosphorus necrosis of a carious tooth (or of a cavity from a recent tooth extraction). It is presumed that under these circumstances the phosphorus fumes gain access to the bone and induce periostitis or periodontitis, followed by suppuration. As opposed to the tenability of this theory it is emphasized by Dearden that necrosis of the maxilla does not occur until the worker has been for some time, generally for many years, so employed, though no immunity exists against caries, toothache and abscess during the earlier years. In addition, it is well known that cases of phosphorus necrosis have developed several years after the sufferers left the match trade. Dearden finds support for his position also in the result of some experimental investi-

gations of Stubenrauch (*Archiv für klinische Chirurgie*, Bd. lix, p. 2, 1899), who contends that phosphorus fumes exert no special action on exposed bone or periosteum. He insists, therefore, that a requisite for necrosis is a primary systemic infection, the local irritation being of secondary importance. A priori reasoning and the results of these experiments therefore constitute presumptive evidence of the existence of some systemic predisposing influence as a necessary adjunct to the local excitation. That there is positive evidence of such systemic infection is contended by Dearden, who believes that the quantity of phosphorus absorbed through the skin and the gastrointestinal tract must be small; on the contrary, that inhaled through the course of years must be considerable. He has repeatedly observed the characteristic odor in the breath of girls several days after it has been necessary to suspend them from work under the operation of special rules. Thus he believes that mild saturation of the system with phosphorus is brought about; this influences bone especially and is chemical in nature. Proof of this is found in the fragile, long bones of match-makers; in the differences in the chemical composition of bones in healthy persons and match-makers (as well as the excised portion of a "phossy jaw"), and in the observations of Wegner, confirmed by Stubenrauch, that the bones of fowls fed on phosphorus are denser than those of animals not thus treated. That a similar condition exists in man is evidenced by the strong shadow revealed by the x-rays at the epiphyseal ends of certain bones. It would seem to be pretty conclusively proved, therefore, that a systemic infection with phosphorus does occur in course of time, and that this and the local irritation—a carious tooth—lead to necrosis of the maxilla.

Some Experiments on the Intermediary Circulation of the Bile-Acids: A Contribution to our Knowledge of Icterus.—Croftan¹ points out that a large proportion of the bile-acid salts that are poured into the intestine from the liver are reabsorbed to be again reexcreted through the common duct of the liver, and that their path and functions are obscure. Inasmuch as bile-acids have been found in the thoracic duct, it becomes necessary to determine what becomes of them while they are circulating from the thoracic duct to the liver. Experiments are detailed whereby bile-acids were detected in normal blood, in the leukocytes and not in the erythrocytes or the serum. It is believed that, aside from their intraintestinal functions, the bile-acids are concerned in the normal destruction of cells, chiefly red-blood corpuscles, that they exercise an influence on the flow of bile, that they aid coagulation and play a role in vasodilation, and that, in pathologic states, when large quantities of the bile-acids enter the blood, their other powers are developed and become clinically manifest. It is said that the discovery of the bile-acid in normal blood has a definite and important bearing on the origin of icterus, especially in reference to the opinions relative to the occurrence of "hepatogenous" and "hematogenous" icterus. Inasmuch as it appears that bile-acids are never absent from the blood, and that they are not specific product of the liver cells, Croftan concludes that we are no longer justified, from the bile-acid findings in any given case, in asserting or denying the existence of pure hematogenous icterus, nor are we aided in formulating any definite diagnostic conclusions in regard to the participation of the liver or its ducts in any disease-process complicated by icterus. [A.O.J.K.]

Sporadic Trichinosis.—DaCosta and Dorsett² give a good review of the literature and report a case of sporadic trichinosis of which the particular features of interest are that a traumatism preceded the apparent onset of the muscular trouble; that the pain in the muscle was slight; that tenderness of the muscle and edema of the skin were absent; that no antecedent gastrointestinal attack occurred; that fever was absent; that, in spite of the widespread invasion, some diseased

muscles (the deltoid) did not appear to be swollen and were not tender and painful, and that other invaded muscles (the opposite lower extremities) were enlarged, but not painful; and that eosinophilia was never noted. [A.O.J.K.]

The Hereditary Transmissibility of Tuberculosis.—Friedmann¹ gives a long and very thorough review of the literature of the subject. Of reported cases of placental infection of the fetus with the tubercle bacillus there are many, but of trustworthy reports of cases of infection of the fetus due to the father alone, there are few. To prove that the tuberculous infection is carried directly from the father to the fetus, it is essential to show that virulent tubercle bacilli are present in the semen, and that the tubercle bacilli are carried over with the semen and infect the fetus without the intervention of the mother. A number of cases have already been reported in which virulent tubercle bacilli have been found in the testicle and in the semen of tuberculous patients without the slightest evidence of tuberculosis of the genitalia. But as yet there has been no proof that tubercle bacilli deposited in the vagina with the semen have directly infected the fetus. To determine if possible whether this can occur, Friedmann injected into the vaginas of rabbits immediately after coitus an emulsion of tubercle bacilli, killed the animals at different periods of gestation, and examined the fetuses. In all cases tubercle bacilli were demonstrable. From this it is concluded that the fetus may be infected directly by the father without the intervention of the mother. [A.O.J.K.]

Epidemic Dysentery in Japan.—Shiga² has made a careful study of the recent outbreak of the disease in his own country, and reaches the following conclusions: (1) Bacillus dysenteriae is a constant occurrence in all cases of dysentery; (2) it occurs only in cases of dysentery, never in healthy individuals or in patients suffering from other diseases; (3) the occurrence of the bacillus in the dejecta is a concomitant of the morbid process; (4) the bacillus is found almost entirely in the deeper layers of the intestinal wall; (5) the bacillus or its toxins have a tendency to produce hemorrhage; (6) the bacillus of dysentery exhibits agglutination-phenomena only with the blood of patients suffering from dysentery, not with the blood of healthy individuals or patients suffering from other diseases; (7) this faculty of producing agglutination varies according to the stage of the disease, being rapidly developed and reaching its highest point just before convalescence; (8) dead cultures of the bacillus, when injected subcutaneously into healthy individuals, produce marked local inflammatory infiltrations, the reaction being considerably lessened in virulence in the case of patients recovering from the disease; (9) Peiffer's reaction of the dysentery bacillus is especially marked during the convalescence of the patient; (10) the immune-serum possesses both prophylactic and therapeutic action in combating the disease. [H.H.C.]

The abnormal positions of the intestines forms the subject of an illustrated article by F. de Quervain,³ wherein he forms two groups of these malformations, viz., those that are incompatible with the normal functions of the digestive tube, such as impermeability; and those which present no obstacle to the accomplishment of digestion and which are occasionally recognized only in the course of an operation or at autopsy, such as the formation of diverticula, the doubling of certain portions of the intestine, etc. [C.S.D.]

The action of tartaric acid upon the sudoriparous glands results, according to Héger,⁴ in hypersecretion when applied in powder to the skin. The same is true of citric acid, but not of oxalic acid. Héger attributes the provoking of perspiration to direct action upon the peripheral nerve filaments. The excessive secretion subsides quickly and is followed by a period of glandular repose and dryness of the skin. [C.S.D.]

Associated Epidemics.—V. Babes and G. Robin⁵ contribute a leading article on those abnormal or pathologic states which seem to produce an exaltation of the noxious characters of microbes which under normal conditions are of only minor

¹ Zeitschrift für klinische Medizin, xliii, 11, 1901.

² Deutsche medizinische Wochenschrift, November 7, 1901.

³ La Semaine Médicale, October 2, 1901.

⁴ La Semaine Médicale, October 2, 1901.

⁵ La Semaine Médicale, October 3, 1901.

¹ American Journal Medical Sciences, January, 1902.

² American Journal Medical Sciences, December, 1901.

importance, whereby there is brought about a complication of affections. The organism becomes infected by more than one microbe; symptoms arise which are entirely out of proportion to the toxicity of either microbe alone. [C.S.D.]

The Transformation of Glycerin to Sugar by Testicular Tissue.—G. Bertrand¹ has reviewed the observations of Bertholet, made in 1857, that a solution of glycerin brought into contact with the testicular tissue of diverse animals gives rise to a sugar analogous to glucose. With a view to determining whether said transformation should be imputed to spermin, to an oxydoze, or to a microbic agent, he instituted experiments whereby the latter appears to be the correct explanation, and Bertrand holds that in many cases the testicle is normally infected. The sugar appears to be dioxycetone. [C.S.D.]

Idiosyncrasy of Some Children to Chloroform due to Intestinal Helminthiasis.—Santucci² calls attention to the presence of intestinal worms as a possible explanation of the intolerance shown by certain individuals to chloroform, and to the importance of avoiding grave consequences by the administration of a vermifuge some days before making an operation requiring an anesthetic. [C.S.D.]

Vesical Troubles in Syringomyelia.—Albarran and Guillain,³ notwithstanding the infrequent reference to bladder symptoms in records of syringomyelia, hold that there are in this affection vesical alterations of a very particular nature, practically constant, but which are overlooked owing to the loss of sensibility of the vesical mucosa, whereby attention to the difficulty is not drawn by the patient but must result from examination by the physician. Catheterization will, however, show incomplete retention to be a frequent condition. [C.S.D.]

On the Etiology of Scurvy.—A. Lewine⁴ has supplemented the investigations of Babes, in which a peculiar microbe was isolated from the ulcers of scurvy patients, and which proved pathogenic to guineapigs, etc., but the conclusions as to which were rendered uncertain owing to contamination with *Bacillus hæma septicus*. The experiments of Lewine demonstrate that this latter microbe was the active agent and is capable in pure culture of producing the characteristic lesions of necrotic myositis. The fact that this microbe has been observed by Koch in the saline waters of Janmure is regarded as significant by Lewine, since prolonged use of salted foods is favorable to the development of scurvy. [C.S.D.]

The Retention of Chlorids in Infectious Maladies.—Vanderbergh⁵ has undertaken to verify the accepted notion that the diminution of chlorids in the urine of infectious maladies is due to renal alterations. That such alterations take part in producing the phenomenon he admits, but concludes that it is chiefly due to the absorption of chlorids from the blood by the tissues and by the elimination of considerable water by the tissues into the blood. [C.S.D.]

The Iron Content of the Liver in Healthy Persons.—In view of the possibility of a knowledge of the quantity of iron normally contained in the liver having a bearing on the determination of the role of the hepatic gland in the process of the destruction and of the formation of hemoglobin, Bielfeld⁶ has made a study of the subject with the result that he finds the average amount of iron in the normal human liver to be 0.169%. In females the average percentage is lower than in males (0.084% females, as against 0.191% males). The percentage increases with age, indicating that the liver participates throughout life in the destructive processes, being most active in old age. [C.S.D.]

Hysterical Hemorrhages of the Mucous Membranes; Death from Pancreatic Apoplexy.—According to Holth,⁷ this neurosis may determine fatal hemorrhages of the viscera; he cites a case of fatal pancreatic extravasation in a patient with a history of frequent cutaneous hemorrhages, epistaxis and hematemeses ordinarily occurring after some insignificant emotion. [C.S.D.]

Testing the Functional Condition of the Liver.—H. Strauss¹ finds from a series of experiments that the degree of alimentary levulosuria in a patient is a good indication of the extent to which pathologic changes have taken place in the patient's liver, the two sets of phenomena occurring in direct proportion to each other. He consequently recommends a careful examination of the urine for levulose as an important diagnostic aid in determining the extent of any suspected hepatic lesion. [H.H.C.]

Intrauterine and Extrauterine Transmission of Antitoxin from Mother to Offspring.—Römer,² by a series of experiments on mares, rabbits, etc., finds that antitoxin, either diphtheric or tetanic, when artificially produced in the blood of the mother during gravidity does not appear in the blood of the newly-born offspring, but very soon appears in the blood of the latter during lactation, only to disappear again as gastric secretion becomes well established. Römer believes that the case reported by Ransom in which the blood of a newly-born foal exhibited distinct trace of tetanus antitoxin, must have been due to a pathologic communication (hemorrhage?) between the maternal and fetal blood-vessels. [H.H.C.]

Early Diagnosis of Vesical Tuberculosis.—Asch³ reports two cases of vesical tuberculosis, one in a man of 22 and the other in a man of 34, in which, with the aid of careful urinalysis, cystoscopy, marked clinical symptoms, etc., he was able to make a diagnosis of tuberculosis before other and more serious complications made their appearance. In neither case was there any trace of pulmonary involvement. [H.H.C.]

Milk Drinking and Tuberculosis.—Biedert,⁴ after calling attention to the fact that in 1883 he published his belief that tuberculosis is seldom if ever transmitted from cows to human beings by milk-drinking, goes on to cite the conditions as existing in the Bavarian Highlands, and to some extent throughout Bavaria, as proof of this theory. In the former region almost the entire population subsist for the most part upon milk and cheese. Tuberculosis is known to exist among the cattle, but the disease is a comparative rarity among the human population, in spite of the consumption of large quantities of undoubtedly tuberculous milk. Biedert calls upon the German Government to collect further statistics among the dairy population of the Alpine Provinces to aid in the settlement of the present Koch controversy. [H.H.C.]

A simple method of measuring the volume of the cavity of a pneumothorax is presented in detail by L. Bard.⁵ The procedure rests upon Mariotte's law as to the constant relation which exists between the changes of gases and the variations of their elastic force revealed by the modifications of pressure, and it consists essentially in a comparison of pressures. By means of a canula, connected with a flask containing gas and with a manometer, the gas of the flask is allowed to mix with that of the pleural cavity. The pleura and the flask inclose gases which exhibit different pressures; when brought into communication the gases mix and take on a new pressure according to the laws: (1) The pressure of a gaseous mixture is equal to the total of the pressures proper to each of the gases composing the mixture, (2) in a mixture of gases, each gas presents the same pressure as if it alone occupied the total volume. (3) A given quantity of gas develops a pressure inversely proportional to the volume which it occupies. For obtaining the volume of the pleura it suffices to perform two operations: (1) To multiply the known volume of the flask by the difference between the known pressure of the flask and the known pressure of the mixture of gases; (2) divide this product by the difference between the known pressures of the mixture of gases and of that of the pleura. [C.S.D.]

The hypodermic injections of spermotoxin are shown by the experiments on guineapigs made by Mlle. C. de Leslie⁶ to produce temporary sterility, which may be prolonged for several days by repeating the injection before the effect of the first has entirely passed. [C.S.D.]

The microphyte of Piedra, a disease of the hair which has

¹ La Semaine Médicale, December 14, 1901.

² La Semaine Médicale, December 14, 1901.

³ La Semaine Médicale, December 14, 1901.

⁴ La Semaine Médicale, December 14, 1901.

⁵ Nederl. Tidschr. v. Geneesk., August 17, 1901.

⁶ Roussk Askh. patol. klin. med. i. bakteriöl., April, 1901.

⁷ Norsk Mag. for Lægevidenskab, June, 1901.

¹ Deutsche medicinische Wochenschrift, November 7, 1901.

² Berliner klinische Wochenschrift, November 18, 1901.

³ Berliner klinische Wochenschrift, November 18, 1901.

⁴ Berliner klinische Wochenschrift, November 25, 1901.

⁵ La Semaine Médicale, October 16, 1901.

⁶ La Semaine Médicale, October 16, 1901.

been supposed to be confined to two districts of Colombia (Cauca and Antioquia) has been recognized in a case occurring in Brazil by de Magalhães¹ who describes certain peculiarities of the parasitic fungus hitherto unobserved. The spores are produced within the hyalin cellular filaments which constitute the *Piedricnodosities*. [C.S.D.]

Psorospermiosis of the skin is reported by Ehrmann² in a hereditary case of the affection which he believes to be frequently confounded with *Lichen scrofulosorum*. His treatment consists of cod liver oil given internally and applied externally. [C.S.D.]

The bacillus of sleeping sickness has been isolated by Broden³ of Léopoldville, and is described as a virulent form capable of producing in dogs and monkeys the symptoms and lesions of this affection. It is found in the blood and cerebrospinal fluid, also in water. The disease which is not transmissible from one person to another is a chronic diffused myelitis. [C.S.D.]

A new sign of Raynaud's disease is pointed out by Pospelov⁴ in the onychophagy which accompanies this disease. He holds that it is a characteristic symptom, a veritable cutaneous neurosis, analogous to the trichotillomania described by Hallopeau. [C.S.D.]

Pian-bois, a disease common to the forest region of Guiana is described by Jeanselme.⁵ It is distinct from pian proper or frambesia and is characterized by circumscribed tumefactions of the skin of the legs, leading to crateriform ulcers, there is great pain in the legs and engorgement of the inguinal glands. [C.S.N.]

Red cerumen has been shown by Pacinotti⁶ to be due in certain cases to the development in the external auditory canal of a fungus which he identifies as *Oospora constacea* or *Monilia miniata*. [C.S.D.]

Eosinophilia in cases of hydatid cysts of the liver is considered by Memmi⁷ to be an important diagnostic point, inasmuch as it does not occur to any degree in affections apt to be confused with hydatid cysts. He was able to produce eosinophilia experimentally by the injection of hydatid liquid. [C.S.D.]

A bacillus of dysentery is described by Moren⁸ and Rieux⁹ as occurring alone or associated with other species in all cases of dysentery. It ferments lactose without the production of indol. The serum of animals into which it is injected acquires marked agglutinating properties. It tends to agglutinate the *Bacillus of Eberth*, but is without effect on *Bacillus coli communis*. The serum is immunizing and antitoxic to the dysentery toxins. [C.S.D.]

Lavements of oxygenated water in acute dysentery, according to Rocaz¹⁰ constitutes a precious remedy. He employed it two or three times a day throughout an epidemic of the disease with great success. [C.S.D.]

Sarcoma of the Large Intestine.—Jopson and White¹⁰ report a case of sarcoma of the ascending colon and give a thorough review of the literature with reference to both the clinical and pathologic features of sarcoma of the large intestine. [A.O.J.K.]

Lymphocytosis without Glandular Enlargement.—White¹¹ reporting a case of lymphocytosis without glandular enlargement, complicated by pneumonia, suggests that a lymphocytosis may result, in the absence of enlarged lymph glands, from increased lymphoid tissue in the intestine; that the presence of these cells in the blood-stream is probably due to mechanic causes (Ehrlich), and that the lymphocytes in the blood-stream play no part in ordinary inflammatory conditions. [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

Decapsulation of the Kidney for Chronic Bright's Disease.—If the operation which has lately been employed by Dr. Edebohl for chronic Bright's disease shall prove as effective as its inventor apparently hopes and believes, it will be one of the most beneficent surgical procedures introduced since the advent of appendicectomy. An exhaustive article appears in the *Medical Record* of December 21, giving the result of the operator's experience in a number of cases.

It goes without saying that chronic Bright's disease, whatever its variety, is one of the most hopeless of human maladies; and any procedure which will appreciably reduce the mortality in this affection will be welcomed as a valuable addition to medical science.

Edebohl reports a series of 18 cases operated upon, all having chronic Bright's disease. Some of the earlier of these had movable kidney and simply underwent an operation for nephropexy: the later cases were without movable kidney and underwent the operation solely with a view of curing or improving the diseased kidney condition. In the latter cases complete renal decapsulation was performed. Nine of the 18 patients have been operated upon more than a year and hence some intelligent opinion can be formed as to the value of the procedure. It is asserted that of the nine cases operated upon eight made a complete recovery from the chronic Bright's disease. It is claimed that the variety of the nephritis, whether it be parenchymatous, interstitial or diffuse, is immaterial. In the successful cases it appears that some 10 or 15 days must elapse after the operation before there is any appreciable change in the quantity or quality of the urine; then there begins a gradual return to the normal which, however, in some cases is not completed for a number of months.

The theory advanced to account for the favorable change is that by the formation of adhesions between the kidney substance and the adjacent tissues many new bloodvessels are soon added whose blood is directed to the kidney tissue, and thus hyperemization of the organ results. In support of the claim that hyperemization leads to rehabilitation in parenchymatous nephritis, Ziegler is quoted as follows: "When a portion of the renal epithelium has been destroyed by a morbid process which spares the interstitial structures, the loss is in general soon made good by regenerative proliferation of the remainder, and if the circulation is adequately maintained the new epithelium presently becomes capable of carrying on the secretory function."

In the case, however, of chronic interstitial nephritis, or in a mixture of parenchymatous and interstitial, a different explanation must be sought for. It is conceivable that hyperemization of the kidney structure would lead to gradual absorption of inflammatory and intertubular deposits, which have as yet not become organized; but when the process is chronic, organization has certainly advanced to a greater or less extent, much secreting structure and many tubules are certainly destroyed, and it is inconceivable that any degree of renal hyperemia, however prolonged, could replace the connective tissue with the original secreting structure.

The theory of rehabilitation and restitution, however, while of great moment to the pathologist, is not the chief desideratum of the surgeon. Results are what he seeks, and the histologic changes necessary to bring about a happy result are of secondary importance.

The results of this operation thus far are certainly sufficient to warrant the careful consideration of the profession. In the hands of the whole profession the general beneficent results may fall far below the success attained by the skilful originator, and it yet remain a justifiable and life-saving surgical procedure.

¹ La Semaine Médicale, October 23, 1901.

² La Semaine Médicale, October 23, 1901.

³ La Semaine Médicale, October 23, 1901.

⁴ La Semaine Médicale, October 23, 1901.

⁵ La Semaine Médicale, November 13, 1901.

⁶ La Semaine Médicale, November 13, 1901.

⁷ La Semaine Médicale, November 13, 1901.

⁸ La Semaine Médicale, November 23, 1901.

⁹ La Semaine Médicale, December 14, 1901.

¹⁰ American Journal Medical Sciences, December, 1901.

¹¹ American Journal Medical Sciences, December, 1901.

The Surgical Treatment of Duodenal Ulcer.—Moynihan¹ has collected from the literature reports of 49 cases of perforating duodenal ulcer, which he tabulates. To this number he adds two cases from his own experience. He discusses the subject quite thoroughly. These ulcers are generally situated in the first part of the duodenum. All ages may be affected and cases have been reported occurring in patients from four days to 94 years old. Men are much more frequently affected than women. In more than half the cases where ulceration is found postmortem the symptoms have never been present. When they exist they closely resemble the symptoms of ulcer of the stomach. The condition is believed to be more frequent than is generally supposed. The cardinal symptoms are pain, hematemesis and melena. The pain usually occurs an hour or more after eating and is referred to the epigastrium or right hypochondrium. It may be indefinitely situated in the upper part of the abdomen. The time of onset of pain is an aid in indicating the position of the ulcer. The nearer to the cardia the more sudden the onset. Vomiting of blood occurs in approximately one-third of the cases; the bleeding is rarely severe. Melena is probably overlooked in a large number of the cases. The chief complications are hemorrhage, which may arise from erosion of vessels in the wall of the bowel or from erosion of neighboring large arteries; cicatricial contraction, which is likely to result in pyloric stenosis with dilation of the stomach or of the stomach and duodenum, and if the region near the bile papilla is invaded narrowing or obliteration of the common duct and pancreatic duct may occur. Cancerous degeneration may also result. Perforation is one of the most important complications. The symptoms differ little if at all from those of perforating gastric ulcer. There is sudden overwhelming abdominal pain, followed by rigidity and tenderness and profound collapse. The fluid which escapes in about one-third of the cases follows the surface of the transverse mesocolon to the right to the hepatic flexure, and then descends along the outer side of the ascending colon to the iliac fossa. In 18 out of 49 cases this has given rise to inflammation in the region of the appendix, leading the operator to make his first incision over the appendix. Moynihan reports two cases of operation for perforation. A man of 44 had had pain after eating for 18 months, beginning in the right hypochondrium and spreading upward and downward. Blood had been vomited, but melena was not noticed. A diagnosis of duodenal ulcer had been made and gastroenterostomy advised. The patient was suddenly taken with very severe pain, followed by abdominal distention and collapse. Operation was undertaken, and a perforation three-fourths inch in diameter was found at the second portion of the duodenum in the anterior wall. After suturing the perforation the intestine seemed narrowed to at least half its diameter; hence gastroenterostomy was done, and drainage was carried down to the site of the ulcer. The patient did not rally and died the next day. In a second case a man of 25 had suffered from pain and vomiting after eating, for four weeks previous to admission. While climbing a ladder he was taken with sudden acute pain in the middle of the upper part of the abdomen. He descended and fell to the ground doubled up in agony. On admission to the hospital he was profoundly collapsed, the abdomen was tender and rigid, and there was persistent retching. A diagnosis of perforating gastric ulcer was made. Three hours and 50 minutes after perforation an operation was undertaken. On opening the peritoneum gas and yellowish fluid escaped from the wound. The perforation was found on the anterior wall of the duodenum one inch from the pylorus. This was stitched by a continuous suture vertically from above downward in 2 layers. The stitch held well. The abdomen was then thoroughly flushed and a drainage tube was placed in the pelvis. Nothing was given by mouth for 24 hours. Rectal injections of saline solution were given every 6 hours. The drainage was removed in 36 hours, and the patient sat up on the nineteenth day. His further recovery was uneventful. Moynihan also reports 4 cases of chronic duodenal ulcer in which he has found operation necessary. In all of these cases gastroenterostomy was performed with recovery and perfect relief of the symptoms which had existed previous to operation. [M.B.T.]

¹ Lancet, December 14, 1901.

Osteitis Deformans.—Packard, Steele, and Kirkbride¹ report a case of well marked osteitis deformans, review the literature, and summarize the etiology, symptomatology, diagnosis, treatment, and pathology of the affection. In addition to the case reported, 66 cases of the disease are reported in the literature. The disease is believed to be a distinct entity of obscure etiology, possibly allied to, though not identical with, osteomalacia, fragilitas ossium, and acromegaly. It develops especially in late adult life, though its occurrence has been noted as early as the twenty-first year. In some cases trauma appears to have played an etiologic role; in a few cases some little family tendency to the disease has been observed. The most noteworthy features of the disease are enlargement and forward projection of head, dorsocervical kyphosis, prominence of the clavicles, spreading out of the base of the thorax, the diamond-shaped abdomen crossed by a deep sulcus, relative increase in the width of the hips, and outward and forward bowing of the legs. The bones most frequently affected are those of the cranium, the tibiae, and the femurs. There is a curious preponderance of cases in which the left side was either first or most involved although at times it was noted that the enlargement was crossed so that the lower extremities of one side and the upper extremities of the other were involved to the greatest degree. The essential pathologic characteristics of the disease are: (a) Absorption of the compact substance causing enlargement and confluence of Havers' canals; (b) formation of new bone which runs diffusely through the affected and the adjacent healthy portions; this remains uncalcified, and is in turn reabsorbed; (c) the conversion of the medullary substance into a vascular connective tissue containing fat cells, giant cells, and leukocytes. In a small proportion of the reported cases cysts filled with gelatinous material and giant celled sarcomas occur in the medulla; (d) as a consequence of these three processes, the ordinary relations of the compact substance and medulla are destroyed. The bones become exceedingly thickened and asymmetric, but since the new bone tissue remains uncalcified, its elasticity permits of great deformity of the long bones from the weight of the body, and fractures do not occur. [A.O.J.K.]

Transplantation of the Ureters.—Peters² details two cases in which the ureters were transplanted into the rectum, for exstrophy of the bladder. He claims the following advantages for this extraperitoneal operation. There is absolutely no danger of peritonitis; a prominent natural papilla is secured, this is the natural manner of debouchement of a duct upon a mucous surface, and affords the best possible protection against spread of the infection up the ureters; the ureters are further protected against infection or sloughing by lying undisturbed in their natural environment almost to the point of implantation; and, the operation is easy of performance, and practically free from shock and exhaustion. [F.C.H.]

Cystitis.—Yeomans³ calls attention to the frequent occurrence of this affection, which is invariably associated with some other derangement of the urinary system. He believes that every case of cystitis, with the exception of those very rare aseptic cases caused by trauma and poisoning with chemic substances, is due to the presence of a microorganism. *Bacillus cystiformis* is more frequently the cause of cystitis than any other organism. True, cystitis is a rare complication of gonorrhea, as the epithelium of the vesical mucosa is singularly resistant to gonorrheal infection. The importance of a cystoscopic examination in doubtful cases as an aid to diagnosis, is emphasized. The treatment mainly consists in treating the cause. [F.C.H.]

Operation for Hypospadias.—C. Beck,⁴ of New York, instead of creating a new urethral canal in hypospadias, according to the methods of Duplay and Thiersch, recommends the loosening up, stretching and forward dislocation of the abnormally short urethra already present in such cases. By this method Beck avoids the unpleasant complications often attendant upon the presence of a raw wound-canal; there is no infiltration of adjacent tissues with urine, the introduction of a

¹ American Journal Medical Sciences, November, 1901.

² American Journal of Surgery and Gynecology, October, 1901.

³ Columbus Medical Journal, October, 1901.

⁴ Deutsche medicinische Wochenschrift, November 7, 1901.

catheter is unnecessary during the healing process, and lastly, the urethra retains its surrounding corpus spongiosum. In his method Beck either cuts a groove for the urethra along the under surface of the glans, suturing the urethra in place with the aid of external flaps, or makes a tunnel in the glans, drawing the urethra through and suturing it with the orifice at the distal opening of the tunnel. [H.E.C.]

Aortic Aneurysm Treated by Means of Silver Wire and Electricity.—Freeman and Hall¹ report 2 cases of aneurysm of the aorta treated successfully by the use of silver wire and electrolysis. It is said that in view of the inefficiency of medical treatment resort should be had immediately to wiring and electricity, especially as this procedure is not dangerous. Soft unalloyed silver wire devoid of spring is to be preferred. Whether a large amount of wire or a small amount should be used is still an open question. A strong electric current is apparently preferable to a weak one. The canula through which the wire is introduced should be inserted just within the sac and no further. There is believed to be little if any danger of bursting the aneurysm from increase of pressure due to coagulation in a portion of the sac only. [A.O.J.K.]

Strangulated Ventral Hernia.—Sternberg² reports an unusual case of ventral hernia. There is nothing in the atomic conditions found after death or in the previous history of the patient to account for its origin. A woman of 61 had been taken 4 days previous to admission with vomiting, abdominal pain, and since then had passed neither feces nor flatus. Vomiting and hiccough had continued, and the patient was in a much weakened condition. On the left side of the abdomen was a hard smooth tumor which extended from the costal margin almost to Poupart's ligament. It was slightly movable, tympanitic on percussion, and very tense. The abdomen was distended, but not tender. Operation was refused, the vomiting continued and death occurred 4 days later. At the necropsy a hernia was found which escaped from an opening with sharp edges between the bundles of the internal oblique muscle. The opening was situated 3 cm. above Poupart's ligament. The length of the tumor was 15 cm., the breadth 9 cm., and it was situated between the layers of the abdominal muscles, the anterior covering being formed by the external oblique, while the internal oblique and transversalis covered the posterior surface. The literature of such hernias is discussed. Very few analogous have been reported. [M.B.T.]

The Association of Pulmonary Tuberculosis with Both Primary and Secondary Endocarditis, and the Effect of Valvular Disease Upon Lung Tuberculosis.—Anders³ states that the cases of endocarditis met in tuberculosis are clearly divisible into several classes: (1) Those due to the presence of the tubercle bacillus within the heart—endocarditis tuberculo-sis; (2) those that are secondary to tuberculosis or merely inter-current, and caused by various organisms other than the tubercle bacillus; and (3) those forms of valvular heart disease that precede the tuberculous infection of the lung and are due to rheumatism and other factors. These questions are discussed in detail, the literature is reviewed, and illustrative cases are cited. With regard to the effect of right-sided valvular disease upon the development and progress of pulmonary tuberculosis, it is believed that the direct etiologic significance of such disease, especially of pulmonary stenosis has been overrated—other factors, insanitary surroundings, defective nutrition, lack of exercise and enforced quiet, etc., being of considerable importance. [A.O.J.K.]

A review of echinococcus disease in North America, with reference to 241 cases, is given by Lyon.⁴ There follows a discussion of the age, sex and nationality of the patients affected, of the geographic distribution, anatomic location, and diagnosis of the disease, of hydatid disease in animals, of the prophylaxis of the disease, and of certain commercial considerations. [A.O.J.K.]

Laparotomy for Perforation in Typhoid Fever.—Briggs⁵ reports in detail the case-histories of six patients

operated upon for perforation in typhoid fever, 4 of whom died, 2 recovered, and in one of these no perforation was found, although the Widal reaction was positive. The abdominal symptoms were well marked in all cases—sudden usually severe pain, tenderness on pressure, increased resistance, distention of the abdomen, tympany, and slight vomiting. There was a rise of pulse in all cases. The temperature was unaffected in 2 cases, in 2 cases there was a distinct rise, and in 1 case there was a fall. There was a distinct rise in the leukocyte count in all but one case. Details are given of the operative technic, the necropsies, and the bacteriologic examinations. [A.O.J.K.]

Stab Wound of the Liver.—A man of 31 was stabbed one inch below the ensiform cartilage and $\frac{1}{2}$ inch to the left of the median line. Five hours after the injury the abdomen was opened, about a quart of blood removed by sponges and a transverse wound found in the left lobe of the liver about 2 $\frac{1}{2}$ inches in length and about an inch in depth. This was closed by two catgut sutures. The abdomen was closed without irrigation or drainage, and the patient made a good recovery. Similar cases operated upon by Dalton¹ are reviewed. He emphasizes the point that in suturing wounds of the liver it is absolutely necessary to involve a considerable portion of the liver substance in the suture and to stop tightening the suture the moment the lips of the wound are in approximation. [C.A.O.]

Operations on the Aged.—Meisenbach² states that the determining facts of operating on the aged are: To save life, to prolong life and to add to the comfort of the patient for the rest of the allotted years. He details a number of operations which he has performed, and from the results obtained draws the following conclusions: The aged bear capital operations relatively well; age, *per se*, is no contraindication to surgical operation, everything else being equal; the aged, under proper conditions should be given the benefit of our skill in surgical work; it must be borne in mind that the aged do not bear well the loss of heat and blood, and in our surgical work the foregoing must be kept in mind and proper means employed to prevent the same. [F.C.H.]

Carcinoma of the Male Breast.—The history of this relatively rare affection in men, first described by Bartholinus (1616-1680) is reviewed by Dr. Louis M. Warfield,³ and report made of five cases which have occurred in Johns Hopkins Hospital. There appears to be practically no difference in the condition as observed in the two sexes. A bibliography of the recorded cases accompanies the article. [C.S.D.]

Tendon Grafting in the Paralytic.—Tubby⁴ details 11 cases of tendon grafting on the feet for paralytic talipes. Of these, four have been done for calcaneovalgus: two for talipes calcaneus; one for equinovalgus; three for equinovarus, and one for calcaneovalgus. Six have shown good results, and five fair results; meaning by "good" when the results aimed at had been fully attained and the improvement permanent, and by "fair" when a partial improvement has been secured. In no case has failure occurred. He also records four operations in the forearm for spastic conditions, the results obtained in three being good, and only partial in one. Tendon grafting must not be employed indiscriminately. It is useless in cases of flail-like joints, where all the muscles are badly affected, and it should not be employed in slight cases of paralytic valgus or varus, or in slight equinus, the last being easily remedied by section of the tendo Achillis. The greatest care must be exercised in the selection of cases, and of the muscles to be employed, and careful watching of the results of the operations for several years afterward. [F.C.H.]

Typhoid Fever Complicated by Noma.—Sailer⁵ reports two cases of typhoid fever complicated by noma—a boy of 14, who had had diphtheria a year previously to the attack of typhoid fever, and his sister, aged 8 years. Another brother had typhoid fever at the same time, but did not develop noma. From the gangrenous areas in both cases the diphtheria bacillus was isolated. The boy died. A review of the literature follows. [A.O.J.K.]

¹ American Journal Medical Sciences, December, 1901.

² Wiener klinische Wochenschrift, October 17, 1901.

³ American Journal Medical Sciences, January, 1902.

⁴ American Journal Medical Sciences, January, 1902.

⁵ American Journal Medical Sciences, January, 1902.

¹ St. Louis Medical Review, October 26, 1901.

² St. Louis Courier of Medicine, October, 1901.

³ Bulletin of Johns Hopkins Hospital, October, 1901.

⁴ Pediatrics, October, 15, 1901.

⁵ American Journal Medical Sciences, January, 1902.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Gonorrhea in Women.—It is very difficult to determine the frequency of gonorrhea in women. On one hand, according to Noeggerath, 80% of women are affected with gonorrhea, while on the other in 1,930 women attending Sanger's clinic, the percentage was only twelve, and Penrose affirms that it is rare in the gynecologic dispensaries of Philadelphia to see acute gonorrhea of any portion of the genitourinary tract. In investigating this subject it is important to make a distinction between prostitutes and reputable women; for in the first class such a large proportion are affected with the disease, either in the acute or chronic form, that any percentage which includes these would be misleading as far as it relates to the spread of the disease. However, the majority of American gynecologists will probably coincide with Wertheim in the statement that gonorrhea is the most frequent cause of suppuration in pelvic disease. Repeatedly cases are observed in which innocent wives are the victims of the husbands' antemarital disease, and the question of the time at which the marriage of a gonorrheic is advisable becomes an extremely important one; for although the primary symptoms of gonorrhea in the female may be slight, the extension of the disease to the uterus and appendages is so certain, that unless vigorous treatment is employed, marked lesions will result that will most certainly injure the health and impair the reproductive power of the individual. Gonorrhea in the male when uncomplicated may be a simple disease to be treated as lightly as a nasal catarrh or any other slight mucous membrane inflammation, yet in women this infection often entails years of suffering and a lifetime of disappointment if sterility is produced. White has spoken of cases of chronic urethritis in which the gonococcus may retain its vitality for two or three years, and men with such imperfectly cured gonorrhea are permitted to marry, entirely ignorant of the consequences of such a course. Few men who have been guilty of ante-connubial indiscretions or youthful immorality would wittingly cause infection of a wife or, possibly, ophthalmia neonatorum of a child; so the physician must be the arbiter of the patient's action and see that men are instructed in regard to the consequences of venereal disease, both immediate and remote. According to Behrens, the microscopic detection of the gonococcus is so uncertain as to render this means of diagnosis unreliable, so that the physician must be guided by a careful study of clinical symptoms as well, for there may be a permanent or intermittent disappearance of gonococci with a further manifestation of clinical symptoms, or these may subside and yet the microorganism be detected. This emphasizes the fact that the physician should be cautious before deciding whether or not his patient is cured, and whether marriage would be free from the danger of transmission of venereal disease.

Prolonged Heart Action Without Respiration.—Redfern and Newby¹ report the case of a newborn infant in which the points of interest were: (1) That the heart beat continued good for 2½ hours without any voluntary respiratory effort, during which time artificial respiration was carried out; (2) increased use of the bellows produced marked quickening of the heart beat; (3) the child never gave any other sign of life than action of the heart and lungs, and clonic spasms of the right hand. [W.K.]

Effect of Ovarian Therapy.—Flockemann² reviews 28 cases in which ovarian preparation was administered to patients after sacrificial operations. In six cases the results were completely satisfactory; in four there was a decided abatement of the usual disturbances attending the artificial menopause; in

nine only a slight influence was perceptible; while in the remaining nine the same treatment had no apparent effect whatever. Hence he concludes that, although the influence of ovarian therapy after double oophorectomy is not uniform; yet its favorable effect in abating the resulting distressing symptoms is sufficiently frequent to make its trial advisable in each case; that ovarian therapy is harmless; and that in operating one should always endeavor to retain some ovarian tissue and thus avoid the undesirable effects of double oophorectomy. [W.K.]

Cesarean Section.—De Lee,¹ details three cases of cesarean section and then contrasts it with craniotomy. He considers the latter operation and its allied procedures in their religious, moral, sentimental, humanitarian, sociologic, legal and scientific relations. He brings out clearly the futility of cesarean section when a patient has been exhausted by prolonged labor. He makes a plea for more definite diagnosis which would speedily make embryotomy on a living child unnecessary. [J.W.H.]

Cesarean Section.—Andrews² gives a historic review of the cesarean operation, and concludes as follows: Craniotomy on the living fetus is very rarely justifiable, unless the choice of the mother to sacrifice the life of her unborn child, rather than subject her own life to a slight risk, renders it justifiable. Symphysiotomy is more difficult to perform and attended with about as great a mortality as cesarean section. Patients convalesce from cesarean section more rapidly than from symphysiotomy. Cesarean section is not a very difficult operation, and under the guidance of the principles of modern surgery has not a high mortality. Craniotomy is at best an unscientific, clumsy operation. When a full-term fetus cannot with the aid of forceps be born per vias naturales, then cesarean section should be the operation of choice. [F.C.H.]

Placenta Prævia.—Leavitt³ details the various methods which have been advocated for the treatment of this unfortunate obstetric accident, but the reader must draw his own conclusions as to the best method to pursue; however, he shows a tendency to favor Murphy's method, which is in every case where placenta previa is evident after the seventh month, or even before then, to induce labor and remain with the patient until she is delivered, treating her on the lines suggested by Barnes. [F.C.H.]

Extrauterine Pregnancy.—Miller⁴ details the diagnostic value of the various symptoms of extrauterine pregnancy, both prior and subsequent to rupture. He firmly believes that even though surgical interference is not practised until after rupture, if done promptly it means the saving of 78% of the patients instead of 68% of deaths as was the case before surgery became the established method of treatment. Extrauterine pregnancy is preeminently a surgical affection, and should be dealt with as promptly and radically as malignant disease. Of the classic symptoms, pain, irregularity of menses and the physical changes, the character of the first will prove the most significant in the majority of cases. [F.C.H.]

The Incision in Vaginal Section.—Webster⁵ describes his method of anterior colpotomy, which is profusely illustrated. He makes a circular incision around the cervix just below the attachment of the vaginal wall. This is joined by a mesial incision 1½ inches or more in length dividing the anterior vaginal wall. The cervix being well pulled down, the wall of the vaginal vault is stripped upward until the anterior peritoneal pouch is reached. The anterior vaginal wall is partially stripped from the base of the bladder. The uterovesical pouch is then opened. The advantages of this method over all others are, the uterus can be pulled down to a greater extent and more room is obtained for intrapelvic manipulations. At the end of the operative procedures, the uterus is pushed into place, the peritoneum sutured and the vaginal incisions closed with chromic catgut. [F.C.H.]

Repeated Pregnancy in the Same Tube.—Stahl⁶ summarizes three previously reported cases of this kind, and

¹ British Medical Journal, December 14, 1901.² Münchener medizinische Wochenschrift, November 26, 1901.¹ American Journal of Obstetrics, October, 1901.² St. Paul Medical Journal, October, 1901.³ St. Paul Medical Journal, December, 1901.⁴ New Orleans Medical and Surgical Journal, November, 1901.⁵ American Gynecological and Obstetrical Journal, December, 1901.⁶ American Journal of Obstetrics, October, 1901.

then adds a fourth from his own practice. The two pregnancies occurred 15 months apart, and each was removed by operation. He concludes that one pregnancy in a tube does not necessarily produce sufficient change as to prevent a second pregnancy in the same tube. [J.W.H.]

Brain Tumor in Gynecologic Practice.—Robb¹ details two cases. The first patient had undergone the operation of abdominal hysterectomy for prolapsus, and while being prepared for the second operation of narrowing the vagina, she suddenly died. The necropsy showed a congenital piaarachnoid cyst at the base of the brain, but no other lesion sufficient to cause death. The second case was in a woman four months pregnant. She was admitted to the hospital suffering from persistent nausea and vomiting, severe frontal headache, weak eyesight, and debility. Blood and secretions normal. Optic neuritis present. The uterus was emptied in the hope that the vomiting would stop, but it did not. The patient grew rapidly worse and died. The necropsy showed an angiosarcoma of the right frontal lobe of the brain. [J.W.H.]

Excessive Vomiting of Pregnancy.—Taylor² believes that this condition should be regarded as the result of various secondary causes, all of which, however, have been influenced by the primary cause—pregnancy. He cites cases to illustrate the many secondary causes, and shows that the treatment must of necessity vary to meet the different conditions. If, after the careful investigation of a case, no other successful treatment is found, he empties the uterus. [J.W.H.]

Toxicity of Urine in Pregnancy.—Steward³ made a series of experiments upon rabbits and white mice, with the urine of pregnant women, to determine the degree of toxicity, and, if possible, the cause. He made careful comparisons with results obtained by foreign experimenters, and concludes that 75% of the deaths were due to bacterial infection of the urine at some stage of the experiments. [J.W.H.]

Prolonged Pregnancy.—Taussig⁴ records a case of this nature of 323 days' duration. He also analyzes and classifies 61 other cases which are well authenticated. He finds that this condition is influenced by (1) the number of previous pregnancies, the liability increasing up to the ninth, then decreasing; (2) the age of the mother, length of gestation increasing up to mother's thirty-fifth year; (3) rest during pregnancy is a causative factor; (4) strong constitution of mother lengthens gestation. He believes that increased size and weight of the child is the most important proof that a given gestation is prolonged. [J.W.H.]

Torsion of a Hydrosalpinx.—Weir⁵ reports a case of this nature which had been diagnosed as ovarian cyst. Moreover, the histologic examination showed that there had been a hemorrhagic infarction into the distended tube. There had been a double twist of the tube, of recent occurrence since there was no peritonitis. [J.W.H.]

Gunshot Wounds of the Pregnant Uterus.—Several cases of gunshot wounds of the uterus and of the abdomen during pregnancy without injury to the uterus itself are detailed by Gellhorn.⁶ He believes that in every case of gunshot wound of the pregnant uterus a cesarean section should be performed immediately, and under no circumstances should the uterus be left in situ, on account of the possibility of infection, but be removed by the Porro operation. [F.C.H.]

Pessaries Versus Operations.—Kaan⁷ offers a plea for the more careful treatment of uterine displacements by suitable applications and by pessaries, before resorting to operative measures which are by no means uniformly successful in their results. He details the various operative procedures and mechanic appliances. [F.C.H.]

Placenta Prævia.—Dugan⁸ summarizes the treatment as follows: Vaginal tampon if it controls the hemorrhage, if not, rapid dilation and delivery either by forceps, or version

when possible; if the cervix is undilatable and the case urgent, the cervix may be split, or it may be necessary to resort to cesarean section in order to save the life of the child. [F.C.H.]

Extrauterine Pregnancy.—Donoghue¹ classifies the different causes of ectopic gestation and details each. Reference is made to the sound moral basis upon which the treatment of this condition is based, as this aspect of the question is fraught with the greater interest from the fact that, as in all cases of pregnancy, the rights of the mother and the fetus are involved. He claims that a very clear explanation of the position of the Catholic Church in regard to the regard to the rights of an ectopic fetus is to be found in the lectures of Father Coppens, on "Moral Principles and Medical Practice." Donoghue thinks we should be justified in holding "that an embryo in a place not intended for it by nature is where it has no right to be, and therefore may be treated as an unjust aggressor upon the mother's life. [F.C.H.]

Problems in Obstetrics.—Byer's² recounts the obstetric advances during the past century, and calls attention to the problems yet unsolved. Among the latter are: Reduction of deathrate from puerperal fever in private practice; prevention and cure of uterine cancer; increase of birthrate by maternal prophylaxis during pregnancy. [J.W.H.]

Determining the Presence of Stone in the Kidney and Ureter by Wax-Tipped Catheters.—The above method is fully described and is fully illustrated by Howard A. Kelly.³ The wax is made of two parts of dental wax and one of olive oil. The usual posture and methods of ureteral catheterization are employed. Various possibilities of error are fully discussed. The following conclusions are reached: (1) Catheterization of the ureters with a wax-tipped catheter is the most direct means of ascertaining the presence of calculus in the urinary tract. (2) The success of the method depends upon care and skill on the part of the examiner, together with attention to detail in the preparation of the instrument. (3) The presence of scratch marks is the most important feature in diagnosis of calculus by this means, but the method affords valuable confirmatory evidence in other ways. (4) In ureteral calculus the method of dilating the ureter and thus inducing the escape of the stone through the natural channel may obviate the necessity for operation. (5) The presence of scratch-marks, if all precautions have been taken, is positive evidence of the existence of calculus, but the absence of scratch-marks cannot be accepted as proof that no stone exists. (6) The possible presence of a double ureter, with two openings into the bladder, should always be borne in mind. [J.W.H.]

Resection of Ovaries.—Goldspohn⁴ has made a laborious review of cases and succeeded, after an average period of nearly two years following operation, in tracing and eliciting not only the subjective condition of 104 patients out of a larger number, but also their objective condition, by actual examination of all except 16 of them; 87 of the cases are entirely well subjectively, and also anatomically, as far as examined, of the disorders existing in the appendages previous to operation; 12 patients are able to attend to their usual duties regularly and completely, but frequently have pain, or some occasional disability, in part probably due to the reconstructed adnexas; and five patients have received only temporary benefit, or none at all, from the operations on the appendages. [F.C.H.]

Version.—Brodhead⁵ classifies versions into complete and partial; spontaneous and artificial (operative); external, internal and combined, and cephalic, pelvic and podalic, each of which is tersely described. He believes in converting all malpositions into a vertex, when possible, with the exception of flat pelvis. [F.C.H.]

Suturing without Knots.—Gibbons⁶ describes a method of suturing without knots, which he claims to be the best method of approximating the edges of a wound of any kind, no matter where situated, in bringing disrupted parts together in the layers of their original association. [F.C.H.]

¹ American Journal of Obstetrics, October, 1901.

² American Journal of Obstetrics, October, 1901.

³ American Journal of Obstetrics, October, 1901.

⁴ American Journal of Obstetrics, October, 1901.

⁵ American Journal of Obstetrics, October, 1901.

⁶ St. Louis Medical Review, November 9, 1901.

⁷ Annals of Gynecology and Pediatrics, December, 1901.

⁸ St. Paul Medical Journal, November, 1901.

¹ Annals of Gynecology and Pediatrics, November, 1901.

² American Journal of Obstetrics, October, 1901.

³ American Journal of Obstetrics, October, 1901.

⁴ American Journal of Surgery and Gynecology, October, 1901.

⁵ Post-Graduate, October, 1901.

⁶ American Gynecological and Obstetrical Journal, December, 1901.

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Medical Treatment of Perityphlitis.—Bourget (*Therapeutische Monatshefte*, July, 1901) considers that much can be done by medicinal means to combat an acute attack of perityphlitis, and deplors the hasty use of the knife in this condition. The treatment generally adopted by surgeons, which consists in the application of an ice-bag to the right iliac region and the internal administration of opium, does more harm than good. Lauder Brunton has shown by experiment that the application of cold to the surface raises the temperature of the deeper structures in the abdomen, which is in direct opposition to the effect desired. The administration of opium to place the intestines at rest in order to favor adhesion is equally bad, for if the majority of cases are caused by fecal accumulations in the cecum, it is illogical to further increase the constipation by opium. The prophylaxis of perityphlitis is important and consists in the observance of a mixed diet in which the quantity of meat is reduced to a minimum, while the greens, well cooked fruits and farinaceous foods are increased. The author does not think that the fear of swallowing seeds of fruits is justified, for by maceration in the intestinal secretions mucin is formed, which is useful in lubricating the intestinal walls and aiding propulsion of alimentary or fecal masses. Gastric hyperacidity should be corrected; the bowels should be regulated by the aid of saline purgatives taken in the morning on an empty stomach; it is still better to employ large amounts of cooked fruits, or if this fails to take in addition $\frac{1}{2}$ to 1 dram of castor oil after meals. If an acute attack begins the patient is placed on a liquid diet, and given 2 to 5 drams of castor oil daily in which is dissolved 15 grains of salacetol. If gastric symptoms predominate, lavage of the stomach is performed with water containing 1% of sodium bicarbonate. Intestinal lavage with antiseptic liquids is considered very beneficial by the author, as by this means toxic material may be removed. The introduction of several quarts of water under pressure is considered dangerous. The author employs 1 quart of water, introduced high in the bowel by means of a soft stomach-tube, so that some of the liquid will enter the cecum. The liquid should have a temperature of 100° and contain a soluble, nontoxic antiseptic. Ichthyol is used exclusively by the author, in the proportion of 4 parts to 1,000. At the same time 3 to 6 ounces of olive oil, containing 1% of menthol, or thymol, or methyl salicylate, is injected into the bowel. The mechanic and emollient effect of the oil also gives very good results in the treatment of constipation, and in appendicular crises it calms the pains very rapidly. In the interval of lavage a flaxseed poultice is placed over the right iliac fossa, or better, 5 or 6 leeches, if the swelling is considerable and very resistant. On the second or third day of treatment the castor oil is replaced by saline purgatives, as follows:

Sodium bicarbonate (pure)	} of each, 75 grains.
Sodium phosphate (anhydrous)	
Sodium sulfate (anhydrous)	
Water	1 quart.

Dose, 5 ounces 3 or 4 times a day.

In Bourget's experience intestinal lavage has a rapid and remarkable effect on the pain of perityphlitis. The colic and pain on pressure diminish progressively and the swelling diminishes in size and consistency. The symptoms of general intoxication cease gradually, in the majority of cases within the first 24 hours. The temperature often falls from 102° or 104° to 98° or 100.4° after the first lavage, and remains at normal after the third or fourth. The duration of the treatment by lavage is from 2 to 10 days, usually they are unnecessary after the fifth or sixth day, and are replaced by mild purgatives, such as castor oil or the saline formula given above. The author has seen many cases definitely cured by this mode of treatment, and considers it preferable in many cases to immediate operation. [L.F.A.] [To an American reader the statement that surgeons generally give opium seems strange.]

Mercury in Diseases of the Heart.—Beatty (*Journal des Praticiens*, April 13, 1901), recommends mercury in cardiac

dropsies of mitral origin, and in general venous engorgement with edema resulting from a relative mitral insufficiency secondary to an old aortic insufficiency, or from dilation of the heart after hypertrophy of the left ventricle in the course of interstitial nephritis. He employs mercury in these conditions because of its diuretic effect. One pill, containing $\frac{1}{4}$ grain of calomel combined with digitalis and squill, is given every 4 hours, night and day, for 10 or 14 days. If these pills cause more than 2 stools daily, $\frac{1}{4}$ of a grain of powdered opium is given occasionally. After 5, 6, or 8 days the urine increases and anasarca and venous engorgement decrease. Treatment is stopped after from 10 to 14 days, according to the condition of the gums, and iron is ordered alone or combined with digitalis, according to the state of the pulse. Beatty thinks that mercury has a special action favoring the reabsorption of the edema, apart from its diuretic power.—[L.F.A.]

Electricity for Neurasthenic Symptoms.—G. W. Jacoby ("System of Physiologic Therapeutics," Vol. II) writes that the functional impotence of neurasthenics may be treated by means of franklinization of the spine, or galvanization of the lumbar region of the spine, or faradization of the genitals and surrounding parts, but he has been able to obtain so much better results through other means (hydrotherapy, cold water, sounds, etc.) that he now but rarely makes use of electricity in any form in the treatment of this symptom. Tremor, symptomatic of a functionally exhausted state of the muscles, as frequently encountered in neurasthenics after slight exertion, may usually be relieved by the employment of galvanic or sinusoidal currents. Persistent vomiting is not an unusual symptom of this disease of multiplex manifestations, and may very often be checked by the application of a weak galvanic current (2 to 3 milliampères) for a comparatively long period (30 minutes); the kathode being placed over the lower cervical vertebra and the anode upon the xiphoid process.

Counterindications to Sea Voyages.—F. Parkes Weber ("System of Physiologic Therapeutics," Vol. 3) states that voyages should not be recommended to patients suffering with cholelithiasis or chronic catarrhal disorders of the stomach and intestines, especially when originally induced by habitual overindulgence in food and drink. In chronic congestion of the abdominal organs from various causes great caution should likewise be observed. Sea voyages are counterindicated when they cause a continued tendency to seasickness and when the diet on board ship leads to persistent loss of appetite; when there is great general weakness; in all grave diseases of the heart and bloodvessels; in the great majority of cases of advanced tuberculosis; when there is a marked tendency to hemoptysis; in epilepsy; when there is a tendency to maniacal attacks; in periodic insanity; when there is an inclination to commit suicide; when the strong light of the sea cannot be borne; and in the rare cases in which a sea trip produces insomnia.

Surgical Treatment of Intestinal Perforation in Typhoid Fever.—(*Journal des Praticiens*, January 26, 1901) states that operative procedures in the treatment of intestinal perforation in typhoid fever must be undertaken very early, and that it is well to give the patient injections of caffein, ether or serum before the operation, which should be as short as possible. The anesthesia should be very light and carefully watched. The incision may be median or lateral, often double in order to readily find the perforation and to favor drainage. After the perforation is sutured the neighboring intestines should be explored in order to be sure that no other perforation exists. Finally flush the peritoneum with boiled water or with a saline solution and place large drainage tubes in position. The abdominal wound may then be partly closed. After-treatment consists in the daily injection of one quart or more of serum to aid in supporting the patient. [L.F.A.]

Taenia Saginata from Raw Scraped Beef.—J. M. Miller (*Pediatrics*, August 1, 1901) describes the case of a baby who from birth had suffered from indigestion. Under a modified milk diet the infant improved for a time, but later relapsed; it was then given a diet of raw scraped beef with peptonized milk and fruit juices, and rapidly improved. In 3½ months, segments of a tapeworm were noted in the stools. The oleoresin of male-

fern was administered, and was followed by expulsion of the worm. Miller calls attention to the dangers of administering raw beef to infants. He believes that it is often of great value in the feeding of infants, but it should never be administered except in extreme cases of indigestion, when the proteids of cow's milk cannot be taken. Beef juice is not attended with so much danger, particularly if a press is employed and the juice strained through fine linen. [L.F.A.]

Hydrochloric Acid in Sciatica.—Radzikowski (*Journal des Praticiens*, April 13, 1901), states that he has successfully used local applications of hydrochloric acid in the treatment of sciatica. The acid is applied to the painful spots by means of a tampon of cotton at the end of a glass rod. A thin layer of gauze is then placed over the area. If the skin is hyperesthetic the patient experiences a burning sensation; if anesthesia exists, as is the rule in old cases, he experiences only a sensation of moisture. The application is often followed by an eruption of small vesicles; occasionally necrosis of the superficial layers of the skin occurs in patients with impaired circulation; but this necrosis is cured very easily. After this treatment the pains disappear rapidly, and cure is effected in from 7 to 25 days, after 3 or 5 applications. [L.F.A.]

Treatment of Ecthyma.—Sabouraud (*Journal des Praticiens*, March 9, 1901), treats congestive forms of ecthyma by bathing the parts with warm water to remove the crusts and to equalize the local circulation, and then applying an antiseptic solution to avoid further inoculation. The following solution is recommended:

Saffron	6 grains
Zinc sulfate	15 drams
Copper sulfate	30 grains
Camphor water	1 quart

The epidermic lesions dry up in a few days and the new skin should be protected by an ointment, as follows:

Zinc oxid	15 grains
Calomel	3 grains
Vaselin	5 drams

A cure is effected in from 10 to 12 days. In torpid ulcers of the leg Sabouraud recommends washing the affected parts with a 1 to 5000 solution of mercuric oxycyanid and afterward dusting the ulcer with powdered iron subcarbonate, then covering with absorbent cotton which is allowed to remain in place for 24 hours. When cicatrization is about three-fourths completed an antiseptic plaster of zinc oxid is applied. [L.F.A.]

Treatment with the Gastric Juice of a Dog in a Case of Enteritis Due to Deficiency of Gastric Digestion.—Fremont (*Journal des Praticiens*, July 6, 1901) reports the case of a woman, aged 55, who for several months had frequent liquid, greenish movements from the bowels, containing neither mucus nor undigested food. The frequency of the stools had produced marked weakness, attacks of suffocation, palpitation of the heart, and a cadaverous appearance, although there was no loss of weight. The tongue showed nothing characteristic, the stomach was not dilated, the urine was normal; the patient did not complain of pain. Fremont ordered that three dessertspoonfuls of gasterin be taken with each of the two main meals. The symptoms rapidly subsided, and at the end of 15 days the patient had only one soft stool daily. [L.F.A.]

Treatment of Sebaceous Cysts by Interstitial Injections of Ether.—Sergent (*Journal des Praticiens*, January 26, 1901) employs interstitial injections of ether after the following manner in the treatment of sebaceous cysts: The region is carefully sterilized and the tumor seized with two fingers of the left hand. The needle, previously sterilized, is inserted into a glandular orifice, and the injection made slowly, while the needle is being moved to and fro in order to break up the sebaceous material and to allow the ether to diffuse in all directions. The quantity of ether injected varies with the size of the cyst. The operation is usually repeated every second day until four or five injections have been made. After each injection the cyst is washed with sublimate solution and the orifice of the sac closed with a little collodion. Extraction of the contents of the cyst may be practised so soon as the tumor becomes soft or fluctuating, or when a small brownish crust forms over an

eschar in the center of the puncture. If the contents of the sac are expressed before being completely liquefied, and some dry sebaceous material remains, it will be necessary to make another injection of ether before continuing the process. When the contents of the cyst are evacuated it is necessary to remove the sac wall, or the cyst will soon return. A small stilet should be inserted between the skin and cyst wall to break up all adhesions, and the sac then seized with a small forceps and slowly withdrawn. After the sac has been extracted the skin which covered the cyst retracts in a few days and the orifice heals leaving no cicatrix. Sergent considers this the best treatment for cysts of average size. [L.F.A.]

Gastric Antisepsis in Tuberculosis.—Grancher (*Montreal Medical*, September, 1901) calls attention to pretuberculous dyspepsia, due to a deficiency of hydrochloric acid in the gastric juice. On account of this alteration in the gastric secretion a septic condition of the mucous membrane is produced by fermentation. The cachexia which is also apparent in these patients is accompanied by demineralization of the tissues, resulting in a decrease in the resistance to tuberculous infection. For the correction of these morbid processes it is recommended to combine hydrochloric acid with calcium phosphate forming calcium hydrochlorophosphate. Small doses of this preparation and of creasote may be given at all stages of tuberculosis, because (1) they combat the subacidity in the early stage of the disease and reestablish the normal aseptic state of the stomach; (2) by the assimilation of a large amount of calcium phosphate the demineralization of the organism is compensated; (3) creasote acts as a direct antiseptic against the bacilli of tuberculosis, which multiply in the stomach of most tuberculous patients. [L.F.A.]

Hemostatic Action of Quinin.—Huchard (*Therapeutische Monatschrift*, Vol. xv, No. 5, May, 1901) reports that quinin, by reason of its vasoconstrictor properties has recently been used with success not only in metorrhagia, but also in Basedow's disease. Huchard recommends quinin hydrobromid in doses of 1 gram (15 grains) a day in aortic insufficiency with visible capillary pulse, and claims that the drug controls not only the lesion itself, but also the peripheral symptoms. [R.M.G.]

Bacillol.—Liebreich (*Therapeutische Monatshefte*, vol. xv, No. 5, May, 1901) in an article on bacillol states that it is an oily fluid of faint alkaline reaction, dark brown color, and specific gravity of 1.100. It is readily soluble in water and the odor resembles that of pitch, but is not persistent. It is only slightly irritating, even in concentrated solutions. With water it forms a clear solution.

The toxicity and disinfectant qualities of the drug have been studied by Paszotta, with the following results: The addition of 10 cc. of a 10% solution of bacillol to 90 cc. of milk was sufficient to keep the milk from coagulating for six weeks, during which time only cream was separated; while the contents of a control tube curdled after 4 days and in 12 days became mouldy. Digestive experiments with pepsin did not yield satisfactory results. Bacillol forms a heavy precipitate on the addition of acid. With pancreatin the process of digestion was delayed by a solution of 0.5% of bacillol for 48 hours at a temperature of 38° C.

Effect on bacteria: 0.2% of bacillol added to agar tubes absolutely prevented the growth of a number of microorganisms, chiefly *Micrococcus prodigiosus* and *Staphylococcus pyogenes aureus*. Similar agar tubes required the addition of 0.5% of lysol to prevent the growth of bacteria. The marked bactericidal power and relative freedom from toxicity of bacillol would alone suffice to recommend it for general use; in addition it has the advantage that it does not make the instruments with which it comes in contact so slippery as do other remedies of this kind. Its odor rapidly disappears and, last of all, the drug is inexpensive, costing only about half as much as other disinfectants of the same power. [R.M.G.]

Accidental Death Due to the Employment of Hydrogen Dioxid.—Moreau (*Journal des Praticiens*, March 9, 1901), states that (1) it is dangerous to irrigate a wound with hydrogen dioxid after an amputation in which catgut ligatures have been used to tie the large vessels. (2) If, for any reason, it is

thought necessary to use these irrigations in subsequent treatment, the large vessels should be tied with heavy silk ligatures at the time of operation. These precautions are based upon the fact of a patient dying from an abundant secondary hemorrhage eight days after amputation of the thigh. Irrigation of the wound with hydrogen dioxid had been practised, and had resulted in destruction of the catgut ligatures used to tie the large vessels and in disintegration of the clots formed. [L.F.A.]

Treatment of Aneurysm.—Lancereaux (*La Médecine Moderne*, July 17, 1901) has employed injections of gelatin in the treatment of aneurysms with good results. In a case of aneurysm of the arch of the aorta and in another of aneurysm of the subclavian artery cure or marked amelioration resulted. [L.F.A.]

OPHTHALMOLOGY

WALTER L. PYLE

Comparative Ophthalmology has invited but few extensive scientific investigations. The difficulties are so many and the material offered has been so limited that Haeckel, in his "Systematische Phylogenie," remarks that so far as their phylogenesis is concerned the organization and development of the eye in vertebrates is of very limited interest. In a recent monograph¹ presented to the Royal Society of London, Dr. George Lindsay Johnson has made a remarkable contribution to this subject, based chiefly upon ophthalmoscopic examination, with an arrangement of the facts ascertained with a view to generalization and testing their taxonic and phylogenetic value.

The chief work was performed in the Gardens of the Zoological Society of London. By great persistence and infinite patience the eyes in 182 species of mammals were examined, extensive notes were taken, and about 200 colored drawings of the fundus oculi made. To secure uniformity of illumination, artificial light was used. At first anesthetics were employed, but they were soon abandoned. Some of the animals were muzzled and occasionally covered with a net, but as a rule kindness, coaxing and taming sufficed. The ordinary ophthalmoscope in the direct method was employed. The lids were held apart by the fingers or spring speculum, and homatropin, scopolamin or cocain was instilled to produce mydriasis. In all cases both eyes were inspected, and when possible several animals of the same species were examined. The refraction was determined by retinoscopy, using a cycloplegic when possible.

Part I of Dr. Johnson's work contains a systematic record of observations as to the ophthalmoscopic appearances, the divergence of optic axes, the peculiarities of the iris, pupil and other interesting features. Part II deals with the implied problems and the resulting generalizations. It includes anatomic and physiologic considerations, and treats of such subjects as the reversion of types and vestigial relics, influence of domestication, the bearing upon classification of the ophthalmoscopic appearances, etc. There are added thirty beautiful plates, portraying in color as closely as possible the appearances of the fundus oculi in many different animals.

DIGEST OF RECENT LITERATURE ON OCULAR THERAPEUTICS.

Peronin is a unique drug in possessing the power of producing anesthesia and at the same time of contracting the pupil. Smirnow has offered the following conclusions relative to perouin:

1. It produces prompt and lasting anesthesia.
2. When instilled in strong solution there is considerable conjunctival edema and vascular congestion, but these undesirable features may be avoided by using weak solutions. Effective anesthesia will follow 2 or 3 instillations of 1 drop of a $\frac{1}{4}\%$ solution.
3. Peronin is antagonistic to atropin in its miotic action.

¹"Comparative Anatomy of the Mammalian Eye," by George Lindsay Johnson, M.D., F.R.C.S., London, 1901.

4. Intraocular tension is diminished by its use. This is proved by the tonometer of Maklakow.

Acain as a substitute for cocain is discussed by Khortzew. It produces more durable corneal anesthesia; it does not affect the pupil or accommodation; it does not change intraocular tension, as proved by tonometric measurements; it is less poisonous; solutions remain unaltered a long time. Its disadvantages are that conjunctival anesthesia is less effective and it causes pain, irritation and congestion, and mucous secretion.

Arecolin hydrobromate has been used with success in glaucoma by Maximow in solution of from $\frac{1}{2}$ to 4% strength. It produces prompt and marked diminution in intraocular tension. Solutions of from $\frac{1}{2}$ to 1% strength do not cause pain or irritation, and seem to give the patients much relief from suffering.

Ichthargan is a combination of silver and ichthyol. It is used in trachoma in $\frac{1}{2}$ to 3% solution, and according to Faltz it gives the best results in cases with extensive corneal involvement. Its application causes a burning pain which may continue for several hours, but the unpleasant symptoms do not occur after the first few applications.

Ichthyol is used by Belewitsch in trachoma, in a 10% solution in glycerin, increasing to 20%, once or twice daily. In the beginning of the treatment, cocain is applied to prevent severe pain. Applications are made for a varying period from three weeks to as many months, according to the severity of the case.

Cinnamonic Acid.—Subconjunctival injections of 4 to 5 cc. of a 1% solution, every two days are recommended by Pflüger in all ocular affections in which artificial leukocytosis favors recovery, such as, iridocyclitis, anterior uveitis, corneal ulceration, scleritis, ocular tuberculosis, etc. The injections cause but little pain, and no dressing is necessary. Light massage through the lids is a valuable adjuvant in the treatment.

Orthoform is recommended by Tcherkess as a reliable analgesic and antiseptic in cases of pannus, corneal ulcer, phlyctenular disease, and burns of the cornea and conjunctiva. It is used in powder or pomade of 5% strength.

Cuprol is a combination of copper with nucleic acid. It is said to contain 6% of copper, and is recommended as a substitute for copper sulfate (blue stone) in the treatment of trachoma. It is less irritating and penetrates the tissues more deeply. It does not coagulate albumin; it is not precipitated by alkalies; and it is readily soluble in warm water. In the form of a fine impalpable powder it is dusted on the everted lids. Preliminary use of cocain is unnecessary. The applications are made at intervals varying from a day to a week, and Snell orders a 5% solution for home use by the patient, while under treatment.

Brucein.—Singer has studied in a very careful manner the action of brucein upon visual acuity, light and color perception and the visual fields of normal eyes. Subcutaneous injections of this alkaloid were given in the temple. He concludes that visual power is increased in every way, and that the influences of fatigue upon vision are greatly lessened by the administration of brucein. Singer used 20 milligrams of brucein to obtain the effect corresponding to that provoked by von Hippel with 3 milligrams of strychnin. But, although brucein is only one-sixth as powerful as strychnin, it is only one-fortieth as toxic; and hence may be given in relatively much stronger doses. In fact Singer did not observe the slightest toxic symptoms in his experiments with brucein. He strongly recommends the employment of brucein in ophthalmology in preference to strychnin, but he utters a warning that the weaker alkaloid must not be contaminated with even a trace of strychnin.

Crude petroleum oil has been used with uniformly good results by Viau in eight cases of diphtheritic conjunctivitis. The conjunctiva was swabbed twice a day with the petroleum, and in addition frequent hot boric acid irrigations and hot compresses were employed.

Holocain is a valuable ocular anesthetic, acting within two to three minutes, and lasting for ten minutes; but its effect may be prolonged for 30 minutes by repeated instillations. One or two drops of a 1% solution are instilled a few minutes before operation; again in about 30 seconds and again in $1\frac{1}{2}$ minutes. There is ocular congestion and slight smarting even with the

ordinary 1% solution, but both soon subside. The corneal epithelium is not affected, and intraocular tension is not altered. According to Ricchi, there may be a loss of 0.50D. in accommodation. The same observer attributes to the drug variable antiseptic properties. Although solutions may become pinkish on standing, they do not lose their anesthetic properties. Crawley reports instilling by mistake, a 20% solution (originally a 1% solution increased by evaporation) without bad effect. Of course, such a strong solution would have no advantage over that in common use (1%).

Beta-eucain.—Cohn has used with good results both the acetate and muriate of this substance in 20 normal, and 80 diseased eyes. The salts are not decomposed in boiling, and they are cheaper than cocain. However, beta-eucain should not be used when there is congestion of the anterior segment of the eyeball.

Oxycyanate of mercury is preferred to the sublimate by Hartz for use in subconjunctival injections. The needle should be entered as far as possible from the corneal border. The chief indications are choroidal disease, vitreous opacities and postoperative infection. Elsching uses a ¹/₁₀₀₀ solution of this salt in the treatment of chronic trachoma with corneal opacities. The solution, on a cotton pledget, is massaged over the conjunctiva. At the first treatment a 2% solution of cocain may be applied before the massage, but later this is unnecessary. Reaction is met by ice-compresses. Beginning with daily manipulations of five minutes' duration for each eye, the intervals may be increased to three or four days. The massage exercises an equally favorable action in other forms of intractable conjunctivitis, and favors the absorption of hemorrhage in the anterior chamber, iritic exudates, lenticular masses, etc.

Deep massage of the eyeball is recommended by Wood and Würdemann in recent cases of embolism of the retinal arteries. The latter reports two cases of recovery by this method, which consists in placing the ball of the operator's thumb upon the upper lid of the closed eyes (Wood uses the second finger), and forcibly, with slow movements, exerting pressure upon the eyeball for two minutes. Although the usual alternative and eliminative treatment was used in both cases, Würdemann attributes the cures largely to the dislodgement of the clot by mechanic treatment, as he has never had such success with drug administration alone.

Large doses of the iodids are recommended by Pagensteher in certain ocular affections such as episcleritis, ocular palsies, etc. Nobbe, one of his former assistants, reports a number of cases in which 30 to 40 grains were given 3 to 5 times daily. The sodium salt is preferable to that of potassium, and the addition of potassium bromid is advisable, to prevent greatly accelerated cardiac action.

The Treatment of Contagious Diseases of the Eye by the General Practitioner is discussed by Ziegler.¹ The local treatment of acute catarrhal conjunctivitis consists of a single application of silver nitrate, five grains to the ounce, on the first day, followed by milder applications of the glycerol of tannin or a 10% solution of protargol on each successive day. The following wash is of value:

- Sodii biboratis 5 grains

Acidi borici 10 grains

Aquæ roseæ } of each 1 fluidounce

Aquæ destillatæ }

M. et Sig.—Drop in each eye freely every two or three hours.

Granular conjunctivitis should be treated by daily applications of silver nitrate, from five to ten grains to the ounce. When the disease begins to yield milder applications, such as glycerol of tannin, or boroglycerid (50% solution) should be substituted. Purulent ophthalmia should be treated by the daily application to the everted eyelids of a ten grain solution of silver nitrate, neutralized by a saturated solution of salt and followed with an after irrigation of the bichlorid wash. Ice compresses should be applied to the lids, and changed every minute until the swelling and discharge are markedly diminished. A 1 to 4,000 bichlorid solution should be used as a wash every 15 minutes for the first three or four days, and then at

longer intervals a 1 to 8,000 solution may be used. Twice daily a solution of protargol (10% to 25%) should be instilled. As a prophylactic measure in ophthalmia neonatorum a single drop of a ten grain solution of silver nitrate may be instilled or the eyes may be irrigated with a 1 to 4,000 bichlorid solution or a solution of protargol, 10% to 25%, may be used. [C.A.O.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended January 4, 1902:

SMALLPOX—UNITED STATES.			
		Cases	Deaths
California:	San Francisco.....Dec. 15-22.....	9	
	San Pedro.....Dec. 7, 1 case original Randsburg, California.	1	
Indiana:	Evansville.....Dec. 21-28.....	5	
Kentucky:	Lexington.....Dec. 21-28.....	4	2
Louisiana:	New Orleans.....Dec. 21-28.....	1	
Maine:	Portland.....Dec. 21-28.....	1	
Massachusetts:	Boston.....Dec. 21-28.....	27	8
	Cambridge.....Dec. 21-28.....	1	
	Fall River.....Dec. 21-28.....	1	
	Medford.....Dec. 21-28.....	1	
	Quincy.....Dec. 21-28.....	4	
	Woburn.....Dec. 15-21.....	1	
	Winona.....Dec. 15-21.....	3	
Minnesota:	Minneapolis.....Dec. 15-28.....	22	
Missouri:	St. Louis.....Dec. 19.....	1	
Nebraska:	Omaha.....Dec. 21-28.....	20	
New Hampshire:	Nashua.....Dec. 2-28.....	1	
New Jersey:	Camden.....Dec. 21-28.....	16	3
	Newark.....Dec. 21-28.....	20	6
New York:	Passaic.....Dec. 15-28.....	4	1
	Binghamton.....Dec. 21-28.....	1	
	New York.....Dec. 21-28.....	19	4
Ohio:	Ashtabula.....Dec. 21-28.....	1	
Pennsylvania:	Cincinnati.....Dec. 20-27.....	9	
	Hazleton.....Dec. 21-28.....	11	
	Lebanon.....Dec. 21-28.....	35	
	Norristown.....Dec. 21-28.....	5	
	Philadelphia.....Dec. 21-28.....	79	19
	Providence.....Dec. 21-28.....	1	
	Greenville.....Dec. 15-21.....	2	
Rhode Island:	McMinn Co.....Dec. 15.....	24	
South Carolina:	Memphis.....Dec. 21-28.....	2	
Tennessee:	Polk Co.....Dec. 15.....	4	
Utah:	Salt Lake City.....Dec. 21-28.....	2	
Wisconsin:	Green Bay.....Dec. 22-29.....	10	
	Milwaukee.....Dec. 21-28.....	2	

SMALLPOX—FOREIGN.			
		Cases	Deaths
Belgium:	Ghent.....Dec. 7-14.....		5
Brazil:	Pernambuco.....Nov. 1-30.....	130	
	Rio de Janeiro.....Nov. 10-24.....	119	
Canada:	Halifax.....Dec. 21-28.....	11	1
	Quebec.....Dec. 15-28.....	56	
	Winnipeg.....Dec. 15-21.....	2	
Colombia:	Cartagena.....Dec. 9-15.....		2
	Panama.....Dec. 16-23.....	15	
France:	Lyons.....Nov. 30-Dec. 7.....		1
	Paris.....Dec. 7-14.....	8	
Great Britain:	London.....Dec. 7-14.....	506	29
Mexico:	Merida.....Nov. 23-30.....	1	
Russia:	St. Petersburg.....Nov. 30-Dec. 7.....	4	4
	Warsaw.....Nov. 23-30.....		2
Spain:	Corunna.....Dec. 7-14.....		1

YELLOW FEVER.			
		Cases	Deaths
Brazil:	Rio de Janeiro.....Nov. 10-24.....	3	
	Merida.....Nov. 23-30.....	1	
Mexico:	Vera Cruz.....Dec. 14-21.....	10	9
West Indies:	St. Lucia.....Dec. 16, Present.		

CHOLERA.			
		Cases	Deaths
Java:	Batavia.....Nov. 16-23.....	21	15
Straits Settlements:	Singapore.....Nov. 8-16.....		10

PLAGUE—UNITED STATES.			
		Cases	Deaths
California:	San Francisco.....Dec. 15-22.....	1	

PLAGUE—INSULAR.			
		Cases	Deaths
Hawaiian Islands:	Honolulu.....Dec. 11-14.....		4

PLAGUE—FOREIGN.			
		Cases	Deaths
Brazil:	Rio de Janeiro.....Nov. 10-24.....		23
Mauritius:	Mauritius.....Nov. 28-Dec. 5.....	52	37
South Africa:	Massell Bay.....Nov. 23-30.....	5	
	Port Elizabeth.....Nov. 23-30.....	1	

Changes in the Medical Corps of the U. S. Navy, for the week ended January 4, 1902:

- HOLCOMB, R. C., assistant surgeon, detached from duty with the Marine Battalion, Cavité, and from the Helena, and ordered home to wait orders.
- YOUNG, R. M., assistant surgeon, detached from the Constellation, and ordered to the Asiatic Station via the Rainbow, as the relief of Assistant Surgeon R. C. Holcomb.
- BUCHANAN, J. B., assistant surgeon, detached from the Columbia and ordered to the Constellation.
- BLACKWELL, E. M., assistant surgeon, ordered to the Columbia.

¹ Pennsylvania Medical Journal, November, 1901.

FAUNTLEROY, A. M., assistant surgeon, detached from the Naval Academy and ordered to the Naval Hospital, Norfolk, Va.
McDONNOLD, P. E., assistant surgeon, ordered to the Naval Academy.

Changes in the Medical Corps of the U. S. Army for the week ended January 4, 1902:

RENN, GEORGE A., contract surgeon, will proceed to Raleigh, N. C., for annulment of contract.
KIERSTED, First Lieutenant HENRY S., assistant surgeon, is granted leave for 20 days, to take effect December 28.
MORSE, First Lieutenant ARTHUR W., assistant surgeon, will proceed from Fort Walla Walla in time to report at Fort Lawton, December 28, for temporary duty. Upon the return of Assistant Surgeon H. S. Kiersted to Fort Lawton, Lieutenant Morse will rejoin his proper station.

AGOSTINA, I. P., contract surgeon, is granted leave for one month, with permission to go beyond the limits of the Department of Cuba.

VAN KIRK, HARRY H., contract surgeon, recently returned from the division of the Philippines, and now in San Francisco, Cal., pending annulment of contract, will proceed to Washington, D. C., for the instructions contemplated in his previous orders.

ROWAN, CHARLES J., contract surgeon, will proceed to his home, Chicago, Ill., for annulment of contract.

The following-named contract surgeons will proceed to their homes, as indicated, where they will report by letter to the surgeon-general of the Army, for annulment of contract: William J. Condon, to Jamesburg, N. J.; Thomas F. Miller, to Lamar, Mo.

JACOBSON, BENJAMIN L., hospital steward, will proceed to Fort Monroe for duty.

EWING, Major CHARLES B., surgeon, having arrived in New York City, as required by orders of July 26, will proceed on or before January 3, to Fort Preble for duty.

PEASE, Captain FRANK D., assistant surgeon, is granted leave, on account of sickness, to include January 31.

The following changes in the stations and duties of contract surgeons are ordered: Contract Surgeon Ernest W. Fowler is relieved from duty at Fort Preble, to take effect upon the arrival thereof of Major Charles B. Ewing, surgeon, and will then proceed to Fort Terry for duty, to relieve Contract Surgeon Joseph C. Garlington. Contract Surgeon Garlington, upon being thus relieved, will proceed to San Francisco, Cal., for transfer to the Philippine Islands, where he will report for assignment to duty.

Orders of December 24 are so amended as to direct First Lieutenant David Baker, assistant surgeon, upon the expiration of the sick leave granted him December 6, to report at Fort Leavenworth for duty.

PEASE, Captain FRANK D., is honorably discharged, to take effect January 31. He will proceed to his home.

During the illness of Colonel Peter J. A. Cleary, assistant surgeon-general, chief surgeon of the department of Texas, Major Charles F. Mason, surgeon, will, in addition to his duties as surgeon at Fort Sam Houston, perform those pertaining to the office of chief surgeon.

The following changes in the stations and duties of contract surgeons are ordered: Contract Surgeon John T. Halsell is relieved from further duty in the division of the Philippines, and from temporary duty at the general hospital, Presidio, and will proceed to San Antonio, Tex., and report to the commanding officer, department of Texas, for assignment to duty at Fort Sam Houston. Contract Surgeon Robert C. Eve is relieved from duty at Fort Sam Houston, to take effect upon the arrival at that post of Contract Surgeon Halsell, and will then proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report to the commanding general, division of the Philippines, for assignment to duty.

SMELSEY, SAMUEL, hospital steward, West Point, N. Y., will be sent to New York City on or before January 14, 1902, and will report on the Army transport Buford for duty aboard that vessel en route to the Philippine Islands. Upon arrival at Manila he will report to the commanding general, division of the Philippines, for assignment to duty.

The retirement from active service, January 1, 1902, of Colonel Charles R. Greenleaf, assistant surgeon-general, by operation of law, under the provisions of the act of Congress approved June 30, 1882, is announced. Colonel Greenleaf will proceed to his home.

The retirement from active service, January 1, 1902, of Colonel Dallas Bache, assistant surgeon-general, at his own request, under the provisions of the act of Congress approved June 30, 1882, he having served more than 40 years, is announced.

BISING, ALBERT G., contract surgeon, will proceed from Jersey City, N. J., to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

Official list of the changes of stations and duties of the commissioned and noncommissioned officers of the U. S. Marine-Hospital Service, for the seven days ended January 2, 1902:

CASSAWAY, J. M., surgeon, granted leave of absence for five days from December 26—December 26, 1901. Granted two days' extension of leave of absence—December 31, 1901.

MEAD, F. W., surgeon, upon being relieved by Surgeon D. A. Carmichael, to proceed to Pittsburg, Pa., relieving Acting Assistant Surgeon R. C. Craig—December 28, 1901.

IRWIN, FAIRFAX, surgeon, granted leave of absence for seven days from December 27—December 27, 1901.

CARMICHAEL, D. A., surgeon, upon being relieved by Passed Assistant Surgeon H. S. Cumming, to proceed to Vineyard Haven, Mass., relieving Surgeon F. W. Mead—December 28, 1901.

COBB, J. O., passed assistant surgeon, granted leave of absence for 20 days from January 2—December 30, 1901.

KALLOCH, P. C., surgeon, upon being relieved by Assistant Surgeon J. T. Burkhalter, to proceed to Washington, D. C., and report for orders, preliminary to going to Portland, Me.—December 27, 1901.

CUMMING, H. S., passed assistant surgeon, directed to assume command of the San Francisco quarantine station, relieving Surgeon D. A. Carmichael—December 26, 1901.

CLARK, TALIAFERRO, assistant surgeon, granted leave of absence on account of sickness for seven days from December 18, 1901. Granted 21 days' extension of leave of absence on account of sickness, from December 26—December 31, 1901.

LAVINDER, C. H., assistant surgeon, granted leave of absence for two days—January 2, 1902.

BURKHALTER, J. T., assistant surgeon, relieved from duty at Mobile, Ala., and directed to proceed to Gulf quarantine station, relieving Surgeon P. C. Kalloch—December 27, 1901.

DUDLEY, D. E., acting assistant surgeon. Department letters of October 10, 1901, granting Acting Assistant Surgeon Dudley leave of absence, on account of sickness, for 30 days from October 7; and leave of absence for 30 days from November 7, amended so that the sick leave shall be from October 9, and annual leave from November 28—December 24, 1901. Directed to proceed to Immigration Depot, New York, N. Y., and report to Surgeon G. W. Stoner, for duty—December 26, 1901.

EBERSOLE, R. E., acting assistant surgeon, granted leave of absence for three days from December 31, under paragraph of the regulations—December 27, 1901.

SIBREE, H. C., acting assistant surgeon, granted leave of absence for seven days from December 30—December 27, 1901.

Board Convened.

Board convened to meet January 6, 1902, at the marine hospital, Chelsea, Mass., for the physical examination of an applicant for appointment in the Revenue Cutter Service. Detail for the Board—Surgeon Fairfax Irwin, chairman; Assistant Surgeon M. W. Glover, recorder.

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Highly fatal contagious diseases that are ignored in the health reports, and by the people, are syphilis and gonorrhea. A contemporary estimates that 100,000 new cases of infection occur annually in one American city. So long ago as 1874 a competent statistician estimated that there were nearly two millions of such diseased persons in England, and Mulhall thinks that the number of soldiers in Europe ill with the disease averages 19% of the forces. Czerny thinks 50% of all sterility is due to this cause, and the reports of twenty-four specialists has shown that 41% of all pelvic inflammation is traceable to it. Is the policy of ignoring a wise one? We are straining every nerve to reduce the mortality of diseases not one-tenth so fatal. We are deporting consumptive immigrants and are unconcerned about the importation of diseases infinitely more loathsome and lethal. And the consumptive is not a sinner; is this the reason we are so lenient toward him? We are compelling notification of cases of smallpox, scarlet fever, diphtheria, etc., and smile carelessly at the ravages of diseases that maim and kill far more than all these put together. When will civilization learn to grapple with its real evils?

The World-Significance of a Medical Discovery.

—Competent students have said that the greatest enemy of the human race, and the most profound cause of the slowness of the extension of civilization, has been malaria. The most fertile regions of the globe are the tropics, and in these the Caucasian carriers of civilization have never been able to live because of this fatal disease. The black races have acquired immunity, but the black does not proceed naturally beyond savagery and barbarism. Medical science has just discovered the method of propagation of malaria and of preventing the same, so that it is confidently predicted that the white races will soon overrun the tropics and tremendously extend the world's civilization. Yellow fever can also be exterminated from these regions, as has been proved in Cuba, and will add to the tendency. All of this happens at a time when the nations of the earth seem furiously driven to extend themselves by colonization and expansion to every part of the habitable globe. Thus by means of what would at first seem a trivial scientific discovery in medicine, the ancient barbarisms of the tropics will come to an end. The fact shows how inti-

mately medicine and civilization are bound together, and how dependent upon our science are all the great movements of peoples and the advances of humanity.

Coeducation in Medical Study.—There seems to be a gradual tendency in this country toward a decrease in the number of medical schools patronized exclusively by women. The number of men's medical schools thrown open to women is constantly increasing. The resulting relative decrease in the attendance at women's colleges, while perhaps as yet not so apparent, must eventually push the majority of these institutions to the wall, especially as most of them are not well endowed. Two alternatives will probably finally present themselves—the weaker must either close their doors, or, what would seem by far the wiser plan, to join forces, as did the Woman's Medical College in New York, with some large and well endowed university, provided that coeducational advantages are offered to women. The pioneer work of the women's medical colleges of this country has been of incalculable value in helping to place woman both socially, economically and intellectually on the same plane with man. The time, however, has now arrived when women students are being admitted to the larger professional schools on equal terms with men, and the need for separate schools is consequently diminishing at a correspondingly rapid rate. The recent decision of the authorities of the Northwestern University to abandon the Woman's Medical Department of that institution comes, however, somewhat in the nature of a shock, in view of the novel and, we must confess, somewhat startling grounds upon which the action was based—at least if we may credit the newspaper reports of the statement made by a prominent member of the Northwestern University Board of Trustees.

Women Medical Students.—To one who has taught in both men's and women's medical schools, the statement that the standard of scholarship is not so high among the women as among the men is absurd. The average medical girl student is older and correspondingly more mature than the average male medical student. She is thoroughly in earnest, fully realizes the value of her opportunities, and works hard—harder than the average young man, who has many more distractions and temp-

tations, and is not too prone to continuous work at high pressure. With the girl, who is more conscientious, it is often a case of being able to "drive the willing horse to death," whereas the boy, if pushed, is apt to slight his work and trust to luck to see him through at critical moments. Whatever advantages or shortcomings the average woman physician may display in practice, it is certain that as a student she is refined, intelligent, receptive, painstaking, and a hard worker—willing and anxious to improve every opportunity offered. That women are thoroughly able to "grasp the chemical and pharmaceutic laboratory work, the intricacies of surgery and the minute work of dissecting" is attested daily by the work of hundreds of well-equipped and capable women practitioners throughout the country.

A vaccination creed has been widely circulated in Chicago by the Department of Health, and it has been of the greatest service, Dr. Reynolds says, to the public vaccinators in arousing interest in the subject of vaccination among classes peculiarly exposed to smallpox. The plan is worthy of imitation. The "creed" reads as follows:

We, the undersigned, hereby publicly profess our firm belief—based upon positive knowledge, gained through years of personal experience and study of smallpox and vaccination—

1. That true Vaccination—repeated until it no longer "takes"—ALWAYS prevents smallpox. NOTHING ELSE DOES.

2. That true Vaccination—that is, vaccination properly done on a CLEAN arm with PURE lymph and kept perfectly CLEAN and UNBROKEN afterward—never did and NEVER WILL make a serious sore.

3. That such a Vaccination leaves a characteristic scar, unlike that from any other cause, which is recognizable during life and is the ONLY conclusive evidence of a Successful Vaccination.

4. That no untoward results ever follow such Vaccination; on the other hand, thousands of lives are annually sacrificed through its neglect—a neglect begotten of WANT OF KNOWLEDGE.

A supplement to the vaccination creed for popular distribution, has also been issued by Dr. Reynolds, of the Chicago Department of Health. We quote some of its sentences:

Not one of the 346 cases of smallpox discovered in Chicago within the last three years was found vaccinated as defined in the Vaccination Creed.

Of the total number, 306 never had been vaccinated at all, though most of them claimed that they had. Examination of the arms proved that these attempts at vaccination were failures; there was no scar and the patients finally admitted that the vaccinations when performed did not "take." A "failure" is not a vaccination; therefore, these 306 cases had never been vaccinated.

Of the remaining 40 cases, 26 had old, irregular and doubtful scars said to be the result of vaccination; but these were not characteristic; they were more like the scars from infected sores or wounds than those from vaccine. Nine had fair old scars of vaccinations made from 30 to 40 years previously. Only five had typical (characteristic) scars; but these also were the results of vaccinations made many years before and never repeated. * * *

These 346 persons are examples of thousands of others who honestly believe they have been vaccinated, because they have had their arms scratched, something rubbed in and a more or less painful sore has resulted. There is no operation so simple and so safe as vaccination when properly performed and cared

for. There is no operation in which such serious results follow carelessness and ignorance—even unto death itself, either as a direct result through poisoning of the vaccination sore or from smallpox through failure to secure a successful protective vaccination. * * * The arm should be first thoroughly washed with soap and water and the site of the operation then wiped with alcohol. After the vaccine spot has dried, pin a clean soft handkerchief or piece of clean soft muslin to the shoulder-seam of the undershirt so as to hang in loose folds over the spot and prevent the sleeve from rubbing it. This must be changed for a clean one every day until the scab comes off and the surface is healed. The vesicle and resulting scab must not be broken or injured in any way and the arm and its coverings must be kept scrupulously clean from the time of the vaccination until it is well. * * * The rule is—repeat vaccination until the susceptibility to vaccine is exhausted. When this is done it is impossible to contract smallpox. This is the protection given the employes of the Department of Health who handle and nurse smallpox patients and bury the dead from the disease, and in no instance, among the hundreds so employed, has any one of them ever contracted smallpox.

Some vaccination statistics of English cities were given by Dr. Bond at a recent meeting of the Hunterian Society. In the term "vaccinated" were included all showing any evidence whatever of vaccination, a very liberal allowance. The figures are epitomized in the following table:

	Total number of cases of smallpox.	Under 10 years of age.					
		Vaccinated.			Unvaccinated.		
		No.	Number of deaths.	Death-rate.	No.	Number of deaths.	Death-rate.
London, 1891-1900.....	5,166	125	.....	.....	672	153	22.8
Leicester, 1892-1893.....	357	2	.....	.....	107	15	14.0
Sheffield, 1887-1888.....	4,703	353	6	1.7	228	100	43.9
Dewsbury Union, 1891-1892.....	1,029	44	1	2.2	174	56	32.1
Warrington, 1892-1893.....	657	33	2	6.0	32	12	37.5
Gloucester, 1895-1896.....	1,979	26	1	3.8	680	279	41.0
Manchester, 1892-1893.....	805	11	.....	.....	36	7	19.4
Oldham, 1892-1893.....	124	3	.....	.....	15	5	33.3
Leeds, 1892-1893.....	200	4	.....	.....	8	3	37.5
Halifax, 1892-1893.....	330	4	.....	.....	38	15	39.5
Bradford, 1893.....	658	17	.....	.....	57	24	40.3
Totals.....	16,018	622	10	1.6	2,047	668	32.6

State Care of the Insane.—Governor Odell, of New York, in his message regarding the state care of the insane showed a businesslike desire to lessen unnecessary expense, but he seems to have been somewhat injudicious in stating the facts, causes and remedies of the alleged abuses. The State Charities Aid Association has issued a statement in which it is demonstrated that—

1. Except in the criticized large institutions it is impossible to provide for the patients at a cost as required by law of not over \$550.

2. This amount does not permit the provision of small buildings that the modern treatment of the insane demands.

3. A reduction in cost is possible only by the construction of three-story buildings which are highly undesirable.

4. The duplication of administrative and executive powers is not so much at fault as the transference of authority in matters of internal administration from the Boards of Managers to the State Commission in Lunacy.

5. The alleged doubtfulness of authority of Boards of Managers and of the State Commission does not exist; each has well-defined duties.

6. The power to remove and appoint superintendents should not be taken from the Boards of Managers.

7. Separate houses for resident officials is the cheapest and best plan.

8. Salaries according to the present uniform schedule are less than those of physicians in private practice.

9. A more scientific grouping of the population has not been possible with the present amount of money provided.

10. The differences in the per capita cost for maintenance are necessary results of differences in the size of institutions.

11. There is no waste of space for administration or other purposes.

12. The state is at present reimbursed by relatives who are able to pay for the support of inmates.

13. Visiting boards cannot take the place of separate boards of managers.

14. The appointment of the superintendent and treasurer being at present in the hands of boards of managers, the supplemental duties now performed by the boards could not be given by an overworked central commission.

15. The great centralization of power urged is unjustifiable and might lead to partisan uses.

It is evident that what is needed, not only in New York, but in all states, is the establishment of complete local systems involving small curative hospitals and clinical instruction for medical students, according to the suggestion of Dr. Peterson, the present head of the Lunacy Commission in New York. Governor Crane, of Massachusetts, has wisely recommended that colony farms should be attached to existing hospitals, and that locality should be respected, not extinguished, by state control.

The Paperhangers' Union and the Prevention of Smallpox.—The Paperhangers' Union is urging the passage of a law against covering up old wall paper in repapering rooms. It claims that the present epidemic of smallpox may be traced to this bad custom. The Union explicitly disavows any self-interest, because, it says, no member of a union will scrape a wall. The report does not say that while thus urging, any tendency toward smiling was rigidly extinguished or concealed, nor does it explain why, if germs live in old paper for years much repapering that is now not done, would not be demanded in the interest of preventive medicine. In aid of the paperhangers and of the scrapers also, as well as in that of the public health, we agree that frequent repapering is advisable. The appeal of the union is in a general way a valid one, even if its logic is not so clear. By all means scrape and repaper all walls frequently, especially if the rooms have been occupied by those suffering from infectious diseases.

Prizes, etc., by Manufacturing Firms.—Of late we have often been gratified to notice that some companies manufacturing medical supplies have adopted

more sensible and ethical methods of advertising. The days when every mail brought things evil, stupid, silly and tasteless to one's office, to attract attention, we hope are ended. If the men were so completely lacking in fact, their medicines could hardly be very valuable. The monotonous waste of the advertiser's money in monotonous trivialities and bribes was poor proof either of his intellect or of his imagination, and were as little complimentary to ourselves. Some time ago we received from a manufacturer a pamphlet containing a most excellent gathering of medical and vital statistics, and now another firm advertises two prizes—one of \$1,000, and a second of \$500—for the best essays on "Preventive Medicine." Such a purpose is worthy of the highest commendation, as there is no better way imaginable to command the respect and cooperation of the profession than to help it in the realization of its ideals. There are a hundred ways in which this can be done. He who chooses the best method will succeed best.

State Control of the Feeble-minded is urged by the Secretary of the Indiana State Board of Charities, Amos W. Butler, in a recent address at Denver. In 241 families with two or more generations of feeble-mindedness there were found 970 persons who were blood-relations. The number of direct descendants who are feeble-minded is at least 726. The misery and expense of this lack of control, of the inbreeding, and of the causes present, increase of these patients should be adequately placed before every voter, and especially before every legislator. Mr. Butler says:

"Their fecundity and animal instincts make them fit subjects for consideration, both on financial and moral grounds, to say nothing of the dangers that beset those of strong minds who have weaker bodies. The problem presented to us is the manner in which these conditions shall be met. Its solution lies in an intelligent and general knowledge of the subject by the public, preventive measures by legal marriage restrictions and other means, the education of feeble-minded children and the custodial care of feeble-minded women."

Popular interest in the pathology of the hair is hardly less constant and active than in that of therapeutic miracles or premature burials. When the newspaper reporter or the pseudoscientist finds failure of items afflicting him he turns naturally to baldness, color of the hair, etc., for a never-failing subject. He works up anew the theory that baldness is due to that unknown god, heredity, to the hat, to the microbe, to beards, and so on. The latest theory is that it is due to trichotoxin, a poison that is not thrown out of the system in imperfect respiration, such as that of men. In last week's newspapers appears a cablegram from the laboratory of the unfailing "Paris scientist," saying that a bacillus has been discovered there which is the cause of hair turning gray. It is a devourer of the pigment of the hair, and is therefore christened *Pigmentophagus*. The bacteriologist, it is said, is studying means to combat it. We expect soon to read from Paris that new varieties of pigment-eating, pigment-secreting and pigment-changing bacilli have been discovered, because numerous cases are on record in which white hair has suddenly turned black, and in which other colors have been

changed. Hence, if the color of the hair is due to color-eating germs there must be a special kind of these for every color and for every change of color. "Let us mix folly with our wit!"

EDITORIAL ECHOES

The Honorarium of President McKinley's Physicians.—As a nation the people of the United States now have an opportunity to acknowledge their indebtedness to the medical profession by conferring a munificent honorarium upon those who were in attendance at Buffalo. The cordiality with which Congress pays this tribute to the late President's physicians will mark in history the value which the people of the United States set upon the medical skill of their land at the beginning of the twentieth century.—[*Medical News.*]

Association Medical Defence.—The movement thus initiated promises to do more for effective solidarity among the members of the medical profession than almost any other feature of association work. It remains now that the details of the plan of medical defence shall be carefully elaborated and that the difficulties inevitably to be encountered in hitherto untried methods shall not be permitted to discourage those directly interested, nor seriously hamper the assured eventual success of organized medical defence.—[*Medical News.*]

Reciprocity of Licensure.—The mere fact that a physician who has practised for years in one state, and moving to another, is unable to pass a new licensing board, by no means proves that he is an ignoramus. He is often rusty on elementary subjects, and may thus be disqualified on a purely technic or arbitrary ruling. In this respect, what is mere child's play for the fresh graduate, is a veritable hardship to the older man. And yet, this is what a new state examination means to many a capable practitioner. It is obviously unjust that he should be compelled to submit to them.—[*Medical Record.*]

The failure to vaccinate successfully in primary cases is due almost invariably to faults in the production, storage or distribution of lymph, and these are susceptible of remedy. In proof of this, the medical officer of the local Government Board of England says in his report in 1896 and 1897 (p. 8), when comparing the success of the board's officials with that of others: "While 3,032 medical certificates of insusceptibility were granted in different parts of England and Wales, . . . the board now has record of 101,487 consecutive primary vaccinations performed by their own officers, among which no single instance of insusceptibility has been found."—[*Boston Med. and Surg. Jour.*]

New York Medical Reconciliation.—A united medical profession in this country can accomplish great things. The fact that the profession of the powerful Empire State has been divided against itself has detracted much from all efforts at national legislation. A favorable opportunity seems to be presented now for the repair of the breach in the ranks that has weakened all such efforts. No sacrifice should be spared on either side to succeed in the beneficent purpose. Certainly the New York State Medical Association should be willing to do anything and everything for the reconciliation with the elder sister organization that will, after nearly a score of years, enable a united medical profession in New York to wield all the influence it should have.—[*Medical News.*]

Out-Patient Departments.—This is the opportunity of the out-patient department of the future—to develop well-equipped and well-managed departments for the best treatment of that growing class of patients who find no welcome in the hospital wards. The coughs and colds and trivial accidents of everyday life will, of course, still be treated, but the claim to distinction and wide recognition which the out-patient department should make in the future, is in the widening of its scope of work to include the ramifying branches of medicine, which are now constantly forcing themselves upon our attention. In such a well-organized department specialism should be seen at its best, and the contact between men working in special fields should be close and constant. All this, no doubt, the future has in store for us.—[*Boston Medical and Surgical Journal.*]

The Politician and Professional Disorganization.—Ernest Wende, health officer of Buffalo, is removed because he is a Democrat, and because a Republican municipal government was recently placed in power. In this action Buffalo and the Republican party have voluntarily assumed the burden of stinging disgrace. For both a feeling of contempt cannot be restrained, but above all there is experienced a pity for the sorry dense ignorance of the men who perpetrate these blots upon American government. The profession of Buffalo expressed itself almost with unanimity against such a crime, but the politicians smiled at its vain resolving. The lesson is easily read. The medical profession must first reach the politician its organized power, as we of Cleveland once did. Then such a public calamity will not be possible.—[*Cleveland Journal of Medicine.*]

Needless Laparotomy.—While there are needless laparotomies frequently performed, there is no doubt that true conservatism will in the future lead to the performance of more rather than fewer abdominal operations. Many patients still die every year because of failure to attempt surgical relief in suitable cases. The frank report of errors will lead to a better state of mind and a surer diagnosis. Exploratory laparotomies may remain, in Dr. Manges' expressive phrase, the "most dangerous of operations," because of the uncertainty involved, but the domain of uncertainty with regard to the indications for surgical interference will be constantly narrowed by the collation of actual experiences. No one is infallible, least of all in the applications of the eminently fallible principles of applied medicine, but we may rise on stepping-stones of past errors to higher things—from discouraging doubt to the comparative certainty that must remain as yet only the moral certitude of human concerns.—[*Medical News.*]

Unjustifiable Distrust in Diphtheria Antitoxin.—The evidence so far given points to a fatal but avoidable mistake as a cause of the St. Louis tetanus cases, and the result will be all the greater care and greater safety in the manufacture and use of antitoxin hereafter. A 33% increase in the case-mortality of such a tractable disease as diphtheria under the antitoxin treatment within less than three weeks is too serious a matter to be dismissed with a shrug of the shoulders. The baker's dozen of tetanus deaths in St. Louis sink into positive insignificance compared with the untold thousands of avoidable diphtheria deaths which will inevitably follow unless members of the medical profession demand a guaranteed purity of antitoxin, and are thus enabled to speak with the confidence of definite knowledge and so inspire the anxious parent with their own confidence. The producers of antitoxin themselves, in their own interests, should lose no time in securing such a test and guarantee.—[*Journal American Medical Association.*]

AMERICAN NEWS AND NOTES.

GENERAL.

Leper Colony Opposed.—The bill introduced in Congress providing for the establishment of a leper colony on the island of Molokai is exciting strong opposition in Hawaii, though some of the home rulers favor it on the ground that it will save Hawaii the expense of maintaining the settlement.

To Inspect Army Hospital.—Under the direction of the Surgeon-General of the Army and the authority of the Secretary of War Mrs. Dita H. Kinney, superintendent of the Army Nurse Corps, sailed for Manila recently to inspect the nursing service in the United States Government hospitals in the Philippines.

Increase of Native Population.—The census returns show that the native white population of the United States exceeds the foreign-born element in the ratio of more than 5 to 1, there being more than 56,000,000 native-born against a little more than 10,000,000 foreigners. Of the natives more than 41,000,000 are also of native parentage. Since 1890 the native white element has increased 23% and the foreign white element but 12%.

The oleomargine bill recently introduced in Congress provides, as did the one submitted to the last Congress, that imitation butter or imitation cheese marketed in any state or territory, shall be subject to the operation of the laws of such state or territory, and shall not be exempt by reason of being introduced in original packages; that when colored in imitation of butter, the internal revenue tax is to be ten cents per pound, but contrary to the last bill it stipulates that if oleomargine is sold for what it is, no tax whatever shall be levied.

Resolutions Passed.—The American Society of Naturalists and the Council of the American Association for the Advancement of Science, Chicago, Ill., at meetings held during the last week in December, 1901, passed the following resolution:

Resolved, That the Council of the American Association for the Advancement of Science approves of the efforts to strengthen the administration and work of the Marine-Hospital Service by its establishment as a National Health Service, in the direction of promotion of the public health, the furtherance of scientific investigation relating thereto, and the securing of the cooperation of experts in hygiene and related subjects.

Award of the Gross Prize of \$1,000.—The Philadelphia Academy of Surgery, as trustees of the Samuel D. Gross Prize for original research in Surgery of \$1,000, has awarded this prize, after six years' interval, to Dr. Robert H. M. Dawbarn, of New York City. The treatise which won the competition was entitled "The Treatment of Certain Malignant Growths by Excision of Both External Carotids." Upon this topic Dr. Dawbarn has worked, as opportunity served for seven years. The essay when published will contain the histories, with pathologists' report in each instance confirming the diagnosis of malignancy and specifying its variety, of 40 carotid extirpations by the author himself; and as many additional by about a dozen other surgeons. At least two of these are members of the Philadelphia Academy of Surgery. By the terms of Dr. Gross' bequest the prize essay must be published in book form and a copy thereof be deposited in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

Obituary.—CHARLES FRANCIS CARPENTER, of West Chester, Pa., January 6, aged 75; JAMES WIGHTMAN FRAZIER, of Sewickley, Pa., January 3; W. W. YOUNG, of Nanticoke, Pa., January 7; WILLIAM C. DIXON, of Philadelphia, a well-known neurologist, January 11, aged 61; EDWARD STEESE, of Brookline, Mass., January 6; DR. POOLE, a surgeon attached to the American Legation at Peking, January 10; CHARLES CALER CRESSON, of Germantown, Pa., January 10, aged 86; A. J. SANDERSON, a prominent physician of Vaiden, Miss., January 7, aged 78; ELBERT TODD, of New York City, January 7, aged 68; LEWIS EVANS CARSON, chaplain of the Ninety-eighth Indiana Infantry during the Civil War, at Prairietown, Ind., where he was physician and friend of almost every one in the township, December 29, aged 77; FRANK E. WEBB, of Nez Perce, Idaho, December 21; SAMUEL C. WEBB, of Homer, N. Y., December 29, aged 83; P. J. McCAFFREY, of Cleveland, Ohio, aged 23; LEROY A. MERRILL, of Lonsdale, R. I., where he was coroner and health officer, December 23, aged 46; MILTON P. MASON, of Mansfield, Ohio, December 26, aged 72; ARBY J. WOLVERTON, a prominent physician of Ardmore, I. T., December 28; SAMUEL H. HUDNALL, of Brookneal, Va., recently, aged 75; EMILY A. BENN, of Ypsilanti, Mich., January 2, aged 41; THOMAS A. JOYCE, of Pittsburg, December 31, aged 30; JAMES L. TITTERINGTON, a pioneer citizen of La Cade county, Mo., at his home in Richmond, December 25; JOHN R. WOOD, in White Hall, Moorman's River, Va., one of the most prominent physicians of Albemarle county, aged 63; HENRY FITZ-BUTLER, dean and professor of materia medica and surgery in the Louisville National Medical College; the first colored regular practitioner of Kentucky, at his home in Louisville, December 28, aged 64; JOSEPH S. CARREAU, of New York, January 7, aged 53.

EASTERN STATES.

Statistics of Insane.—The insane in Massachusetts numbered October 1, 1901, 7,790. This showed an increase of 373 for the year. The General Court made provision last year to provide for additions to the present insane hospital buildings. These additions will accommodate 632 patients.

New England Hospital.—All departments (medical, surgical maternity and dispensary) of the New England Hospital for Women and Children, Boston, are reported to be fully equipped. During the year there were 851 patients received in the hospital and 17,791 women and children were treated at the clinics, in all an average number of 54 cases a day as against 49 a day the year previous. This hospital is entirely dependent upon money received from patients and private subscriptions.

Phthisiophobia.—Following the lead of Liberty the town of Rockland, in Sullivan county, has just passed an ordinance imposing a fine of \$50 on anyone who conducts a public house or sanatorium in which tuberculous patients are received. The same penalty is imposed on anyone harboring in his house any tuberculous person not an immediate relative of the family or dependent on him for maintenance. A tuberculous person is not permitted in the town, even to visit friends or relatives.

Expectoration Bill.—According to a recent ruling made by the Boston Board of Health, the old regulation in regard to expectoration that was passed in 1896 and extended to 1900, is rendered more effective. It regards the deposit of sputum in public places as a nuisance, a source of filth and a menace to health, and therefore orders "that spitting upon the floor, platform or steps of any railroad or railway station, or car, or from any electric car while said car is in the subway or elevated above the surface of the ground, or upon the floor, platform or steps of any public building, hall, church, theater, market or any sidewalk immediately connected with said public places, be, and hereby is, prohibited."

NEW YORK.

Bodies Received at Morgue.—During the year ended December 31, 1901, 8,295 bodies were received at the morgue in New York City. In all 25% of these were buried in Potter's Field. Out of the whole number received 124 bodies were interred without identification.

Nassau Hospital, at Mineola, L. I., has received \$6,000 from William C. Whitney. The hospital was established a few years ago, and the members of the Meadowbrook and Rockaway Hunt Clubs and a number of the prominent families of Nassau county were the leading spirits in its organization.

Hospital Donation.—The Norwegian Lutheran Deaconesses' Home and Hospital in Brooklyn has received an endowment of \$64,000 from a member of the Clark Thread Company, of Newark, whose name is not mentioned. The donor intends it as a memorial to Severin S. Skougaard, the Norwegian singer.

Tuberculous Milk Sold.—An infected herd of cows has been discovered at a point about 2½ miles from Peekskill. The milk and products of this dairy were shipped to New York City. During the past six months 50 of a herd of 108 cows have died, and the State Veterinarian and an appraiser from the State Department found everything in a deplorable condition. Two cows have been killed and the entire herd quarantined.

Gift to Columbia University.—A gift of \$3,000 from Adolph Lewisohn has enabled the Columbia University to obtain 50,000 theses, mostly in pamphlet form, embracing nearly every branch of scientific work and almost covering the entire field of original research in foreign universities during the last century. This addition, with the 40,000 dissertations already belonging to the university, will form the most extensive collection owned by any institution in America.

Postgraduate Hospital.—At the recent annual reception in the babies' wards, Dr. D. B. St. John Roosa, the president of the hospital association, announced that a conditional gift of \$100,000 had been tendered the hospital to aid in liquidating the debt of \$400,000. The condition attached is that the remaining \$300,000 should be raised before the donation becomes available. During the few days which have elapsed since the publication of the fact the subscriptions have amounted to \$35,000.

New York's Insane.—The most important feature of the work of the hospitals during the last fiscal year, as recently reported by the State Commission in Lunacy, was the increased number of recoveries. These amounted to 1,109; in addition to this number, 821 patients were discharged in an improved condition and able to maintain themselves. The insane of the state now numbers 24,300. The early completion is announced of the large colony for the insane at Central Islip, designed to receive the patients from Blackwell's and Hart's Islands, so that these islands may again revert to New York. The commission emphasizes the necessity of having psychopathic hospitals for the special treatment of the acute and curable insane of the large

cities, and in connection also with the colonies in the country. The commission has vigorously carried out its policy of removing to their homes such aliens as have found temporary domicile in the State Hospitals, and deported 103 of them to foreign countries.

PHILADELPHIA, PENNSYLVANIA, ETC.

The marriage law making a ceremony between first cousins void as a marriage bond in Pennsylvania went into effect January 1, 1902.

Contagious Disease.—During 1901 the assistant medical inspectors in the Bureau of Health of Philadelphia acted on 14,339 cases of contagious disease.

To Check Smallpox.—A daily medical examination of every one of the 5,100 inmates and attendants of the almshouse has been ordered by Superintendent Geary. Each physician is responsible for the patients in his ward.

Isolation of smallpox patients in tents has proved very successful at Paterson, N. J. Even in the coldest weather experienced during the season there has been no difficulty in keeping the air in them at the proper temperature.

An epidemic of "pink eye" in Philadelphia is attributed to the torn-up and dirty condition of the streets. About 3,000 persons are reported to be suffering from the complaint. Of these nearly 500 cases were treated at the Wills' Eye Hospital within a period of 10 days.

Smallpox at Princeton.—A mild case has developed among the students at the University. He has been removed to the contagious ward in the University infirmary, and the house in which he roomed has been quarantined. All members of the University will be vaccinated.

Antispitting Crusade.—The Woman's Sanitary League of Philadelphia is endeavoring to secure the passage by the City Council of an ordinance which shall provide that persons expectorating in public shall be punished. The present order of the Board of Health is declared to be ineffectual.

Examination of Pupils' Eyes.—Arrangements are being made for the examination of the eyes of pupils in the Philadelphia public schools. Teachers will make the examination according to test cards supplied by the Public Education Association. All cases of defective vision will be reported to parents with the recommendation that proper medical attention be sought.

Court Closed by Smallpox.—The Hudson County Court-house in Jersey City will be closed until all danger of the spread of smallpox in that institution and vicinity is over. The disease appeared in the jail a few days ago and the patients were removed to Snake Hill Smallpox Hospital, but as an additional means of safety Judge Blairst announced that no trial would take place until all danger of contagion is passed.

Town Quarantined.—An epidemic of smallpox in Hackensack, N. J., has caused the State Board of Health to order the town to be strictly quarantined. Persons are not allowed to leave the town, no mail goes out, and trains pass through without stopping. The health officers have converted the town hall into a smallpox hospital. Thus far 35 cases have been reported. The epidemic is attributed to the mistaken diagnoses made by local physicians, the disease not being recognized until it had spread to 20 persons.

Marcus Hook Station.—At the quarantine station at Marcus Hook, Del., during the past year 1,514 vessels were reported upon. The number of inbound passengers inspected was 38,996, and 36,190 officers and men of inbound vessels were examined. On outwardbound vessels 9 passengers and 80 officers and men were inspected and passed and 2,500 officers and men were spoken and passed. The total number of seamen examined was 38,770. In the detention department 21 vessels were held for observation; 6 for disinfection; 712 passengers and 1,160 officers and men were held for observation and 137 for disinfection. Six vessels and 300 pieces of baggage were fumigated, and 146 persons were bathed.

Sanatorium at White Haven.—Work on two of the cottages to be erected at White Haven, Pa., for the Free Hospital for Poor Consumptives will be begun so soon as the weather permits. One of these cottages will afford accommodations for 16 patients, and the other for 24. A large barn on the grounds has been fitted up as a temporary sanatorium for male patients, and it is probable that the new cottages will be used exclusively for women. The patients who are being treated in the barn are reported to show gratifying improvement. The Free Hospital for Poor Consumptives, which is supported mainly by donations of the public, is also endeavoring to raise funds to secure a house in Philadelphia for the care of patients whom it now maintains in the various hospitals in that city.

SOUTHERN STATES.

To Report Typhoid.—The draft of a bill to require cases of typhoid occurring in the District of Columbia to be reported to the health department, has been submitted to the district commissioners by William C. Woodward, health officer. This bill does not aim to quarantine patients nor to placard houses, but solely to enable the health department to ascertain, if possible, the source of infection and to remove it.

WESTERN STATES.

The St. Joseph Medical Society held its annual banquet at the New Metropole Hotel in St. Joseph on New Year's Eve, with 50 members present.

The Women's Medical College Building of the Northwestern University, Chicago, has been purchased conjointly by the Valparaiso, Ind., Normal School and the Chicago Eclectic Medical College for the sum of \$40,000.

Substitute for Beef.—The freight or express charges render meat so expensive to the section men on the desert districts along the line of the railroad in southern Utah that they are using the meat of wild horses as their principle article of diet.

Burglar Posing as Doctor.—Claiming to be sent by her attending physician a stranger entered the sick-room of Mrs. W. W. Reynolds, of Chicago, felt her pulse, made some inquiries about her condition, wrote what purported to be a prescription, and departed, taking with him \$500 worth of jewelry. On the prescription blank he had written: "I am sorry I had to do this."

Scientific Study.—The women students in biology at the Chicago University have been given the privilege of competing for a place at the American Women's Table in the Marine Zoological Station at Naples. This table, which is supported by an association of college alumnae, subscriptions from various women's colleges, and by women interested in scientific work, is maintained at an annual cost of \$500.

The Oldest Practitioner known is said to be John P. Wood of Coffeetown, Kan., who celebrated his one-hundredth birthday recently. Dr. Wood was born in Dublin, Ireland, has lived 40 years in Kansas, served in the Mexican and Civil Wars, and retained his physical strength and mental vigor, being able to read without glasses and daily walks about the streets of his town without the aid of a cane visiting the sick.

Mrs. Adams' Annex.—The sum of \$50,000 has been given by Charles L. Adams of New York, for an addition to the Consumptives' Retreat in North Denver, which was designed and endowed by Mrs. W. M. Twombly of New York for tuberculous patients who at the rate of \$50 per month could receive all the accommodations of a good hotel. The annex to be known as Mrs. Adams' Annex will be built for those who cannot afford to pay more than \$25 per month for practically the same advantages as the wealthier patients.

Indians Vaccinated.—When the revenue cutter Rush arrived at Hoonah, Alaska, early in December, smallpox was epidemic among the natives. Surgeon Mulroney was landed with two assistants and the village was thoroughly fumigated. During the season about 1,500 Indians were vaccinated and under the direction of Captain Kilgore the Indians gave the village a thorough cleaning. The ravages of the epidemic were thus stayed, but to insure greater protection the cutter will remain in Alaska during the winter.

Dirt-eaters.—A society of dirt-eaters organized about six months ago in St. Louis is said to be rapidly increasing in numbers. It now consists of 75 persons who claim that the human stomach, like the gizzard of a fowl, requires grit and that by eating a certain amount of dirt daily, such good health will result that the services of a physician will never be required. They only use a certain kind of material that is obtained from river bottoms, and is especially prepared and sterilized by the lawyer who started the society and who charges 25 cents a bag for this prophylactic against disease.

CANADA.

Testing Cattle.—An agreement has been made between the United States and Canada, whereby all cattle purchased in Canada for importation into United States will be tested for tuberculosis and all contagious diseases by special official veterinarians, who will hold permanent positions and be appointed and paid by the government.

Tuberculosis Sanatorium.—A committee, appointed by the provincial board of health of Manitoba, to consider the advisability of establishing a tuberculosis sanatorium, report that such an institution is greatly needed, as tuberculosis is undoubtedly increasing. As an evidence of this, it is shown that the number of cases treated in the Winnipeg General Hospital has increased from 80 in 1898 to 112 in 1900.

FOREIGN NEWS AND NOTES

GENERAL.

New Surgical Device.—At a recent meeting of the Vienna Society of Physicians, a new apparatus for closing wounds by means of minute clamps was introduced. The claims for its use are that it is quickly and easily done, reliable, and that asepsis is maintained.

Marriage Restrictions.—A recent royal decree issued by the ministry of war debar from marriage all Spanish army officers who have not attained the age of 25, or who do not have an income at least equal to a captain's pay, which is 250 pesetas (about \$50) a month. The measure is strongly criticized, as it is considered an encouragement of immorality.

Obituary.—HENRY BROWNE, of Manchester, December 28, aged 84. HENRY DAVID COOK, of Bedford, Eng., December 16, aged 55. ROBERT CROMIE, at Clough, Ireland, December 18. DR. GONGENHEIM, of Paris, one of the few physicians of that city who had made a specialty of rhinology and laryngology. JAMES JOSEPH TRACY, of Cork, December 26. WILLIAM HENRY CARRINGTON, of London, December 26, aged 45. MATTHEW WILLIAM STEWART ISACKE, at Oratava, Teneriffe, December 27, aged 30. JOHN WALLIS MASON, of London, December 29, aged 80.

GREAT BRITAIN.

False Teeth for Soldiers.—It is reported that 60% of the applicants for enlistment in General Baden-Powell's police were rejected because of bad teeth, and hundreds of applicants for service with the Yeomanry were disqualified for the same reason. Accordingly, the War Office of London is considering the advisability of supplying false teeth to the forces and the dental hospitals of London have notified the War Office that they are prepared to equip applicants who are otherwise eligible at £1 per head.

The tension at Macclesfield Infirmary has been relieved by the resignation of Miss Clark, the junior house surgeon. This was brought about by a motion introduced at a special meeting of the governors, held December 23, to give notice to Miss Clark to terminate her engagement within four weeks from that day. On December 30 another special meeting was called by the mayor, and Miss Clark's resignation was tendered and accepted and the sum of £100 subscribed among the governors as a testimonial for her. The medical staff will all recall their resignations, handed in because of the appointment of a woman.

CONTINENTAL EUROPE.

Medical Research.—An appropriation of 150,000 marks for investigations on tuberculosis is reported to have been made by the German Imperial Home Offices, and 12,000 marks for research on protozoa.

Cancer Research.—Professor Czerny, in a circular letter sent to all the surgeons of Germany, asks them to state after what lapse of time, on an average, after operation for cancer of the breast, recurrence is wont to recur. By this means the committee of investigation at work in the Institute for Experimental Therapeutics at Frankfort hope to collect sufficient material to ascertain the duration of the latent period of the disease.

Dispute Over the Nobel Prize.—Mlle. Clemence Royer, the celebrated woman economist and translator of Darwin, enters a vigorous protest against the Swedish Academy's award of the Nobel chemistry prize to Dr. Van Thoff on account of his discovery of the "chemistry space," of which she claims priority, referring to her popular lectures at the Trocadero in 1885, and also to several communications made to the Academy of Science in proof of the justness of her claim.

Pasteur Institute at Kasauli.—The report for the past year shows that failures in treatment have been only 1%, and all of them occurred among native patients, who delay in attending treatment. The extreme virulence of the poison from the bite of a mad jackal is noted and a demonstration made that special measures are necessary in dealing with the virus of the jackal, and an acceleration of the usual course. A jackal bit 40 natives, six of whom died, but in three of the deceased the disease set in within 14 days of the completion of the treatment. The usual incubation period when the virus is implanted on the brain of a rabbit is 14 days. The mortality from mad jackals' bites averages 85% where there is no treatment. Since this record of 40 cases, there have been 15 cases of jackal bite treated by a more intensive method, with recovery in every instance. The memory of an ancient Egyptian custom has been revived in connection with the Pasteur treatment. Then the brain and spinal cord of the rabid animal were rubbed into the skin of the patient. The possibility is suggested that through the wound or skin abrasion the virus was introduced and gave immunization against any subsequent effect of the poison.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

ANTHRAX IN HUMAN BEINGS.

BY

H. M. BRACKEN, M.D.,

of St. Paul, Minn.

In order to aid in the matter of statistics bearing upon anthrax in human beings, permit me to draw your attention to the two following cases:

CASE I.—July 3, C.——K.——assisted in the postmortem examination of a cow on a farm where three cattle had died within a short time. He died on July 8. The patient was attended by Dr. L. O. Kron, of Wheaton. Bacteriologic examination was made by Dr. J. F. Corbett, of Minneapolis. The result of the postmortem findings demonstrated the case to be one of anthrax.

CASE II.—Early in July, J. P. Foster, State Veterinarian, of Selby, S. D., was called to investigate a fatal disease among cattle. He made a diagnosis of anthrax and immediately asked if any one about the house was sick. He was informed that a son of the farmer was ill with a sore on his hand. Dr. Foster at once saw the boy and made a diagnosis of anthrax. He was at once driven to Pierre, S. D., and placed under the care of Dr. D. W. Robinson. The case was undoubtedly one of anthrax, and the patient recovered.

ANGIONEUROTIC EDEMA.

To the Editor of AMERICAN MEDICINE:—In perusing the very interesting paper of Dr. Bertrand Kohn on angioneurotic edema, published in your issue of December 21, I notice that no mention is made of the paper of Dr. W. F. Milroy, of Omaha, "An Undescribed Variety of Hereditary Edema," read before the 1892 meeting of the Nebraska State Medical Society, and published in the society proceedings for that year.

Dr. Milroy's case differs, however, from the typical angioneurotic edema in that the patient was born with the edema, which only affected the lower extremities, and had never been absent since birth. He was able to trace cases in the family for six generations, being particularly fortunate in securing a little volume which gave the American family history for a period of 250 years. This peculiar condition entered the family by marriage in 1768. Of the 97 individuals of the six generations, 22, or approximately 23%, were affected in either one or both legs. The edema was present in all the cases at birth except two, and was persistent, never having disappeared, either temporarily or permanently, in but one of the cases, and in this patient, a male, the edema was present at birth in one foot, which grew in proportion to the bodily development till maturity, when the testicles began to hypertrophy, and progressed to such an enormous size that it was thought best to remove them, which was done. As the testicles increased in size the foot gradually resumed the normal size, and ever afterward remained so. In all the other cases, with the two exceptions noted above, the edema was present at birth, and progressed as the body grew till maturity, when they remained stationary. One of the above cases, a female, in the third generation, possessed all the usual phenomena in one foot till she reached the age of 20, when she was thrown from a carriage and sustained an injury to the sound leg. The immediate effects of the injury soon passed off, but this leg began to enlarge and reached enormous proportions, although her health and activity was in no wise impaired. The other, also a female of the third generation, had normal legs till the age of 12, when one of her ankles presented all the appearances of having been sprained, though she had no knowledge of having sustained such an injury. The pain in the foot on attempting to use it prevented her from walking for several weeks, but gradually all the symptoms subsided except the swelling, and this extended until it involved both foot and leg, and then it remained stationary throughout life. Only the lower extremities, one or both, were affected in any of the cases, and there were no gastrointestinal crises. The deformity was permanent in all the cases with the three exceptions noted.

These were evidently not typical cases of angioneurotic edema, and as Dr. Milroy remarks, it is not probable from the history that any functional neurosis was responsible for the edema, but as the cases are of particular interest in connection with Dr. Kohn's paper, I thought it advisable to call attention to Dr. Milroy's paper.

J. W. BULLARD, M.D.

Pawnee City, Nebraska.

CASE OF MULTIPLE CHONDROMAS.

BY

R. Y. FERGUSON, M.D.,

of Pontiac, Mich.

To the Editor of AMERICAN MEDICINE:—The photograph illustrates an interesting case of multiple chondromas, operated on October 27. The condition is one of comparative rarity, especially in such an exaggerated and neglected form. The history of the case extends over a period of about 35 years and apparently originated in traumatism. None of the other joints present any abnormal conditions. Three of the fingers were



disarticulated and together weighed about 24 ounces, the largest one weighing 17½ ounces. The patient also presented a very interesting mitral murmur, disappearing at time of operation to return later. Ether was administered without any unpleasant effect. No tendency toward malignancy was manifest but destructive cystic changes of the interior of large finger had commenced.

AGGLUTINATION TEST FOR HUMAN BLOOD.

BY

F. N. WHITTIER, M.D.,

of Brunswick, Me.

Professor Bacteriology, etc., Bowdoin College.

I have been much interested in your editorial notices of the agglutination (or precipitation) test for human blood.

I have had occasion to use this test in an important medico-legal case and find it very satisfactory. This case (State of Maine vs. Henry Lambert) has just been tried at Dover, Piscataquis county, Me. The respondent, Henry Lambert, was charged with the murder, May, 1901, of J. Wesley Allen, of Shirley, Me. The respondent was also charged with the murder of the wife and daughter of Mr. Allen. The remains of the murdered family were found in the ruins of the farm buildings, which had been burned, presumably to cover up the crime. After a trial lasting over two weeks the jury brought in a conviction. Evidence of a large pool of blood was found on the greensward between the house and barn. The state wished to determine whether or not this blood was consistent with human blood. The amount of blood and the average size of corpuscles indicated that it might be human blood. The

agglutination test gave positive results, a precipitate appearing immediately in a solution of the blood upon the addition of the blood serum of a rabbit previously "immunized" by subcutaneous injections of human blood. The rabbit serum gave no precipitate in solutions of horse's blood, cow's blood, rabbit's blood or guinea pig's blood. It gave marked precipitates in solutions of fresh human blood and dried human blood. The technic used was practically the same as that given by George H. F. Nuttall in *Journal of Hygiene*, vol. i, No. 3.

PURULENT TENONITIS AS A COMPLICATION OF TYPHOID FEVER.

BY

W. ZELTMAYER, M.D.,

of Philadelphia.

As no mention of this affection is to be found in the chapter on the "Ocular Complications," by de Schweinitz, in Keen's volume on "The Surgical Complications and Sequels of Typhoid Fever," and as I have recently been informed by the author that he knows of no similar case in literature, I am constrained, at this late day, to place on record the notes of the following case.

On August 29, 1898, A. S., soldier, was admitted to the wards of St. Mary's Hospital, under the care of Dr. Fussell and later Dr. Kelly. He gave a history of an illness which he attributed to heat exhaustion of four days' duration from June 28. The present attack, dated from about August 12, while at Camp Alger, when he began to suffer from headache, constipation, nausea, fever and chills. He developed enteric fever of a mild form, but complicated by deep muscular abscesses. On October 8 I was asked to see him because of the appearance of localized congestion of the conjunctiva and sclera over the insertion of the internal rectus muscle. The movements of the globe were full and the fundus was normal. Sodium salicylate and hot compresses were ordered. On October 10 the temperature which had been normal rose to 101°. On October 13 the inward and downward movements of the eyeball were limited, and there was diplopia in the nasal field. On October 15 this limitation became marked and the excursions in all directions were limited. There was now mound-like swelling at the lower border of the internus and edema of the overlying conjunctiva. A deep incision was made at this point and about a half a dram of pus evacuated. Two days later a few drops of pus were liberated, after which there was no further trouble. There was no bacteriologic examination made of the pus from this locality or from any of the muscular abscesses.

TOXIC AMAUROSIS: RECOVERY.

BY

A. D. McCONACHIE, M.D.,

of Baltimore, Md.

CASE.—Seaman, J. H., aged 34: nativity, Connecticut; was admitted to United States Marine-Hospital, Baltimore, Md., January, 1897. He comes to the hospital to be treated for "blindness." His parents are living and are healthy.

The patient had measles when eight years of age. He had had no other serious illness. He denies syphilis, and there is no evidence of previous infection. He has used tobacco freely, and for some days previous to illness, had been drinking daily about 240 cc. of Jamaica ginger with some whisky. Two days before admission to the hospital he felt dizzy and nauseated, and about the same time everything began to appear dark and day seemed like night. On his admission he could not see a lighted candle held before his eyes. The pupils were widely dilated, and he complained of some tenderness on palpating his eyes. Ophthalmoscopic examination revealed slight congestion of veins of the retina. The urine showed no pathologic changes.

Treatment was begun with a saline cathartic followed by iodid of potash and strychnia in appropriate doses. January 4, patient begins to distinguish objects; he can now count fingers six inches from his eyes. January 5, he complains of pain in the eyes, and headache. January 6, he is able to go about in the ward; his pupils are less dilated, though he still complains of pain in the eyes. January 8, improvement is not so rapid as at first. January 13, still improving; he says he can see best out the corner of his eyes. January 22, he can now recognize faces across the room; there is no evidence of color blindness. On February 8, he could see to read, but only for a short time. He was discharged that day.

Although he was asked to report his condition when convenient, he has neither been seen nor heard from since discharged.

ORIGINAL ARTICLES

ARTIFICIAL RESPIRATION BY DIRECT INTRALARYNGEAL INTUBATION WITH A MODIFIED O'DWYER TUBE AND A NEW GRADUATED AIR-PUMP, IN ITS APPLICATIONS TO MEDICAL AND SURGICAL PRACTICE.¹

BY

RUDOLPH MATAS, M.D.,

of New Orleans.

In two communications, one contributed to the Transactions of the Louisiana State Medical Society, in May, 1898,² in which I suggested the advantages of the Fell-O'Dwyer apparatus as a means of preventing and overcoming the effects of acute traumatic pneumothorax in thoracic operations; and the other, published in the Transactions of the Southern Surgical and Gynecological Association, in November, 1899,³ I have discussed the historic, physiologic, surgical, and, to some extent, the mechanicotherapeutic phases of acute traumatic pneumothorax. In these communications I have endeavored to demonstrate that intralaryngeal insufflation is a most valuable auxiliary in meeting the emergencies of surgical practice whenever the respiratory function is compromised and imperilled by acute surgical atelectasis.

While especially considering the advantages of insufflation or artificial respiration with mechanic aids, in its applications to thoracic surgery, and more particularly in those conditions met in intrapleural and mediastinal work in which collapse of the lungs occurs in consequence of the sudden entrance of air into the pleura through large openings or fenestra in the chest wall, I have also considered the advantages of mechanic appliances in maintaining artificial respiration in conditions of asphyxia due to other nonsurgical causes. Among these the most desirable is a reliable means of maintaining prolonged artificial respiration in chloroform and ether asphyxia; in acute cocaine poisoning and opium narcosis; in respiratory failure from bulbar paresis—*e. g.*, in drowning, in poisoning from illuminating gas and other deoxidizing gases; in the paresis caused by the increased intracranial tension due to cerebral hemorrhage, contusion, etc.

Without detaining you with the consideration of the historic and evolutionary phases of the question, which I have fully presented in the contributions referred to, I will simply recall the fact that artificial respiration for the relief of asphyxia due to suffocation and drowning had already attained a remarkable degree of development as early as 1829, when various pumps and bellows for simple insufflation and for combined insufflation and aspiration of the lung had been devised by several ingenious experimenters (Monroe's Goodwin's, Hunter's, Nooth's John Murray's, Cap's, among others). But a decided setback was given to the practice of artificial respiration with mechanic aids by the exhaustive experimental research undertaken by Le Roy d'Etiolles in 1829, who, in a memoir addressed to the French Academy of Sciences, adversely criticised the methods of insufflation then in vogue, and showed their objectionable and dangerous features when indiscriminately and unskillfully applied. He based his conclusions on numerous experiments made on rabbits, foxes, goats and sheep, in which death had been observed to follow with alarming frequency as a result of the sudden and forcible insufflation of air into the trachea. The French Academy appointed a special committee, consisting of

Dumeril, and the celebrated physiologist, Magendie, who confirmed LeRoy's observations, and extended his experiments to the dead bodies of newborn infants, and adult human cadavers. These observations showed that the sudden violent injection of air into the lungs often caused acute emphysema, rupture of the smaller bronchi, and laceration of the lungs, with the production of acute pneumothorax and secondary collapse of the lungs. After this discouraging report nothing was done to advance the practice of artificial respiration by mechanic aids until 1845, when a new movement was vigorously started in its favor through the exertions of Chausseur and Depaul, the eminent professors of obstetrics at the Faculté. Depaul, who was particularly vigorous in his agitation of the subject, and his followers, only developed one phase of the question, but this was in a very important direction, viz., the application of insufflation in asphyxia neonatorum by means of a tube introduced directly into the larynx through the glottis. Intraglottic tubes of various designs were devised to be used as blow-pipes by the operator, or were connected with rubber bulbs which forced the air into the larynx through the canula. Artificial respiration by intralaryngeal intubation and insufflation was relegated almost exclusively to the accoucheur, and nothing was done to advance or perfect its application to the emergencies of surgery until the last decade, when the rapid and ever-increasing assaults made by surgery upon the lesions of the intrathoracic organs aroused a new interest in the literature of intrathoracic operations and created a demand for a reliable means of counteracting the dangers of asphyxia and pneumothorax. Quenu and Longuet, Tuffier and Hallion, Doyen and H. Milton, of Cairo, and possibly Péan, had all realized the possibilities of mechanic insufflation, and had made notable experimental and clinical contributions to the technic in 1897-1898, but with the exception of Doyen's apparatus, which he had described in 1898, a simple and reliable appliance for the practice of artificial respiration had not been devised or put to the test of clinical experience in Europe.

Doyen, it is true, had invented and fully described his compound bellows, which, when attached to an intralaryngeal canula, was capable of maintaining rhythmic artificial respiration by insufflation and aspiration. This apparatus is figured in his "Technique Chirurgicale," published in 1897, but there is no reference in his book or his subsequent publications to any experimental or clinical application of his invention. About this time (1897) I received a copy of the medical and surgical reports of the Presbyterian Hospital of New York, for 1896, which contained a brief but excellent article by Dr. Northrup, in which he demonstrated the value of the Fell-O'Dwyer apparatus as an aid to artificial respiration in the treatment of opium narcosis and other nonsurgical conditions. Too much credit cannot be given Dr. Northrup for his persistent advocacy of this valuable apparatus, the invention of his lamented and ingenious colleague, O'Dwyer. The reading of this article, together with the repeated demonstration of its unflinching and almost marvelous efficiency in cases of opium narcosis, at the hands of Dr. J. D. Bloom, surgeon in charge of the Charity Hospital of New Orleans, immediately suggested to my mind that this was the apparatus needed in thoracic surgery.

The suggestion grew upon me, and it was my confidence in its value that led me to take it as a basis of an address before the Surgical Section of the Louisiana State Medical Society in May, 1898. Since then the clinical confirmation of the value of the principle of intralaryngeal insufflation in overcoming the collapse of the lungs, following upon the resection of the chest walls, has been amply confirmed by my colleague, Dr. F. W. Parham, whose able and exhaustive monograph on the "Surgical Treatment of Tumors of the Chest Walls" is familiar to all those who have followed the latest developments in this field of thoracic surgery.

¹ Contributed to the Transactions of the American Surgical Association, May, 1901.

² The Surgery of the Chest, etc. Transactions of the Louisiana State Medical Society, May 10-12, 1898; also Annals of Surgery, vol. xxix, 1899, pp. 400-434.

³ Intralaryngeal Insufflation for the Relief of Acute Surgical Pneumothorax, etc. Transactions of the Southern Surgical and Gynecological Association, November, 1899; also Journal of the American Medical Association, June 9, 1900.

The interesting case just reported by our distinguished fellow, Dr. Keen, also illustrates the practice of pulmonary insufflation to overcome the collapse of the lung in traumatic pneumothorax; but the form of apparatus used—*i. e.*, the Fell mask, by which air is insufflated by the oronasal method—is liable to failure, chiefly from the dropping of the tongue backward and the introduction of air into the pharynx instead of the air passages, and is, therefore, unreliable as a surgical method, more especially in critical conditions, in which certainty and

and one of the most serious obstacles in the advancement of surgery of the chest.

It would now appear from all that has been said and done that no further discussion could be called for, at least on the value of a reliable apparatus for maintaining artificial respiration in the course of intrathoracic operations. But a little thought and experience in this field will convince us that the application of artificial respiration by mechanic devices as applied to surgical conditions is still in its infancy, and that the clinical applica-

tions of intralaryngeal insufflation thus far made, have been to a large extent empiric and justify further experimentation with the view of elevating this mode of treatment to a higher plane of scientific accuracy.

There are also certain conditions met in surgery which differ radically from the conditions met in purely medical cases, and it is with a view of adjusting our resources to these more effectively that I have continued to devote much time and thought to the mechanic features of the subject.

In order to investigate with any degree of accuracy the effects of pulmonary insufflation by the intralaryngeal method upon the lungs in normal and pathologic conditions, the first requisite was a suitable apparatus which would indicate the positive and negative variations in the intrapulmonary pressure during insufflation (inspiration) and expiration, and that would also provide a measure and means

precision are absolutely necessary. That in this case (Dr. Keen's) the collapse of the lungs which followed the entrance of air into the pleura would have been promptly overcome if an intralaryngeal canula had been used, as in Dr. Parham's case, cannot be doubted. The recovery of the patient and the absence of untoward symptoms when the pleura was opened simply illustrate the fact that in this, as in other recorded cases, acute surgical pneumothorax does not invariably cause an arrest in the respiration in both lungs; but in man, more often than in dogs and other lower animals, there is often a tolerance to the invasion of the pleura with air, provided the air is allowed to enter and fill the pleura *gradually*. This toleration of pulmonary collapse in some cases does not argue that the occurrence of this condition is free from peril; on the contrary, the numerous cases that have been recorded (see author's contribution to the surgery of the chest¹) only confirm the experimental evidence which conclusively demonstrates that the sudden admission of air in the pleura through a large fenestrum is one of the greatest danger elements in intrathoracic surgery

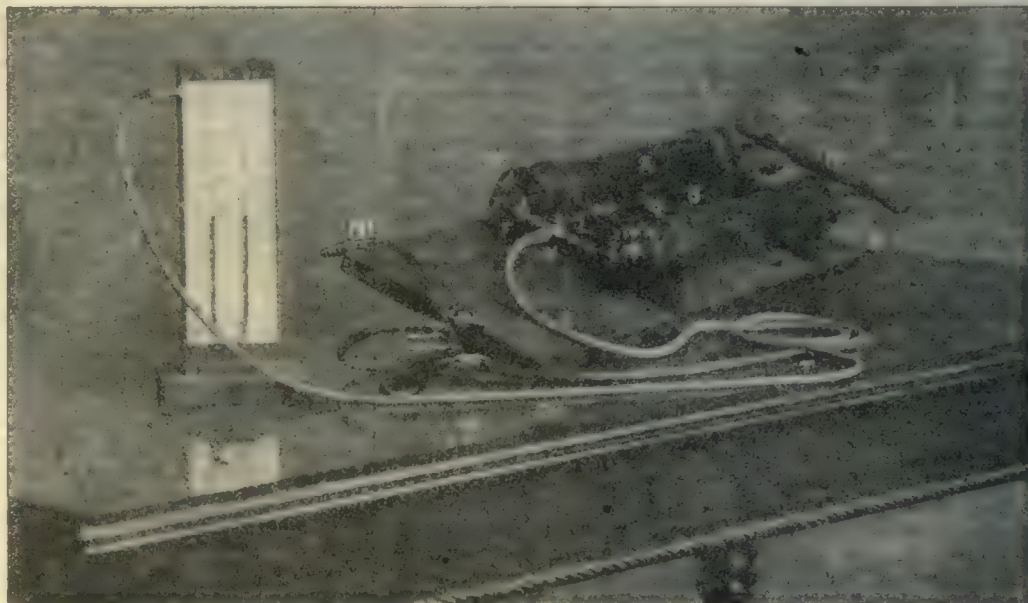


Fig. 2.—Experimental automatic respiratory apparatus with double inspiratory and expiratory cylinders (Matas).

of controlling the quantity of air injected into the trachea.

It was evident from the start that the bellows provided with the original Fell-O'Dwyer apparatus, and their

¹ Transactions of the Louisiana State Medical Society, 1899.

modifications by Dr. Bloom and myself, or by the Doyen instrument, could not be utilized for the purpose, and that an entirely new apparatus, based upon the principle of the pump, would have to be constructed for our experiments. As a result of many trials with different models and suggestions the machine which is shown in Figs. 1 and 2, and described as an "experimental automatic respiratory apparatus," was adopted. In the construction of this apparatus, as well as in devising the sequel of this, which is our practical and latest improved single cylinder pump for clinical use (see Figs. 3 and 4), I have had the benefit of the collaboration of my assistant and friend, Dr. John Smyth, whose training and skill as a mechanical and civil engineer have been most helpful in overcoming the mechanical obstacles met in perfecting the working details of these appliances.¹

The idea of utilizing an automatic respiratory apparatus on the duplex principle, with independent inspiratory and expiratory cylinders or pumps, was suggested by some of the older appliances devised for this purpose, and especially by the desire to test Doyen's method of artificial respiration with his compound inspiratory and expiratory bellows. The evident object of this machine was to simplify the work of the operator in applying artificial respiration to a purely mechanical function, so that once the intralaryngeal canula was adjusted *in situ* the work of insufflation and expiration would be carried on automatically by the machine. As will be seen by looking at Figs. 1 and 2 and the accompanying legends, which describe the details of our experimental duplex apparatus, pump I, on backward stroke, aspirates fresh or oxygenized air through the inlet valve (IV), and during forward stroke insufflates it into the lungs through the opening in the cut-off (V). Pump A, on backward stroke, aspirates the vitiated air from the lungs through cut-off valve (V), and in forward stroke discharges it through outlet valve (OV). The mechanism by which this alternate insufflation and aspiration is due is clearly explained by the legends and by the separate diagram of the cut-off. The pumps in this machine were made to work independently of each other, or could be worked together if desired, and were connected with a manometer which accurately indicated all the variations in the intrapulmonary pressure during inspiration and expiration. The stroke-length of the piston in both pumps regulated the capacity of the cylinders, and this in turn was controlled by an adjustable screw and collar. The central piston-rod, which moved the cut-off valve, was marked into spaces of one inch each, equivalent to about 4.4 cubic inches of air per inch, as determined by spirometric tests. The total maximum capacity of these experimental cylinders was nearly 1,500 cc., or 90 cubic inches, corresponding to the average total respiratory capacity of a single lung in repose (Landois).

The quantity of air insufflated and the intrapulmonary pressure could be multiplied indefinitely by excluding the aspirating cylinder (A) and preventing the escape of air from the trachea while working the inspiratory cylinder (I). The need of a powerful pump that would permit of an indefinite increase in the intrapulmonary pressure suggested itself in view of our desire to test the resistance of the lung tissue to pathologic pressure and to determine the amount of air and the pressure required to produce emphysema, laceration of the lungs, and other pulmonary lesions by violent insufflation.

When the large duplex pump had been completed it was utilized in our preliminary experiments on dogs and human cadavers to familiarize ourselves not only with the technic of insufflation, but to test the practicability of automatic respiration in which the cylinders were used to alternately pump air *into* and *out* of the lungs. But we soon found out that there were many serious obstacles in the way of the successful application of this

duplex principle, and the most important of these was the damage done by the suction force exercised by the aspirating cylinder in expiration. The aspiratory action of cylinder (A) caused a collapse of the smaller bronchial tubes, which are not sufficiently cartilaginous and rigid to resist even moderate, slow aspiration. We found that when inspiratory pressure on insufflation was equal to +10–14 mm. mercury, the negative pressure or expiration was –20–24 mm., as gauged by the manometer. The respiratory movements, under these circumstances, were carried on at the rate of sixteen times per minute, and yet, under these conditions, a general collapse of all the smaller bronchi took place in both lungs, which imprisoned the vitiated air over large areas with each expiration. Under these conditions the bronchi are opened again with each insufflation, but the deoxygenized air is not completely released, and thus accumulates in the air-cells, thereby increasing the intraalveolar tension to such an extent that it arrests the capillary circulation, and thus defeats the essential purpose of the mechanism. If the suction force is still increased by increasing the frequency of the respiratory rhythm, then a vacuum is created in the larger bronchi as well, which, when frequently repeated, induces a condition of hyperemia, paresis of the vessels and edema of the mucosa, followed by extravasations which permanently damage the lung and still further cripple its respiratory function. This we found to be the case in the lungs of the dog upon which we performed our first experiment, and the lesions were plainly recognizable during life and after death. The evidence obtained in this experiment promptly led us to abandon all expectation of ever utilizing this duplex method in practice.

It is fortunate, in view of the dangers attending the use of the compound inspiratory and expiratory machines—which for convenience we shall continue to designate as the "duplex" machines, that the expiratory part of the respiration aid is unnecessary in practice, and that all that is required, so far as the expiration is concerned, is that the apparatus used shall insufflate air into the lungs in sufficient quantity and under proper pressure. As stated by O'Dwyer in his commentary upon the original Fell apparatus, all that is required is to get air into the lungs and give it sufficient room to expand and time to escape, the power generated and stored up in overcoming the resistance to inspiration being amply sufficient to carry on expiration.

The correctness of this statement is well shown by practical experience with the Fell-O'Dwyer apparatus, and is fully confirmed by our experiments; but the dangers which attend artificial expiration, or rather, aspiration, had not been appreciated by previous experimenters, if we are to judge by the existence of various apparatus, notably the ingenious device of Doyen, which has been created for the purpose, but evidently never utilized in practice.

After demonstrating to our satisfaction that the double inspiratory and expiratory pump was not a practical appliance for artificial respiration, we abandoned the aspirating cylinder entirely in our work and utilized the single insufflating cylinder (I, Figs. 1 and 2), on the O'Dwyer principle, and, having found it perfectly reliable, have made it the basis of our practical clinical respiratory machine shown in Figs. 3 and 4. Without entering into a tedious and unnecessary description of our experiments with this pump on human cadavers and dogs, we shall simply make a few statements which will serve as conclusions to our work, which is still incomplete, but is quite sufficient to satisfy us of the practical working qualities of the apparatus which is now exhibited to you. (Figs. 3 and 4.)

These experiments confirm the conclusions already established by the investigations of the physiologists (Donders, Landois, etc.) and of the surgeons (Tuffier and Hallion), to the effect that the intrapulmonary pressure required to overcome the elastic reactivity of the lungs

¹ My thanks are also due to the McDermott Surgical Instrument Company, of New Orleans, who manufacture this instrument, for their valuable cooperation and interest in this work.

when collapsed by the admission of air into the pleura is very slight, and that positive pressure of 8-8 mm. of mercury is quite sufficient.

In a human adult cadaver, with both sides of the thorax widely opened by two quadrilateral fenestra (4x5 inches), the lungs, normal and free from adhesions, were insufflated with the respiratory pump, the modified O'Dwyer canula (M. F., Fig. 3) being introduced into the trachea. The stroke of the piston was set at 6½ inches

expansion of the chest, produced by a full inspiration, was easily obtained with a displacement of 45 inches per stroke of the pump.

The following experiment on a dog was also instructive:

A medium-size mongrel cur was anesthetized with chloroform by the usual oronasal method; after relaxation had been obtained the intralaryngeal canula was introduced into the glottis, and chloroform was continued through the canula until anesthesia was complete. The funnel of the inhaler was then attached to the inlet of the insufflating pump, and the insufflating pump was set so that each stroke of the piston displaced 45 cubic inches per stroke. A large osteoplastic thoracotomy was performed, and the right pleura was rapidly exposed by cutting a large quadrilateral flap measuring 4 x 5 inches. The bleeding from the intercostals was surprisingly little. The lung immediately collapsed, and respiration ceased at once. The pump was then set into operation at the rate of about 18 times a minute. The lung immediately expanded to the full limit of the chest wall, showing a tendency to prolapse through the fenestra. With aspiration (the aspirating cylinder being used) the lung receded as in expiration, and the rhythm of the respiration was kept up for over four minutes, during which the circulation was restored and the animal appeared to recover from the shock. During this time the demonstration of the efficacy of insufflation could not have been more satisfactory or conclusive. We were able to manipulate the lung freely while it was alternately expanding and contracting, and had no difficulty in reaching the hilum of the organ and feeling it, as well as the pulsating heart and great vessels. If we had then closed the chest we believe the animal would have survived the ordeal; but we were curious to try suture of the lung, and other surgical procedures, and while preparing to do this we observed that the expiratory retreat of the lung became more feeble and that the lung failed to empty itself. This we attributed to the powerful suction of the aspirating cylinder, which interfered with complete expiration by creating too great a vacuum in the bronchi.

While observing this phenomenon the animal became cyanosed and the heart's action feeble and irregular. In the meantime the assistant in charge of the canula accidentally allowed this to become displaced, and the air was pumped into the esophagus, causing an enormous distention of the stomach, which still further interfered with the action of the diaphragm. Before this accident could be remedied the animal died. It was plain to all that if in this case only the single insufflating cylinder had been used, or that if the aspirating cylinder had been promptly disconnected and expiration allowed to take place through the canula, death would not have occurred.

(= about 28 cubic inches of air per stroke), the manometer indicating + 10 mm. pressure. With each stroke the completely collapsed (normal) lungs were made to expand and project beyond the line of the chest wall.

In the same subject, with a 4½-inch stroke (19 cubic inches air displacement), the manometer indicating + 8 mm. pressure, the lungs were fully expanded and held against the chest wall.

In the same subject, with a 4-inch stroke (= 17.6 cubic inches) and a pressure of + 6 mm. mercury, the lungs were expanded, but barely touched the ribs.

In another cadaver, adult, male, preserved in a refrigerator four weeks, insufflation was tried with the same pump without opening the chest. Our pump working with a 10½-inch stroke (= 45 cubic inches of air displaced with each stroke) and the manometer indicating 10 mm. mercury, the cadaveric rigidity of the diaphragm and the chest was overcome and the chest expanded with marked bulging at the intercostals and epigastrium. In this way the cadaver was made to breathe rhythmically at the rate of 18 to 20 times per minute.

A pressure of 8 mm. mercury was found to be quite sufficient to expand the lungs in another adult male subject upon which we experimented 12 hours after death. In this case the cadaveric rigidity was less, and the

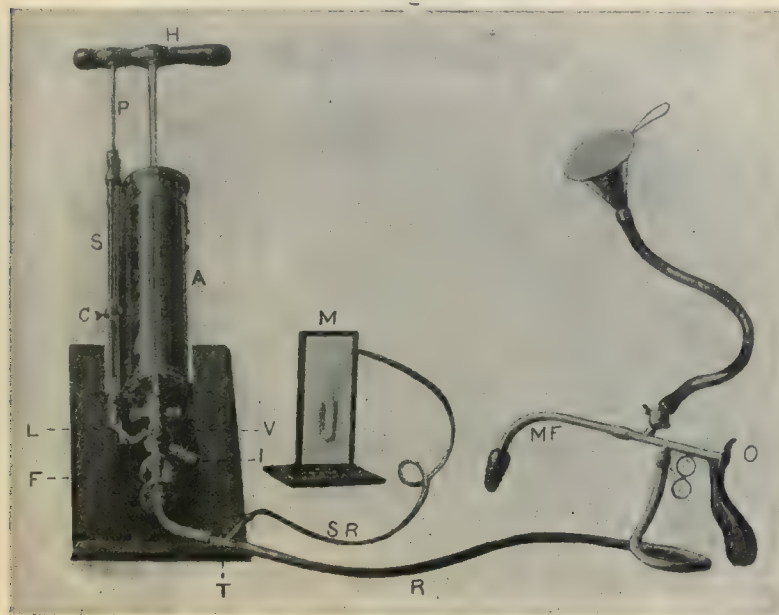


Fig. 3.

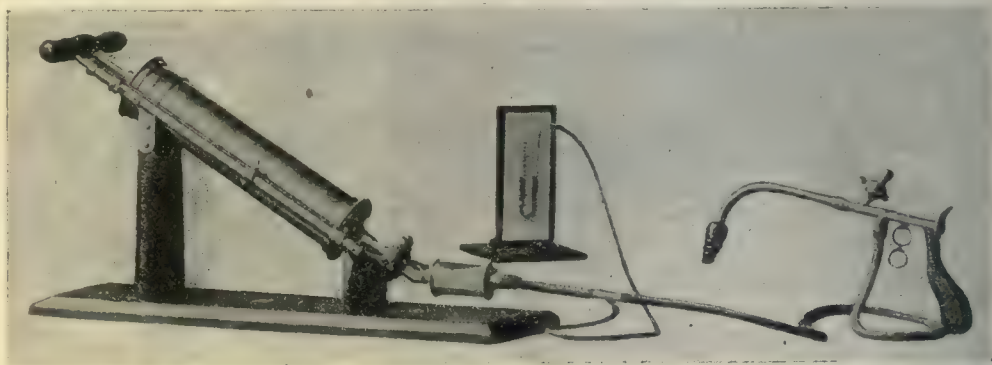


Fig. 4.—Latest working model of apparatus for artificial respiration in medical and surgical practice (Matas).

The fact remains, however, that insufflation did very promptly overcome the collapse of the lung which followed, with arrested respiration, the moment the pleura was widely opened. It is also positive that the animal would have perished promptly when this happened had not the insufflation immediately revived him by restoring the respiration.

Other experiments were performed to test the amount of pressure required to destroy the elasticity of the lungs and to produce emphysema by rupture of the air cells, and while these are still incomplete, we believe

it safe to assert that so long as the intrapulmonary pressure of the air insufflated is not sufficient to cause the lung to be herniated beyond the chest wall, there is no serious risk of traumatic emphysema in intrapleural operations. In fact, we have been struck, in our experiments on the cadaver and dog, by the enormous resistance of the lung tissue to laceration. The lung apparently recovers promptly, even its normal respiratory capacity is doubled. In a dog of medium size from 1,000 to 1,500 cc. were required to cause serious permanent emphysematous lesions. Further experimental evidence is still required to study the exact conditions under which these pathologic lesions are produced. It is also quite possible that minute histologic lesions are caused by even moderate over-distention which has escaped the gross, naked-eye observations which we have made.

The most important part of our work still remains to be completed, and that is the practical, experimental study of pulmonary and mediastinal surgery under the new conditions of aided respiration. That much can be learned in this field by repeating in a systematic way many of the older experiments of Bloch, Marcus, Schmid, Biondi, Willard and others, cannot be denied. In the meantime the means of applying artificial respiration with an apparatus which can be readily and safely applied, which will accurately register the intrapulmonary pressure during insufflation, and will permit the operator to regulate the quantity of air insufflated, is necessary for experimental work and is very desirable in actual practice. Without wishing to disparage or minimize in the least the excellent service which the Fell-O'Dwyer apparatus and its modifications have rendered and are capable of rendering in medical practice, we believe there is a place for such an apparatus as I now have the pleasure of submitting to you. The chief objection to the bellows as an insufflating agent is that its insufflating capacity cannot be regulated or graduated, and that it is capable of insufflating at best only a fixed quantity of air. We have tested all the bellows now in use for the purpose (original Fell, Fell-O'Dwyer, and its modification by Dr. Bloom), and these are capable of a maximum displacement of 45 cubic inches of air. While this quantity is far in excess of that required to overcome the elastic retractility of the collapsed lung when the chest is opened (28 cubic inches being amply sufficient in healthy lungs), the empiric insufflation of the excess of air discharged by the bellows is not excessive or injurious when artificial respiration is practised on the *closed chest* with a pressure of 6 mm. in cases of arrested respiration. The more serious objection to the bellows is that it is incapable of sustaining intrapulmonary pressure long enough during the periods of inspiration (insufflation) to favor surgical action in open cases. The bellows will distend the lungs fully when the respiratory movements are kept going at the rate of 20 insufflations per minute; but whenever this rhythm is moderated in frequency to 10 or 12 complete respirations per minute or less, the lungs empty themselves before the next insufflation is ready to fill them again. This is caused by a backward leakage into the bellows, while the finger which controls the outlet of the laryngeal canula continues to stop the opening. In other words, the duration of the inspiration cannot be controlled by the will of the operator. With our pump, on the other hand, the pulmonary distention obtained by the inspiratory insufflation is not lost by leakage, and is sustained so long as the expiratory outlet in the canula is stopped by the thumb of the operator. In this way the rhythm of the respiration can be regulated by the operator, which is a distinct advantage in operative work.

The difference in the action of the pump and bellows is in this respect well shown by a simple demonstration with the artificial lungs that we have extemporized for the purpose. The model which I now show you has been made by attaching a pair of rubber toy balloons to a human larynx and trachea.

The balloons are connected separately to each one of the primary bronchi, which remain as a part of the bifurcation. If we now intubate the larynx with the O'Dwyer canula and insufflate with the bellows you will see that the balloons become distended to their full capacity, but this distention is followed by an immediate collapse, which begins before I have time to compress the bellows again. This happens in spite of the fact that I have the expiratory outlet in the laryngeal canula closed. As the connections are all air-tight, it is evident that there is no exit for the air in the lungs except through the bellows. If the same experiment is repeated with our pump you will see that the balloons remain distended fully until I release the confined air by withdrawing my finger from the outlet in the canula.

If we now summarize the peculiarities of this apparatus for artificial respiration (see Figs. 3 and 4) we will state—

1. That it is a graduated pump which can be readily adjusted to any quantity of air required, from 1 to 700 cm. (or 1 to 43 cubic inches).
2. That it is provided with a mercurial manometer, which indicates the intrapulmonary pressure and is an index to the peripheral resistance that is overcome by the insufflation.
3. That it is provided with an automatic cut-off which effectively prevents any backward leakage of air into the cylinder, and thus puts the inspiratory inflation of the lungs under the control of the operator, thus regulating the duration of the inspiratory act and thereby the rhythm of the respiration.
4. It is provided with an air filter interposed between the larynx and the pump, which purifies the air injected through the pump.
5. The inlet opening of the pump can be readily adjusted to a screened funnel and tube for further administration of chloroform or oxygen while artificial respiration is going on.
6. It is provided with an intralaryngeal canula of the O'Dwyer type, with several adjustable conical tips for intubation. Our modified canula differs from the O'Dwyer canula in the shape of the handle, which is pistol-shaped and gives a firm grip, and in having an opening guarded with a stopcock which is easily connected to a tube and funnel for the administration of chloroform while the patient is breathing through the intubating canula. While insufflation is going on the stopcock is closed and the anesthetic is administered through the inlet in the pump.

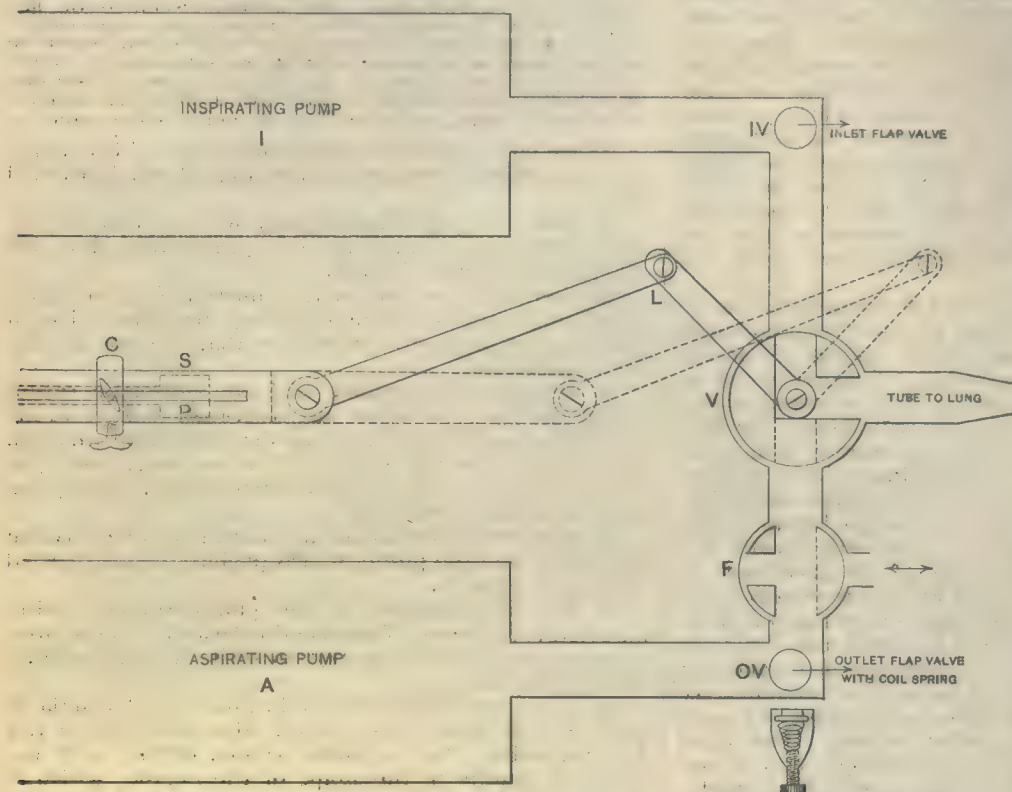
In applying this apparatus the intubating end of the canula is introduced into the space above the vocal cords bounded by the arytenoepiglottic folds and epiglottis. In some cases the smaller conical tips may be introduced as an ordinary intubating canula between the vocal cords; but in the majority of cases this is unnecessary, as the conical graded tips furnished with the original O'Dwyer canula can be accurately adjusted to supraglottic space, where it is firmly held in place by the epiglottis, the arytenoids, and the aryepiglottic folds. The adjustment of the intralaryngeal tips requires a certain experience and dexterity, which are generally obtained after a few attempts, but are better acquired by a preliminary experience on the cadaver. The long handle and firmness of the metallic canula greatly facilitate the maneuver required in fitting the intubating tips to the glottic opening. In this respect the O'Dwyer canula is easier to handle and to adjust than the short intralaryngeal tube devised by Doyen, which requires for its introduction the special long forceps which he has devised. In applying intubation for insufflation the preliminary anesthesia of the patient is required, unless he is already unconscious and anesthetic from the effects of asphyxia, shock or narcotic poison. After the patient is relaxed by the anesthetic the introduction of the intralaryngeal canula is much simplified. Once the canula is in place it may be necessary to continue the anesthesia. This can be very readily done by attaching the funnel-shaped inhaler to our canula. In the meantime the connections with the respiratory cylinder are adjusted and kept in readiness for insufflation the moment the operator may

deem it necessary. When the pump is set in operation the stopcock which guards the opening of the inhaler is closed in order that the insufflated air may not escape through the inhaler. The inhaling tube and funnel are

Cleveland, Ohio ("The Effects of Increased Barometric Pressure," etc., *Medical News*, January 27, February 24, 1900), are of great interest and value. His experiments were directed especially toward the study of the effects of increased intrapulmonary tension under high barometric pressure, but they are equally valuable in explaining the mechanism of sudden death as it has been observed in the course of violent insufflation of the lungs in animals. It is not so much the effect of direct traumatism upon lung tissue (emphysema, lacerations, etc.), that is to be feared, but the arrest of the heart's action and collapse of the circulation caused by a sudden interruption or blockade of the pulmonary circuit. A pressure of 30 mm. mercury in the dog, as demonstrated by Tuffier and Hallion, is sufficient to arrest the circulation by overdistending the air cells and interrupting the capillary circuit in the alveolar network—this fact had been ascertained, but Crile has shown most lucidly (and this is his great merit) that this primary interference with the respiration is only a preliminary to the more dangerous secondary effect of the overdistention on the heart and the general arterial tension, which immediately collapses when the complete blockade of the pulmonary circuit occurs in the lungs. The mechanism by which these fatal circulatory phenomena are produced is best explained by the following experiments related in Crile's paper. The technic employed was as follows: The animals

were placed under full surgical anesthesia, the trachea dissected out and a canula tied firmly into it; a heavy tubing was then tied to the canula and this was connected with a strong leather bellows, from which a large quantity of air might be suddenly or slowly driven into the lungs—that is to say, the intrabronchopulmonary pressure might be increased, as would be the case in increased barometric pressure. The blood pressure was taken in the carotid artery.

A fox terrier, weighing 20 pounds, in good condition, with an initial blood-pressure of 146 mm., was subjected to the experiments as outlined. The bellows was suddenly emptied into the pulmonary tract of the dog, producing a very great immediate fall in the blood pressure. The rubber tubing at the close of the injection of air was clamped; the bellows



then transferred and attached to the inlet of the pump itself, so that anesthesia may be continued if desired while artificial respiration is going on. It is also a very simple matter to attach the discharging tube of an oxygen cylinder to the inlet of the pump if the use of this gas be especially indicated. In using the pump on adults it will be well to adjust the piston so that the full capacity of the pump (43 cubic inches) is administered at the start, after which the quantity of air may be regulated according to the effect observed on the lung itself in open cases or on the chest walls and diaphragm when the chest is closed, as in nonsurgical conditions. If the amount of air insufflated is excessive the lung will have a tendency to become herniated through the opening made in the chest walls, and the capacity of the pump should be regulated by the screw and collar on the piston until the proper distention is obtained—i. e., just enough to make the lungs touch the chest wall in full inspiration. The normal pressure required to obtain this pressure is 6 to 8 mm., as indicated by the manometer. The manometer is especially useful in indicating cumulative or excessive pressure in the lungs, more particularly in closed cases. It will help to regulate the rhythm of the respiration and to prevent too rapid or frequent insufflations, which would overstretch the alveoli and thus defeat the purpose of the insufflation; a pressure of 30 mm. or more being sufficient to stop the aerating function of the lungs, the manometer in this and other ways being a very useful adjunct to the apparatus.

In connection with the necessity of providing against violent and sudden overdistention of the lungs in the practice of intralaryngeal insufflation the recent experiments of Crile, of

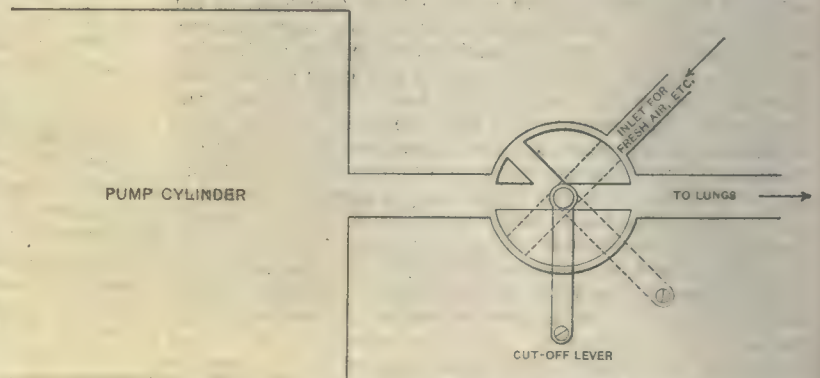


Diagram of automatic air cut-off devised for the experimental double-cylinder and clinical single-cylinder pumps of the author, by Dr. Jno. Smyth, of New Orleans.

refilled, then, again as the air was passing into the tube it was unclamped, and more air forced into the lungs. In this manner the blood-pressure fell abruptly to the abscissa line. The animal was killed almost instantly thereby. An immediate autopsy showed the right heart to be engorged, the left heart empty. In another dog, the same experiment was repeated, and at the first blast of the bellows the blood-pressure dropped almost to the abscissa line. On removing the clip and allowing

the air to escape from the lungs the blood-pressure leaped up very rapidly and soon regained its normal height. This was repeated several times so that there could be no doubt as to the striking effect of an increased intrathoracic pressure upon the circulation. The animal was then killed by again increasing the intrapulmonary pressure so as to block the circulation through the lungs. The autopsy revealed conditions similar to those observed in the preceding case.

In other experiments Crile demonstrated that the fall of the blood-pressure with collapse of the circulation was more rapid and complete when the pulmonary circulation was blocked by violent insufflation than when the venous system was emptied by severing the superior vena cava. The evidence of these experiments tends to show that a sufficient increase in the intrapulmonary pressure may produce a collapse of the circulation. It robs the left heart directly of blood and therefore causes a greater collapse than can be produced by severing either the superior or inferior vena cava alone. The respiratory symptoms (asphyxia, etc.), are produced by a sudden fall in the blood-pressure as well as by arrested pulmonary circulation, thereby diminishing the exchange of gases in the alveoli, which in itself is sufficient to cause an increased respiratory action and the respiratory distress.

These experimental demonstrations also throw a new light upon the frequent deaths which were observed by Le Roy and Magendie in their experiments in the early part of the past century, and prove that it is not trauma, as they believed, but alveolar hypertension in the lungs, which was the determining cause of death. Fortunately in practice the disastrous effects of pulmonary overdistention are not to be feared, first, because the vascular effects of intrapulmonary hypertension, if they should occur accidentally or through gross carelessness, will be immediately overcome by the release of the confined air in expiration which promptly restores the pulmonary circulation and general arterial tension. In surgical cases, in which insufflation is practised when the chest is open, intrapulmonary tension is still less likely to occur. But it is evident that some provision must be made to protect the patient from pulmonary vascular obstruction and sudden falls of arterial tension which in critical conditions would be very alarming. This is well provided for in our apparatus, which can never cause dangerous alveolar hypertension, even when its entire capacity is emptied into the lungs, so long as the expiratory outlet is not obstructed and rhythm of the respiration is maintained. Furthermore the manometer will always warn the operator of any approach to excessive pulmonary tension which, as we have stated, is indicated by a rise to 30 mm.

In applying artificial respiration with this pump (which will only open or close with the full excursion of the piston), it will be found that the respiratory movements will be carried on with a regularity, fulness and deliberation that are scarcely possible with the bellows. The duration of each inspiratory insufflation will be controlled by the finger of the operator, which closes the outlet in the handle of the canula. So long as the thumb occludes this outlet the insufflated air will be retained in the chest and the distention of the lung will be maintained. It is only when the thumb is lifted from the opening that the imprisoned air in the lungs escapes and expiration takes place. In this way the rhythm of the respiration can be regulated, so that it may be very rapid or slow according to the needs of the case.

We regret very much that the opportunity has not yet presented itself to apply this pump on the living subject, but our experience with it on the cadaver and dog fully demonstrates its practical working capacity. In submitting this appliance to the Association we do not pretend to have reached the ideal apparatus; on the contrary, we do not doubt that in the course of further experimentation other suggestions may be made which will contribute to its simplicity and usefulness. It is the outcome of our efforts in meeting the necessities of experimentation, and in the hope that it may prove useful to other investigators and surgeons who are interested in the development of a most promising field of surgical advancement, we gladly submit it to the profession.

EXPERIMENTAL AUTOMATIC RESPIRATORY APPARATUS,

with Independent Inspiratory and Expiratory Cylinders or Pumps, for the Purpose of Maintaining Rhythmic Artificial Respiration.

Pump I, on backward stroke, aspirates fresh or oxygenized air through inlet valve IV, and during forward stroke insufflates it into the lungs through opening in cut-off V.

Pump A, on backward stroke, aspirates vitiated air from the lungs through cut-off valve V, and on forward stroke discharges it through outlet valve OV.

Legend to Figs. 1 and 2.

- H. Handle common to P and the two pump pistons.
- P. Accessory piston for automatic cut-off.
- S. Sliding tube for automatic cut-off.
- A. Aspirating pump.
- I. Inspirating pump.
- C. Adjustable collar for automatic cut-off and regulating stroke.
- IV. Inlet valve for oxygenized or medicated air.
- L. Compound lever for automatic cut-off.
- V. Valve or stopcock for automatic cut-off.
- OV. Outlet valve for discharge of expired air.
- F. Stopcock to disconnect pump A.
- R. Rubber tube to intubating apparatus.
- T. Glass T connecting manometer tube.
- SR. Small rubber tube connecting with manometer.
- MF. Modified O'Dwyer intubating apparatus, with thumb opening closed with rubber stopper.
- M. Mercuial manometer, reading in millimeters to 200, pressure or vacuum.

Notes.

To allow the double yet independent action of these pumps, an automatic cut-off was necessary. This was accomplished by the modified stopcock V attached by the compound lever L to sliding tube S, which was moved by the accessory piston-rod P attached to the common handle H. This piston P, having a knob on its free end, travels in S and when about $\frac{1}{2}$ inch from limit of forward stroke it strikes the end of the tube, driving it forward and pushing the lever of stopcock V through arc of 90° (see Fig. 1 and dotted line in diagram), thus closing communication of pump I with tracheal tube R, and opening communication of R with pump A.

In the sliding tube S, almost its entire length is a slot; on the tube is an adjustable collar C with a thumbscrew to clamp it at any point; in this collar and projecting through the slot is a screw against which the knob of accessory piston P strikes when within $\frac{1}{2}$ inch limit of backward stroke; this final $\frac{1}{2}$ inch of stroke then moves the tube S which causes cut-off at V as before, but in opposite direction, closing communication with pump A with tracheal tube R and opening communication between tracheal tube and pump I. (See diagram.)

APPARATUS FOR ARTIFICIAL RESPIRATION IN SURGICAL AND MEDICAL PRACTICE (LATEST MODEL),

with Automatic Cut-off and Attachment for Governing Stroke of Pump and Regulating Amount of Air Insufflated.

Pump A, on backward stroke, receives fresh or medicated air through opening at I, and during forward stroke insufflates it into lungs through opening in cut-off V. Expiration is accomplished through opening in modified O'Dwyer intubation canula by operator removing thumb from outlet O.

Legend to Figs. 3 and 4.

- H. Handle common to P and the pump piston.
- P. Accessory piston for automatic cut-off.
- S. Sliding tube for automatic cut-off.
- C. Adjustable collar for automatic cut-off and regulating stroke.
- I. Inlet for fresh or medicated air.
- L. Compound lever for automatic cut-off.
- V. Valve or stopcock for automatic cut-off.
- F. Cylinder containing absorbent cotton for filtering air.
- R. Rubber tube to intubating apparatus.
- T. Glass T connecting manometer tube.
- SR. Small rubber tube connecting with manometer.
- MF. Modified O'Dwyer intubating canula and stopcock attachment for chloroform anesthesia.
- M. Mercuial manometer, reading in millimeters to 60, pressure or vacuum.

Notes.

To obviate the use of flap or ball valves which presents a considerable factor of uncertainty, an automatic cut-off with positive stopcock was adopted (Dr. Smyth's suggestion). The modified stopcock V attached by the compound lever L to the sliding tube S is moved by accessory piston P attached to the common handle H.

The piston P, having a knob on its free end, travels in S, and when $\frac{3}{8}$ inch from limit of forward stroke it strikes the end of the tube driving it forward and pushing the lever of the stopcock V through arc of 45° (see Fig. 3, L, and dotted line in diagram), thus closing communication of pump with tracheal tube and opening communication with I.

In sliding tube S, almost its entire length, is a slot; on the tube is an adjustable collar C with a thumbscrew to clamp it at any point; in the collar and projecting through the slot is a screw against which the knob of the accessory piston P strikes when within $\frac{3}{8}$ of an inch of limit of backward stroke, thus moving the tube S which causes cut-off at V as before, but in opposite direction, closing communication of pump with inlet I and opening communication with tracheal tube (see diagram).

The sliding tube S is graduated on each side of the slot, on left side in cubic inches to 45, and on right side in cubic centimeters to 700, relative to pump capacity.

Filter F is $1\frac{1}{2}$ by $2\frac{3}{4}$ inches, and filled with absorbent cotton to prevent oil or other noxious materials from entering the tracheal tube. Vaseline has been used in pumps instead of sperm or cylinder oil, it having no odor.

Manometer M is made of one-sixth inch glass tubing on the open principle.

The intubating canula differs from the O'Dwyer, in (1) the shape of the handle which forms the grasp of the instrument, while the thumb of the operator controls the expiratory outlet; (2) in the addition of an attachment and stopcock for a chloroform inhaler of the Trendelenburg funnel type. In this way anesthesia can be continued or interrupted while the canula is in the larynx. So long as artificial respiration is not required the chloroform is administered directly through the canula inhaler; when the pump is in operation the anesthetic attachment is removed, stopcock closed, and inhaler attached to pump-inlet I.

The pump is made of one-sixteenth inch copper tubing $2\frac{3}{4}$ inches in diameter and $10\frac{1}{2}$ inches long, having total effective capacity of 43 cubic inches, 700 cubic centimeters, with nine and eight-tenths inches stroke, or 4.388 cubic inches capacity per inch of stroke.

PROPER FOOT-WEAR AND THE TREATMENT OF WEAKENED AND FLAT FEET BY MECHANICAL DEVICES FOR MAINTAINING THE ADDUCTED POSITION.¹

BY

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In studying the feet of a child who has never worn shoes or stockings, we are impressed with the fact that we have not inherited the acquired characteristic of deformed feet. For the foot of the infant is practically normal. The long arch may seem flatter than it should be, but Dane² has shown by serial sections of the feet of infants that the apparent flattening is due to a pad of fat, which acts as a brace until the foot becomes stronger. In the feet of poorly nourished infants the long arch is very apparent, for this pad is absent.

This arch may be divided into an outer one, which is low and only slightly yielding and well adapted to continuous weight bearing, and an inner, which is higher and much more elastic. The latter is the one usually spoken of as the long arch. Both arches are permanent. The outer is affected very little by the movements of the foot, while the inner is lowered by some movements and deepened by others. During action the arches are relieved from much of the strain by the muscles of the leg and the foot, while in the passive support of the body weight, as in standing, more of the strain falls on the ligaments.

The transverse arch is not permanent. It flattens out when the body weight is thrown forward, thereby widening the front of the foot so that we may walk with greater surety. It reforms as soon as the weight is removed. It is lessened by dorsal flexion of the toes, and increased by plantar flexion. These arches impart ease and elasticity to all our movements and relieve the

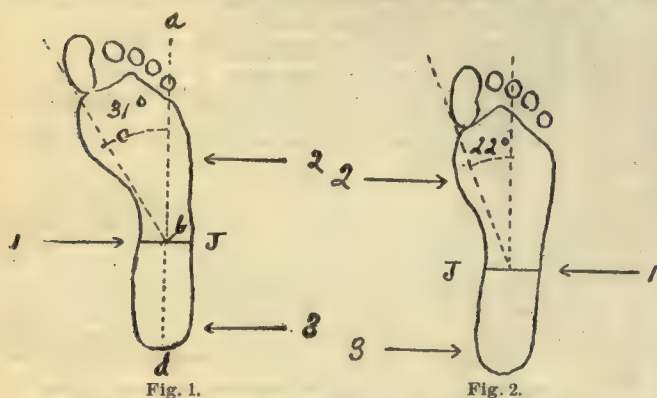


Fig. 1.—Foot in adducted position. 31° angle of lateral deflection. J, mediotalar joint. 1, 2 and 3 are the forces one would use to maintain the foot in this position.

Fig. 2.—Foot in adducted position. 22° angle of lateral deflection. J, mediotalar joint. 1, 2 and 3 are the forces one would use to maintain the foot in this position.

body of the jar which would otherwise be caused by the transmission of the body weight to the ground. By maintaining their structure and position the various forms of work to be done are distributed to the parts of the foot best adapted to that work. Thus the foot may be used to its best mechanical advantages.

If one grasps the foot firmly with one hand to restrict motion between the os calcis and astragalus, and with the other pushes the front of the foot toward the median line, motion taking place mainly at the mediotalar joint, the foot becomes adducted and shorter. There is

a slight elevation of the inner border, the edge of the outer border becomes more convex, and associated with these movements the long arch is deepened.

The forces causing adduction of the foot, as represented in Fig. 1, may be resolved into three (1, 2 and 3), and are the same one would use to bend a stick into a similar position, the angle being formed at the mediotalar joint of the foot. The angle α, b, c in Fig. 1 is indicative of the amount of lateral deflection of the front of the foot and is determined as described by Roberts.¹ On an impression or outline of the foot a transverse line is drawn corresponding to the mediotalar joint (J) and perpendicular to it a line corresponding to the long axis of the os calcis (a, d). Another line is drawn through the head of the first metatarsal bone, to the intersection of the other lines (c, b). The angle formed by this and the perpendicular line we may call the angle of lateral deflection. If we reverse our forces, as shown in Fig. 2, abduction takes place, the foot becomes straighter and

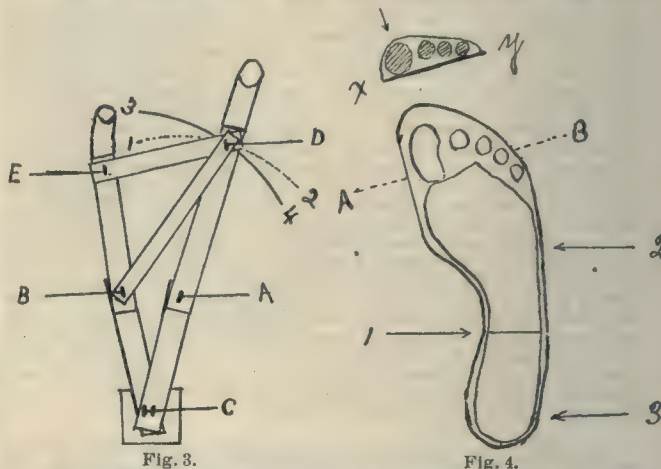


Fig. 3.—Schematic representation of the mechanism of the foot, made of strips of card board bent to represent the arches and fastened with McGill fasteners. C, A, D = inner and C, B, E outer portion of long arch. B, D = rigid tether joining the two portions of the arch. A, B = mediotalar joint. 1, 2 = arc along which D would move with A, D as a radius. 3, 4 = arc along which D must move with B, D as a rigid tether as a radius, the arch C, A, D being elastic, will permit it.

Fig. 4.—Shows the proper relation of the sides of the shoe to the sides of the foot, in a foot which, when voluntarily adducted, the angle of lateral deflection is 31°. 1, 2, 3 are adducting forces caused by the shoe fitting the foot in this position. x, y represent a cross section of the shoe, and the foot taken at A B, the deepest portion of the shoe corresponding to the thickest portion of foot, and is along the inner edge.

longer, the angle of lateral deflection less, the outer border slightly elevated and nearly straight or concave along the outer edge, and associated with these movements the long arch is lowered. A very simple way of demonstrating these associated movements is to construct a model out of strips of cardboard which have been bent to represent the arches and fastened together with McGill fasteners, as in Fig. 3. C, A, D represents the inner portion of the long arch and C, B, E the outer portion. A, B is the mediotalar joint. In assuming the adducted and abducted positions the front of the foot moves as a whole, but for the sake of clearness I have represented the association between the anterior portion of these arches by a strip of cardboard, B, D, and the transverse arch by another strip, E, D. If the inner arch could move unhampered, the point D in assuming the positions of adduction and abduction, would move along the arc 1, 2 with A, D as the radius from the center A, and the height of the inner arch would not be affected by this movement. But the inner arch is high and elastic while the outer arch is lower and much more rigid, and the front of the foot moves as a whole, which means that the strip B, D is a rigid tether and D in assuming the adducted and abducted positions, must move along the arc 3, 4, which is formed by B, D as the

¹ Read before the Johns Hopkins Medical Society, October 21, 1901 and published synchronously with the Johns Hopkins Bulletin.

² Further Studies Upon the Arch of the Foot in Infancy and Childhood, Trans. American Orthopedic Association, vol. xi, 1898, p. 61.

¹ Contributions to Orthopedic Surgery, pp. 217 and 218, Phila., 1898.

radius from the center *B*. As the inner arch is elastic it will adapt itself to this tether and be shortened and elevated in the adducted position, and lengthened and lowered in the abducted position. All connections between these two arches which we may construct will confirm the above, that is, that in all movements the inner and elastic portion of the foot must adapt itself to the movements of the outer and more rigid portion. In studying a skeleton of the foot which has been so articulated that the normal motion at the mediotarsal joint has been maintained we can see that in adduction the scaphoid slides under and lifts up the astragalus, that is, raises the arch, and in abduction pushes it down, *i. e.*, lowers the arch. On assuming these positions in standing we readily see that in the adducted position the body weight is thrown to the outer side of the foot over the outer portion of the long arch, which is well adapted to receiving it. This position is one of strength and muscular support. While in the abducted position the body weight falls to the inner side of the inner portion of the arch, causing the foot to be rolled over inward into a position of weakness and ligamentous support.

Both positions are physiologic, as in walking along the side of a hill the upper foot will be abducted and the lower adducted, also in walking over uneven ground these positions enable the foot to adjust itself as needed. The abducted position with pronation is the one normally assumed when the body weight is thrown on one foot or both in such a manner that equilibrium is maintained without muscular exertion. This becomes pathologic when excessive or used in other or all attitudes. The big toe, by its ability to become adducted (motion toward the median line of the body), aids in supporting the long arch and in preventing the rolling over inward which occurs in the pronated foot. I wish specially to emphasize that the adducted position of the foot is a natural means of supporting the long arch, and adduction of the big toe is also an aid. A deformity of the foot frequently has two effects; first, the function of that part is impaired, and secondly, by a change in the directions or elevation of the arches, the various forms of work are distributed to parts ill adapted to that work. The foot must then readjust itself as best it can to the deformity.

STOCKINGS.

On observing the feet of adults we must admit that either the inheritance of acquired characteristics comes late in life, or else there must be some other factor in the etiology of deformed feet. Stockings, such as are usually worn, are interchangeable and have pointed toes. During infancy and childhood stockings have more influence in moulding the foot than later, but even in the adult the effect is considerable. If we make tracings of the foot in such a stocking, first with the foot just resting on the floor, then bearing the body weight and compare them with similar tracings of the foot without the stocking, it is evident that the stocking compresses the toes, and not only interferes with adduction of the big toe, but even holds it in a position of hallux valgus. The above is well shown in a series of skiagraphs of feet with and without stockings by H. A. Wilson.¹

The effect of the hallux valgus and interference with adduction of the big toe is that we have lost a natural means of supporting the long arch and preventing pronation of the foot. Also in walking, in the final push, instead of stepping squarely off from the end of our big

toe we walk off from the side, thereby losing some force and also pushing the foot into a position of abduction. Our gait, which should be with feet parallel, now is with abducted and everted feet.

A hallux valgus thus acts not only as a deformed member, but also causes the whole foot to work under disadvantages, and may be considered an etiologic factor in the causation and maintenance of the weakened and flat foot.

SHOES.

As for the shoes of adults, one would never think of wearing the right shoe on the left foot, but how about the shoes of children? They are frequently interchangeable, and when not, the difference is very slight, the shank being cut away a little more on the inside and the shoe only slightly adducted. The inner edge is not straight enough and there is not enough room along the inner side for the foot to assume the adducted position.

Many adults still wear shoes which cover the feet without much wrinkling and are long enough to extend beyond the end of the big toe, but the shoe was made over a last formed according to the demands of fashion and not to those of the foot which is to wear it. The proper shoe should maintain, or at least permit the foot to assume, within the shoe its position of greatest strength, namely adduction.

In Figs. 4 and 5, I have represented the relations of the proper shoe to a normal foot. The parallel lines indicate the forces which act when the shoe is made to fit the foot in the adducted position. *X, Y* represents a cross section of the foot within the shoe taken at *A, B*.

The deepest part of the front of the shoe corresponding to the thickest part of the front of the foot is along the inner border. In such shoes there is room for the foot to assume the adducted position and the big toe is

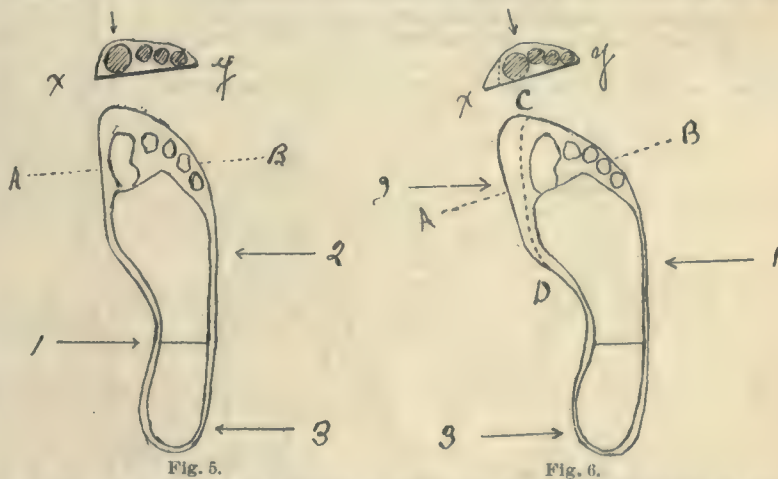


Fig. 5.—Shows the proper relations of the sides of the shoe to the sides of the foot in a foot which, when voluntarily adducted, the angle of lateral deflection is 24°; otherwise as in Fig. 4. This shoe would not fit the foot in Fig. 4, because the angle of lateral deflection is different, and *vice versa*. The shoe must have the same angle of lateral deflection as the foot.

Fig. 6.—Shows the effect of a shoe, otherwise correct, in which the deepest portion of the front of the shoe as represented in cross section, *x, y*, taken at *A, B*, is in the middle, and not along the inner edge as in Figs. 4 and 5. The inner side of the foot being thickest will occupy the deepest portion of the shoe; hence the foot represented in Fig. 4 would be abducted in the shoe in Fig. 6. *D, A, C* represents the unavailable portion of the shoe. 1, 2 and 3 are the abducting forces.

not forced into a position of hallux valgus. Should the deepest portion of the front of the shoe be in the middle, as represented in Fig. 6, even though the rest of the shoe might be correct, the foot would not be able to assume the adducted position and would be forced to the outer side of shoe. This would cause pressure on the smaller toes and the big toe would be abducted. The unavailable portion of the shoe would be as represented by the space *D, A, C*. A foot having an angle of lateral deflection of 31°, when adducted, as in Fig. 4, would be held in the abducted position as indicated by forces (1, 2 and 3) Fig. 6.

¹ An X-Ray Demonstration of Some of the Effects of Shoes and Stockings upon the Human Foot. Philadelphia Medical Journal, January 6, 1900, vol. v, pp. 38-39.

to a tripod, consisting of one posterior and two anterior limbs. The posterior limb, extending from the astragalus to the tuberosity of the os calcis, is less elastic and stronger than the anterior limbs, and, being more directly in line with the direction of the body weight, receives the greater part of it. The anterior limbs, the inner extending from the astragalus to the distal end of the first metatarsal bone and the outer extending from the same point to the distal end of the fifth metatarsal bone, are longer, more elastic and better adapted to balancing the individual and giving spring and elasticity to the gait than of receiving a steady strain. For the purpose of obtaining some idea of the amount of strain on the ligaments of the arch and the relative proportion of the body weight transmitted along each limb, let us resolve the two anterior limbs of the tripod into one, or better, consider the inner portion of the long arch.

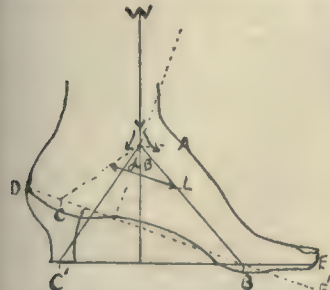


Fig. 13.—Shows the effect of placing the heel forward so that it does not form a direct continuation of the posterior limb. The posterior limb is lengthened and drawn forward, thus diminishing the working angle of the arch. The strain on the ligaments at L is less than without a heel, for the working angle is less; the amount of body weight transmitted down each limb approaches the same as the length of the limbs do, the greater amount being transmitted down the shorter limb.

pounds, angle being 96° , anterior limb 11 cm. and posterior 7 cm. long. As determined by mathematical calculations, in standing on one foot, as above referred to, less than 50 pounds would be transmitted along the anterior limb and over 100 pounds along the posterior limb of the arch. I have placed all ligaments holding the limbs of the arch in position at one place, *i. e.*, one-third the way from the top of the arch. The strain on the ligaments in this case would be about 230 pounds. Add a heel well back on the foot, so that the posterior limb is lengthened without changing the working angle of the foot, as shown in Fig. 12. By lengthening the posterior limb 4 cm. I make it equal to the anterior limb, the angle of the arch remaining the same. C, A, B is now an isosceles triangle. An equal amount of body weight is transmitted along each limb, namely 75 pounds, an increase of over 30 pounds on the anterior limb, which we know is not as well adapted to continuous weight-bearing as the posterior limb. The strain on the ligament has been increased from about 230 pounds to about 250 pounds. When the two limbs are equal there is the greatest amount of strain possible on the ligaments for an arch of that angle bearing that weight. By increasing the height of the heel so that the posterior limb will be longer than the anterior, more weight will be transmitted down the anterior than the posterior limb, but the strain on the ligaments will be less than when the two limbs were of the same length. In nearly all shoes, specially very high-heeled ones, the heel is placed forward so that it does not form a direct continuation of the posterior limb, but is anterior to it, as shown in Fig. 13. In such shoes the actual working angle of the arch is lessened, for the heel, acting as a prop to the arch, is more in line with the transmission of the body weight than the posterior limb. Therefore, the strain on the ligaments of the arch is less than when

the heel is a direct prolongation of the posterior limb. As in the other instance, the strain on each limb of the arch is in inverse proportion to its length, the greater



Fig. 14.—Shows the "spring" in a shoe which holds the toes in dorsal flexion, thus lowering or destroying the transverse arch. A person with such a shoe "rocks" off from the end of the shoe. Viewed from the plane, A B, on which the entire foot should rest, we can see that the heel has doubled the "spring" or dorsal flexion of the front of the shoe.

amount being transmitted down the shorter limb. As shown in Figs. 12 and 13 by the angle E, B, E , and also in Fig. 14, the heel has the same effect as the "spring" in the shoe, holding the toes in a position of dorsal flexion, thus lowering the transverse arch.

To summarize, we may say in favor of a heel:

1. If placed forward on the shoe the working angle of the arch is diminished, thus there is less strain on the ligaments maintaining the arch (see Fig. 13).
2. The body-weight being thrown forward, walking is a little easier, less muscular effort being required.
3. It helps to prevent slipping. This is noticeable specially in walking down hill.
4. By elevating the posterior limb, the actual working lever of the foot becomes a little longer.
5. We are accustomed to heels, they are fashionable and make the wearer appear taller.

Against a heel may be said:

1. It creates a deformity which acts not only as such, but also changes the arches so that there is a redistribution of work to be done, and work falls on parts ill adapted to perform it.
2. There is an increase in the amount of strain on the anterior portion of the foot, which is not as well adapted to receiving it as the posterior (see Figs. 12 and 13).
3. The function of the transverse arch is interfered with or lost by the toes being maintained in dorsal flexion (see Figs. 12, 13 and 14).
4. Heels are usually unstable, the instability increasing with the height, smallness of their diameter and forward position on the shoe.
5. The front of the foot is forced into the toe of the shoe.
6. The strain on the ligaments maintaining the arch is increased unless the heel is placed forward. The further forward the heel the less the strain, but with greater injury to the rest of the foot. Should the heel be placed so far forward that it would be directly in line with the transmission of the body weight to the ground, there would be very little strain on the ligaments, and it would be as though we were walking on stilts, in other words, as though our foot had been replaced by a wooden stump.

THE EFFECT OF BED-CLOTHES.

Since we spend about one-third of our lives in bed, the effect of the weight of the bed-clothes on the feet may well be considered. During sleep our muscles are relaxed and the strain falls on the ligaments and the bony structures, and none of it is supported by the muscles as it is to a greater or less extent in walking and standing. While sleeping on our back the weight of the bed-clothes falls on the inner side of the big toe, causing hallux valgus and abduction of the foot. In lying on either side one foot is supported in the abducted and the other in the adducted position. In the prone position the force is in the direction of hallux valgus

and abduction. It would seem advisable that cradles, such as are used in the treatment of fractures to remove the weight of the bed-clothes from the feet, should be more generally used in cases of prolonged illness. For a foot weakened by the ill health of the patient would the more readily be influenced by forces causing abduction and hallux valgus.

PROPER FOOT-WEAR.

Since birth, forces, some great, others small, have been brought to bear on our feet, interfering with the position of greatest strength and aiding that of weakness. The stocking supplements the work of the shoe and the bed-clothes at night maintain the results of both, so that hallux valgus and the weakened foot are only too common. The question arises, what may we as physicians do to prevent this? Some have suggested placing a pad of leather under the long arch of the foot of infants in whom the pad of fat is lacking, until the foot becomes stronger. We should see that children wear right and left stockings with straight inner edges, which do not help to cause hallux valgus.

The shoes of infants should be distinctly right and left. The front of the shoe should be adducted, the inner edge straight, and there should be room along the straight inner edge for the front of the foot and the big toe to assume their positions of greatest strength. People so brought up would undoubtedly exercise more and what would be prophylaxis, for the foot would be prophylaxis for the rest of the body.

As for adults, they too should wear right and left stockings and, better, with a separate apartment for the big toe. Right and left stockings can be purchased at about the same price as other stockings, and an apartment for the big toe can readily be made by placing a piece of wood the size of the big toe in the stocking and slitting the toe of the stocking down as far as the length of the toe, indicated by a notch in the wood. If we now sew up the sides of the slit we have a mitten stocking.

The shoe for a normal foot or one nearly so, which can voluntarily assume the positions of strength, should have the following features:

1. Most important of all is that the angle of lateral deflection of the shoe be the same as that of the foot in its adducted position, as shown in Figs. 4, 5, 20 and 21.
2. A straight inner edge or, if hallux valgus exists, an inner edge a little straighter than the inner edge of the foot, thereby better supporting the long arch, and preventing pronation.
3. The front of the shoe of the same depth along the inner edge as the thickness of the foot at that place, thus permitting the thickest portion of the front of the foot, the big toe and inner side to assume their proper positions, as shown in Figs. 4 and 5. An incorrect form is shown in Fig. 6.
4. The shoe convex, not concave, along the outer border of the shank at the mediotarsal articulation. If convex we have pressure at this point, interfering with adduction, shown in Figs. 4 and 5. An incorrect form is shown in Fig. 8.
5. The forward part of the shoe should be as wide as the weight-bearing portion of the foot at that point and room for the individual toes to rest on the sole.
6. The posterior portion of the shoe should grasp the heel of the foot *firmly* and be well supported. The stiffening should not extend beyond the mediotarsal joint.
7. There should be no spring, *i. e.*, dorsal flexion of the front of the shoe, which interferes with walking and lessens or destroys the transverse arch.
8. The distance from points in the shoe corresponding to the heel and distal end of the first metatarsal bone must be the same as in the foot. If the distance in the shoe is longer adduction is interfered with, as shown in Fig. 7.
9. The shank of the sole should be convex along the

outer border, thus better supporting the outer arch of the foot; it should also be higher on the inner edge and not so wide but that the upper of the shoe can snugly fit the instep.

10. The sole of the front of the shoe should be flat from side to side.

11. The lower and broader the heel the better.

12. A steel spring in the shank of the shoe helps maintain the shape of the shoe and that of the foot.

13. A little "Scotch" or lateral extension of the sole makes our base of support wider, renders the parallel gait easier and if broader along the inner side than the outer it hinders pronation.

14. The bottom of the last or the inner sole pattern must include the area covered by the weight-bearing portion of the foot, as shown in Fig. 20.

There can be purchased many so-called reform shoes, but usually there are one or more features preventing the foot from assuming the adducted position in the shoe, as shown in Figs. 6, 7 and 8.

Even though the form of the shoe be correct, should the angle of lateral deflection of the shoe be less than that of the foot, the foot would not be able to assume the adducted position. On the other hand, if the angle of lateral deflection of the shoe is more than that of the foot, the shoe will be exceedingly uncomfortable, because

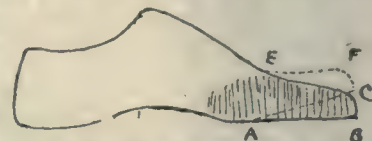


Fig. 15.—Shows the relation of an incorrect to a correct last. The dotted lines indicate the original form of the front of the last.

of pressure on the small toes and outer side of the foot (see Fig. 21). It is as much of a physiologic impossibility to wear ready-made shoes as ready-made false teeth, the only difference being that the alveolar process cannot adapt itself to the plate, while the foot can in a measure adapt itself to the ready-made shoe, but only under pathologic conditions. It would be difficult to find two feet of the same length and width, in which the distance from the heel to the distal end of the first metatarsal is the same, and the same thickness along the inner portion of the front of the foot, and still most important of all, the same angle of lateral deflection

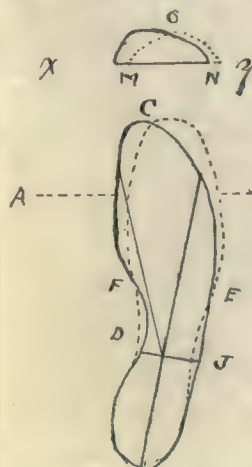


Fig. 16.

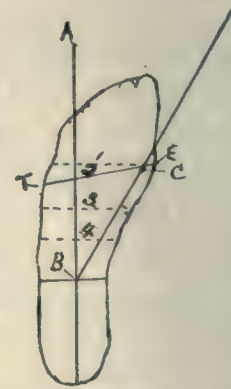


Fig. 18.

Fig. 16.—Shows the bottom of an incorrect last represented by the dotted lines altered to fit a foot in which, when adducted, the angle of lateral deflection is equal to 22°. C, A, F and m, x o show the amount it has been necessary to build out the last along the inner edge. C, B, E and N, O, y, the amount cut away from the outer edge. The last has been built out at J so that the foot may assume the adducted position, and cut away at D, which will lift up the arch and favor adduction. x, y represents a cross section of the two lasts at A, B, the adducted last highest in the middle has been changed to an adducted last, deepest along the inner edge.

Fig. 18.—Shows tracing of sole of foot in adducted position, made by marking around the foot with a pencil, flat on one side, held perpendicular except under long arch. A, B, C=angle of lateral deflection. 1, 2, 3 and 4 lines where 1, 2, 3, 4 of Fig. 17 cross the foot. T E, position of the transverse arch.

when the foot is adducted. For this angle may vary from 15 to 35 degrees. The shoe for one foot would not fit the other under physiologic conditions (see Fig. 21). It would seem that those of us who wish to wear proper shoes must have our shoes made over a last constructed for our feet. Two last manufacturers have made lasts



Fig. 17.—Shows tracing of the inner side of the foot with lines indicating where measurements are to be taken. Place a piece of glass 10x12 inches or larger, on the side of the foot, and with pen and ink or wax pencil trace the foot on the glass. Transfer the outline to the paper by placing a piece of paper on the glass, holding them up to the light and following the lines with a pencil. A, B=length from heel to distal end of first metatarsal bone (7). A, C=length of foot (8).

for me which have proved fairly satisfactory. I send them the following outlines and measurements:

1. Mark the foot with skin pencil or ink, as indicated in Fig. 17. Place a plate of glass 10x12 inches on the inner side of the foot and trace on it with ink or a wax pencil the outline of the foot, including the lines indicating where measurements are to be made. The tracing on the glass can readily be transferred to paper by laying a piece of white paper over it and holding it up to the light and following the lines with a pencil. Make the eight measurements indicated. This outline shows just where the measurements were taken and at the same time furnishes an idea of the shape of the foot, and gives the length of the shank and entire foot.

2. Make an outline of the sole of the voluntarily adducted foot on paper by means of a pencil held perpendicular and drawn around the foot, and on this outline draw the angle of lateral deflection, position of the transverse



Fig. 19.—Card board pattern of cross section of the foot through the transverse arch. Made by folding a lead tape over the front of the foot at T E, Fig. 17, then lay the tape on edge and cut out the pattern. Last must conform to this pattern at this place.

arch, and mark lines indicating where the lines of measurement cross the bottom of the foot (see Fig. 18).

3. Mould a piece of sheet lead 1 cm. wide, and about 2 mm. thick, over the front of the foot from the distal

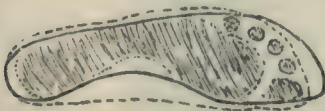


Fig. 20.—Shaded area represents an impression of the foot on smoked paper, i.e., the weight bearing portion of the foot. The dotted line represents an outline of the foot made by drawing a pencil, flattened on one side and held perpendicular around the foot. The inner sole pattern for the shoe, i.e., the bottom of the last, must include the area covered by the weight bearing portion of the foot and is outlined by the solid line.

place. Both these manufacturers have a model of a proper last which I furnished them.

Lasts are made by them, having the form of this model, but differing from it according to the measurements and outlines given. After receiving the lasts have a custom shoemaker measure the feet and the lasts

and make what changes are necessary to have the shoes fit the feet. Changes should be made in size and not in form.

A cheap way to see whether one's last is correct or not is to cut out an inner sole of cardboard, fasten it on the last with a roller gauze bandage. Now wind a wet crinoline bandage over this; set aside to dry; when dry slit down the center of the front as in a lace shoe, remove the last and try on the crinoline shoe, then alter as seems necessary.

Shoes can be made from one's last either by a custom shoemaker, or if one desires cheaper shoes, at any of the large manufacturers who have stores in our cities; in the latter places shoes costing from three to five dollars ready-made can be obtained, made on your last, for four to six dollars. My idea in describing the above in detail is to show how feasible it is to wear proper footgear, the only trouble being to start with the proper last. A little

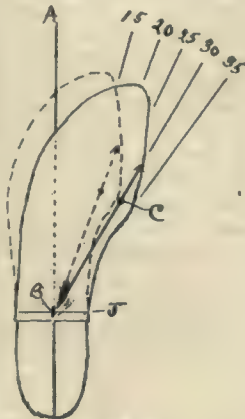


Fig. 21.

Fig. 21.—Cardboard model showing the changes in shape of an inner sole pattern of a last from 15° to 35°. An inner sole pattern is cut out of cardboard, then cut in two and fastened to a background of cardboard, by means of a McGill fastener, through the center of the metatarsal point J. The line B, C is drawn on the inner sole pattern, and the angles of 15° to 35° are drawn on the background. The inner sole pattern will have an angle of lateral deflection of 15°-35°, according to the number to which B, C points. One sees the difference in form of one of 20° and 30°, and how a shoe of 20° would not fit a foot of 30°, and vice versa.

Fig. 22.—Making the pattern for a toe-post. A heavy piece of paper folded once along the line A, B. A, D, E and B, C, F are cut away, leaving the tongue A, D, C, B. A, D should equal the depth of the shoe at that point, and A, B should be as wide as the length of the slit in the cardboard inner sole. The tongue is inserted in the slit, and the bases folded back and cut away to conform to the front of the inner sole. When removed and straightened out this forms the pattern in Fig. 23.

Fig. 23.—Pattern of paper from which the tin is cut. The edges D, D and C, C are to be turned in. Tin is folded along the dotted lines A, B-D, C and D, C forming the toe-post in Fig. 24.

painstaking at the onset will insure much comfort afterward at a very little increase in price.

THE WEAKENED FOOT.

We are all acquainted with that form of the weakened foot known as the abducted or pronated foot. The two movements go together, viz., abduction and rolling over inward or pronation. The gait of such an individual is clumsy and heavy, the internal malleolus is very prominent, and the ability to voluntarily adduct the foot is lessened or lost. The symptoms vary, being weak ankles, tired feet, pain in the calf, etc. There is an actual lowering of the long arch and the line between the pronated and flat foot is an arbitrary one. What can we do for such a foot? If we ask a person with pronated feet to stand and we hold his feet in the adducted position, we notice that the long arch is supported and pronation is prevented and the body weight no longer falls to the inner side of the long arch, but over the outer border of the foot which, as we know, is better adapted to receiving it. To treat the weakened foot, first have a shoe made as one would for the normal foot, but differing from it as follows: The angle of

lateral deflection of the shoe must equal that of the foot when held in the adducted position as just described. Increase the forces causing adduction by filing away the last at points corresponding to 1, 2 and 3 of Fig. 1. This will cause the shoe to make pressure at these points. The heel and sole should project out further from the inner than the outer side. This will interfere with the rolling over inward or pronation. Before having the shoes made, fasten an inner sole of leather 2 mm. thick on the bottom of the last to make room for an inner sole which is to be worn in the shoe. Better have lace shoes and lacing to extend well down to the tip, as in the bicycle pattern, then the foot can more readily slip in the shoe fitted with devices about to be described than in the usual form of shoe. From our knowledge of the abducted foot we know that it is unable to assume or maintain in the shoe without assistance the position of strength, namely, adduction. To hold the foot in the shoe in this position we must either cause pressure on the outer side of the front of the foot, thus cramping the toes and making the feet very uncomfortable, or else use some other means. For nearly one year I have been wearing a device for holding the foot in the adducted position, which, with the aid of proper footgear, has relieved me from all previous disagreeable symptoms. The device may be called a toe-post. It is represented in Fig. 24. It is maintained in its



Fig. 24.—Shows the toe-post ready to be inserted into the cardboard inner sole. Rough points on the upper and under surfaces of the base, which are made by punching holes with an awl, hold the toe-post to both the inner sole of the shoe and the cardboard inner sole.

proper position in the shoe by means of an inner sole with a slit between the positions of the large and second toe, through which the upright of the toe-post projects (see Fig. 28). To make a toe-post:

First cut an inner sole of cardboard 1.5 to 2 mm. thick, having the outlines of the sole of the last, for it must exactly fit the inside of the shoe. Place the foot on this inner sole held in the adducted position, the big toe held along the inner edge, and with a pencil mark a line between the big and second toe. Remove a small slip of cardboard 2 cm. long and 3 mm. wide along this line, leaving a slit in the inner sole. The posterior end of the slit should be about 1.5 cm. anterior to the front of the foot between the two toes. To make a pattern for the toe-post follow the directions in Figs. 22 and 23. With heavy shears cut out from tin according to the pattern, using No. 1C or 1X tin. The tin is to be folded as indicated in Fig. 23. The folding should be rounded, not angular, thus imparting elasticity to the toe-post. Slip the upright portion of the toe-post through the slit in the cardboard inner sole and trim the edges of the bases if necessary, so that they will not project beyond the edge of the cardboard inner sole. Place it in the shoe and try it. If any adjusting is necessary, change the position of the slit in the inner sole as needed. Make sure that the post does not strike the front of the foot. I prefer a cardboard to a leather inner sole because the cardboard, by absorbing moisture, keeps the feet dry. New inner soles should be used every week. One has a feeling of satisfaction in throwing away a certain amount of filth and perspiration which would otherwise have been retained in the shoes. After having determined the proper position for the slit, keep an inner sole as a model from which to make others. The patterns for one foot reversed serve as patterns for the other. It is not any more trouble to change the cardboard inner soles than to change one's stockings, and the hygienic reasons for both are the same. For indeed all phases of civilization are comparative, and individuals who bathe once a day and those who bathe once a week may both be classed as civilized and living under hygienic conditions.

To illustrate the effects of the toe-post, I have taken skiagraphs of the foot within a shoe. Fig. 25 shows the foot in the shoe without the toe-post. In Fig. 26 the



Fig. 25.—A skiagraph of a weakened foot having an angle of lateral deflection of 18° in a shoe whose angle of lateral deflection is 25° . Hallux valgus is present. The inner portion of the shoe is not occupied by the front of the foot A, the inner edge of the sole is 22 mm. from B, the inner edge of the first metatarsal bone. The outer edge of the foot after "breaking in" the shoe would overhang the outer edge of the sole.

foot is adducted and hallux valgus has been overcome by the toe-post. The line about the foot is caused by a wire placed in the crease between the upper and the sole in order to more clearly outline the shoe.

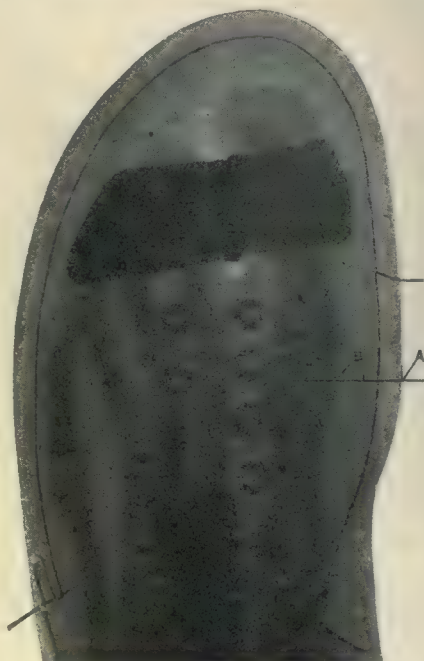


Fig. 26.—A skiagraph which shows the same foot and shoe taken with a toe-post, otherwise under similar conditions as in Fig. 25. The foot is held in the adducted position and has the mechanic advantages of a foot with an angle of lateral deflection equal to 25° . The inner portion of the shoe is occupied by the front of the foot. A, B=16 mm. instead of 22 mm., as in Fig. 25. The hallux valgus has been corrected. The outer edge of the foot will not overhang the outer edge of the sole.

I have worn the toe-post for a year under all conditions, as tramping, tennis, golf, in the operating room, etc. I have worn it in one shoe one day and in the other shoe the next, and at the end of the day the foot supported by the toe-post would feel strong, while the other would be tired. The toe-post maintains the foot in the adducted position, prevents hallux valgus, and does not cause discomfort when properly adjusted. There is a greater sense of security for the shoe seems to be a part of the foot and the foot grasps the shoe in walking. The Greeks wore sandals with a leather thong between the first and second toe, holding the sandal in position. Judging from their statues they did not suffer from pronated feet, and we have never heard of their shoes hurting them. The principle is the same in the toe-post.

In favor of a toe-post such as I describe I think it may be said :

1. That the weakened foot which can be passively adducted—with the toe-post and the aid of a proper shoe—can be relieved from its previous symptoms, for it holds the foot in the adducted position, thus naturally supporting the long arch, prevents the rolling over inward and overcomes hallux valgus.
2. That it is not only comfortable, but gives one a greater sense of security and strength.

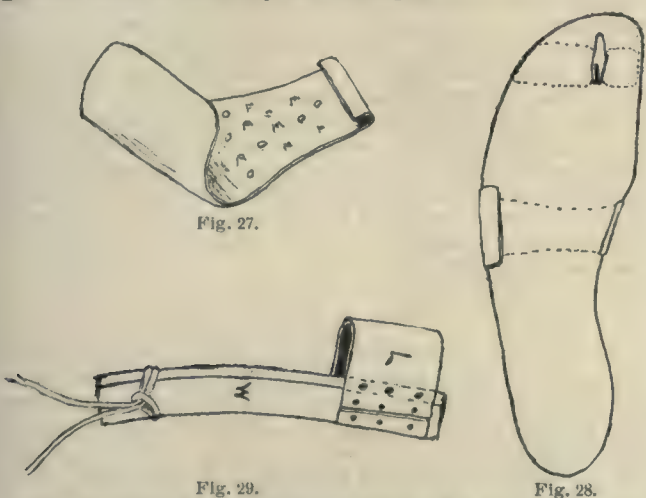


Fig. 27.—Shows foot adductor made of heavy tin and fitted over the last at a place corresponding to the middle $\frac{2}{3}$ of the fifth metatarsal bone. This slips over the cardboard inner sole as shown in Fig. 28. It also has rough points to prevent displacement as in the toe-post.

Fig. 28.—Cardboard inner sole with toe-post and foot adductor attached.

Fig. 29.—Foot and big toe adductor to be worn at night. It consists of a curved piece of wood, W, with a leather loop, L, which fits over the big toe. When the thongs are tied as represented in Fig. 30 the foot and the big toe are adducted.

3. It is simple, easily made and, fitting in a slit in an inner sole. Any adjustment necessary can be made readily which would be impossible if it were incorporated in the structure of the shoe.

Another means of holding the foot in the adducted position is represented in Fig. 27. It helps out the toe-post and is comfortable. It can be made from XX tin. Fig. 28 shows a card-board inner sole with toe-post and foot adductor in position.

While sleeping, nearly the entire human mechanism is at rest. As I have pointed out, no matter what position we may assume, strain falls on the structure of one or both feet in such a manner as to cause hallux valgus and abduction. It is obvious if we wish more than temporary relief that our feet must be treated by night as well as by day. For two years I have worn at night a big toe and foot adductor. This device is not uncomfortable, it overcomes hallux valgus, maintains the foot in the adducted position, thus relieving ligaments which have been stretched during the day. There are other means of treating the pronated foot, as massage, forcible adduction of the foot and gymnastics. These are all

important adjuncts to whatever mechanic means we may employ. In extreme cases a flat foot brace, if it can be worn, is of great service, for when we elevate the arch we adduct the foot and pronation is interfered with. One thing more about the treatment of the weakened foot. Do not simply relieve symptoms but let the treatment be progressive, and when new shoes are necessary, see if the foot will not stand a little more adduction, and alter your lasts as necessary. At present I am able to wear a shoe which would have been impossible a year ago. In altering a last to increase the adducted position cut away the last at places 1, 2, 3, of Fig. 1; thus we increase the adducting forces. This causes the shoe to make pressure at the mediotalar joint on the inner side of the foot and counter-pressure at the heel below the mediotalar joint and over the fifth metatarsal bone on the outer side. The foot will now become more adducted if there is room. This is furnished by adding leather to the last at places 1, 2, 3, Fig. 2. This diminishes the abducting forces and permits the foot to assume the adducted position.

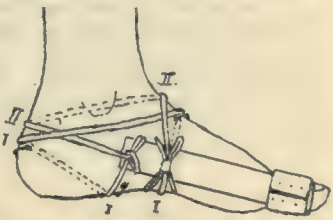


Fig. 30.—Foot and big toe adductor as applied to the foot.

FLAT FOOT.

Two of the most noticeable features of the flattened foot are the lowering of the foot and abduction. We have considered the effect of the adducted position. Now let us consider what effect the lowering of the arch has upon the structure and mechanism of the foot. The transition from a normal and weakened foot to a flattened foot is so gradual that it is hard to say just where to draw the line. In considering the transmission of the body weight through the foot to the ground and for the sake of obtaining some idea of the strain on the ligaments of the arch and the relative amount of weight transmitted down each limb, I resolved the anterior limbs of the tripod into one and considered what would be the effect on the ligaments and limbs of the long arch.

The following table based on mathematical calculations gives some idea of what effect the lowering of the long arch would have on the ligaments of the arch and the relative amount of the body weight transmitted down each limb, the individual weighing 150 pounds, standing on one foot, in the erect posture and the weight falling over the long arch.

The effect of lowering the arch of the foot, individual weighing 150 pounds, erect posture, entire weight on one foot:

Angle of the arch . . .	96°	116°	124°	150°	160°	170°	179°-36'	180°
Amount weight transmitted down ant. limb	44	47	60	65	68	71	74+	0
Amount weight transmitted post. limb	106	103	90	85	82	79	76 (about)	0
Strain on ligaments placed $\frac{1}{2}$ way to top of arch	228	342	413	833	1263	2,308	17,475	0

From the study of the above table we see that as the arch becomes lower and the angle greater, more of the body weight is transmitted down the anterior limb of the arch, which is ill-adapted to receiving it, and most important of all, the strain on the ligaments becomes greater, an increase from less than 300 pounds in the normal foot to several thousand in the marked flat foot. When the arch has been completely destroyed both the anterior and posterior limbs and ligaments are relieved from any strain in the transmission of the body weight, for the entire weight is transmitted directly to the ground through the bottom of the foot. The most important factor in the treatment of flat foot is that of prophylaxis. One cannot begin too early, for it is much easier to correct an arch whose ligaments have been

under a strain of a few hundred pounds than one which has been under a strain of several thousand pounds. We may classify flat feet into the mobile, those which can be passively adducted and the arch increased, and the rigid form. Do not treat the rigid flat foot with a brace until the deformity has been passively corrected, for the surgeon who fits a brace to a rigid flat foot is in the same position as the gynecologist who treats an adherent retroflexed uterus with a pessary. In both cases the mechanic supports will injure soft parts and not do any good. Two features in flat foot must be corrected; first, the lowering of the arch, and second, the abduction of the foot. When we correct one we aid the other, but

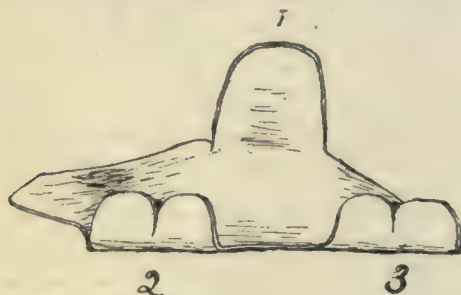


Fig. 31.—Plate for flat foot, made from No. 20 sheet steel. It supports the arch, thereby adducting the foot, and by holding the foot in the adducted position by forces 1, 2 and 3, the arch is maintained. The view is from the outer side. 1 is the flange on the inner side fitting over the astragalo-scapoid articulation. 2 represents the anterior flange fitting over the middle $\frac{2}{3}$ of the fifth metatarsal bone. 3 is the posterior flange fitting over the os calcis posterior to the mediotalar joint.

when we treat both our results will be four-fold. Begin with proper shoes which maintain the foot in the adducted position, as for the pronated feet. How often the surgeon has his patient wear a flat-foot brace, which elevates the arch and tends to adduct the foot, in a shoe in which adduction is interfered with or impossible. In these cases the additional support afforded to the arch by adduction of the foot is lost. The elevation of the arch is interfered with, because its associated movement adduction is impossible. After obtaining proper shoes, have a brace made which will accurately fit the foot and not only support the arch but maintain the foot in the adducted position. A brace for flat feet which I



Fig. 32.—Flat-foot brace applied to the foot. The foot is held in the adducted position by the flanges as indicated, which act as the adducting forces 1, 2 and 3.

have worn and found very comfortable is shown in Figs. 31, 32, 33 and 34. This brace supports the arch, thereby also adducting the foot and vice versa; the arch also supports the adducted position. If one wishes to hold a foot in the adducted position it can be done most readily by grasping the foot with two hands, the thumbs being close together, and making pressure against the astragalo-scapoid articulation. The fingers of one hand grasp the front of the foot over the fifth metatarsal bone and the fingers of the other hand grasp the heel. These forces we may resolve into the adducting forces 1, 2 and 3 as represented in Fig. 1, etc. This brace employs the same forces: flange 1 makes pressure over the astragalo-scapoid articulation and prevents the rolling over inward of the weakened foot. As the long arch is elevated more of the body weight falls to the outer side of the foot. The body weight and inner flange 1 are resisted by the two outer flanges, 2, fitting over the middle two-third of the fifth metatarsal bone and 3 over the

heel posterior to the mediotalar articulation; thus the foot is held in the adducted position. It would seem that any brace which has a flange fitting over the calcaneo-cuboid articulation on the outer side of the foot

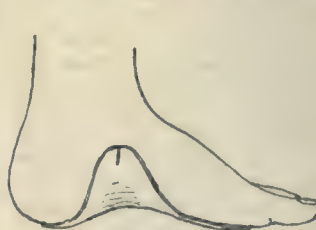


Fig. 33.

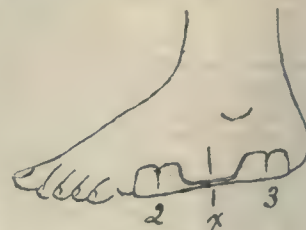


Fig. 34.

Fig. 33.—Inner view of flat foot brace. Inner flange 1, fits over the astragalo-scapoid articulation, thus preventing the rolling over inward of the foot, and with the two outer flanges it holds the foot in the adducted position.

Fig. 34.—Outer view of flat foot brace showing the flanges 2 and 3 which, with 1, hold the foot in the adducted position. There is no pressure over the calcaneo-cuboid joint at x which would cause abduction.

must abduct the foot, thus interfering with the elevation of the arch. When the long inner arch is elevated and more weight is thrown to the outer arch of the foot, this weight will be opposed by this flange, which will act as the abducting force 1, and the body weight as abducting forces 2 and 3 (see Fig. 2). These are the same forces one would use to straighten a bent stick. We would grasp the stick with both hands and the opposing force, as our knee, would be placed against the angle in the stick. Thus such a brace must straighten, i. e. abduct the foot and thereby interfere with its own action. It is essential that a brace such as I have described shall fit the foot accurately, otherwise it will be very uncomfortable or else not do any good.

TO MAKE A FLAT-FOOT BRACE.

First make plaster casts of the feet in the adducted position. To do this have the patient sit in a chair with the leg of the foot from which the cast is to be taken resting on the knee of the other leg. Having poured enough plaster on a piece of paper on another chair near enough for the foot to rest on, let the foot sink into the plaster with the outer side of the foot down and the long axis of the foot horizontal. As it sinks adduct the foot by lifting up the big toe and hold it adducted until the plaster has hardened. Rub some vaselin over the edges of the plaster and a little over the foot and cover the rest of the foot with plaster. When the plaster has hardened separate the two halves, re-vaselin and tie together and this will form the mold for the cast. After making the cast, mark the mediotalar joint and the tuberosity of the fifth metatarsal bone. Outline the brace as shown in Figs. 31, 32, 33 and 34. The casts may need a little trimming, the arch may be increased a little. From these casts the braces are made according to the outline, using No. 20 or 22 sheet steel. These braces assume their proper positions in the proper shoe and do what is claimed for them. A toe-post also helps out the flat foot brace by overcoming the hallux valgus and maintaining the adducted position.

If I have written anything of practical value in this article, special thanks are due to my own feet, which without grumbling have stood all kinds of experiments and have constantly been urging me during the last three years that something must be done for bettering the foot and its covering both in its normal and weakened conditions.

Embalming the Dead.—A Belgian physician has been demonstrating at the London Royal College of Surgeons an apparatus devised by himself for embalming the dead without evisceration by means of air heavily charged with formaldehyd.

CONCERNING A SUGAR-FORMING FERMENT IN SUPRARENAL EXTRACT. A PRELIMINARY REPORT ON SUPRARENAL GLYCOSURIA.¹

BY

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The congeries of morbid phenomena that we have learned to group under the generic name of diabetes may originate from a variety of primary perversions. Certain nervous lesions, gout, obesity, arteriosclerosis, morbus Basedowii, syphilis, malaria, may all be complicated by diabetes. It is impossible to state, in the light of our present knowledge, whether the syndrome diabetes is due to some uniform cause or not.

Since it has been known that diabetes follows removal of the pancreas, the attention of clinicians and pathologists has been largely directed to this organ; a veritable flood of investigations has been published on the interrelationship of pancreatic disease and diabetes. Whereas it is known that a considerable number of cases of diabetes show pancreatic lesions, a still larger proportion present no evidence of involvement of the pancreas, and the great majority of cases of pancreas disease are not complicated by diabetic symptoms. Here, then, is not given the whole solution of the problem.

In scanning the multitude of disconnected facts that is arrayed before us in this field for a new point of attack, our attention was directed to the suprarenal glands for the following reasons: (1) A number of cases of suprarenal disease are on record in which the symptoms of diabetes developed; (2) certain pigmentary anomalies, hemochromatosis ("bronzed diabetes") on the one hand, the pigmentation of Addison's disease on the other, are common both to diabetes and suprarenal disease;² (3) have recently shown that an intimate relation exists between the formation of so-called bile pigments (and their congeners, the pathologic pigments) and the destruction of physiologic sugars.

If the suprarenal glands are concerned in the normal metabolism of sugars and if a perversion of their function can lead to all or any of the symptoms of diabetes, then these glands must be able to exercise an influence on the percentage of sugar in the blood; for in diabetes we always find an increase of blood sugar, hyperglycemia, followed by an excretion of sugar in the urine, glycosuria. In order that hyperglycemia be produced, the amount of sugar normally poured into the blood must be increased, or the amount normally destroyed must be decreased. The question arises, therefore, do the suprarenal glands incorporate an agent that can either cause the formation of excessive sugar or that can inhibit the normal destruction of sugar in the blood and tissues?

In this preliminary report we limit ourselves to a description of the facts we have discovered in regard to the effects of suprarenal extract on the *formation* of sugar; a report on other investigations that are under way, on the effects of suprarenal extract on the *destruction* of sugar, is reserved for future publication.

The bulk of the sugar introduced into the body from without is converted into glycogen in the liver and only a small proportion passes through the liver into the circulation beyond. All the carbohydrates, moreover, that are generated within the body from the proteids (and the fats?) first appear in the form of glycogen, from which secondarily sugar (dextrose) is formed. We may say, therefore, that under normal conditions the blood-sugar is in great part derived from glycogen. A large store of this starch-like substance is at all times present

in the liver, the muscles and some other tissues, and is converted into sugar so soon as the percentage of blood-sugar falls below normal; this is the cry of the working organs of the body for food. The conversion, according to the recent researches of Bial, Salkowski, Schwienig and others, is brought about by the action of a diastatic ferment that is present in small quantities wherever glycogen is found in the body.

It can be imagined, therefore, that whenever this diastatic action grows excessive an abnormal quantity of glycogen will be converted into sugar; the latter entering the blood produces hyperglycemia, and later glycosuria.

The first problem to be investigated is the effect of suprarenal extract on the conversion of glycogen to sugar.

REPORT OF PRELIMINARY EXPERIMENTS.

Fresh suprarenal glands from cows were carefully freed from all fat and adherent connective tissue, washed with distilled water and mashed to a pulp; this pulp was extracted for two hours with distilled water in the cold, 10 cc. of water being used for every gram of gland; the extract was filtered twice.

Ten cc. of this extract were mixed with 20 cc. of a 1% solution of glycogen (made from rabbit's liver), a sufficient quantity of thymol added to prevent bacterial action, and the mixture kept in the incubator for one hour, at body temperature. At the expiration of this time an excess of alcohol was added in order to precipitate any unconverted glycogen, the precipitate filtered off, the filtrate evaporated to dryness, dissolved in water and brought back to its original volume. One portion was allowed to flow into boiling Fehling's solution; a reduction of copper sulfate was observed and the cupric reducing power determined. A second portion was slightly acidulated with dilute sulfuric acid and boiled for 10 minutes, allowed to cool off, neutralized with soda solution, brought back to its original volume and the cupric reducing power again determined. It was found that more copper was reduced than before.

These tests were repeated a number of times with varying quantities of suprarenal extract, and with glycogen solutions of different strength; the mixtures were allowed to remain in the incubator for varying periods of time and the cupric reducing powers determined before and after boiling as above. The figures obtained from these different titrations will be recorded in an exhaustive report soon to be published.

In this place we content ourselves with stating (1) that suprarenal extract prepared as above contains a substance that is capable of destroying glycogen and forming from it a substance or substances that are capable of reducing copper sulfate in alkaline solution; (2) that the solution of the products of glycogen-conversion on boiling with dilute sulfuric acid acquires still greater cupric reducing powers; (3) that the cupric reducing powers of the solution increase proportionately to the time the mixture of glycogen and suprarenal extract is kept at body temperature.

We know that the hydrolysis of glycogen by diastatic ferments progresses through the dextrins to maltose (and isomaltose). We also know that the cupric reducing power of maltose is smaller than that of dextrose (as 7.78 mgr. of maltose are required to reduce 1 cc. of Fehling's solution, and only 5 mgr. of dextrose) and that maltose by boiling with dilute mineral acids forms dextrose, thus imparting to the solution greater cupric reducing powers. In other words a glycogen solution treated as above with an extract containing a diastatic ferment will yield like results. We are justified in suspecting that suprarenal extract contains a substance capable of converting glycogen into maltose.

In order further to establish the identity of the copper reducing substance in the solution, it was subjected to the fermentation test and the phenylhydrazin test. It was found that if the mixture of glycogen and extract remained in the incubator for a short time (varying with the strength of the two ingredients) no fermentation by yeast occurred, but that after a prolonged time (again varying as above) a slight development of carbon dioxide could be determined in the saccharometer. This demonstrates that in the beginning only maltose is present (that does not ferment) but that later a partial conversion to dextrose (that does ferment) probably takes place.

This assumption was strengthened by the results of the phenylhydrazin test; for after a short time in the incubator an osazone was obtained that melted at 206° (melting point of maltosazone), later crystallizations furnished a sediment that melted lower, i. e., between 204° and 206°, making it probable that some phenylglycosazone had been formed (m. p. 204°).

It appears, therefore, that the solution of suprarenal extract we prepared contains two substances, one that can convert glycogen into maltose, the other that can convert maltose to dextrose. This is analogous to the findings in pancreas, salivary gland, liver, and blood extracts, for in all of these we find a large proportion of maltose and a small proportion of glucose.

¹ Read before the University of Pennsylvania Medical Society, December 19, 1901.

² Philadelphia Medical Journal, January 11, 1902.

As these last named ferments are destroyed by boiling, it was determined what effect boiling would have on the active substance contained in our extract; it was found that boiling destroyed all the glycogen-converting power; even after remaining in the incubator for 48 hours the mixture of boiled suprarenal extract and glycogen acquired no cupric reducing powers, nor were any osazones formed, nor did it ferment.

From the similarity of the action of suprarenal extract and of known diastatic ferments on glycogen, and from the fact that boiling destroys the activity of the extract in this respect, we conclude that it contains a diastatic ferment and a small quantity of a glucase.

In comparing the powers of suprarenal extract with the powers of a pancreatic extract made from an equal quantity of pancreatic substance in an identical manner, we found that the activity of the suprarenal extract is almost equal to that of the pancreatic extract; it is greater than that of an extract made from salivary glands, greater than that made from the liver; we are not, therefore, dealing with an organ that contains only minute quantities of diastatic ferment like so many of the tissues of the body, but with a gland that contains nearly as much of this active substance as the pancreas itself.

The effect of this ferment on starch is the same as on glycogen; there are slight quantitative differences that we are at present investigating. We are also occupied in attempts to isolate the ferments from the extract, in determining quantitatively the intermediary and the end products obtained from their action on starch, glycogen and other polysaccharids, in determining the optimum temperature of their action, and in establishing whether or not their action is reversible; all these results will be incorporated in a report that is soon to be issued.

In this preliminary paper we merely wish to place the discovery of a sugar-forming ferment in the suprarenal glands on record together with the animal experiments to be reported below. Two points may, however, be briefly emphasized in this place, viz.:

The most simple qualitative test for determining the destruction of starch or glycogen in a solution is the disappearance of the well known color-reaction that these two bodies give with iodine (starch blue, glycogen brown). In the case of the suprarenal extract this test cannot be applied to indicate the disappearance of starch or glycogen for the reason that the extract contains a substance (probably a chromogen) that possesses marked reducing powers; as a result the addition of a watery solution of iodine will alone cause an oxidation of this substance, the iodine being converted to HI and no longer be free in the solution; consequently the addition of starch or of glycogen will not cause the typical colors to appear. This may be very misleading for the impression may well be created that the starch or glycogen have been converted. If e. g. suprarenal extract and starch solution are mixed and iodine water added at once, no blue color will appear until a large excess of iodine is added; or again, if starch solution is colored with iodine and suprarenal extract added the blue color will disappear; this reaction is particularly confusing as the fluid may turn pink thus simulating the presence of dextrins. We record this peculiar phenomenon because it may in a sense be considered a typical and characteristic reaction for suprarenal extract. The iodine reaction can, therefore, only be utilized in studying the conversion of starch or glycogen by suprarenal extract if large quantities of iodine are used; if no conversion of starch occurs an excess of iodine will cause the blue color to appear, if the conversion has taken place, after the solution has been kept in the incubator for a sufficient length of time, no amount of iodine will color the solution.

It might be argued that a substance that possesses such marked reducing powers and is chemically so active might possibly be made responsible for the destruction of glycogen. We found, however, that boiling did not destroy the reducing powers of the solution for iodine solutions but did, as we have seen, destroy its diastatic action, so that coupled with the discovery of characteristic end-products of diastatic conversion of glycogen and starch, this argument collapses.

Finally, it might be objected that the suprarenal extract contains a protagon-like substance similar to "jeorin" that on boiling with baryta water is known to furnish a copper reducing substance, probably dextrose. We determined, however, that suprarenal extract may be boiled for a long time with Fehling's solution without causing any copper reduction even though the tube containing the extract is allowed to remain in the incubator for 48 hours; this objection, therefore, should it be made, is herewith refuted in advance.

Can we draw any definite conclusions from these preliminary findings? The basis of experimental evidence is thus far too narrow to allow us to construct a theory with safety, but we can certainly formulate a hypothesis and must leave it to future investigation to strengthen or to overthrow.

The presence of a diastatic ferment of great power in the suprarenal glands, in quantities of nearly as large a percentage as those found in the pancreas, the factory of the diastatic ferment *par excellence*, certainly justifies us in deducing that the suprarenal glands are in some way

concerned in the diastatic processes that are carried on in the animal organism; in other words, that they are in some way concerned in the conversion of glycogen to sugar.

Two possibilities present themselves, viz.: either the suprarenals manufacture a diastatic ferment, or they retain the diastatic ferment that is formed elsewhere in the body (pancreas, salivary glands), when it is carried to them in the blood and lymph stream. In the former case their function would be to furnish an active "internal" secretion intended to play an important part in the intracellular disassimilation of glycogen; in the latter their function would be to act as disintoxicating organs (for the diastatic ferment in large quantities is highly toxic) and as regulators of intracellular digestion. In either case they would regulate the quantity of sugar in the blood and maintain the normal percentage.

The intimate connection of these organs with the sympathetic system, the presence of numerous ganglionic cells of the sympathetic type within the glands, suggests that they are capable of responding to inhibitory and excitatory impulses that may be sent to them from any part of the body. Immaterial whether they secrete or retain the diastatic ferment, the effect would ultimately be the same, provided the play of inhibitory and excitatory stimuli is correspondingly regulated.

If the suprarenal glands manufacture the diastatic ferment, a perversion of their function in the sense of *hyperactivity* would lead to the excessive disassimilation of glycogen; if they retain the ferment that is normally poured into the blood from other sources so soon as it is present in excess, then a perversion of their function in the sense of *insufficiency* would lead to an accumulation of this ferment, excessive hydrolysis of glycogen, hyperglycemia and glycosuria.

It is impossible to decide at present which of these two functions is de facto assumed by the suprarenal glands.

The following animal experiments on the production of glycosuria following the injection of suprarenal extract lend further support to the hypothesis that the adrenals are concerned in sugar metabolism.¹

PRELIMINARY REPORT ON ANIMAL EXPERIMENTS.

The extract in these animal experiments was prepared as follows: In the case of the dogs, cow's adrenals were used; in the case of the rabbits, adrenals removed from other rabbits. A cold water extract was prepared as above, using the same proportion of cold distilled water. A number of test-tubes were filled with 20 cc. of the extract and subjected to discontinued sterilization at 60° to 65° for ten minutes on three successive days, after it had been determined that heating to this temperature did not destroy the diastatic action of the extract. It is true that the injection of unsterilized extract, the filtrate described above, seems to produce a glycosuria of higher degree. Two rabbits were injected with this preparation, but both animals died very rapidly with violent symptoms of intoxication (in one case before any urine was voided); it seemed, moreover that the results obtained by this method would be ambiguous so long as the action of bacteria could not be excluded, and while it is true that the injection of an indifferent fluid containing bacteria could hardly produce glycosuria in every instance still it seemed so utterly unscientific and inexact to inject a contaminated preparation that we preferred to use the sterilized preparation. As a matter of fact, injections of the latter seemed to be comparatively so well borne and seemed to lead to such uniformly positive results that we preferred to employ the sterile solution throughout. Blum, in his paper, suggests filtering the extract through a germ-proof filter; we consider the suggestion a good one, and will employ it in the future.

We have studied the effects of suprarenal injections on 6 animals in all, 2 dogs and 4 rabbits, not counting the 2 mentioned above.

Of the latter one died two hours and forty minutes after the injection without having voided any urine; the animal rapidly lapsed into a comatose state, and remained motionless until death occurred; there was a slight agonal rise of temperature.

¹ While these investigations were in progress, a paper appeared by F. Blum (Deutsch. Arch. f. klin. Med., Oct. 30, 1901) in which this author, testing the effects of suprarenal extract empirically, discovers glycosuria in 22 out of 25 animals that he operated on. The paper is a thorough one and establishes the findings to be reported in my investigations beyond peradventure.

The bladder contained a small quantity of urine (about 10 cc.) with 1.36% of dextrose.

The second rabbit died in one hour and ten minutes; here some spasmodic symptoms, involving chiefly the posterior extremities, preceded the coma; there was also a slight rise of temperature. About half an hour after the injection a small quantity of urine was voided, but as it was unfortunately contaminated with feces the sugar could not be exactly determined; the suspension of feces and urine in water reduced Fehling.

Each of the two animals, as well as all the others to be spoken of presently, received 20 cc., the contents of one tube, at each injection. Dextrose was identified in the urine by its cupric reducing powers and the phenylhydrazin test; in one of the dogs in addition by circumpolarization and yeast fermentation. The substance excreted was undoubtedly dextrose. The amount excreted would be far too large to be explainable by a splitting of the jecorin-like substance mentioned above; it would not, moreover, be possible for considerable quantities of dextrose derived from this source to appear in the urine for several days after the injection. That the excretion of dextrose is not explainable by vasomotor disturbances can be learned from the investigations of a number of authors¹ who found that the *subcutaneous* injection of suprarenal extract did not lead to the severe vasomotor disturbances that follow *intravenous* injection.

I append a sketch-protocol of the six animal experiments performed:

1. Rabbit, injection of 20 cc. of sterile extract at 10 a. m.; no urine voided that day. At 9 a. m. the next day 12 cc. of urine were found that were passed during the night, no reduction of Fehling; the animal in good health. At 10 a. m. injection of 20 cc.; urine found at 2 p. m. contains 0.11% of dextrose; 4 p. m. 22 cc.; 6 p. m. 21 cc. of urine containing 0.20% of dextrose. Urine next morning at 9 a. m. (12 cc.), trace of sugar; suspension of feces; no sugar. More urine at 5 p. m., no sugar. No urine at 9 a. m. the next day; the animal apparently well. Killed at 10 a. m., nothing abnormal found. Urine found in bladder contained no sugar.

2. Rabbit, 20 cc. at 10 a. m., 20 cc. at 11 a. m. Urine voided at 4 p. m. contains 0.4% dextrose; 4 p. m., 20 cc. of extract injected; no urine until 11 a. m. the next day, contains 0.17% of dextrose, trace of albumin; animal sick, is allowed to recover and seems perfectly well the next day.

3 and 4. Two rabbits, each receive two injections of 20 cc. at 10 a. m. Urine found at 5 p. m. contains 1.2% and 0.9% dextrose and a trace of albumin. Both rabbits recover.

5. Mongrel bitch, 20 cc. at 9 a. m., no urine until 11 a. m. next day. No sugar, no albumin; 20 cc. at 1 p. m., urine at 5 p. m.; trace of sugar, no albumin. Dog perfectly well. Next day, at 10 a. m., twice 20 cc., first urine at 3 p. m.; 0.2% dextrose, no albumin. At 4 p. m., twice 20 cc., urine at 11 a. m. the next day, 1.4% of dextrose, trace of albumin, some bile-pigment. Twice 20 cc. at 1 p. m., dog sickens and does not eat; temperature at 4 p. m. 102.4°. Urine at 5.30, 1.1% dextrose, trace of albumin, considerable quantity of bile-pigment. The area around the injection discolored reddish-brown and indurated; painful to pressure. Urine next morning at 9 a. m. contains 0.6% dextrose, no albumin, trace of bile-pigment. Another portion found at 5 p. m., trace of sugar, no albumin, trace of bile-pigment. Dog allowed to recover. Area around injection remains pigmented for nine days gradually turning yellowish-green.

6. Mongrel dog, injection four times of 20 cc. between 11 and 11.30 a. m. First urine at 2 p. m. the next day. Dog seems sick and in pain; temperature at 5 p. m. of first day 101.2°. Urine contains 1.4% dextrose, trace of albumin, trace of bile-pigment. Twice 20 cc. at 4 p. m. Urine at 10 a. m. the next day, 0.6% dextrose, no albumin, trace of bile-pigment, the point of injection discolored. Dog allowed to recover.

Incomplete as these experiments are they reveal the fact that the injection of suprarenal extract can cause the excretion of dextrose provided the quantity injected is sufficiently large. Why in the case of one animal more must be given than in the case of another to produce approximately the same excretion is undecided and remains to be determined. The effects of the injections were transitory in all the cases and all the animals recovered.

The appearance of albumin in the urine in a few of the cases indicates some irritation of the kidney epithelium.

The appearance of small quantities of bile-pigment in the urine of both dogs, and the local discoloration of the skin near the site of the injections, are suggestive in view of the pigmentary anomalies known to occur in disease of the adrenals, and the connection I² have shown to exist between the destruction of glycogen-dextrose and the formation of pigments.

It is desirable that the suprarenals be examined with the same degree of accuracy, in all cases of diabetes that come to autopsy, as the pancreas. This seems a promising field of investigation, in view of the results chronicled above, particularly in those cases in which the pancreas is found to be intact.

OBSTETRIC FORCEPS IN RELATION TO TUBERCULOUS LUNGS, CARDIAC LESIONS, ANEMIA, ETC.¹

BY

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Few practitioners of today would allow patients suffering from tuberculous lungs, valvular lesions of the heart, severe anemia or neurasthenia to perform any exercise which would cause prolonged holding of the breath, cardiac strain or severe muscular exertion. And yet, many physicians follow the old-fashioned method of tying a sheet to the foot of the bed and allowing such a patient to deliver herself if at all possible, causing her to strain the lungs, heart and vascular system generally.

I believe this to be decidedly wrong, both in theory and practice. A much better method is to allow the first stage, during which there is practically no straining, to go on as usual.

When the second stage begins, however, the patient should be anesthetized immediately and the vagina then fully dilated by gradually introducing the elongated, compressed hand and slowly extracting the full fist once or twice. After this apply the forceps in the usual manner.

The second stage is thus accomplished without straining the heart or lungs.

CASE.—A. B., aged 23, was referred to me by a Philadelphia physician, who had watched her carefully for several months on account of a beginning lung trouble, supplemented by a bad family history. She had married a few months previously against his advice, and at the time of consulting me was two months pregnant. She had a frequent, hacking cough and a tender and congested right apex.

The question of precautionary abortion was thoughtfully considered, but was "tabled" in favor of conservative watchfulness for the reason that surgical interference could be instituted and pregnancy terminated at any time. Pregnancy went on with quite a gain in the mother's health, although the cough persisted and was annoying during the entire parturient period. After the sixth month, when I saw that pregnancy would probably continue to full term, I determined to apply forceps at the end of the first stage and to have the child brought up on the bottle to prevent any possible infection from the mother. This was carried out at term. Fortunately, the cervix was very fibrous. The waters broke early, and the first stage was so long and trying to the mother that she asked aid before I was quite ready to give it. When the second stage commenced I anesthetized her and then fully dilated the vagina by the method mentioned above. After this I did a moderately high forceps operation, and all was safely over without the slightest strain upon heart or lungs.

Immediately after delivery, the mother's hacking cough disappeared and it has given comparatively little trouble since. Both mother and child are doing exceedingly well, considering their previous history.

We see so many cases of cardiac and tuberculous disease, in which the patients invariably date the commencement of their unfavorable or serious relapses to the time of having unwisely exposed themselves to an extra physical strain, that I cannot but believe that the cause of many tuberculous mothers failing so markedly, almost immediately after the birth of their child, is due to the severe straining of the lung tissue at the time of delivery. The use of the forceps immediately that the second stage has begun, in order to prevent all straining, will save many a mother from an increase of her heart symptoms or tuberculous troubles, and perhaps prevent an early death.

¹ e. g. Gottlieb, Arch. f. Exp. Path. & Pharm., Vol. 38, 1897, p. 99.

² I. c.

¹ Read before the Pasadena Medical Society, September 10, 1901.

HYSTERECTOMY AND REMOVAL OF A NINE MONTHS FETUS DEAD IN UTERO FOR FIFTEEN MONTHS: TRANSPOSITION OF THE HEART TO THE RIGHT SIDE.

BY

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Although the literature of the subjects indicated in the title is not available to me in my present location, I feel reasonably certain that there can be few cases analogous to the first mentioned.

CASE.—The patient, who resided at Unga, on the Alaskan Peninsula, was a native Aleute woman, of small stature, aged 28. She was the mother of two boys, aged four and six years, respectively. During the latter part of her first lactation she was mildly deranged for one month. Further than this her clinical history was negative. One sister, however, had transient insanity during six successive lactations.

The patient menstruated last in September, 1899, and in the following May she was told by the Mining Company's physician at Unga, Alaska, that she would be confined in about a month. Her abdominal enlargement remained stationary, however, until January, 1900. During the next three months it decreased one-half. In the interval she showed signs of mental derangement, and the latter state persisted until she came under my observation September 18, 1901. For several days she had been having convulsions, and occasionally disturbed her neighbors with wild cries at night. When I saw her on the above date she was unconscious, and during a short observation had two convulsions, each of which was of two minutes' duration. Her pulse was 120, respirations 28, and temperature 39° C. Examination showed a hard symmetric pelvic tumor, reaching half way to the umbilicus. Aural, digital and bimanual examination made it an easy matter to decide that a dead fetus occupied the uterus. The urine was voided involuntarily and the few drams obtained by catheterization was acid and a high degree of turbidity present disappeared under heat. There was no albumin. Though the condition of the patient was anything but desirable for a grave operation, she was chloroformed while semiconscious and laparotomy performed. The uterus was found to consist merely of a thin sac, the muscular tissue having atrophied by expansion over a large, full-grown fetus, dead for more than a year. On account of the improbability of the organ regaining its normal state and the great danger of infecting the peritoneal cavity if a cesarean section was attempted, I decided to remove the entire uterus with its contents. A few adhesions had formed with the omentum, but these were easily separated. The ovaries and tubes being normal were carefully tied off and left in the pelvis. The operation was without further incident. Chloroform was well tolerated and no hypodermic stimulation became necessary during its administration.

The abdomen was closed in the usual manner after careful cleansing and irrigation of the peritoneal cavity with a liter of normal salt solution. The patient had a convulsion an hour after the operation was completed, and another two hours later. She did not regain consciousness, and died in 24 hours.

A partial necropsy showed the scene of operation in proper condition. No peritonitis. There was no pelvic deformity. The case was further remarkable by the fact of the transposition of the heart to the right side of the chest, its upper and lower boundaries being the second and fifth ribs, respectively; its inner boundary was represented by the right margin of the sternum. The organ was of peculiar shape, the right side being abnormally large, though no bruits were heard before death. There were firm adhesions of the right pleura to the anterior mediastinum.

Examination of the tumor removed showed a full-grown fetus in which the bones of the skull had become separated and the right hand amputated.

The femurs were laid bare on their outer aspect, and the placenta was shrunk into a small, elongated mass. There was no fluid in the uterine cavity, the entire contents of which were much softened but not putrid.

Dutch Harbor, Alaska.

Effects of Red Light.—Since Dr. Finsen first advocated window panes of red glass for smallpox wards, and also that artificial lights in such wards be protected by deep red globes in order to exclude actinic rays, physicians in Scandinavia and France who have used the red light treatment have mostly reported favorably thereon. Some, however, have found the red light productive of great mental excitement in both patients and attendants; and as green light also stops actinic rays without at the same time causing mental disturbance, its substitution for red light has been recommended. It seems that healthy workmen in rooms where photographic plates and papers are handled, suffer similarly under the constant influence of red illumination. This is a subject worthy of further observation.

PERFORATION IN TYPHOID FEVER: OPERATION: RECOVERY.

BY

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of Beury, W. Va.

The following report may be of interest as illustrating a successful operation performed under very unfavorable conditions in a miner's humble home in the wilds of West Virginia:

Mrs. C., aged 17, white, a coal miner's wife, was in the fourth week of typhoid fever which had followed a normal course, the highest evening temperature being 104°. She had been improving for three or four days and all symptoms pointed to an uninterrupted recovery, when at 12.30 p. m. (June 16) she was seized suddenly with a violent pain in the left side of the abdomen, so excruciating that it caused her to scream. I had been away from home for 24 hours for a distant consultation and did not reach her bedside before 4.30 of the same afternoon. I found her pulse was 140, temperature 105° in the mouth, the skin clammy, respirations very rapid, and marked tenderness just to the left of the umbilicus. I diagnosed perforation and advised immediate operation. By 6.30 p. m. the kitchen table was prepared and everything was ready. After opening the abdomen I carefully examined the whole length of the ileum before finding the perforation. It was a small, pinpoint rupture about eight inches from the valve. Small quantities of the intestinal contents and a very offensive gas were exuding from the orifice. The surrounding peritoneum was inflamed and there was some flocculence. After closing the perforation with an interrupted silk suture, using a very small cambric needle, I carefully wiped off the intestines, washed out the abdomen with hot salt solution, and closed the abdominal wound. The patient made an uninterrupted recovery, except that on the third day she was troubled with some vomiting, which was easily controlled by small doses of calomel.

I report the case to show that the general practitioner, if he cannot get his patient to a surgeon or to a hospital, should operate himself, as by so doing he gives the patient a chance for life.

ASTASIA—ABASIA.

BY

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of Ardmore, Pa.

I have had recently under my care at the Bryn Mawr Hospital a patient suffering from pseudopalsy, of the kind first described by Charcot and Blocq, the latter giving it the name of astasia-abasia. The condition is a functional or so-called hysterical neurosis, a syndrome and not related to any discoverable pathologic lesion. The literature of the subject is mainly confined to a paper by Knapp based on an analysis of 50 cases. This number has since been added to by the occasional reports of isolated cases. The disorder, when met for the first time, is likely to strike one as peculiar, and the unsuccessful efforts on the part of the patient to stand or to walk seem grotesque, more especially when it is known that muscular, sensory and coordinating powers are quite normal.

My own case was that of W. P., aged 20, born in England, an undergraduate of Oxford, who stated that after an attack of influenza in the winter of 1901, he was advised by his physician to leave off study for a prolonged rest, and while still ailing from the debility of convalescence, he made the voyage to America, arriving at Boston about the middle of the following summer. His time was taken up by visits to friends, with only partial regain of strength and later on, while walking alone in the suburbs of Philadelphia, there was a sudden "break down in his legs," as he expressed it, and after some difficulty, he succeeded in reaching a house in the immediate neighborhood. His friends, on learning of his whereabouts, removed him to the Bryn Mawr Hospital. On admission, I found him to be a young man, of seemingly more than average intelligence, but of effeminate look and bearing, tall and of spare build with a peculiar hesitancy of speech, which I found was not habitual. While lying in bed he had absolute control of every muscular movement, but he was powerless during the effort of standing or walking and compared his legs to "a bundle of rags tied in a knot." His coordinations were unusually well developed, and there were no disturbances of sensation. The reflexes were also found to be normal. The patient was given a prolonged rest treatment and finally left the hospital quite recovered.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

January 11, 1902. [Vol. XXXVIII, No. 2.]

1. Treatment of Chronic Myocarditis. JOHN H. MUSSER.
2. The Influence of Some of the Commoner Drugs Upon the Gastric Functions. BOARDMAN REED.
3. Treatment of Chronic Round Ulcer of the Stomach. G. FUETTERER.
4. Gastric Hyperesthesia and Its Management. CHARLES G. STOCKTON.
5. State Supervision of Marriage. W. H. HEATH.
6. Injuries of the Choroid, with Report of Case. ELLET ORRIN SISSON.
7. A New Combined Electro-Cautery Incisor for the Bottini Operation for Prostatic Obstruction. HUGH H. YOUNG.
8. Lichen Planus Hypertrophicus. DAVID LIEBERTHAL.
9. Notes on Recent Cases of Extragenital Syphilitic Infection. L. DUNCAN BULKLEY.
10. Traumatic Arterio-Venous Aneurysms of the Subclavian Vessels, with an Analytic Study of Fifteen Reported Cases, Including One Operated Upon. RUDOLPH MATAS.

- 1.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 493.
- 2, 3 and 4.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 539.
- 5.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 500.
- 6.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 544.
- 7.—See AMERICAN MEDICINE, Vol. II, No. 22, p. 847.
- 8 and 9.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 541.
- 10.—See AMERICAN MEDICINE, Vol. I, No. 8, p. 335.

Boston Medical and Surgical Journal.

January 9, 1902. [Vol. CXLVI, No. 2.]

1. Remarks on the Diagnosis Between Acute Appendicitis and Some Atypical Cases of Typhoid Fever. MAURICE H. RICHARDSON.
2. Unnoticed Fractures in Children. F. J. COTTON and R. H. VOSE.
3. Notes on X-Light. WILLIAM ROLLINS.
4. Case of Attempted Criminal Abortion in Extrauterine Fetalion. W. D. SWAN.

1.—The Diagnosis Between Acute Appendicitis and Some Atypical Cases of Typhoid Fever.—Maurice Richardson calls attention to the difficulties which are met with in these cases by the physician and the surgeon, between whom there should always be consultation and cites in illustration five cases in his own experience, and sums the matter up as follows: There are three considerations of importance in connection with this subject. (1) There is a strong possibility of mistaking a case of typhoid fever, in which abdominal pain is a conspicuous feature of onset, for an acute appendicitis, even if the observers combine a large experience in both the medical and the surgical aspects of the disease; (2) the consequences of error are so serious and so humiliating that the surgeon may go to one extreme, and, hesitating about his diagnosis, may lose precious time; (3) or, by going to the other extreme, he may fall into the error of meddling and hasty intervention. Between his fears of making an unnecessary and possibly fatal exploration, and his fears of withholding the patient's only chance of cure, the surgeon's anxieties are excessive, for upon him, after all, must rest the chief responsibilities of decision. He says further: "In reviewing my experience of the past 10 years one fact is conspicuous—that the disasters in acute abdominal surgery come, not from too early intervention, but from too late. I have opened the abdomen a few times—perhaps half a dozen—when I have found nothing to justify the exploration. Two of these patients died. The experience of these two cases has led me to be, in times of doubt, too conservative. I am positive that these two deaths have been indirectly the cause of other deaths. The shock to a community caused by an unnecessary and fatal exploration is so great that it is almost impossible in that community to convince patients of the necessity of operating in a perfectly plain case. Under such circumstances there is no question that an unnecessary exploration is followed by many deaths from the want of a necessary one. The chief deduction to be drawn from the foregoing remarks is that one should proceed in doubtful cases with extreme caution; that every means of investigation should be exhausted before subjecting the patient to an operation. In those cases in particular in which the suspicion of typhoid fever is present, the abdomen should not be opened unless the indications are strong. When, in spite of repeated examinations and the greatest care, the surgeon is convinced that typhoid fever is not present, exploration,

even if it proves him wrong and shows that typhoid does really exist, loses the sting of carelessness and haste. The blunders that mortify are those which would be unnecessary were the examination painstaking." [A.B.C.]

2.—Unnoticed Fractures in Children.—Cotton and Vose call attention to the fact that the cardinal symptoms of fracture are more frequently absent in children than in adults. Consequently fractures in the bones of children are more frequently overlooked. We ordinarily think of the greenstick fracture as being most misleading, but the authors call attention to a form of subperiosteal fracture which is common in children and easily overlooked. They recite a list of 13 cases to illustrate the necessity for painstaking examination of all doubtful cases in children, and if still in doubt the necessity for resorting to the x-ray apparatus. [A.B.C.]

3.—Notes on X-Light.—Rollins gives a synopsis of recent articles appearing in different journals relative to burns by the x-ray. Some have asserted that it was electricity burns and others said ozone and nitrous acid are responsible for the death of guineapigs upon which experiment is made. The author has conducted a careful series of experiments with guineapigs, and has thus proved that x-ray burns can be produced by x-ray light when no electricity is present, and, conversely, by electricity when no x-light is present. [A.B.C.]

4.—Criminal Abortion in Extrauterine Fetalion.—Swan reports an autopsy held after death from ruptured tubal pregnancy, but found no evidence that the rupture was the result of the attempted abortion. [W.K.]

Medical Record.

January 11, 1902. [Vol. 61, No. 2.]

1. On the Progress of Public Health Organizations in the United States. STEPHEN SMITH.
2. Official and Private Phthisiophobia. S. A. KNOPF.
3. A Contribution to the Pathogenesis of Narcolepsy and Other Forms of Morbid Sleepiness. HEINRICH STERN.
4. Are the Tonsils to be Regarded as Normal Physiologic Organs of the Body? FRANCKE H. BOSWORTH.

2.—Phthisiophobia.—On account of an exaggerated fear, aggravated by the recent action of the Treasury Department in regard to immigration, which is creating much hardship for those suffering with the disease, and is leading to difficulties in locating sanatoriums, Knopf calls attention to the need of instructing the public that pulmonary tuberculosis is a communicable, but not a contagious disease. It is pointed out that the immigrant, who is generally from a rural district, is freer from the disease than the native population, and the possibility of retaliatory legislation is suggested. The appointment of a governmental tuberculosis commission, corresponding to those abroad, and the establishment of numerous sanatoriums, are advocated. [H.M.]

3.—See AMERICAN MEDICINE, Vol. II, No. 18, p. 680.

4.—See AMERICAN MEDICINE, Vol. II, No. 19, p. 724.

New York Medical Journal.

January 4, 1902. [Vol. LXXV, No. 1.]

1. The Etiology and Treatment of Bright's Disease. JOHN WINTERS BRANNAN.
2. Clinical Notes on Gleet. A. RAVOGLI. (To be concluded.)
3. Round Ligament Ventrosuspension of the Uterus; Improved Technique. D. TOD GILLIAM.
4. Gelatinous Carcinoma of the Peritoneum, with Metastases in Sternum and Lung. PHILIP KING BROWN and GEORGE T. BRADY.

1.—Bright's Disease.—Brannan believes that Bright's disease in its chronic form is always a degenerative process, and the result of powerful functions of other regions of the body. The treatment, in general terms, is the restriction of the proteid foods, the prohibition of strong alcoholic liquors, the free use of diluents, especially alkaline mineral waters, and the promotion of the action of the skin and bowels. Nitroglycerin is sometimes of great value and laxatives are necessary. The two chief agencies in the production of acute Bright's disease, which is always an inflammatory condition, are acute infectious diseases and exposure to cold. Of the infectious diseases scarlet fever is the most important, especially in children. Two cases are reported in detail. The first is that of a boy of 12

suffering from scarlet fever, who on the thirty-ninth day of the disease had a gradual rise of temperature and pulse followed by convulsions. A hot tub bath of 10 minutes' duration was given and repeated every hour or two alternating with hot packs. Chloroform was used and hot saline enemas given. Nitroglycerin and other stimulants, including suprarenal extract, were given. Later the patient was kept in a hot-air bath for two hours, during which he perspired profusely. He gradually improved and was discharged on the sixty-seventh day of the disease. The second case is that of a physician of 47 who while in vigorous health was exposed to severe cold. With rest in bed and a milk diet, and a free use of laxative waters and vichy célestins the patient's temperature declined and the urine improved so that at the end of five days it contained only a trace of albumin and a moderate number of hyalin and slightly granular casts, and the blood and pus had entirely disappeared. Recovery was uninterrupted. [C.A.O.]

3.—Ligament Ventrosuspension of the Uterus.—Gilliam gives in detail an operation which he has devised and which he believes fulfils every indication of a safe and efficient anchorage of the uterus without in any way curtailing its normal range of mobility. It consists in bringing up the round ligament on each side into the abdominal wall and fastening it there. The point of contact is $1\frac{1}{2}$ inches from the uterus, and the same distance above the pubes. The uterus is in reality not suspended, but rests easily and naturally on the bladder, from which it can be raised to a position little short of the vertical. Thus it is enabled to conform to the altered conditions of the bladder, rectum, and to the various bodily movements. Should pregnancy ensue, the ligaments develop *pari passu* with the growth of the uterus, and there is neither embarrassment in gestation nor difficulty in parturition. [C.A.O.]

4.—Gelatinous Carcinoma of the Peritoneum.—Brown and Brady report a case of gelatinous carcinoma of the peritoneum with metastases in sternum and lung in a man of 64. The points of special interest were the size of the tumor-masses at the time of examination, the absence of significant blood changes then and months later, the slow progress of the disease and the peculiar character and doubtful origin of the tumor. The postmortem findings are given in detail. [C.A.O.]

Medical News.

January 11, 1902. [Vol. LXXX, No. 2.]

1. Chronic Myocarditis. I. Morbid Anatomy and Physical Signs. J. H. MUSSEY.
2. Prolonged Medication, with Special Reference to Digitalis. ABRAHAM JACOB.
3. Heart Strain: Its Result and Treatment. J. M. G. CARTER.
4. On the Action of Digitalis. ARTHUR R. CUSHNY.
5. Bacteriologic Diagnosis of Typhoid Fever. HENRY A. HIGLEY.

1.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 493.

2.—Digitalis Medication.—In bad cases of dilation of the right heart with cyanosis and orthopnea two or three 10 or 12 grain doses of digitalis, 3 or 5 hours apart will contract the heart and restore the circulation; while in chronic weak heart of muscular or nervous origin or due to pulmonary obstruction, 4 to 6 grains daily, or its equivalent, may be given for years without hesitation, generally in combination with other cardinals, the heart being a complex body. It is invaluable in all stages of tuberculosis. Cumulative effects are the consequence of excessive or too frequent doses or improper preparations. Those insoluble in water should not be used. The digitalins of different manufacturers yield widely differing results. When the stomach is affected the tincture and infusion will not be tolerated long. The solid extract is preferred. Small doses have only a moderate action on the bloodvessels. It is indicated in insufficiency of the heart muscle and mitral and beginning aortic insufficiency. In anemia and chlorosis it should be combined with iron. [H.M.]

3.—Heart Strain.—The study of this in connection with army life is reviewed. It originates in forcible dilation by blood-pressure from within acting suddenly or gradually. Muscular action increases blood-pressure. The periods of greatest danger are at night when respiratory movements are most sluggish and when, upon rising from a recumbent position, the blood column is suddenly thrown back on the en-

feebled ventricles, thus at the same time diminishing the brain pressure. Injury is done the heart whenever resistance is excessive, as muscular effort with a tight belt surrounding the body, and even when slightly above normal for the individual, but continuous in rigid vessels, as in those of advancing years. Resistance and strain occur in cirrhosis of lungs, liver and kidneys. Persons of sedentary life are more liable to strain than those accustomed to exercise. In acute cases the symptoms are deepened, color, labored breathing followed by profuse sweating, deathly pallor and great weakness. The slower form is common among porters, hod carriers, etc. The damage persists in proportion to the age. High temperature increases liability. The physical signs are described. Prophylaxis requires elimination of corsets and belts and avoidance of overexertion. Hygienic and dietetic treatment are considered at length. When the work of the heart is excessive liquids should be limited but should be administered when blood-pressure is low. Sudden dilation requires rest in bed and milk diet. Digitalis and strychnin are the most important drugs. Gelsemium and aconite are sometimes required as sedatives. [H.M.]

4.—The Action of Digitalis.—The introduction of the drug, isolation of its active principles and investigation of its physiologic action on the mammal are reviewed. These experiments vindicate for it and its allies an action on the heart different from that obtained by any other drug. The slow pulse from prolongation of the diastole and the increase in dilation are due, for the most part, to stimulation of the inhibitory center. The increased strength of contraction must be referred to a change in the cardiac muscle itself. Efficiency is increased up to a certain point by the greater amount of blood discharged more than counterbalancing the slowness of the pulse. Its value is in conditions of displacement of the blood shown in venous engorgement and accompanied by malnutrition and degeneration of various tissues. Its action on the muscular coat of the arterioles is noted. [H.M.]

5.—Bacteriologic Diagnosis of Typhoid Fever.—Unsettled points in regard to mobility, dilution, and time required in the Widal reaction are discussed, and the nature of "agglutinin" and the conditions of the laboratory organisms necessary for the test are considered. It order to prove that agglutinating substances are present as often in atypical as in typical cases of typhoid, we must verify by isolating the bacillus during life, or by following the doubtful case to the autopsy table. The usual inaccurate method of making dilutions with dried blood is criticized, and capillary tubes are recommended. In atypical cases higher dilutions should be used. No stain for differentiating the typhoid bacillus has been discovered. The Hiss method of isolating and identifying the organism is described at length. His statistics show that it can be isolated from the sixth to the thirtieth day in 80% of cases. Examination of a fresh specimen is essential. Laboratory aid is of limited service in the first week of the disease. Until the fourth week statistics lead to a preference for the Hiss isolation method, and it is, both clinically and from a laboratory standpoint, an easier proposition. After the fourth week the Widal reaction is preferable. Bacilli in the urine appear too late to be of much diagnostic value, and blood-examinations for the bacillus, which require 5 cc., are objectionable to the patient. The leukocyte-count and diazo-reaction are incidentally considered. [H.M.]

Philadelphia Medical Journal.

January 11, 1902. [Vol. 9, No. 2.]

1. The Treatment of Inoperable Tumors. CONRAD GEORGE.
2. Duration of Immunity by Diphtheria Antitoxin. HENRY D. JUMP.
3. Note on the Treatment of Follicular Tonsillitis. CHARLES W. DULLES.
4. Some Aural Complications of Influenza. S. MACCUEEN SMITH.
5. Acquired Pulmonary Lues. OTTO LERCH.
6. Some Experiments on the Formation of Bile-Pigment and Bile-Acids; a Contribution to Our Knowledge of Icterus. ALFRED C. CROFTAN. (To be continued.)

1.—Treatment of Inoperable Tumors.—George refers to those tumors which are permitted to become inoperable either through neglect on the part of the patient, or, being misled by the so-called cures of "cancer doctors;" and, to certain cases of malignant growth which on account of their nearness to impor-

tant vessels and nerves, or because they involve or infiltrate into the parenchyma of some vital organ, are beyond the domain of legitimate surgery. A series of cases is detailed in which pyoktanin and Coley's mixture were employed. [F.C.H.]

2.—See AMERICAN MEDICINE, Vol. II, No. 14, p. 522.

3.—**Treatment of Follicular Tonsillitis.**—Dulles strongly advocates fractional doses of calomel and soda bicarbonate, a gargle of a saturated solution of boric acid and a restricted diet. The application of dilute solutions of adrenalin chlorid will prove at times advantageous. [F.C.H.]

4.—See AMERICAN MEDICINE, Vol. II, No. 13, p. 480.

5.—**Acquired Pulmonary Lues.**—Lerch details a case of acquired pulmonary syphilis presenting a number of interesting features, of which some worth mentioning are: Its resemblance to aneurysm of the aorta and the absence of tubercular symptoms (dilation of bronchi due to syphilitic interstitial growth has been confounded with tuberculous cavities). The patient presented a definite history of syphilis, the characteristic onset 20 years after acute attack commencing with a tickling sensation in the throat; followed by cough; severe and persistent dyspnea, the involvement of one lung, the absence of fever, and the enlargement of the glands and the absence of the tubercle bacilli from the sputum, serve to make the diagnosis above rendered. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Light Treatment of Smallpox.—Phototherapy is slowly earning legitimate recognition in a circumscribed field. S. Bang, of Copenhagen, has recently published an interesting summary of the work done in Finsen's Institute. Of 640 cases of lupus vulgaris treated by light all showed improvement, 456 were dismissed as cured and only 136 of these suffered relapses. Alopecia areata, acne rosacea, angioma and epithelioma of the skin were all favorably influenced. The most remarkable results, it appears, were obtained in the treatment of smallpox cases in the "red room." In all instances the character of the eruption was modified and the severity of the skin lesions mitigated. Hypothetically there is a positive and a negative phototherapy. The former postulates certain curative effects from light rays, the latter aims to exclude certain rays that are known to do harm. The positive method so far as we know today is applicable only to cutaneous diseases of bacterial origin and is based exclusively on the germicidal powers of the chemic rays of the spectrum. We have no experimental or clinical evidence to show that light rays are capable of stimulating the life of the cells in deeper tissues or of influencing general metabolism. What excitation of "vital" processes there may be must be attributed to reflex irritation from the periphery. The negative method, *i. e.*, the exclusion of the chemic rays is the one employed in the treatment of smallpox. The light is allowed to stream through red glass not because "red" light is curative but because the violet and the ultra-violet rays of the spectrum, the chemic rays, are excluded in this way; in other words, because red light is *indifferent*, not because it is *active*. The rationale of this treatment, its biologic basis, is as simple as its execution. Charcot (1859), Gintrax, Witmark, Hammer (1891), showed that the chemic rays of the spectrum can produce a typical erythema that differs from the ordinary heat erythema in the following respects:—In heat-ray erythema there is pain and redness at once but both symptoms soon disappear without leaving any trace; in chemic-ray erythema there is no pain, the redness does not appear for several hours but increases in intensity for several days—it disappears very slowly and leaves a pigmented area for months; even after this vanishes the burnt area reacts to the slightest irritation by hyperemia. It can readily be understood why the exclusion of rays of such marked irritating powers must

act beneficially in the treatment of smallpox, a disease that is characterized by destructive inflammation of the cutis. If, moreover, smallpox should be found to be due to some hitherto undiscovered microorganism, phototherapy should be useful both in the positive and the negative sense, for the bactericidal powers of chemic rays seem to be really remarkable. A lamp is in use in Copenhagen, constructed on the plan of the arc-light, in which iron electrodes are used instead of the ordinary carbons; this light is a "cold" light and is capable of destroying a virulent streptococcus culture in 4 seconds, whereas an ordinary arc-light of the same ampérage and placed at the same distance requires 4½ minutes to exercise the same effect. The results obtained so far are encouraging; the treatment is not purely empiric, but is founded on a rational experimental basis.

The Infantile Spinal Cord and Syringomyelia.—J. Zappert¹ says one of the earliest theories regarding syringomyelia was that it is dependent upon a congenital anomaly of the central canal. This pathogenesis has been opposed by later writers, who separated syringomyelia from congenital hydromyelia, and attributed the former to disintegration of newly-formed glia tissue. It is, however, now accepted that in many cases syringomyelia depends upon congenital disturbances, such as malformation of the central canal and hydromyelia, which give rise to a predisposition to cavity formation later in life. In order, if possible, to detect syringomyelia in its incipency, Zappert has examined a series of cords from little children, paying especial attention to hydromyelia, the condition of the central canal, and the existence of glia proliferation, as well as the presence of intrapartum hemorrhages. A total of 200 cords was examined. As regards the hemorrhages occurring intrapartum, they were found to have a special place of predilection, which is about the posterior horns in the cervical cord. Such hemorrhages are, however, rare, and do not seem to prevent the further development of the child, as in Zappert's case the infant died on the seventh day, of an intercurrent malady. The question arises: If the child had lived, would syringomyelia have ensued? Schultze considers this possible, while Zappert is noncommittal. More important for the production of syringomyelia appear to be congenital anomalies in the central canal. Zappert studied the development of the canal in embryos, and describes in detail the various changes. In early embryonal life, the gray commissure is penetrated by the elongated central canal, the apex of which forces the commissure into the posterior septum. The canal presents marked variations in shape and size, and there are all gradations, up to hydromyelia; therefore, a simple hydromyelia cannot possess much pathologic importance, although it is possible that from it more complicated cavity formation may originate. In one case, a rachitic child of 19 months that died of bronchitis, there was not only dilation of the canal, but also a proliferation of the glia. It is fair to assume that, had the child lived, the condition would have been progressive, and might have eventuated in syringomyelia. The question whether the glia proliferation in this case was congenital, cannot be definitely answered. In an anencephalus, hemorrhages and dilation, with bifurcation of the canal, were found, the process being most marked with the cervical cord. One interesting point was that the hemorrhages had apparently dislocated some of the epithelium of the central canal, the displaced portion being found behind the posterior commissure. The author's researches, it seems to us, throw little light upon the pathogenesis of syringomyelia. He, himself, admits that in no case was he able to demonstrate a congenital gliosis. His findings can be used only for the explanation of cases of syringomyelia which are accompanied by other congenital disturbances of the nervous system. These studies do not permit the application of the congenital theory to typical primary cases of syringomyelia. [D.R.]

Degenerative Changes of the Renal Epithelium.—Landsteiner's¹ studies concern themselves with the nature of cloudy swelling and its relation to fatty degeneration. He finds that in cloudy swelling there is a destruction of the normal rod-

¹ Wiener klinische Wochenschrift, October 10, 1901.

like structure of the protoplasm of the renal cells, or at any rate a loss of tinging of the rod structure, with the appearance of granules, which, judging from the tinctorial behavior, differ from the substance normally composing the rods. Regarding the relation of albuminous degeneration to fatty change, the author found that there is no parallelism between the two processes. Marked albuminous degeneration may occur without fatty change, and there may be a marked fatty deposit without disturbance of the rod structure of the renal cells. His observations strengthen the view of Hansemann, who admits the existence of a fatty change in the kidney that is not due to degeneration. [D.R.]

Gastroptosis in its Relation to Hyperchlorhydria und Tachycardia.—A. Rose¹ lays stress upon the importance of the splashing sound in making the diagnosis of atony or relaxation of the stomach. Splashing sound which can be elicited only during the normal period of digestion, means simple atony; splashing sound produced after the legitimate time of digestion, means motor insufficiency, and splashing sound produced in the morning after the night's fasting, before liquid or food has been introduced, shows that we have to deal with that degree of motor insufficiency which has been called dilation of the stomach. For gastroptosis an abdominal supporter either in the form of a bandage or adhesive plaster strapping is used. A case of hyperchlorhydria associated with gastroptosis successfully treated by the application of the abdominal supporter and the administration of belladonna is reported. Rose believes that typical paroxysmal tachycardia is sometimes caused by gastroptosis. [C.A.O.]

Localization in the "Motor" Cerebral Cortex.—Sherington and Grünbaum² refer to some historic matter in the development of our knowledge of the localization of functions in the cerebral cortex, and give the results of their investigations of the brains of all known species of anthropoid apes, which differ in some respects from the results of previous investigators. Among interesting findings was the fact that the fissures of the frontal region do not mark physiologic boundaries, and are not even reliable landmarks to the functional topography, since their relation is too inconstant and variable. The degree of subjection of these fissures to individual variation, and the frequency of their asymmetry in the two hemispheres, is in striking contrast to the far greater constancy from individual to individual and far greater symmetry of bilateral situation, which holds good for the arrangement of functional centers of the motor region as examined by physiologic methods. A practical outcome of this was that it was found essential for accurately detailed localization not to trust to the anatomic details of the exposed cerebral surface, but to obtain orientation as to the topography by applying electrodes and observing the movement, if any, that was excited. [A.O.J.K.]

The Quantitative Estimation of Chloroform in Animal Tissues.—Waller² discusses the methods previously employed, a new method devised by Dodgson and the conclusions derived therefrom. It appears that the weight of chloroform recoverable from the body of a small animal killed by the inhalation of chloroform amounts to one part in 10,000 of the body weight in the case of a small animal (rat), a quotient which is about twice that estimated by Snow as being lethal to the human subject. [A.O.J.K.]

Theories of Inheritance.—Reid² discusses the alleged transmission of acquirements, the different theories of inheritance—those of Darwin, Weismann and Adami, and states that the fact that offspring take origin not from the whole of the parent's body, but only from the microscopic germs, renders the transmission of acquirements exceedingly improbable. Doubt is converted into certainty by the fact that though all high organisms acquire millions of traits, in no case has the transmission of an acquirement been proved. It is believed that while inborn traits are transmissible, acquirements are not transmissible. [A.O.J.K.]

Hemiplegia.—Taylor³ defines the different varieties of hemiplegia and discusses (1) the character of the paralysis, the

relative weakness or disability produced in different parts of the body depending upon the position of the lesion in the brain; and (2) the nature of the lesion producing the paralysis as determined by the clinical history of the case. With regard to the nature of the lesion—whether hemorrhage, thrombosis, embolism, or tumor, two factors are to be taken account of: (1) The mode of onset of the paralysis, and (2) the clinical pathology of the individual—the state of his arteries, pulse, heart, kidneys, and organs generally. The differential diagnosis is given in detail. [A.O.J.K.]

Renal Changes in Congenital Syphilis.—In connection with his study of congenital syphilis of the kidney, Stoerk¹ has investigated the development of the renal tubules, and has come to conclusions which differ somewhat from those generally accepted. The first beginnings of the kidney are an outgrowth of a hollow canal from the wolffian duct, which grows upward, branching dichotomously, until it reaches the renal capsule, where the ends expand into ampullas. These ends again branch, the branches growing in opposite directions. One of them, after a circuitous growth, becomes the anlage for the malpighian body; in its shape, it resembles a sickle or, stereoscopically, the hollow part of a dipper. Thus, the form of the malpighian body is preexisting, and is not conditioned, as has usually been taught, upon an invagination by the glomerular loops. The formation of the malpighian bodies and of the convoluted tubules belonging to them, continues uninterruptedly throughout the greater part of fetal life, these structures being constantly produced from the subcapsular terminal or end canals. In the fifth month Stoerk was able to count eight layers of malpighian bodies. The subcapsular layer is the one in which the most active processes are going on, and is, therefore, called the neogenic zone. This formative zone, together with its connective tissue, is characteristic of the developing kidney. When it has disappeared, the kidney is no longer capable of development, and cannot produce new malpighian bodies. The zone disappears normally in the ninth or tenth lunar month. Regarding congenital syphilis, the neogenic zone presented striking appearances in cases studied. In fetuses from the last two lunar months, the cortex corticis, as the outer layer is also called, showed numerous anlages of malpighian bodies in the earliest stages of development. In their form, the bodies presented characteristic variations from the normal. They were deformed; the epithelium of the capsule of Bowman was different from that normally found, the visceral layer possessing no flat, but cubical cells. Regarding the question of nephritis in congenital syphilis, the author's studies do not give an unequivocal answer. He never found casts, and is disinclined to consider the lesions described as nephritic. In three cases, however, he found what might be termed a specific nephritis, characterized by cellular infiltrations. [D.R.]

The Histology of the Pancreas.—The alleged presence of fat in the cells of the pancreas was the starting point of Stangl's¹ studies. Osmic acid normally stains certain particles black, and the application of the usual reagents, as well as of sudan III, has shown to the author that these granules are actually fat. The fat appears in the second half of embryonal life, and increases more rapidly up to the twentieth year, both in the gland cells and in the islands of Langerhans, than afterward. Regarding the significance of the fatty particles, the natural thing would be to connect them with the secretory processes; but experiments prove that there is no direct connection between the fat and secretion. Concerning the islands of Langerhans, Stangl is of the opinion that they are independent formations, incapable—at least, after the first half of embryonal life—of being transformed into gland cells.

Postscarlatinal Diphtheria.—R. W. Marsden² believes from a study of these cases in Monsall Fever Hospital that the complication is introduced by new patients possibly infected with both diseases. In 32 successive admissions Loeffler's bacillus was cultivated from two, although there was nothing suggestive of their presence then or later. Scarlet fever may predispose, but the majority of cases are not due to this so much as to the mingling of the children during convalescence.

¹ The Post-Graduate, December, 1901.

² British Medical Journal, December 28, 1901.
Lancet, December 28, 1901.

¹ Wiener klinische Wochenschrift, October 10, 1901.

² Medical Chronicle, August, 1901.

The prominent clinical manifestation is a slight rhinitis. Diphtheria should be suspected if the nasal discharge begins late in the disease, if the scarlet fever has been so mild as to be unlikely to produce rhinitis itself, especially if the discharge grows more profuse and purulent; when the discharge is worse from one nostril or limited to one; when it is bloodstained with excoriation of the nares; if membrane can be seen. Otitis is another source of infection, less common than rhinitis. A large percentage of the cases of "secondary sore-throat" are diphtheritic. These commonly occur in the third and fourth week, and are not infrequently associated with nephritis. This and the first few days of scarlet fever are the periods when the patient is most susceptible to diphtheria. Prophylaxis consists in avoiding dry dusting, disinfection of instruments and eating utensils, prevention of interchanging of toys, periodic inspection of convalescents, segregation of suspicious cases, keeping of patients in bed for the first three weeks. [H.M.]

The early diagnosis of pulmonary tuberculosis, with especial reference to the value of tuberculin, is the subject of a paper by Latham.¹ He believes that the tuberculin test is a very valuable diagnostic aid. [A.O.J.K.]

The Differential Diagnosis of Smallpox.—LacCombie² discusses the differential diagnosis of smallpox in the preeruptive stage and in the eruptive stage. The means of differentiation from measles, scarlatina, erythema multiforme, typhus fever, influenza, ptomain poisoning, röteln, lumbago, etc., in the preeruptive stage is pointed out. From chickenpox, smallpox is to be differentiated by the distribution of the eruption, the shape of the vesicles, the rate of growth of the vesicles, and the unilocular character of the vesicles of chickenpox as compared with the multilocular character of the vesicles of smallpox. [A.O.J.K.]

Tuberculosis of the Heart.—Heineman³ discusses tuberculosis of the endocardium, of the myocardium, and of the pericardium, reviews some of the literature, and reports two illustrative cases. [A.O.J.K.]

Torsion of the Spermatic Cord.—J. W. Dowden⁴ reports three cases and believes this occurs more frequently than is supposed, through a wrong diagnosis being made. The main predisposing cause is abnormally in the relations of the tunica vaginalis whereby the testis, epididymis and cord are completely enveloped by the visceral layer and consequently hang free in the sac formed by the parietal. In the majority of cases there is incomplete descent of the testicle. Strain or bodily position interfering with venous return may be the exciting cause of the torsion. The twist is generally from without inward and amounts to 1½ turns. The tunica vaginalis is found to contain blood-stained serum or clot, the testicle, bluish-purple in color, and a greatly swollen epididymis. The cord is often lobulated and thickened. The ultimate result is destruction of the organ. The symptoms in infants are sudden onset of fretfulness, vomiting, constipation, flexion of the thigh and a tender swelling in the inguinal canal, external ring or scrotum. In late years severe pain is complained of. There is no pulse or coughing. If seen in the first few hours the cord should be untwisted. This is probably difficult when the testicle is undescended. The organ should be fixed firmly in the scrotum by removing a strip of visceral tunica vaginalis from the upper attachment of the cord to the lowest point of the testicle and a corresponding portion of the parietal layer also, then sewing together the cut edges of the two layers with catgut. When the testicle is undescended it must be brought down if possible or removed. [H.M.]

New Methods of Examination and Renal Insufficiency.—From his own and the observations of others, Kiss⁵ is led to believe that cryoscopy of the urine or the discrimination of its freezing point is not such an accurate method of determining the exact functional condition of the kidneys as was at first supposed; for although it, together with the specific gravity of the urine, may yield some idea of the quantities of abnormal substances held in solution, the solid substances, such as casts, etc., can only be determined by microscopic examination. In the

same sense he claims that the diagnostic use of methylen blue and phlorizin are also not strictly "functional" tests. [H.H.C.]

Discussion on Cryoscopy.—Korángi¹ takes exception to the statements of Thorner in his preceding article on the value of cryoscopy as a method of determining the exact functional condition of the kidneys, and cites a number of facts in support of his claim that this method is a strictly "functional" test and hence of distinct scientific and clinical value in determining the extent of renal lesions. [H.H.C.]

Percentage Modification of Cow's Milk.—After a careful discussion of the various phases of the subject of infant feeding, Hamilton² makes a strong plea for the percentage method, and presents a fairly simple working formula. [J.W.H.]

A case of infection of the rectum with secondary infection of the liver caused by Bacillus influenza similia is reported by Orphüls.³ The infection of the rectum was associated with sloughing and ulceration. The infection of the liver had occurred by way of the portal system. Interesting features were the absence of macroscopic septic thromboses in the hemorrhoidal plexus, and the fact that although the infection was very low down in the rectum, the infective material was carried into the portal circulation. An infection of the right lung also had occurred—probably secondary to the septic thrombosis of the hepatic veins. The organism recovered could not be identified with any of the known species, though it resembled influenza bacillus. [A.O.J.K.]

A case of lymphatic leukemia is reported by Wende⁴ as apparently developing out of Hodgkin's disease, accompanied by leukemic lesions and pigmentation of the skin, and culminating in streptococcus infection. [A.O.J.K.]

Clinical Observations on Blood Pressure.—Carter,⁵ as the result of a series of investigations, concludes: (1) The average normal mean arterial pressure in males is 116 mm. Hg., and in females 113 mm. Hg.; (2) in acute nephritis the accompanying arteriosclerosis, if present, is of slight or moderate degree; (3) in acute nephritis the height of the blood-pressure varies, for the most part, directly with the amount of albumin in the urine; (4) an acute parenchymatous nephritis complicating an acute infectious disease causes little or no increase in blood-pressure; (5) the average mean arterial pressure in chronic nephritis is about 62 mm. Hg. higher than that of acute nephritis; (6) there were no cases of chronic nephritis seen without an accompanying arteriosclerosis; (7) in arteriosclerosis it is only those cases in which it is extreme that the average mean arterial pressure is raised; (8) the most satisfactory drug for lowering blood-pressure, whether the increase is due to nephritis or marked arteriosclerosis, is sodium nitrite, best given in 2 or 3-grain doses every 2 to 4 hours. It acts in about 26 minutes, causing a reduction of 10 to 15 mm. Hg. (in marked arteriosclerosis sometimes much more), the effect lasting one hour and 44 minutes, on the average; (9) when the blood-pressure is high and is accompanied by symptoms of uremia the best method of rapid reduction is phlebotomy—5 to 8 ounces, followed by saline infusion (1,400 to 1,500 cc. of hot normal salt solution), and sodium nitrite in full doses. Clinically, also, there is almost invariable improvement; (10) blood-pressure in aortic regurgitation, whether complicated by nephritis or not, is low. If a mitral regurgitation also is present pressure may be nearly normal; (11) blood-pressure in all forms of anemia is below normal; (12) there is possibly a relation between lowered pressure in chlorosis and the production of gastric ulcer. [A.O.J.K.]

The Consumptive Poor.—E. J. Barrick⁶ tells how Toronto has reached a practical solution of the question of dealing with this class, through government funds for the building of a sanatorium and weekly allowances from the general and municipal government for each patient and additional sums from private philanthropy. Popular education is necessary in order to combat the beliefs that tuberculosis is hereditary and incurable, or that some mecca must be reached or particular medicine found to affect a cure, also that the care of the poor is necessary to prevent spread of the disease. [H.M.]

¹ Lancet, December 28, 1901.

² Scottish Medical and Surgical Journal, September, 1901.

³ Berliner klinische Wochenschrift, December 2, 1901.

¹ Berliner klinische Wochenschrift, December 2, 1901.

² American Journal of Obstetrics, October, 1901.

³ American Journal Medical Sciences, December, 1901.

⁴ Dominion Medical Monthly, September, 1901.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The Surgical Treatment of Arthritis Deformans.—The chronic joint affections best known as arthritis deformans are probably as poorly understood by general practitioners and surgeons as any kind of disease. The lack of clear understanding as to their real nature even by the more eminent members of the profession is shown by the large number of names which have been applied to this class of conditions. Schuchardt, in his discussion of the diseases of the bones and joints (*Deutsche Chirurgie*, Lieferung 28, 1899) classes these affections all together as proliferative joint inflammations. One source of confusion is that a special name has been applied to the disease as affecting different joints; for example, the form of the disease which affects the vertebrae is commonly known as spondylitis deformans. Among the terms which are considered synonyms with this are chronic rheumatoid arthritis of the spine, osteoarthritis of the spine, spondylosthesis deformans, ankylosis of the spine, chronic rheumatism of the spine, etc. Marie (*Revue de Médecine*, April, 1898, p. 285) would separate the condition from arthritis deformans in general, and gives it the name spondylose rhizomélisque, but the condition is usually considered only a form of arthritis deformans. Our lack of knowledge with regard to the cause of the disease is also, no doubt, another cause for confusion. Nearly every possible cause has been suggested, the neurotrophic theory no doubt meeting with as much favor as any. Schuchardt believes that there is considerable evidence in favor of the infectious nature of the condition.

In order that it may be understood just what condition we are considering, a few facts with regard to its pathology may not be out of place. This joint affection begins in the cartilages and synovial membranes, the cells of which proliferate. The cartilage covering the joint undergoes fibrillation and softening and is either absorbed or thinned by friction, thus leaving bare the ends of the bone and causing it to become eburnated. Around the border of the bone where the pressure is less the proliferative process usually develops irregular nodules, which ossify, forming osteophytes, which in time completely block the joint. With this process there is usually great thickening of the ligaments, and finally complete ankylosis results. Rarely is this a true ankylosis, but it is caused by the bony outgrowths and thickened ligaments. In certain cases really bony ankylosis exists, however. In some cases the hyperostosis causes slight lengthening of the bones, in others the atrophy of the heads of the affected bones cause shortening. This is particularly true of the form affecting the hips of old persons, the so-called morbus coxae senilis. The course of the disease is usually very slow, lasting for many years. Schuchardt states that in certain cases effusion into the joint is present in the early stages of the disease, and in its various stages the condition is no doubt generally called by many different names. Pain is usually present and intermittent, but in some cases is entirely absent. Gradually the shape of the joints is greatly altered, the muscles about the joints atrophy from disuse and contractures cause deformities by flexing the extremities. In extreme cases the patient becomes almost absolutely helpless. In such cases nearly all the articulations of the extremities are affected, and possibly including the spine. Most of the patients finally reach a quiescent stage in which they are free from pain and enjoy very good health, suffering only from the inconvenience caused by the deformity. The surgical treatment of these affections has received comparatively little attention. Probably Fock (*Arch. f. klin. Chir.*, 1861, Bd. I, Heft 3, p. 172) was the first to operate for this condition. In a series of resections of the hip-joint which he reports he has mentioned one case which was

no doubt of this kind. Over 20 years later Zesas (*Deutsch. Zeitschr. f. Chir.*, 1888, Bd. 27) discussed the subject and reported four cases. He concluded that resection of the hip for arthritis deformans usually relieved the patients from pain, but he did not speak enthusiastically of the results as regards the functions of the joint. In 1890 Cornils (Inaugural Dissertation, Jena, 1890) reported 19 cases affecting various joints, eight of which were from Riedel's clinic. Resection was performed in most of these cases. In many of them severe pain was present before the operation, but there were no recurrences after the operation and the functional results were reported good in seven cases, fairly good in two cases, unfavorable in two cases and doubtful in two cases, while two of the patients died so soon after operation that it was impossible to determine the functional result. Among others who have reported favorable results are Bose and Poppert (*Berl. klin. Wochenschr.*, 1886, p. 890) and Müller (*Arch. f. klin. Chir.*, 1894, Bd. 47, H. 1), who reports two cases of resection of the hip, and two of the knee with very satisfactory results and three cases of resection of the wrist with more or less improvement. Küster in his *Surgical Triennium* also speaks favorably of the operation. König has been one of the chief advocates of the operation and has discussed the operative treatment of this affection in the later editions of his *Specielle Chirurgie*. He reports probably the largest series of hip cases observed by any one surgeon in the *Berl. klin. Wochenschr.*, Vol. 38, 1901, p. 67. He has had 27 cases of arthritis deformans of the hip, and operated upon four of these. He believes that a real cure of the condition never occurs, but the symptoms and course of the disease are most favorably influenced by a systematic course of treatment, such as is usually best obtained at some of the health resorts. The patient alternates between rest and suitable active and passive exercises with massage and a carefully regulated life. Complete rest of the joints is out of the question, as it leads to ankylosis. If there are exacerbations of pain which are very severe, however, the patient may be put to bed and an extension apparatus applied for a short time. Certain cases are benefited by the application of suitable braces which gives some support, but permits the use of the leg. In advanced cases, however, he believes that radical surgical intervention is decidedly to be recommended. In these cases resection is usually the only operation to be considered. It not only relieves the pain, but usually gives the patient a fairly satisfactory functional result. He reports four cases of arthritis deformans of the hip in which resection was performed with a very satisfactory result. The patients were all free from pain and able to get about very well. Two of them are reported to have resumed their usual occupations.

In the *Lancet* of November 4, 1899, Collison reports two cases of arthritis deformans affecting the elbows, resected also with very satisfactory results.

These reports of the favorable results of more radical surgical treatment in this class of cases should be more generally known than they appear to be at present. In many textbooks in English, German and French, the possibility of operative relief of this otherwise hopeless condition is not even mentioned. Several writers go so far as to say that the diathesis which they believe coexists contraindicates operation. Fortunately the disease is not very common, but it seems a pity to allow the sufferers to be helplessly disabled for years—to say nothing of suffering severe pain—when the experience of so many trustworthy observers seems to clearly indicate that by a timely operation the patients can be greatly relieved as regards deformity, loss of function and pain.

Appendicitis.—J. M. Cotterill¹ advocates operation after the first attack because 25% to 40% have subsequent attacks

¹Scottish Medical and Surgical Journal, September, 1901.

which may be perforative or fatal, and operation during an attack is more serious; every attack increases adhesions and the dangers of operation, and the mortality of operation in the interval is comparatively trifling. It is noted in connection with 15 recent cases of operation reported that a separate collection of pus frequently forms in the pelvis, separated from the abscess in immediate relation to the appendix. When abscess is suspected the pelvis should be explored first by a mesial one-inch incision. A glass drainage tube is slipped in and sterile saline or boric solution injected. If no pus be found here the incision may be stitched and collodionised before proceeding with the main operation. The worst time for operation is probably from the third to the sixth day, when the parts around the appendix are in a condition of septic infection and secure adhesions have not yet shut off the general peritoneal cavity. The best time to operate is in the first few hours. [H.M.]

Stricture of the Large Intestine.—F. M. Caird¹ details 20 operations. Incision is generally made in the left linea semilunaris directly into the peritoneal cavity, and if necessary a second incision at right angles may be made. If the gut cannot be withdrawn vessels and adhesions must be divided *in situ* between double ligatures or pressure forceps. When the mesenteries are short clamp forceps should be applied to the healthy freed colon well beyond the distal end of the tumor $\frac{1}{2}$ of an inch apart and the gut divided between, and the intestinal surfaces disinfected with pure carbolic and smeared with iodoform. The gut is wrapped in gauze, the free end pulled out, adhesions, vessels, etc., divided until healthy bowel is reached and severed between clamps. Compressed parts are trimmed, the smaller extremity stretched and the end-to-end sutures made. When there is no obstruction the best treatment in stricture of the large intestine is primary resection, end-to-end suture, and closure of the abdomen without drainage. But 2 stage operations should be rigidly adopted in presence of an existing obstruction, every trace of which must be got rid of before union is attempted. Mikulicz's method is approved. The prognosis is good where there has been early diagnosis and operation. If the patient escapes recurrence of the neoplasm for 12 months the outlook is hopeful. The dangers of an attack of obstruction are great, owing to the cardiac failure induced by autointoxication. [H.M.]

Osteitis Deformans.—The history of this chronic disease of the bones is given by E. W. Elting² and a case is described. The term osteitis deformans was first used by Czerny in 1873, and though the recorded cases are few, the affection is of more frequent occurrence than is generally supposed. It develops in middle or late life—the onset being insidious, either in a single bone or showing a symmetrical involvement of the bones. There is especial tendency to involvement of the tibia and femur as well as of the frontal, occipital and parietal bones. It attacks both sexes and does not appear to be related to any constitutional disease. The etiology is not understood. The literature of the subject is given. [C.S.D.]

The Cause of Death in Aneurysms of the Thoracic Aorta Which do not Rupture.—Arnold,³ having pointed out that almost half the patients with aneurysm of the thoracic aorta do not die from rupture, reports 5 illustrative cases. The subject is considered under the following headings: (1) Cases in which an aneurysm of the arch of the aorta exists but in which it is not an important factor in the fatal result; (2) cases in which death ensues from disease or disturbance of the circulatory system not caused by direct pressure of the aneurysmal tumor; and (3) cases in which death is due directly or indirectly to pressure of the aneurysmal tumor upon organs of vital importance. [A.O.J.K.]

The Differentiation Between the Inflammatory Processes and Neoplasms of Bone by X-rays.—Beek⁴ believes that in the past many limbs have been sacrificed by unnecessary amputation, and many lives have been lost by deferred amputation on account of errors in differentiating between inflammatory processes and new growths of the bones. The x-rays give valuable information in this respect and much

increase the chance of arriving at a correct diagnosis. In osteomyelitis, abscesses can be recognized and their extent well outlined, thus aiding decidedly to determine the extent of operation required. In arthritis deformans osseous proliferations are well shown by the x-rays. In arthropathia tabica the bone appears eroded and at the same time considerably distended. In tuberculosis, information is gained with regard to the seat and extent of the diseased area. In many cases, by early detection of the tuberculous focus, a conservative operation is possible. The skiagraphic picture of periosteal sarcoma is characteristic. It shows fine spiculated trabeculae which radiate from the surface. Osteosarcoma proper shows some osseous tissue with very irregular outlines. The appearance of syphilis is also characteristic. In the congenital form large ossified areas are recognized in the epiphysis which would appear translucent in the normal cartilaginous condition. Osseous cysts showing the same clinical signs as osteosarcoma may easily be confounded with it, but in osseous cysts the cortex, on account of its thinness, appears narrow but well marked and regular. In Raynaud's disease, Beck believes that the nutrition of the bones is much more disturbed than is generally assumed. He mentions a case in which the skiagraph showed decided atrophy of the upper end of the third phalanges. [M.B.T.]

The Treatment of Peritoneal Tuberculosis.—Fenger¹ discusses this subject very thoroughly, giving the history of the operation and the more important points from papers which have been published up to this date. From the tone of his paper we judge that he agrees on the whole with the views of Borchgrevink, who has studied parallel series of cases which were treated, the first series without laparotomy, and the second series with laparotomy. These cases were not selected, and from his observations, Borchgrevink concluded that if the operation did any good it was, to say the least, very doubtful. Fenger says: "The frightfully disappointing results of the energetic surgical treatment of peritoneal tuberculosis . . . must teach us that nature cures tuberculosis of the peritoneum better than the surgeon." He quotes from Borchgrevink: "Serous tuberculous peritonitis is a territory which surgery must hand back to the internal medicine clinic with thanks for the splendid opportunity which a misunderstanding gave to the profession by means of laparotomy to study tuberculosis in one of the large cavities of the body." [M.B.T.]

Obturator Hernia of the Bladder and Fallopian Tube.—Gladstone¹ reports a case of this kind which he had an opportunity of studying after death. The subject was a woman of 78 who had died from heart disease. On the right side a U-shaped bend of the fallopian tube was found within the small peritoneal sac which had escaped from the pelvis through the obturator canal and lay embedded beneath the obturator externus muscle. The obturator nerve and vessels at the entrance of the canal were on the outer side of the sac. At the crural end the two branches of the nerve lay to the outer side, while the bifurcation of the obturator artery was situated below the hernia. On this side of the pelvis there was also small femoral hernia containing a knuckle of small intestine. On the left side of the pelvis a corner of the bladder was firmly fixed at the commencement of the obturator canal. It lay beneath the obturator externus muscle. No very definite history of the case was obtained but the hernia were apparently not recognized during life. Both of these conditions are said to be extremely rare. The literature of the subject and the possibility of operative treatment are discussed. [M.B.T.]

Direct Introduction of Purgatives Into the Large Intestine in Cases of Operation for Septic Peritonitis.—Shield² says that in 5 cases operated upon for septic peritonitis from perforative appendicitis he has injected a purgative directly into the bowel before closing the abdominal wound, and in every case with such excellent results as to induce him to recommend it to his fellow practitioners. The formula used is: Magnesium sulfate 3 drams, tincture of nux vomica 10 drops, and glycerin 1 dram, in an ounce of water. Two hours afterward a turpentine enema is given. [A.B.C.]

¹ Scottish Medical and Surgical Journal, September, 1901.

² Bulletin of Johns Hopkins Hospital, November, 1901.

³ American Journal Medical Sciences, January, 1902.

⁴ Annals of Surgery, December, 1901, Vol. xxxiv, No. 6.

¹ Annals of Surgery, December, 1901, Vol. xxxiv, No. 6.

² British Medical Journal, December, 1901.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Degenerative Changes in Uterine Fibroids.—

It is apparent that the belief in the benignity of fibroid growths of the uterus must be modified. The rapidly accumulating evidence from such reliable sources as Cullen, Williams, Bishop and others prove indubitably that these growths may undergo sarcomatous changes. Cullen has found three instances in the examination of 600 specimens in which this was demonstrated. Although it is now well known that carcinomatous degeneration of the growth itself is impossible, yet the frequency with which carcinoma and fibroma are found coincidentally makes it probable that some direct relation exists between them. Lebert found that in 125 carcinoma patients fibroids coexisted in 11%. Other degenerations are equally dangerous, such as necrobiosis, which may affect a part or the entire growth, with a danger of septic infection. Fibromitis may occur. This condition, which is described by Menière, is an interstitial inflammation of the tumor itself, in which there is local pain and tenderness, with general constitutional disturbance and rapid enlargement of the tumor. Edematous, calcareous and myxomatous degenerations also threaten the life and increase the danger of operative interference, leading us to emphasize the fact that whenever these neoplasms are present and producing symptoms operation by the most conservative method is clearly indicated. All Fabian policies of delay, of medical or electric treatment, should be avoided and the neoplasms removed.

Infections of the Soft Tissues of the Female Pelvis.—

Allaben¹ enumerates the various microorganisms, their mode of entrance, and details the method of treatment of the suppurative processes in the soft tissues of the pelvis, viz., cellulitis with abscess, uterine abscess, pyosalpinx and ovarian abscess. He believes that infection occurs more frequently from the gonococcus than any other microorganism. In the treatment of the above conditions he follows this rule. In acute cases, while the microorganisms are highly infectious, puncture and drain through the vagina if possible. Do not open into the peritoneal cavity, especially in streptococcal infection; in chronic cases radical abdominal surgery is indicated. [F.C.H.]

Sudden Death After Labor.—Hall and Moore¹ report a case of adherent placenta, which was only partially removed, as the uterus required a curetment 30 hours after labor. Several hours after this operation the patient died, and from the results of the autopsy, they were led to believe, in spite of the absence of the anatomic proof, that an embolus was the cause of the sudden death. [F.C.H.]

Traumatic Stricture of the Bowels and Hydronephrosis.—Brannon¹ records a case of traumatic stricture of the ileum about 18 or 20 inches from the ileocecal valve in a woman upon whom he operated. Her condition was favorable until the ninth day, when the temperature rose to 105° F., pulse 130, and there were other symptoms of septic infection. The left kidney on palpation was found to be tender and enormously swollen. A lumbar incision was made and the kidney drained, the drainage tube being removed at the end of six weeks. [F.C.H.]

Carcinoma of the Female Urethra.—Miller¹ strongly advocates the complete removal of the urethra and base of the bladder in early cases, as the result has been very gratifying, and recurrence exceedingly rare. [F.C.H.]

The Pulse Beat in the Puerperium.—Aichel² having made a study of 135 cases with reference to the rapidity of the pulse during the puerperium, reaches the conclusion that the pulse usually beats more rapidly during labor than during pregnancy and, under normal conditions, again decreases in the puerperium. But, in looking to the pulse beat as an aid in making a prognosis, the physician must always consider the comparative rapidity of the pulse in health, in pregnancy,

and in labor, and especially he must know the normal rapidity of the pulse in each individual case. [W.K.]

Hemorrhages of Pregnancy.—A. E. A. Lawrence¹ discusses those of the first three months. When menstruation persists the diagnosis of pregnancy must rest mainly on uterine changes. A granular condition of the os and cervix will cause regular or irregular bleeding, and should be treated with scarification and nitric acid. In malignant disease the uterus should be removed per vaginam without emptying. Bleeding may come from hemorrhoids, the urethra, bladder or kidney. A profuse and continuous uterine bleeding will almost always negative extrauterine pregnancy pure and simple, yet many women abort with an ordinary intrauterine pregnancy with little loss of blood. Pain as a rule is more severe in extrauterine cases and accompanied with more or less shock. [H.M.]

The Angiotribe.—James N. Ellis² prefers Doyen's instrument. The portion of tissue which is included between the jaws of the angiotribe is compressed to the thinness of paper. The watery elements of the adipose, muscular, and elastic tissues in the track of the instrument are pressed to the sides of the shank of the angiotribe, leaving only the fibrous and cellular coats of the vessels and a thin, ribbon-like sheet of compact connective tissue, in the channel of the instrument. The nerves, cords, and the middle and inner coats of the arteries and veins are completely severed, the latter retracting, incurvating and occluding the lumen of the vessels as when subjected to torsion. The lymphatics, in common with the outer coats of the veins and arteries are firmly agglutinated and rendered impermeable. According to Thumin, a microscopic examination of this compressed tissue shows that its integrity is not completely destroyed, but that it is simply compactly compressed; and observations prove that necrosis and sloughing do not result, but that a gradual process of revitalization takes place. The author frequently reinforces the hemostatic action of the angiotribe by placing a very fine catgut ligature in the channel or groove made by the jaws of the instrument. [F.C.H.]

A Unique Case of Extrauterine Pregnancy.—The following is a review of the case detailed at length by Tuholske.² Tubal pregnancy (ampullar) of the right side, tubal abortion with complete extrusion of the gestation sac unruptured and containing fetus; the hemorrhage and position carried the sac up to the diaphragm between the right lobe of the liver and upper end of the kidney. Implantation in the parietal peritoneum of the diaphragm as far forward as the attachment of the coronary ligament, in the liver from its upper border to the transverse fissure, down the diaphragm posteriorly and in the upper end of the kidney. Establishment of placental connections, allowing the development of a well formed living child and pushing the limit of growth of the kidney toward the left and turning it upon its axis, with the coronary ligament as a fixed point, until the right margin of the liver became the anterior. Histologic examination shows original implantation in the ampulla of the right tube and the formation of a placenta by efficient transformation of the peritoneum and the adjacent liver tissue. The diagnosis of the case from its history was confirmed by clinical, operative, pathologic and histologic evidence and is, therefore, beyond doubt an answer to the question as to whether a fetus with its sac loosened from its original site and forming new connections might live to full term. [F.C.H.]

Curettage.—C. R. Hyde² details the use and abuse of this operation, and believes that the certain definite limitations for dilation and curettage may be summarized as follows: As a possible factor to overcome sterility; as a temporary relief for menorrhagias and metrorrhagias; as a means of relieving any degree of stenosis of the cervical canal, especially in markedly acute antelexions with the so-called "pinhole os," common in nulliparas; to secure scrapings of the uterine cavity for diagnostic purposes; as a preliminary to certain operations on the uterus or adnexa; to remove retained secundines, also septic foci in acutely infected uteri. [F.C.H.]

Uterine Atrophy During Lactation.—According to Thorn,³ amenorrhea is the normal condition of the nursing

¹ American Gynecological and Obstetrical Journal, December, 1901.

² Münchener medicinische Wochenschrift, November 19 1901.

¹ Bristol Medico-Chirurgical Journal, September, 1901.

² American Gynecological and Obstetrical Journal, December, 1901, Vol. xix, No. 6.

³ Münchener medicinische Wochenschrift, November 19, 1901.

woman, and is caused by atrophy of the body of the uterus, and in no way by the cessation of ovulation. This atrophy leaves the cervix and ovaries intact and heals spontaneously, sometimes during lactation, but as a rule about four to six weeks after the weaning of the child. It is an entirely physiologic procedure, although because of too prolonged lactation or of some organic or general sickness, it may take on a pathologic character; though this also usually recovery spontaneously after the removal of the complication. The assumption that the atrophy is due, in the first place, to the contraction of the uterus, and in the second place to loss of nutrition absorbed by the milk supply, harmonizes with the fact that the time of the greatest atrophy corresponds to that of the most abundant secretion of milk. That conception sometimes takes place during the period of lactation and amenorrhea, shows that the ovaries remain in active function. Yet as a rule this uterine atrophy acts as a protection from a renewed conception and thus prevents undue exhaustion of the woman's strength. Sometimes the atrophy through sympathy or through the woman's weak power of resistance or other causes extends to the ligaments, parametrium, vagina, and peritoneum, and causes prolapse or retrodeviation of the uterus. This condition usually yields readily to treatment after lactation ceases and the regeneration of the uterus takes place. There are a few instances of women in whom lactation led to a permanent loss of the functions of the uterus. This apparently was caused by an excessive production of milk or to a prolonged period of lactation in frail weak women. [W.K.]

Tetanus Following Aseptic Celiotomy.—H. C. Coe¹ details two cases of tetanus following aseptic celiotomies, both of which died. The antitetanus serum was employed in both instances. Bacteriologic examinations of the suture materials, dressings, etc., were negative. Reference is made to the difficulty experienced in the early recognition of tetanus; the early diagnosis of hysteria having been made in these two cases, until the occurrence of marked tetanic symptoms cleared the obscurity. Its insidious approach, acute onset, and the impossibility of locating the point of infection, and hence of exposing and treating with strong chemicals the infected area, render the prognosis of tetanus following celiotomy practically hopeless. In abdominal cases of tetanus, the treatment should be directed to diluting and neutralizing the poison by injecting into the blood large quantities of normal salt solution containing the antitetanus serum. Though subdural injections are safer and probably as efficacious as intracerebral, these cases are so desperate that resort should be made to any measure which promise immediate relief. [F.C.H.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPF

Treatment of Tuberculous Peritonitis.—I. Burney Yeo (Merck's Archives, Vol. iii, No. 7, 1901) gives an outline of his management of tuberculous peritonitis as follows: To allay pain and irritation of the bowel a mixture containing in each dose—

15 gr. of bismuth salicylate
15 gr. of spirit of chloroform
1 dr. of compound tincture of cardamom

was ordered every six hours. Locally, an application consisting of three parts opium liniment to one part tincture of iodine was made to the abdomen. To combat the tuberculous infection a mixture containing equal parts of iodoform ointment and codliver oil was freely rubbed over the abdomen twice daily. The bismuth mixture was later replaced by a pill of $\frac{1}{4}$ gr. iodoform with $\frac{1}{4}$ minim creosote thrice daily. This treatment to be considered for several months; in three cases cited by Yeo satisfactory results were obtained. The three patients, who were very young—between 10 and 20 years of age—were desperately ill, and the disease ran an acute course. In older people and in chronic types of the affection the same success can hardly be hoped for,

Iodoform ointment is excreted as iodine in the urine, hence the absorption of iodoform by the skin results in the supplying of iodine or iodine compounds to the tissues of the body, and, since iodine has long been considered as an antitoxin to tubercle, the rationale of this treatment is readily understood. Yeo believes that better results may be obtained by iodoform applications externally and the administration of iodoform with creosote in small doses internally than by surgical interference. [R.M.G.]

Migraine.—Migraine is sometimes due to eye-strain, very rarely to adenoids in the pharynx or to disease of the nose. Uterine and menstrual disorders also may cause attacks. Heredity plays an important part in the production of many cases, while a gouty diathesis, which is often inherited, is the cause in most instances. The presence of disease of the eyes, nose, pharynx, and uterus should always be ascertained, for it is sometimes a cause of migraine. Those cases that have a lithemic origin can be greatly helped by a suitable diet and mode of life. A generous amount of exercise out-of-doors ought to be taken daily. Especially should pains be taken to practise deep breathing with great frequency, in order to promote better metabolism, first by producing as complete oxygenation of the blood as possible, secondly, by filling the lungs with fresh air and thereby eliminating waste-products from the blood, and lastly, by promoting good lymphatic and venous circulation in liver, stomach, and abdominal viscera through the suction that considerable changes of intrathoracic pressure effects. Occasional hot baths and frequent vigorous rubbing of the skin are beneficial.

Water should be drunk freely—at least six or eight glasses daily. Water and milk are especially needed to help dilute the blood, to hold in solution waste matter and toxic substances, and to eliminate them by the kidneys. Alcoholic beverages should be forbidden. In many instances, tea and coffee are also harmful; in others they may be permitted if used sparingly and without sugar and cream.

Cereal foods may be eaten in small quantities with a very little sugar, or with saccharin as a substitute; likewise custards, cornstarch, and blanc mange. Dry bread may also be permitted, but no hot breads, rolls, pancakes, or pastries. Fruits may be eaten, providing they are not too acid, as strawberries, currants, gooseberries, and cherries are likely to be; also stewed fruits if they are not too sweet. The simpler vegetables, such as potatoes, baked or mashed, squash, string, or wax beans, peas, corn, tomatoes, spinach, lettuce, asparagus, cucumbers, and onions, may be prescribed, but cabbage, cauliflower, baked and Lima beans, beets, and turnips are usually not well digested. Eggs, fish, oysters, the white meat of fowl, and once in a while, tender, lean beef or lamb may be allowed; cheese, however, and high game, pork, fat mutton and rich gravies and sauces are likely to do harm. Moreover, patients should be taught to eat whatever food is permitted in small amounts. Those patients who pursue this regimen strictly are able to avert their headaches, but indiscretions in eating, especially overeating, or extreme weariness or undue anxiety are likely to cause an occasional attack. The bowels should be moved freely each day.

I believe that for those sufferers from migraine who are disposed to so-called uric acid troubles, the most important of these regulations are exercise, copious drinking of water or milk, and the abstemious use of simple foods.—[N. C. Davis, Jr. "Diet Therapy."]

Diet in Albuminuria.—Certain nitrogenous foods are more likely than others to cause albumin to appear in the urine. Milk, although it contains from 4% to 5% of proteid, is the food par excellence for those who have albuminuria. If eggs are eaten raw, albumin is more likely to appear or be increased in the urine than when they are used after cooking. Fish and oysters affect only the severe cases unfavorably. The meat of squab and the breast of chicken are less harmful than the red meats, such as beef and mutton. Breads, cereals, vegetables, and fruits may be eaten by most of those having albuminuria. The use of these articles of food must be curtailed because of uremia, severe nephritis, or complicating disorders of digestion, not because of albuminuria. Water should be drunk

¹ American Gynecological and Obstetrical Journal, December, 1901.

copiously when casts, renal epithelium, blood-cells, or granular matter, as well as albumin, appear abundantly in the urine. As in such cases the urine is diminished in amount, diuresis must be provoked by drinking water freely. Milk also is almost a necessity in the treatment of these cases, both because it is a perfect food and because it is a diuretic of great value. Tea, coffee, and cocoa may be permitted in the mildest cases provided they do not hinder or disturb digestion. Alcoholic beverages must be forbidden when any portion of the urinary tract is inflamed or diseased, for they aggravate such conditions.—[N. S. Davis, Jr. "Diet Therapy."]

Mercury Oxycyanid Topically in Urethritis.—Genouville (*Journal des Praticiens*, June 22, 1901) has found mercury oxycyanid particularly valuable in urethritis due to gonococcus infection, and in chronic discharge from the urethra complicated by slight cystitis or prostatitis. In the majority of cases it may be employed when potassium permanganate is indicated. Genouville employs mercury oxycyanid in solutions varying in strength from 1 to 5,000 to 1 to 1,000, beginning with a weak solution and rapidly increasing the strength. Mercury oxycyanid has the advantage over potassium permanganate in that it is devoid of all irritant action on the urethra and bladder. [L.F.A.]

Cacodylates in Scrofula.—Quelmé (*Bulletin Général de Thérapeutique*, August 30, 1901) has seen but little benefit follow the use of sodium cacodylate in the treatment of tuberculosis. In scrofula, however, the drug has given great satisfaction. In the treatment of 30 cases of scrofula, both in children and in adults, he obtained marked improvement. Some of these had been treated for a long time by the usual methods without any success. The author employs sodium cacodylate in ascending doses, beginning with $\frac{1}{4}$ grain before breakfast for 3 days, then stopping for 2 days, then increasing $\frac{1}{4}$ grain at each dose until $1\frac{1}{2}$ grains are taken twice. It is now stopped for 15 days, and then repeated. [L.F.A.]

Treatment of Aneurysm by Injections of Gelatin.—J. Sörgo (*Journal des Praticiens*, June 8, 1901) has treated 48 cases of aneurysm with subcutaneous injections of gelatin. Coagulation was obtained in 13 cases; in 12 the results were doubtful, and in the remainder no effect was produced. The best results were observed in circumscribed sacculated aneurysms. Sörgo employed 4% to 5% solutions of gelatin, and injected from 3 to 5 ounces every 3 or 5 days under the skin of the abdomen or of the thigh, after the part was anesthetized with cocaine. At first the injections were nearly always followed by local pain and fever, sometimes by oppression, headache, a burning sensation, or by arrest of the heart action; in one instance the pulse was accelerated. The patient should remain in bed during treatment, and should be kept on an absolute milk diet, without internal medication. [L.F.A.]

Treatment of Otitis Media.—A. Courtade (*Journal des Praticiens*, April 6, 1901) recommends the insufflation of air in the first stage of acute otitis media, occurring in the course of an acute coryza, generally from the fourth to the eighth day. These patients at first complain of discomfort and fullness in the ear, soon followed by sharp lancinating pains with nocturnal exacerbations; deafness is present in a variable degree and increases as the secretions accumulate. Very often after the insufflation the patient feels relieved, the head becomes clearer, deafness diminishes, and the pains cease. In many cases if insufflation is practised early the symptoms do not return. This treatment is not applicable to all cases of otitis media. In severe cases it is useless, painful, and may cause immediate perforation of the tympanum. The most favorable cases are those in which inflammation of the mucous membrane appears only as an intense injection of the handle of the malleus and of Schrapnell's membrane or even as a redness of the whole tympanic membrane, but without infiltration of the horny cutaneous layers. [L.F.A.]

Treatment of Inoperable Malignant Tumors by Quinin.—Launois (*Journal des Praticiens*, March 9, 1901) reports the case of a woman aged 50 who had a large ulcerated carcinoma of the breast; the axillary glands were enlarged, and there was functional impotence with pains in the lower limbs, and in the back, which led to the belief that the carcinoma was general-

ized. By reason of the probable generalization, and the bad general condition, all curative intervention was impossible. The patient was given injections of quinin hydrochlorosulfate, at first in doses of $\frac{7}{8}$ grains, then 4 grains, daily. She thus received 54 injections in a little less than three months. At the end of this time the ulceration of the breast was cicatrizing, the axillary glandular enlargements had disappeared, pains had ceased, sleep had returned, the patient's appetite had improved and she was able to be up for several hours daily. This treatment was based on the theory of Metchnikoff that cancer is due to animal parasites analogous to those of paludism, for which quinin is a poison. [L.F.A.]

[This report is interesting, but hardly establishes a new therapy for cancer. S.S.C.]

Dietary for Tuberculous Patients.—According to N. S. Davis, Jr., the following diet-list will be found useful for those patients with good digestion who need to have food crowded upon them in order to gain in weight and strength: On awakening: A cup of hot milk or of tea, coffee, or cocoa well diluted with cream or milk, or of beef tea, or of gruel; the hot milk is the best. Breakfast, one to three hours later, at from 7 to 9: Weak tea, coffee, or milk; one of the cereal foods with rich cream and sugar; bacon, fried hard, and a poached or boiled egg; bread or toast and fruit or marmalade; this meal is preferably taken immediately after the morning coughing, unless the patient falls to sleep for an hour or so, when it will follow the sleep. Bacon should form a staple breakfast dish if possible; fish, sweetbreads, or minced meats may be taken instead of eggs. Luncheon at about 11: A glass of milk, gruel, malted milk, Mellin's food, or a dish of Robinson's barley or of soft-boiled rice with cream; milk is usually the best, for it is easily prepared and quickly taken. Dinner at from 1 to 2: Soup, meat such as beef, mutton, lamb, or fowl; a variety of simply prepared and easily digested vegetables, like baked potatoes, peas, string and wax beans, corn, spinach, asparagus, and similar garden products; salads with oil dressing are grateful to many patients, and the oil is a most useful food; desserts should be simple—those made or eaten with cream are especially good; fruits are among the best. Luncheon about 4: A cup of broth, an egg lemonade, a dish of ice-cream, or a glass of milk; bread or crackers may be eaten with these if desired. Tea at from 6 to 7: Fruits, fresh or preserved; bread and butter; some cereal food with cream, or cream or milk toast; a small portion of meat; milk or tea or cocoa weakened with milk if preferred. At bedtime: A glass of milk, hot or cold, as the patient prefers. Water may be taken as it is wanted. The easily digested fats, such as butter, cream, bacon, and olive oil, are especially to be recommended. The frequent use of foods on which they are freely eaten should be urged. Necessarily this regimen must be greatly modified for patients who have much fever or gastritis.—Cohen's System of Physiologic Therapeutics, vol. vi.

Treatment of Hypertrophy of the Prostate.—O. Horwitz (*Philadelphia Medical Journal*, June 22, 1901), after performing 161 operations for the relief of senile hypertrophy of the prostate gland, is convinced that the Bottini operation is the best method of dealing with this condition. In a number of cases there has been a slight tendency to recurrence, necessitating a second operation. When the enlargement [is small, a median and 2 lateral incisions are all that are required; with considerable enlargement 3 cuts are necessary in the prostatic floor. It is rarely necessary to incise any but the lower portion of the gland, although it may be necessary to go higher where there is general enlargement with projection backward and pouching. Hemorrhage is more common after incision into the upper portion of the gland. Four cuts should be made in the lower portion when there is a marked projection of the middle lobe backward. Two v-shaped incisions into the middle lobe will permit it to fall backward out of the way, and it finally becomes atrophied. A finger in the rectum should be used as a guide in making the incisions. This method of palpation will show whether a fold of the bladder has been caught in the beak of the instrument. Care should be taken not to press the rectum against the blade, lest a rectovesical fistula be formed. The Bottini operation is indicated for all forms of

hypertrophy, except where there is valvular formation, or where there is an enormous overgrowth of the 3 lobes, associated with tumor formation, giving rise to a pouch both below and above the prostate gland. The results are negative when the bladder is hopelessly damaged, and when a general atheromatous condition of the bloodvessels associated with polyuria exists.—[L.F.A.]

Therapeutic Value of Fluid Extract of Horsechestnut.—According to B. Schürmayer, of Hanover (*Therapeutische Monatshefte*, vol. xv, No. 6, June, 1901) the saponin of commerce contains four ingredients: Sapotoxin, quelliac acid, pure saponin, and a carbohydrate, probably lactosin. As the two first named substances are exceedingly toxic, little confidence was placed in the group of saponin substances for therapeutic purposes. Recent investigations have brought to light the existence of saponin substances which possess less toxicity and permit the general therapeutic effect of saponin to be produced without danger of poisoning. Such a substance is the fluid extract of horsechestnut (*aesculus hippocastanum*); it has a dark brown color, a peculiar syrupy odor, and intensely bitter taste. It forms a mucilaginous coating on the skin when applied locally.

Externally the following preparations were tested:

1. Fluid extract, full strength
2. " " diluted with water
3. " " diluted with chloroform
4. Plaster mulls made with the extract.

} as inunctions

It was noted that even the undiluted extract did not irritate the skin. Inunctions may be continued for weeks without toxic results. Gargling with a 1% to 2% watery solution was not followed by the phenomena attending the use of other saponin substances, such as a scratching sensation in the throat, etc.

Pills of 0.1 (gr. 1½) ext. hippocastani with 0.05 (gr. ½) ext. rhei were administered successfully. The drug was used with good results in rheumatism and neuralgia and in painful affections of the skin. [R.M.G.]

Finsen's Method of Phototherapy in Lupus and Rodent Ulcer.—Malcolm Morris and Ernest Dore obtained (*Therapeutische Monatshefte*, Vol. xv, No. 5, May, 1901) their best results with Finsen's method in lupus vulgaris; next in order came rodent ulcer and lupus erythematosus. In mild cases of lupus vulgaris a single application of the concentrated chemic rays, after the method of Finsen, sufficed to institute the process of repair. In cases characterized by marked crust-formation the treatment had to be reinforced by pyrogallie acid. Conditions that interfere with the treatment are: Marked cicatrization of the parts to be treated; pigmentation and great vascularity, preventing the rays from penetrating to the proper depth; depth of the lesions below the surface of the skin, and proximity of mucous membranes and delicate organs, such as the eyes. When the diseased area of the skin is extensive the treatment may require a long time—a year or more. Nevertheless, the treatment is agreeable to the patient and the satisfactory results obtained far outweigh its disadvantages. [R.M.G.]

Hot Electrotherapeutic Compresses.—E. Lindermann, of Berlin (*Therapeutische Monatshefte*, Vol. xv, No. 6, June, 1901), insulates the heating wires in his electrotherapeutic apparatus by means of asbestos and canvas wrappings. The compresses have various shapes—simple square compresses, hemispheric, concave pads for the joints, etc. As they offer a great resistance to the electric current they may be raised to a high temperature without reaching red heat (glowing). They therefore maintain a constant tension. By inserting a rheostat the radiated heat may be increased or diminished or kept constant at will, a marked advantage over all other forms of compress, which usually develop a high degree of heat at first and then gradually cool off. A contrivance on the rheostat guards both the patient and the apparatus against injury in case of short-circuiting. The rheostat in its simplest form consists of a series of incandescent lamps mounted on a wooden frame. The number of incandescent lamps determine the amount of current that reaches the compresses, and since the incandescent lamps always transmit a known quantity of current, the increase in the temperature of the compresses is under constant

control. One minute after closing the circuit the temperature of the compress rises to 40° C., after two minutes to 60° C., and after three minutes 80° C., after four minutes to 90° C., after five minutes to 100° C., etc. Larger compresses require a somewhat longer exposure. The rheostat is provided with two contacts so that two compresses can be connected at the same time; these will then require a little longer time to become heated. The compresses do not require much current and may be attached to an incandescent lamp.

A waterproof cloth should be interposed between the compress and the skin to prevent the wires from being moistened by the perspiration and transmitting a portion of the electric current to the skin.

The advantages of these over other hot compresses are, their cleanliness, convenience of application, comfort to the patient, simplicity, and, especially, the ease with which the temperature can be maintained or changed at will. Lindermann was able to raise the temperature of a compress applied to the precordial region within half an hour from 45° C. to 60° C., after another quarter of an hour to 70° C., and in one case even to 75° C., without burning the skin. They are recommended as antispasmodics in the treatment of chronic joint affections where baking with the electrotherm either fails or cannot be applied; for the purpose of maintaining heat in other compresses, poultices, fango applications, ichthyol compresses, and the like; in irritative affections of the stomach, ulcer, etc., especially when combined with a wet compress after the method of Wintermitz. [R.M.G.]

Hydrogen Dioxid in the Treatment of Pyodermitis. Cochart (*Journal des Praticiens*, April 13, 1901) reports 15 cases of impetiginous lesions and cutaneous abscesses successfully treated by lotions of pure hydrogen dioxid. He considers hydrogen dioxid the antiseptic of choice for disinfection of the skin in children, as it is without toxic effect. [L.F.A.]

An Improved Method of Treating High-seated Cancer of the Rectum.—W. F. Weir (*Medical News*, July 27, 1901), prefers the operation devised by Maunsell for the removal of high-seated cancer of the rectum. This consists in opening the abdomen above the pubis; a loop of tape is then passed through the rectum and out at the previously dilated anus, in the hope of pulling down the neoplasm. Owing to the difficulty in delivering the tumor in his operation, Weir modified it by separating the bowel along the sacrum, liberating it down nearly to the tip of the coccyx and in front to the edge of the prostate. Two iodoform tapes, about 1 inch apart, are tied around the bowel 3 inches from the anus; the intestine is then cut through and the free end raised through the abdominal wound. The severed end of the rectum is then seized by forceps and everted through the anus. After removing the tape from the everted lower portion, a forceps is carried through it into the pelvis and the upper bowel brought down within its clasp, and it is then brought out through the erected lower portion. A couple of needles passed through the invaginated ends of the bowel near their margins allow of easy suturing with the knots inside the bowel, after which the bowel is replaced. In 3 cases this operation has given satisfactory results; 2 cases recovered, and the third died of diarrhea, apparently not connected with the operation.—[L.F.A.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended January 11, 1902:

SMALLPOX—UNITED STATES.				Cases	Deaths
California:	San Francisco.....	Dec. 22-29.....		2	
Indiana:	Evansville.....	Dec. 22-Jan. 4.....		3	
Iowa:	Clinton.....	Dec. 27-Jan. 4.....		1	
Louisiana:	New Orleans.....	Dec. 27-Jan. 4.....		1	
Massachusetts:	Blackstone.....	Jan. 1-8.....		2	
	Boston.....	Dec. 27-Jan. 4.....		21	6
	Brookton.....	Dec. 27-Jan. 4.....		1	
	Cambridge.....	Dec. 27-Jan. 4.....		2	
	Chelsea.....	Dec. 27-Jan. 4.....		1	
	Lowell.....	Dec. 27-Jan. 4.....		4	
	Medford.....	Dec. 27-Jan. 4.....		2	
	Newton.....	Dec. 27-Jan. 4.....		1	
	Quincy.....	Dec. 27-Jan. 4.....		1	
	Somerville.....	Dec. 27-Jan. 4.....		1	

Nebraska:	Omaha.....	Dec. 27-Jan. 4....	29	
New Hampshire:	Nashua.....	Dec. 27-Jan. 4....	2	
New Jersey:	Camden.....	Dec. 27-Jan. 4....	19	
	Jersey City.....	Dec. 22-29.....	-	1
	Newark.....	Dec. 27-Jan. 4....	31	1
New York:	New York.....	Dec. 27-Jan. 4....	8	2
Ohio:	Cincinnati.....	Dec. 28-Jan. 3....	9	
	Cleveland.....	Dec. 27-Jan. 4....	1	
	Youngstown.....	Dec. 21-28.....	1	
Pennsylvania:	Allegheny.....	Dec. 27-Jan. 4....	2	
	Norristown.....	Dec. 7-Jan. 4....	1	1
	Philadelphia.....	Dec. 27-Jan. 4....	90	16
South Carolina:	Greenville.....	Dec. 27-Jan. 4....	1	
Tennessee:	Memphis.....	Dec. 27-Jan. 4....	2	
Vermont:	Burlington.....	Dec. 21-28.....	30	
Virginia:	Roanoke.....	Dec. 24-31.....	2	
Washington:	Tacoma.....	Dec. 22-29.....	2	
Wisconsin:	Green Bay.....	Dec. 29-Jan. 5....	5	1
	Milwaukee.....	Dec. 29-Jan. 4....	1	

SMALLPOX—FOREIGN.

Argentina:	Buenos Aires.....	Oct. 1-21.....	61	
Austria:	Prague.....	Dec. 7-14.....	16	
Belgium:	Antwerp.....	Dec. 7-21.....	4	1
	Ghent.....	Dec. 14-21.....	4	
Brazil:	Rio de Janeiro.....	Nov. 28-Dec. 8....	83	
Canada:	Halifax.....	Nov. 22-Jan. 4....	15	
	Quebec.....	Dec. 28-Jan. 4....	21	
Colombia:	Cartagena.....	Dec. 16-22.....	3	
France:	Paris.....	Dec. 14-21.....	6	
Great Britain:	Liverpool.....	Dec. 7-21.....	3	
	London.....	Dec. 14-21.....	588	32
India:	Calcutta.....	Nov. 23-Dec. 7....	2	
	Madras.....	Nov. 23-Dec. 6....	3	
Italy:	Naples.....	Dec. 7-14.....	16	1
Russia:	Odessa.....	Dec. 7-14.....	3	1
	St. Petersburg.....	Dec. 7-14.....	5	1
Spain:	Corunna.....	Dec. 14-21.....	2	
Uruguay:	Montevideo.....	Oct. 25-Dec. 9....	108	5

YELLOW FEVER.

Brazil:	Bahia.....	Nov. 30-Dec. 7....	1	1
	Rio de Janeiro.....	Nov. 23-Dec. 8....	4	
Mexico:	Vera Cruz.....	Dec. 21-28.....	6	2
West Indies:	St. Lucia.....	Dec. 9.....	Prevalent.	

CHOLERA.

India:	Bombay.....	Nov. 26-Dec. 3....	5	
	Calcutta.....	Nov. 23-Dec. 7....	79	
Java:	Batavia.....	Nov. 8-30.....	40	28

PLAGUE—FOREIGN.

Brazil:	Rio de Janeiro.....	Nov. 23-Dec. 5....	11	
India:	Bombay.....	Nov. 23-Dec. 10....	238	
	Calcutta.....	Nov. 23-Dec. 7....	50	
	Karachi.....	Nov. 23-Dec. 8....	169	155
Mauritius:	Batoum.....	Dec. 5-12.....	42	25
Russia:	Batoum.....	Dec. 12.....	1	Suspect
South Africa:	Port Elizabeth.....	Nov. 30-Dec. 7....	1	
	Massell Bay.....	Nov. 30-Dec. 7....	2	

Changes in the Medical Corps of the U. S. Army for the week ended January 11, 1902:

PERLEY, Major H. O., surgeon, leave of absence for one month, to take effect about January 5.

BEVANS, First Lieutenant JAMES L., assistant surgeon, will proceed to Columbia Barracks, Cuba, for duty.

DE MEY, Captain CHARLES F., assistant surgeon, granted leave of absence for one month.

FIELD, First Lieutenant PETER C., assistant surgeon, is relieved from further duty at Fort Slocum, and will proceed to Fort Robinson for duty, to relieve Contract Surgeon Albert H. Simonton, who will proceed to Birmingham, Ala., for annulment of contract.

HODNETT, GARRETT F., hospital steward at Fort Bayard, is transferred to the general hospital at Fort Bayard for duty.

The following named contract surgeons will proceed from the places designated to San Francisco, Cal., and report for transportation to the Philippine Islands, where they will report for assignment to duty: Thomas Howlett, from Gilroy, Cal.; Edward H. Jordan, from Denver, Colo.; Marion F. Marvin, from Jacksonville, Fla.

POMEROY, Contract Surgeon WILLIAM H., now at Springfield, Mass., will report to the commanding officer of the Springfield Armory for duty at that armory.

SCHUYLER, WILFRED H., hospital steward, now at Fort Wright, when able to travel will be sent to the Army and Navy General Hospital, Hot Springs, Ark., for treatment in the hospital.

BARTLETT, First Lieutenant COSAM J., assistant surgeon, is relieved from further duty at the United States general hospital, Presidio, and will proceed to Fort Liscum, Alaska, for duty, to relieve Contract Surgeon James T. Arwine, who will proceed to San Francisco, Cal., for assignment to duty.

HALLORAN, First Lieutenant PAUL S., assistant surgeon, leave of absence extended 14 days.

MACKIE, JAMES V., hospital steward, San Juan, Porto Rico, is transferred to Ponce, Porto Rico, for duty, to relieve Hospital Steward Hugh R. MacCleery. Steward MacCleery will be sent to Fort Howard for duty.

Changes in the Medical Corps of the U. S. Navy, for the week ended January 11, 1902:

GROVE, Passed Assistant Surgeon W. B., ordered to the San Francisco—January 3.

BLAISTED, Passed Assistant Surgeon W. C., detached from the Topeka and ordered to the naval hospital at New York—January 7.

FURLONG, Assistant Surgeon F. M., ordered to Vicksburg, Miss., for duty at the naval rendezvous; and to the Topeka upon completion of recruiting duty.

HUNTINGTON, Assistant Surgeon E. O., detached from the Columbia and ordered to the naval hospital at New York—January 8.

BENTON, Assistant Surgeon F. L., detached from the naval hospital at New York and ordered to the Columbia.

STOKES, Surgeon C. F., detached from the Solace and ordered to duty at Guam, L. I.—January 9.

HESLER, Surgeon F. A., ordered to remain on duty on the Asiatic station.

WAGGENER, Medical Inspector J. R., ordered to the United States training ship Constellation.

McCLURG, Medical Inspector W. A., detached from the Constellation and ordered home to hold himself in readiness for sea duty.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended January 9, 1902:

IRWIN, FAIRFAX, surgeon, bureau telegram of December 27, 1901, granting Surgeon Irwin leave of absence for 7 days amended so that said leave shall be for 5 days—January 7, 1902.

CARTER, H. R., surgeon, leave of absence for 10 days granted Surgeon Carter by bureau letter of December 26, 1901, revoked—January 7, 1902.

KALLOCH, P. C., surgeon, to proceed to Portland, Me., and assume charge of the quarantine service at that port—January 7, 1902.

KINYOUN, J. J., surgeon, 6 days' leave of absence from January 6, 1902, under paragraph 179 of the regulations.

McCONNELL, E. F., acting assistant surgeon, granted leave of absence for 30 days from December 24, 1901—January 8, 1902.

MACEO, J. N., acting assistant surgeon, granted leave of absence for 30 days from December 17, 1901—January 8, 1902.

RIDGOUT, C. F., acting assistant surgeon, granted leave of absence for 10 days from January 2, 1902—January 7, 1902.

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The Compulsory Vaccination of Teachers, Employes, etc.—In accordance with resolutions of the Committee on Hygiene and the Committee on High Schools of the Philadelphia High School for Girls, relative to the vaccination of teachers, the chairman suspended one of the teachers for her refusal to be vaccinated. The Superior Court on Tuesday last decided that it could not assent to the proposition that the Board had not power to suspend the teacher for refusing to comply with the vaccination regulation. Such a ruling is, of course, in the interest of the public health, and it is a cause of congratulation that the decision is good law. Some time since we urged the great advance that could be made in rational temperance by the rules as to drinking which all great corporations and employers of labor are making or should establish. So as to vaccination we are not thoroughly utilizing the opportunities that exist to extinguish by the same methods the ravages of smallpox. The profession as a whole, and every member of it, should use his influence repeatedly and unremittingly to induce all government officials, corporations, and employers of labor, public or private, to make it one of their rules, breaking of which should mean discharge, that every employe must, at stated periods, file a regular physician's certificate that he is protected from smallpox by vaccination.

Physicians Who Oppose Vaccination.—The recent occurrence of smallpox in the families of a number of physicians who oppose vaccination is a most serious matter. It is said that "vaccination by the mouth," or "by the stomach," is the method advised by them. Such phrases, according to science, betray an obstinacy that is worthy of punishment. We can find some excuse for layfolk, wholly ignorant of physiology, history and statistics, who oppose vaccination, but in physicians there is no excuse whatever. The testimony as to the value of vaccination is so overwhelming that those who do not admit it have no right to pass from the sick-room of patients with highly infectious diseases and scatter the germs among the people. Such physicians should be quarantined with their patients. Argument will have no effect upon such minds, and the swift punishment of their delusions by the occurrence of smallpox in themselves or in their families will have no influence upon their views or in their advice to their patients. In the

name of medicine, to oppose the best established medical truth, and, in the name of therapeutics, to scatter disease is an outrage upon the community.

Shall the National Government Assume Control of the Manufacture and Sale of Vaccine, and of Therapeutic and Prophylactic Serums?—The recent unfortunate results attending the use of diphtheria antitoxin in one city and vaccine virus in another, with reports from elsewhere that certain vaccine lymphs do not protect, etc., tending to bring discredit upon valuable therapeutic and prophylactic agents and cause an epidemic of inoculation phobia among the laity, there is a strong feeling in the profession that a better guarantee of purity and of a standard immunizing power of all such preparations is needed. For the government to engage in the manufacture of these substances is considered both impractical and undesirable; but government supervision and periodic inspection of the laboratories and farms, where serums and vaccine virus are produced commercially, are the proper and advisable remedial measures. In France, Germany, Italy, Russia and most countries of Continental Europe we find the production and sale of all such preparations under strict government control. This is not so, however, in Great Britain. In France such substances cannot be marketed under an actual or trade name until they shall have been, in point of view of manufacture and origin, the recipient of governmental authorization rendered according to the judgment of the consulting committee of the council of hygiene and the Academy of Medicine; and they will be granted a temporary and revocable license only, and shall be subjected to an inspection to be made by a commission appointed by a minister having competent authority. These products shall be delivered to the public by pharmacists only upon physicians' prescriptions. These regulations do not apply to either animal or humanized vaccine virus. In Italy vaccine virus is also included under a similar law. In countries where the officers who are charged with seeing such laws and regulations enforced are either ill-paid, or where their appointment is a political one, there is always danger of superficiality or remissness, and in that case the vigilance of individual physicians and the boycotting of firms that do not furnish reliable preparations will, in the end, be more efficient. Unfortunately

lives will be lost and great harm will be done otherwise before our vigilance is aroused.

Supporting Quackery for Local Business Reasons.—We have often been astonished at the ease with which when they set up as healers, faith-curers, or offer miraculous nostrums for sale, the most impudent and ignorant scamps secure the testimonials of local bankers, preachers, and "leading citizens." If the legitimate profession, local and neighborhood, were united and in earnest these quack-backers could be brought to their senses and the fallacy of their argument that it is for the good of the town's business could be shown. No community gains, but on the contrary it loses by supporting scoundrelism. According to the newspapers a flagrant example has lately occurred in the State of Washington in which, if the reports are true, a conspiracy to secure the passing of an applicant by the State Board was by some thought excusable on the ground that so good an advertiser should be kept in Seattle. Fortunately the excuse was not held to be valid by members of the Board, the plotting came to naught, and the indignant citizens are justly demanding an investigation and a punishment of those guilty. Legalizing the right to practise by one who knows nothing whatever of the science of medicine is a crime against every citizen.

The sale or theft of examination questions of State Examining Boards has been a charge often brought against examiners, and in some instances so definitely that there has not been much doubt of the fact in the minds of onlookers. In most of these cases, however, there was no question as to the right of those examined to present themselves for examination. More or less poorly they had studied medicine and more or less unworthily they held the degree of M.D. But such methods lead quickly to their logical results and we have now to meet the attempt to secure license to practise on the part of downright quacks who have no degree and who have never studied medicine. If we may trust newspaper reports a "specialist" in Seattle, Washington, attempted to buy copies of the examination papers for \$1,000. The president of the Examining Board refused to allow the "doctor" to go on with his examinations and the plot fell through. It is plain, that only those holding the doctorate degree should be allowed to come up for examination by State Boards; that an applicant's character and history should be as carefully inquired into as his medical knowledge; that every examiner should not allow his questions to be printed, but should bring them in MS. to the meeting of the examiners.

The disinfection of paper money is a subject that may well attract the attention of hygienists. When patients with smallpox or other contagious diseases are quarantined they must purchase and pay for food, etc., and it is certain that the bills sent by them may be carriers of contagion. It is almost impossible for the larger banks to carry out thorough disinfection of money with the present devices, and for the small stores and working-men it is perhaps more difficult. A simple, cheap and effective disinfection device is highly desirable.

Banks may lessen the danger by returning to Washington for redemption notes that are not only badly soiled or damaged, but that are slightly so. It would be well if the English system of redemption were also in use in our country. Our Government should be more liberal to banks, in this respect..

Improvement of the Human Breed.—A number of thoughtful persons have suggested improving the human race by eliminating the criminal classes and the mentally unfit by laws to prevent their marrying; some have even suggested unsexing those classes of people that are very evidently unfit. This would no doubt abolish a source of suffering and misery to future generations and there would be no unwarrantable hardship in it. In one of the Huxley lectures before the Anthropological Institute, delivered October 29, 1901, Francis Galton suggests quite an opposite means of possible improvement of the human race under the existing conditions of law and sentiment (*Popular Science Monthly*, January, 1902). He advocates efforts to encourage the intermarriage of talented, energetic, morally, intellectually and physically strong individuals, and states that the result in improving the race would be much more important than that which could be attained by eliminating the undesirable classes. He cites the investigations of Dr. Farr, the eminent statistician, who has endeavored to estimate the money worth of the average baby born to the wife of an Essex laborer. Dr. Farr, by estimating the cost of maintenance during childhood and helpless old age and comparing it with the earnings as a boy and man, on balancing the two sides of the account computes the value of a baby to be five pounds. "On a similar principle the worth of a baby born to people of the most gifted classes would be reckoned in thousands of pounds. Some such talented folk fail, but most succeed and many succeed greatly. They found great industries, establish vast factories, increase the wealth of multitudes and amass large fortunes for themselves. Others, whether rich or poor, are the guides and light of the nation, raising its tone, enlightening its difficulties and imposing its ideals." Galton suggests making use of the universities to determine those among the males of the English nation who give greatest promise. By submitting to vote of the tutors and professors on the one hand and the votes of fellow students whose ideals of character and merit necessarily differ, he believes that a safe selection might be made. The opportunities of selecting the most gifted young women are fewer, but he believes that such a selection is possible. To encourage the intermarriage of this select class of young men and women money might be appropriated by the state to aid those to whom moderate sums are important. Help should be assured in emergencies during the early years of married life, and healthy homes for the families provided at moderate cost. Another way of accomplishing this end would be by voluntary contributions from wealthy people. The sum of money given to public charities in the British Isles every year at the lowest computation amounts to \$70,000,000, and no doubt if those who have such favors to bestow are convinced of the practicability of such a plan, such

endowments would be possible. Galton urges further statistical study to the end of determining more definitely what are the results of suitable intermarriage among gifted people. The clear distinct statement of a problem is often more than half way toward its solution and there seems no reason why this one should not be solved between limiting values that are not too wide apart to be useful. But unscientific love laughs at all such regulations. Before any active measures can be taken along such lines careful study of the subject certainly should be undertaken. It not by any means always follows that gifted parents have gifted children; in fact, we know of some very striking examples to the contrary. A careful study of statistics might do something to determine the factors which lead to such unfortunate results as the birth of idiotic children to gifted parents as well as the proportion of those with unusual talent. Galton's suggestion no doubt has much that is highly valuable in it and it is not by any means beyond possibility that future generations may profit by some such plan.

The After-Dinner Nap.—According to *Health*, a German physician, Dr. Schule, by analysis of the stomach-contents, has demonstrated that sleep after meals decreases the mobility of the stomach and increases the acidity of the contents, and hence is not advisable. This, so far as it goes, corresponds with the advice of the old German saw—

"Nach dem Essen stehen
Ober Tausend Schritte gehen."

May it not be that the matter cannot be decided by rule, but depends upon the individual peculiarity and habits? Does it also possibly depend to a large extent upon the kind of food eaten? As a rule the Canidæ and the Felidæ, flesh-eaters, sleep after meals, and acidity would aid their digestion, whilst the ruminants and graminivorous animals lie down, but keep awake. Dr. Schule, it is said, admits that the recumbent position without sleep aids digestion.

A gift of \$1,000,000 for a tuberculous hospital has been placed at the disposal of King Edward, of England, by Sir Ernest Cassel. His Majesty has appointed an advisory committee of eminent medical men. The *British Medical Journal* says that the sanatorium is intended to accommodate 100 patients, fifty male and fifty female. Of the total number of beds, eighty-eight will be reserved for persons who can pay only a small amount toward the cost of treatment, while twelve will be set apart for well-to-do sufferers. The sanatorium is to be built on a suitable site in extensive and well-wooded grounds; each patient will have a separate room, and the accommodation will be in every respect thoroughly comfortable; the sanitary arrangements will be in accordance with the teachings of the most advanced hygiene, and abundant provision will be made for recreation and exercise. The institution will also be fully equipped with all requirements for scientific research. In a word, it is the wish of the King that his sanatorium should be as perfect as possible in every detail. In order that no means of attaining this object

may be omitted, His Majesty has approved the expenditure of £800 in prizes to be given for the best essays and plans for the construction of a model sanatorium. Three prizes of £500, £200 and £100 respectively will be awarded, provided the essays come up to the requisite standard of excellence. The competition is open to medical men of all nationalities.

Another job for the antivivisectionists is suggested by the *Medical Press and Circular*. Strasburg is said to send out \$750,000 worth of *foie gras*, which is made from the diseased livers of geese "deliberately brought to death's door by treatment that is diabolically cruel."

"The unfortunate birds are cooped up indoors in boxes so arranged that the head alone can be moved. They are then crammed with a rich diet, which is forced down their gullet. Under these circumstances the liver quickly becomes affected, and attains an enormous size from fatty degeneration. The larger the liver the more successful the process. The most valuable livers are those of a green tint; that is to say, fatty livers impregnated with bile pigments. Three months of forced feeding is required to bring the unfortunate birds to the proper pitch of organic degeneration so that their livers may tickle the palates of fat gourmands."

If the antivivisectionists hated cruelty with a tithe of the intensity they hate science!

"The immoderate moderate drinker" is warned against by Sir Dyce Duckworth, in the interests of life insurance companies. He speaks purely clinically, and has no faith in statistics; he does not believe in total abstinence, except that it is better to abstain altogether than to misuse alcohol in the slightest degree. He regards alcohol as a food, and as a good food when used properly and well within the physiologic limit, which he puts at an equivalent of two fluid ounces daily. He says that more assured lives are cut short by exceeding this limit than by tuberculosis or any other malady. A far more accurate and detailed method of quizzing applicants for insurance is urged. Sir Dyce Duckworth draws a number of fine distinctions between "intemperate abolitionists," "temperance advocates," "temperance persons," "alcoholic intemperance," etc., and lastly "immoderate moderate drinkers," which will hardly be recognized by the understanding of the ordinary man, at least not practically. There is, we should say, entirely too much immoderate moderate drinking.

"The Only Bad Feature."—A correspondent sends us a copy of the following letter, which recently reached him. As subscribers to *AMERICAN MEDICINE* are not likely to accept this invitation, we do not think we run any danger of giving the enterprising promoters a free advertisement by copying. Comment is clearly unnecessary. The English is, of course, almost as bad as the ethics:

Dear Doctor.—We are organizing a company to eventually comprise 400 doctors, who have from good to large practices, to promote the sale of a laxative tablet by prescription writing only. It does not make any difference who writes the prescription; how many times it is renewed; who it is loaned to, or how many times the druggist sells it on his own recommendation, the company makes its profit on every bottle sold from any cause. The tablets are put up in a 2 drachm screw-cap vial containing 36 tablets, and sell to the patient for 25 cents. The

retail druggist pays \$2.00 a doz. for them, the wholesale druggist \$1.70. They cost us 40 cents a doz. That gives us a profit of 400%. A doctor writing one prescription a day for a year for this tablet would sell, with renewals, over 1,000 bottles. A profit of 10 cents on every bottlesold would give us a profit of \$100, the result of one man's work, and with 400 men in the company a profit of \$40,000 a year.

Our expenses are small, no advertising of any kind to do, no sampling or detail work to do, no factory expenses, ——— of ———, making our tablets.

We also have a tonic and a digestive tablet that adds to our profits without increasing our expenses, and will eventually have a cough mixture and a liquid tonic.

The only bad feature is that you are limited to an investment of \$100. In buying 10 shares you agree to pay 25%, or \$25.00 on demand, and the balance in equal quarterly payments. Our dividends are also quarterly, and against every payment except the first, you have a dividend, so at the end of the year instead of putting in \$100, you put in \$50 or \$60. In other words, we will pay a dividend the first year of 40 to 50%, and twice that the second. A \$100 investment that will pay bigger dividends than \$1,000, anywhere that is safe.

We are incorporated under ——— laws for \$50,000. Our board of directors is comprised of prominent ——— physicians, the management is in the care of ———, who you will remember as calling on you in the interest of the ———, of ———.

Mr. ——— wishes to invite the most rigid investigation of this proposition and hopes you will call when in town, or open correspondence on the subject.

We have now 165 gilt-edge men, the cream of the towns we have canvassed. Only graduates of recognized medical colleges are eligible as shareholders. Five shares can be taken, with privilege of increasing to 10 by those who prefer. It will only take a short time to secure our full quota of men, and with the stock sold the opportunity is gone.

There is so much in a physician's life that the thing he does not do at the time he is apt to forget. Very sincerely,

Discrimination in Quackery.—The proof of progress out of evil conditions is a hitherto unobserved distinction drawn between what is utterly bad and what is less bad. This less bad is, of course, at first called utterly good, and all the wrath of conscience is heaped upon the utterly bad. The discrimination, to a higher conscience may provoke cynical smiles, but it is a slight proof of advance, and in such things a little progress should not be treated too harshly by one who is not spurred to hypocrisy. The little periodical *Printers' Ink* has been admitting to its columns a series of articles in which the writers have displayed an amazing ignorance of the motives and ethics of physicians. These writers have exposed their iniquitous methods of advertising in unblushing nudity. Lately appears an article which says that some methods of self-advertisement by "physicians" in newspapers are "dishonest," and that the honest plan most worthy of commendation is openly to hire space in the newspaper and therein describe diseases and their treatment. Formulas of remedies must not be given, but only "fanciful names." Although under some other physician's care patients are likely to be interested in the advertiser and may adopt the outlines of the treatment he advises. Repeated statements of hours and fees should be made, and lists of special apparatus, microscopes, x-ray machines, etc., prominently mentioned. At least such a method avoids the dreary monotony and stupidity of the ordinary advertising doctor.

"By connivance with the cook," says *The Lancet*, "the physician's orders may be carried out more thoroughly than if the patient is ordered to take the medicines direct." The cook is to put the draught or pill in the food secretly "without altering the taste of the dish and without losing its own efficiency." What strange advice! Moreover, do patients have no families who partake of the common food served? Will not every rich epicure, as of yore, be compelled to have a taster to avoid the suspicion that he is being treated by doctor and cook in a way he may not like? A little experience abroad with the servant problem also shows that upon everything the householder buys—food, furniture, horses, harness, plumbing, etc.—commissions must come to one or all of the servants. If not, woe betide the luckless purveyor and his employer. And so if the doctor "connives" with the cook it must be done by giving him or her a liberal share of the fees. Here is a new form of the commission evil. We cannot imagine an American physician stooping to such nonsense. Partnership with the cook does not accord with our professional habits.

The Memory in Children.—"A child remembers only what it can understand" is a statement quoted approvingly by a recent writer in one of the magazines. This is a pretty positive assertion, and should not be given currency until more facts are accumulated in its support, or until many apparently contrary observations are explained away. It is not more than a year ago that another and equally credible magazine writer in an article that dealt with the teachings of patriotism in the public schools, recorded many observations opposed to that enunciated in the sentence quoted at the introduction of his comment. Such songs as "America," "The Star Spangled Banner," and "Marching Through Georgia" were remembered by a large majority of small pupils, but few could explain the meaning of the words they sang. One has only to recur to his own childish memories for equally striking examples of things remembered but not understood, or perhaps most grotesquely misunderstood. A certain Sunday school hymn with the refrain "Toiling on, toiling on" was remembered with some exactness, and many times rendered with a degree of enthusiasm by certain children who thought the refrain was "Charley Long, Charley Long," and they always wondered who Charley Long could be and what he had done to entitle him to such distinction. A certain father always asked the divine blessing at table "upon the good things we may receive;" his little son long wondered whom "Mary Seeve" could be. The same child frequently returned from church service at which a certain psalm had been sung, in a state of mental bewilderment as to the identity of a certain "Mary Joyce" and why she should have been engaged in the occupation of breaking bones; the line of the psalm was, "the bones which Thou hast broken may rejoice."

These are certainly fairly good examples of memory without understanding; the rehearsal of declamations, of "rules" in grammar and arithmetic, of words in the spelling lesson, are equally pertinent instances. Children

remember a great deal that they never understand, and at the same time understand many things that they cannot explain, and that they do not remember until such time as the teacher recalls the fact to them by direct methods. Child study must be based only upon a real appreciation of facts, not upon theories set forth in false garb as axioms, such as is the foregoing erroneous text.

Trypanosoma in Man.—As a contribution to our knowledge of diseases of the tropics the announcement by Dr. Donald Ross in the *British Medical Journal* for January 4, of the discovery by Dr. Everett Dutton of trypanosomes in a European in British Gambia, West Africa, possesses unusual interest. Species of the trypanosome (possibly distinct) are the cause of two of the most important diseases in the lower animals—the dreaded fly disease in South Africa amongst domesticated animals, and the fatal Indian horse disease, “surra.” Trypanosomes abound in rats without causing any symptoms, and the same trypanosome that is so fatal to some of the domesticated animals in South Africa appears to be harmless to the wild animals of the country. So far as is known Dr. Dutton’s discovery is the first recorded case of any trypanosome being found in man, and the fact that it causes symptoms is of great importance. Particulars of the discovery, which are not yet at hand, will be awaited with much interest, and the discovery, it is hoped, will lead to further information concerning the unhealthiness of the West Coast of Africa and possibly also of other tropical regions.

EDITORIAL ECHOES

Quality and not quantity must be the watchword of a dignified medical journalism, as of a dignified lay journalism.—[*Boston Medical and Surgical Journal*.]

The Nicaragua and Panama Canals.—The health of those engaged in constructing, as well as those who will subsequently use these waterways, is an element of superlative importance and one that cannot be neglected when Congress undertakes the consideration of this great engineering problem.—[*Medical News*.]

The Conscientious Objector is the Unconscientious Neglector.—The present government created the conscientious objector, and the conscientious objector created or helped largely to create the present epidemic. If the public at large would recognize this, if they would become a little less indulgent to the vast and noxious army of faddists by which we are beset, the epidemic could not be regarded as unattended with good. Once the public recognize that the term conscientious objector is synonymous with unconscientious neglector, the fate of smallpox in these islands will be that of rabies.—[*The Medical Press*.]

The Public Health Service.—Organized, as is the Marine-Hospital Service, on a strictly military basis, its discipline, efficiency and *esprit de corps* give the service a firm foundation on which its accessory duties may be engrafted with benefit. To bring some order from the chaos of present conditions is desirable, even if such order is not of the most ideal form. What is needed is something to serve as a rational foundation for the establishment of our Public Health Service, and this, we believe, is better subserved by the bill under consideration than by any other which has yet been drafted.—[*Medical News*.]

Phthisiophobia.—It is only avoidable neglect that makes the presence of consumptives in any way dangerous to a community, and it is a reflection on our civilization and on our intelligence that such rules are enacted as those reported from Liberty, New York. Their efficiency is, at best, dubious. Nothing short of a universal tuberculin test, more reliable than any now known, could guard against the pervasive tubercle germ. The present tendency to silly panic over the dangers of consumption will, of course, have its brief day; it will die out as it did nearly a century ago in Southern Europe where its uselessness was demonstrated, but in the meantime it has added to the sum of needless human misery. The medical profession is largely responsible for its existence and should now do all it can to end it, not in neglecting reasonable measures of precaution, but in counteracting the unreasonable apprehensions of the laity which have been unwittingly aroused.—[*Jour. Am. Med. Assoc.*]

Lymph Supplies and Revaccination.—The importance of preventing the sale of unsatisfactory lymph is, however, so great that though there seems good reason to hope that the occasion may not now arise, we should be prepared to give publicity to instances which may in future be brought to our notice, in which it is found that a particular lymph, when carefully used, for vaccination or revaccination, in a plurality of cases has proved unreliable; either through failures or because the results have appeared abnormal. But in view of the possibility of such a necessity arising, it is absolutely essential that medical practitioners should keep an exact record of particulars with regard to each case vaccinated or revaccinated, comprising date of vaccination, source and series of lymph used, number of insertions made, date on which the arm was examined, and the appearance, particularly in respect of vesiculation, which it then presented. Without a series of data of this kind it is hardly possible, for reasons above indicated, to determine with reasonable probability whether or not the lymph has been at fault.—[*British Medical Journal*.]

Pasteur.—How Pasteur rose from the obscurity of a humble origin to worldwide celebrity without seeking notoriety, intriguing, or courting the favor of the great is charmingly related in this book. The principal interest is biographic; but the main features and the practical bearing of Pasteur’s scientific work are set forth in a simple and lucid style so that those to whom his own writings would be sealed books can easily acquire sufficient knowledge of what he did to be able to judge of the importance of his work. The picture of the man in the environment in which he lived is delightful. He was a man of the deepest family affections, of the tenderest heart, and also of the keenest sensitiveness; hence the rancorous denunciations of antivivisectionists which most men would have dismissed with a shrug of the shoulders cut him to the quick. But he did not allow those attacks to deter him from prosecuting researches which he knew to be of the highest importance; like Him of whom he was all his life the humble follower, he forgave his enemies, for they knew not what they did. There could be no more stimulating example for a young man gifted with what Huxley called the divine thirst for knowledge than that of Pasteur. Those—and there are too many of them among ourselves—who think examinations an all-sufficient test of intellectual capacity, may be invited to mark and inwardly digest the fact that in his examination for the degree of Bachelier des Sciences, Pasteur was put down as mediocre in chemistry, and on competing soon afterward for a place in the Ecole Normale, he was fifteenth out of 22 candidates. All medical men should read M. Vallery-Radot’s book, and should give it to their sons to read if they show a wish to enter the profession, or a taste for science.—[*The Practitioner*.]

BOOK REVIEWS

A Textbook of Medicine for Students and Practitioners.—

By DR. ADOLPH STRÜMPPELL, Professor and Director of the Medical Clinic of the University of Erlangen. Third American edition, translated by permission from the thirteenth German edition. By Herman F. Vickery, A.B., M.D., Instructor in Clinical Medicine, Harvard University; Visiting Physician to the Massachusetts General Hospital; Member of the Association of American Physicians; Fellow of the Massachusetts Medical Society, etc., and Philip Coombs Knapp, A.M., M.D., President of the American Neurologic Association; Clinical Instructor in Diseases of the Nervous System, Harvard University; Physician for Diseases of the Nervous System, Boston City Hospital; Fellow of the Massachusetts Medical Society, etc. With Editorial Notes by Frederick C. Shattuck, A.M., M.D., Jackson Professor of Clinical Medicine, Harvard University; Visiting Physician to the Massachusetts General Hospital; Member of the Association of American Physicians; Fellow of the Massachusetts Medical Society, etc. 1242 pages, with 185 illustrations in the text, and one plate. New York: D. Appleton and Company, 1901.

The new edition of Strümpell's Practice requires no extended comment. It suffices to record the fact that the third American edition has been issued, that the book is now in its thirteenth edition in the original German, and that it has already been translated into eight languages—English, French, Italian, Spanish, Russian, modern Greek, Turkish and Japanese. The author well expresses his purpose in writing the book when he says: "... and I desired particularly to impart to the reader an insight into the origin and relation of the various morbid phenomena. To this end I have brought the facts of clinical experience into the closest possible relation with the data of pathologic anatomy and of general pathology, and have endeavored also, in discussing therapeutics, to deduce from the nature of the symptoms a basis for rational medical opinion and treatment, although I have not underestimated the importance of simple experience." In the new addition large portions of the book have been almost completely rewritten—in particular, the whole doctrine of gastric diseases and several chapters in other sections, including gallstones, intestinal parasites, etc. The translators and the editor have added many notes throughout the book, as well as special chapters on the plague, yellow fever, dengue, etc., that materially enhance the value of the book to the American practitioner.

Saunders' Medical Hand-Atlases.—Atlas and Epitome of Special Pathology and Histology. By Docent Dr. HERMANN DÜRCK, of the Pathological Institute of Munich. Edited by Ludvig Hektoen, M.D., Professor of Pathology in Rush Medical College, Chicago, Vol. II, Liver, Urinary Organs, Sexual Organs, Nervous System, Skin, Muscles, Bones. With 123 colored illustrations on 60 lithographic plates, and 192 pages of text. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$3.00 net.

In this volume is completed the consideration of special pathologic histology. It is in every way as satisfactory as the first volume. These two volumes, with the volume devoted to general pathologic histology, which is advertised to appear toward the end of 1901, will constitute a very satisfactory epitome of pathologic histology. In the volume before us, the text, though brief, offers a clean and lucid presentation of the subject. The relation between gross and microscopic appearances is emphasized. The editor has inserted much interesting and valuable material dealing mainly with recent work of American investigators. The illustrations, which are in colors, are numerous and quite satisfactory, although occasionally semidiagrammatic and lacking in detail.

A Textbook of Physiological Chemistry for Students of Medicine and Physiological Chemistry, by CHARLES E. SIMON, M.D., of Baltimore, Md. Pages, 453. Lea Brothers & Co., Philadelphia and New York, 1901.

Perhaps no other single department of biologic research holds such essential relations to the solid foundation of modern medical science as does physiologic chemistry. Additions, such as the present, to the textbooks in this department are highly

desirable; there should be greater room for choice of books, to meet the varying demands of the courses of instruction in different institutions. The excellent and standard works of Haliburton, Ham merstein and others are not fully up-to-date and we welcome Dr. Simon's treatise as bringing together the results of the most recent investigation. We do not agree with the author as to the expediency of omitting bibliographic footnotes, as we believe both student and practitioner to be stimulated to more extended reading and to be benefited by a knowledge of the original sources from which the facts presented are derived. We trust that in future editions the excellent example set by the authors of the American Textbook of Physiology, in this respect will be followed. With the exception of this matter of bibliography we find nothing to criticize; the book is a monument to the thoroughgoing research and comprehensive knowledge of its able author.

The Diseases of the Respiratory Organs, Acute and Chronic, by WILLIAM F. WAUGH, A.M., M.D., Professor of Practice and Clinical Medicine, Illinois Medical College, etc. Pages 221. Price \$1.00 net. G. P. Engelhard & Co., Chicago, 1901.

In this work, which is one of the standard monograph series, the author has treated his subject in two parts, the one containing the acute, and the other the chronic respiratory diseases. Although partaking of the general character of compend, the material is handled in such a way as to give a fairly comprehensive survey of the diseases considered, each chapter taking up the etiology, symptomatology, diagnosis, prognosis and treatment of the disease in question. No attempt has been made to describe the pathology, except occasionally in a very general way. The book is thoroughly practical, and as such will be useful to the busy physician.

The Standard Medical Manual.—A Handbook of Practical Medicine, by ALFRED S. BURDICK, M.D., Editor of the *Medical Standard*; Junior Professor of the Practice of Medicine, Illinois Medical College; Member of the American Medical Association, the Illinois Medical Society, the Chicago Medical Society, etc. Illustrated. 921 pages. Chicago: G. P. Engelhard & Co., 1901. Cloth, \$4.00.

We are informed in the preface that in spite of its name this volume does not assume to be nor hope to become the standard one on the practice of medicine, but that its name is due rather to its author's editorial connection with the *Medical Standard*. Most of the ordinary diseases and many of them minor ailments encountered in general practice are discussed alphabetically. While the etiology, pathology, and symptomatology of the different diseases are considered, especial attention has been directed to treatment, and a large number of useful prescriptions are scattered throughout the book. In an appendix there are directions for examining the urine and the gastric contents and for making bacteriologic examinations, a discussion of drugs and their administration, a table of doses and solubilities, an epitome of the National Formulary, etc. The book represents a considerable amount of honest effort, but although it contains much good matter, it contains also many inaccuracies and much obsolete matter, and it is too large for a manual and not large enough for a textbook on the practice of medicine. Consistently it cannot be recommended to students of medicine and it will scarcely commend itself to the general practitioner, who presumably will prefer the larger textbooks.

Essentials of Physiology. Prepared especially for Students of Medicine; and arranged with questions following each chapter, by SIDNEY P. BUDGETT, M.D., Professor of Physiology, Medical Department of Washington University, St. Louis. 16mo volume of 233 pages, finely illustrated with many full-page half-tones. Philadelphia and London: W. B. Saunders Co., 1901. Cloth, \$1.00 net.

These "abbreviated lecture notes" on physiology will certainly meet favor at the hands of medical students, few of whom take notes of sufficient accuracy and completeness to serve alone as a review of their course of study. Their textbooks are, on the other hand, so voluminous as to make it

difficult to bring together the essential facts, even were the average student fitted for such collection from the vast fund of accumulated data. This task Dr. Budgett has accomplished in a most satisfactory manner, combining with the text a number of diagrams of an unusually instructive character. As a means of preparation for quiz and examination this leaves little to be desired.

First Aid to the Injured and Sick.—By F. J. WARWICK, B.A., M. B. Cantab., Associate of King's College, London; Surgeon-Captain, Volunteer Medical Staff Corps, London Companies, etc.; and A. C. TUNSTALL, M.D., F.R.C.S. Ed., Surgeon-Captain commanding the East London Volunteer Brigade Bearer Company; Surgeon to the French Hospital and to the Children's Home Hospital, etc. 16mo. volume of 232 pages and nearly 200 illustrations. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$1.00 net.

This volume of practical information is intended as an aid in rendering immediate temporary assistance to a person suffering from an accident or sudden illness until the arrival of a physician. The authors have succeeded in producing an excellent work of practical emergency procedures in such clear language that even those entirely unfamiliar with the science may easily grasp the meaning intended. It will be found of invaluable service as a book of indispensable first aids.

An Atlas of the Medulla and Midbrain.—By FLORENCE R. SABIN, M.D. Edited by Henry McE. Knower, Ph.D., Instructor in Anatomy in the John's Hopkins University, Baltimore, Md. A laboratory manual of 142 pages, illustrated with 7 colored plates, one black plate and 52 figures. The Friedenwald Company, publishers, Baltimore, Md. Price \$1.50 in paper, \$1.75 in full canvas.

This atlas is planned to meet the practical need of some quick and simple, yet full and reliable means of aiding the student to obtain from sections a reasonably clear idea of the important central relay station of the brain. It is based on a model which represents that part of the brain in which the nuclei of origin of all the true cranial nerves are found. The association between these centers is shown, and the cells and fiber tracts brought into intimate association with those of the spinal cord, cerebellum, and forebrain. Full references to the plates and sections are given. The text is useful to the anatomist, physiologist, pathologist, and psychologist, whether in the laboratory or in connection with lectures or demonstrations.

A Manual of Diseases of the Eye, by CHARLES H. MAY, M.D., Instructor in Ophthalmology, Medical Department, Columbia University, New York. Second revised edition.

This admirable manual is offered as a means of supplying a foundation of ophthalmic knowledge. It is written especially for the student and general practitioner, and all that is essential in ophthalmology is concisely, yet adequately, noted. A valuable feature of the book is the illustrations, which are mostly original, and aid greatly in elucidating the text. The second edition has been thoroughly revised, and a number of line drawings and colored plates have been added. The section on ocular therapeutics has been revised to include the latest drugs and remedial agents.

A Laboratory Handbook of Urine Analysis and Physiological Chemistry, by CHARLES G. L. WOLF, B.A., M.D., Instructor in Physiological Chemistry, Cornell University Medical College, New York. Illustrated. 203 pages. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$1.25.

This little book, designed to serve as a guide to a course in physiologic chemistry and the examination of the urine and the gastric contents, affords one an elementary insight into some of the important problems in physiologic chemistry and is really a useful manual. It makes no claim to completeness—the aim of the author being rather to describe certain tests that are available clinically and that have stood the test of experience. Its value is enhanced by a table for urinary diagnosis that appears in the appendix.

AMERICAN NEWS AND NOTES.

GENERAL.

The preliminary notes on the virulence of the bovine tubercle bacillus, by E. A. de Schweinitz and E. C. Schroeder, were published in our issue of January 4 by the courtesy of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry.

In recognition of service rendered to the late President McKinley, Dr. Presley M. Rixey has been chosen chief of the Naval Bureau of Medicine and Surgery with the Rank of Rear Admiral. He succeeds Rear Admiral William K. Van Reypen, who will be retired at his own request with the rank of senior Rear Admiral.

Health in the Philippines.—The health report of the Division of the Philippines for the month ended November 15, has been received by Surgeon-General Sternberg. The report shows 650 sick in quarters, 1,024 in regimental hospitals and a total incapacitated of 2,952. The percentage of sick to the command was 6.79%.

Extermination of rats in Honolulu is carried on systematically by Dr. Pratt, the executive officer of the Territorial Board of Health, who has appointed an inspector to each district who distributes traps and poison, sees to their proper use and collects the rats. All rubbish is cleared up and burned, all warehouses made airtight for sulfur fumigation, and all inter-island vessels are fumigated. All rats are kept by districts, so that by bacteriologic investigation it can be determined whether there are any infected districts.

Against Opium Smoking.—In order to restrict opium smoking in the United States, a bill will be shortly introduced into Congress prohibiting the importation of opium manufactured for smoking to any of United States' ports. Before any package containing opium exclusively shall be delivered, an affidavit must be made that the opium is to be used solely for medicinal purposes. If these provisions are not complied with the opium will be forfeited. For violations a fine not to exceed \$500 or imprisonment not to exceed one year is imposed.

Obituary.—R. W. HILL, of Davenport, Ia., former professor of anatomy and physiology at the State University, January 11. PHINEAS I. MULVANE, of Chicago, January 10, aged 65. GEORGE COVERT, of Clinton, Wis., president of both the National and the State ecletic Medical Associations, January 9, aged 73. W. C. JELKS, of McComb City, La., January 9, aged 48. J. J. BUCHANAN, assistant surgeon U. S. Navy, at Newport, R. I., January 12, aged 24. ROBERT HALL, of Concord, N. H., January 12, aged 91. D. WALDO STEARNS, of Newton, Mass., January 9, aged 48. ALFRED N. MAHON, of Pittstown, Pa., January 11, aged 29. JAMES MARTIN SWEENEY, of New Orleans, at Utica, N. Y., January 10, aged 34. KINGSTON GODDARD, of Philadelphia, January 17, aged 63. Dr. Goddard was a surgeon in the navy during the Civil War and from 1874-1877 was coroner of Philadelphia. J. N. WESTON, of DeLamar, Idaho, recently, aged 41. C. H. THURMAN, of Cincinnati, January 14. T. J. ESKRIDGE, of Denver, Col., January 16, a prominent physician and expert in nervous diseases. J. H. HARLEY, of Dewart, Northumberland Co., Pa., January 14, aged 72. MORTIMER STARLING, of Pittsburg, January 13, aged 62. CLAYTON PARKHILL, a prominent surgeon of Denver, Col., January 16. CHARLES LEWIS BONNELL, of Brooklyn, January 15, aged 56. He was visiting surgeon and lecturer at the Brooklyn Homeopathic Hospital and consulting surgeon at the Memorial Hospital for Women and Children. TORRANCE SPARHAM of Brockville, Cal., January 11, aged 89. JAMES RODMAN, of Hopkinsville, Ky., January 10. DR. POOLE, surgeon to the American Legation in Peking, China., January 9, of typhoid fever. NICHOLAS TIMANY, of Cincinnati, January 14. C. JANE VINCENT, of Allegheny, Pa., January 7, aged 48. NORBURN N. SHIPMAN, of Seymour, Ind., January 7, aged 72. BURK PRIDDY, of Magazine, Ark., January 3. GAZAWAY B. KNIGHT, of Madison, Ga., January 3, aged 76. H. J. GRIFFITH, of Morgantown, Ind., January 2, after an operation for appendicitis, aged 27. G. C. GRAY, a leading physician of Harvel, Ill., December 23, aged 52. A. HOWELL, of Eagle Bend, Minn., a veteran of the Civil War, December 20, aged 61. SMITH T. FERGUSON, of Joliet, Ill., January 10, aged 56. JOHN R. McDONALD, of Courtland, Ala., January 6, aged 58. SAMUEL S. SHAMHART, of Hyattsville, Wyoming, January 2. JOSHUA M. DOAN, of North Bend, Neb., January 6, aged 27. GEORGE W. JONES, a practitioner for 30 years in Lawson, Mo., January 2, aged 64. JOHN D. YOUNG, of Starkville, N. Y., January 7, aged 70. LEROY E. JONES, of Buffalo, N. Y., January 6, aged 81. CHARLES SCHAPER, of Franklin, Wis., December 29, aged 42. FRANK M. HAYES, of Allegheny, Pa., January 2, aged 40. SCOTT C. NEWCOMB, of Walpole, Mass., December 31. ANDREW J. CHRISTENSEN, of Waukon, Ia., January 7, aged 75. LUTHER LAGLE, of Gainesville, Texas, December 27. CHARLES C. GARRETT, of Calvert, Texas, December 26, aged 83. A. L. NICHOLS, of Ludington, Mich., December 28, aged 36. LEE A. LOGGINS, of Graham, Texas, December 27. WILLIAM W. YOUNG, of Nanticoke, Pa., January 6. JAMES S. WHEDON, of Jordan, N. Y., December 26, aged 57.

EASTERN STATES.

Open-air treatment for incipient tuberculosis is shown to have been efficacious to about 67% of the cases treated the past year, at the Massachusetts State Sanatorium at Rutland, according to the annual report published recently. There were 1,100 applications and 390 admitted. The average age of patients was 28.

Maine Quarantine Station.—On December 5, 1901, at the request of the State Board of Health of Maine, a quarantine station was established at Eastport under the charge of Dr. E. M. Small, acting assistant surgeon U. S. Marine-Hospital Service. At the request of the State Board of Health of Maine, and under the provisions of the act of Congress, approved February 15, 1893, the U. S. Marine-Hospital Service assumed control of quarantine at Portland, Me., and on December 27, 1901, Surgeon P. C. Kalioch, U. S. Marine-Hospital Service, was detailed by authority of the President as quarantine officer at that port, arriving there January 9, 1902.

Compulsory Vaccination.—The board of health of Boston has recently ordered that all inhabitants who have not been successfully vaccinated since January 1, 1897, "shall be vaccinated or revaccinated forthwith." This is done to effectually control the present epidemic of smallpox. A few months ago an average of 20 cases a day were reported, this led to free vaccination stations being opened in all sections of the city, and as a result about 400,000 persons were vaccinated. This wholesale vaccination proved so effective that for some time past the average number of cases reported has not been more than five a day. If the present law is enforced about 170,000 persons will have to be vaccinated.

NEW YORK.

Smallpox is epidemic in the lumber camps of the Adirondacks, over 20 cases have been reported. The Board of Health has ordered proper quarantines to be established.

Health Commissioner.—Dr. Walter David Greene, of Buffalo, was made health commissioner of Buffalo in place of Dr. Ernest Wende, who had held the position for 10 years when he retired, January 1, 1902.

Osteopathy Bill.—A contest over the bill to legalize osteopathy took place in the Senate, January 15, on the resolution of Senator McCabe, asking that the Judiciary Committee be discharged from the consideration of the bill and that the measure should be transferred to the Committee on Public Health. In spite of objection this resolution was insisted on because the bill gave osteopaths the power of signing death certificates, and control over contagious diseases.

Asylum Bill Condemned.—At a recent meeting of those interested in charitable works held in the assembly room of the United Charities' building, to discuss the bill before the Legislature providing for the abolition of the boards of managers of the state hospitals for the insane, adopted unanimously resolutions to the effect that the proposed legislation is unwise, inexpedient, and contrary to good public policy; that it removes the protection afforded by the existing provisions of law under which contracts for buildings and supplies are made by the managers of the hospitals, subject to the approval of the State Commission in Lunacy, which has an absolute veto upon every item of expenditure, and thereby will tend to promote extravagance rather than economy; that it would lead to a dangerous centralization and might expose the hospitals to the influences of partisan politics, and thus relegate the state insane asylums to the barbarism of 200 years ago.

PHILADELPHIA, PENNSYLVANIA, ETC.

Alumni of the Jefferson Medical College will confer a favor on the editors of *The Jeffersonian* by sending the names and present addresses of the officers of their respective graduating classes. Address, *The Jeffersonian*, care of the Jefferson Medical College, Philadelphia, Pa.

A health protective association has been formed by citizens of the Pocono region. Its object is to prevent the establishment of camps for the treatment of tuberculosis. Rumors that a movement was on foot to establish a tuberculosis sanatorium in that section led to the formation of the association.

Polyclinic Hospital.—The report for December, 1901, shows that 6,249 cases were treated in the dispensaries during the month. In the receiving ward, 636 cases were treated. Fifty-four patients were admitted to the wards of the hospital, and 64 were discharged. During the month 40 operations were performed under ether.

Compulsory Vaccination for Students.—The enforcement of an order respecting vaccination, issued several weeks ago by the various deans of the University of Pennsylvania, has resulted in over 100 students being forbidden to attend classes or lectures until they present certificates stating they have either been successfully vaccinated or twice unsuccessfully.

Report of the Examination of Vaccines by the Pennsylvania State Board of Health.—The following report is furnished to AMERICAN MEDICINE by Dr. Benjamin Lee, secretary of the State Board of Health:

OFFICE AND LABORATORY
DR. ROBT L. PITFIELD,
Assistant Bacteriologist,
State Board of Health of Penn'a,
Germantown.

PHILADELPHIA, Jan. 7, 1902.

DR. BENJAMIN LEE,
Secretary State Board of Health,
Philadelphia, Pa.

DEAR SIR:—In accordance with your instructions, I have made microscopic and bacteriologic examinations of the various vaccine lymphs on sale in Philadelphia. I purchased samples from a drug store without declaring my intention as to the use I was to make of them. In general the quality of the lymph shows a marked improvement, as to the number of bacteria contained in or on each vaccination, over the quality of the same lymphs tested in 1896, by myself.

I injected the vaccine matter into healthy young guinea pigs. Each animal received at one injection, five vaccinations diluted with a half cubic centimeter of sterile salt solution. In every instance the animal survived the inoculation.

To this report I append a table of the number of bacteria per vaccination of each kind tested. It is interesting and noteworthy to observe the lessened number of bacteria in the glycerinated lymph compared with the dry lymph or points.

Yours very respectfully,
(Signed) ROBERT L. PITFIELD,
Assistant Bacteriologist.

(Copy)

TABLE OF VACCINES, SHOWING NUMBER OF BACTERIA TO EACH VACCINATION.

Dry Points.

Maker of Virus	Number	Date	Number of Bacteria	Remarks
Slee.....	286	none	78 per vaccination	
Alexander.....	none	Dec. 28, 1901	480 per vaccination	All of same kind Saprophytes
National.....	none	none	174 per vaccination	
Mulford.....	363 a	Dec. 20, 1901	84 per vaccination	
New England.....	none	Nov. 20, 1901	801 per vaccination	
Parke, Davis & Co.....	829,599	Jan. 8, 1902	36 per vaccination	Sent out in sterilized envelopes

Glycerinated Points.

National.....	none	Jan. 15, 1902	63 per vaccination	
Mulford.....	3,229	Jan. 20, 1902	24 per vaccination	

Tube Virus.

Parke, Davis & Co.....	823,927	Dec. 6, 1901	11 per vaccination	
Mulford.....	3,689	Jan. 20, 1902	2 per vaccination	
Alexander.....	none	Dec. 28, 1901	11 per vaccination	
Slee.....	287	Feb. 1, 1902	8 per vaccination	
National.....	none	none	9 per vaccination	

NOTE.—All of these bacteria are harmless, and exist naturally on or in the skin. Had there been any dangerous bacilli in the specimens the inoculated guinea pigs would have died.

SOUTHERN STATES.

The Eye, Ear, Nose and Throat Hospital of New Orleans has received \$2,000 under the will of the late A. A. Maginnis of that city.

Pharmacy Legislation.—A bill requiring all drug clerks to register is before the Maryland House. It provides, however, that country merchants may sell proprietary medicines and other drugs not requiring compounding. This concession was made to the wholesale people.

WESTERN STATES.

Resection of Liver.—Carl Kruger, of Chicago, who had his stomach removed for carcinoma last spring will shortly have his liver resected for the same cause. After the former operation the patient is reported to have recovered weight and strength on the proper diet.

Erysipelas is reported to be epidemic in all parts of Chicago. The cases are so numerous that only the most serious can obtain hospital treatment. The health department is investigating the cause of the outbreak, and has adopted proper precautions against a further spread of the disease.

A peculiar disease is epidemic in the mining camps at Tonopah, Nev. It is caused by the inhalation of dust containing minute particles of fractured quartz. The tiny crystals pierce the lung tissue, acute inflammation results, and death generally follows. Thus far 23 deaths have been reported. There is a general exodus of people from the region.

Against Illegal Practice.—The California State Board of Health have adopted resolutions recommending that the State Board of Examiners take steps to suppress illegal practice throughout the state. They also advise that, so far as possible, tuberculous patients in the various state institutions be segregated from other patients in order to prevent contagion.

Dental Board Sustained.—The Supreme Court of Wisconsin, has reversed the decision of the lower court in the case of W. L. Coffey vs. the State Board of Dental Examiners. Coffey, a graduate of the Wisconsin College of Physicians and Surgeons, having been refused a license to practise dentistry without an examination, brought suit to compel a license from the board and was sustained in the lower court, but the Supreme Court held that the board did not exceed its discretionary power.

German Credit System.—Dr. Victor C. Vaughan, dean of the medical department of the University of Michigan and chairman of the national committee for the affiliation of courses, confidently anticipates, it is said, that the German credit system will be in operation in the large medical colleges of the United States by next fall. By this system a student can go from one college to another and take work under professors who stand at the head of their specialty without the complication and delay that is experienced at the present time.

Missouri State Sanatorium.—The Medical Society of City Hospital Alumni of St. Louis, in recognition of the urgent need for an institution erected and maintained by state government in some mountainous region of the state, for the exclusive cure and treatment of tuberculous persons, at a meeting held November 21, 1901, passed resolutions to this end. A special committee consisting of George Homan, Ludwig Bremer, Louis H. Behrens, Francis Reeder, and R. B. H. Gradwohl, was appointed to develop the plan, and to enlist the cooperation of other medical societies.

Deaths and Sickness in Indiana in December.—Reports to the State Board of Health show there were 2,842 deaths in the whole state in December, 1901, which is an annual rate of 13.3 in 1,000. In the preceding month there were 2,402 deaths, and in December, 1900, there were 2,880. By important ages the December deaths were as follows: Under 1 year 380 or 14.2% of the total number; 1 to 4 years of age 151 or 5.6%: 65 or over, 765 or 28.7%. From important causes the deaths were: Tuberculosis 359, typhoid fever 86, diphtheria 51, scarlet fever 18, measles 3, whoopingcough 11, pneumonia 380, cerebrospinal meningitis 22, influenza 25, puerperal fever 14, cancer 81, violence 148. All cities, total population, 847,302, report 1,110 deaths, a rate of 15.4 per thousand annually; the country, total population 1,669,160, reports 1,732 deaths, a rate of 12.2. The cities, therefore, show a rate which is 2.1 above the average for the state, and the country is 1.1 below the average for the state. For the corresponding month last year the figures were: cities 1,096 deaths, rate, 15.2; country 1,784 deaths, rate 12.6. The cases of smallpox reported numbered 465 in the following counties: Vanderburg 40, Kosciusko 26, Tippecanoe 41, White 1, Union, 13, Lawrence 1, Spencer 31, Vigo 1, Owen 3, Scott 12, Pike 1, Marshall 3, Switzerland 1, Randolph 3, Dearborn 9, Warren 1, Knox 4, Wabash 19, Warwick 41, Shelby 12, Jefferson 80, Marion 12, Wayne 40, Davis 41, Decatur 3, Madison 2, Perry 20, Delaware 4. One death in Warrick county and one in Tippecanoe. Reports from County Health officer show that the following diseases prevailed in the order given: Tonsillitis, bronchitis, influenza, rheumatism, pneumonia, typhoid fever, intermittent fever, pleuritis, scarlet fever, diphtheria, diarrheal troubles, erysipelas, inflammation of the bowels, measles, dysentery, puerperal fever, whoopingcough, cerebrospinal meningitis, cholera morbus, cholera infantum.

CANADA.

Tuberculosis Research.—It is reported that a large sum of money has been given by Mr. E. S. Bronson, of Ottawa, to the McGill medical faculty for researches in the possible methods of the cure of tuberculosis by Dr. A. G. Nicholl, under the supervision of Dr. Adams, professor of pathology.

FOREIGN NEWS AND NOTES

GENERAL.

Protection Against Famine.—The British government has established a commission to consider exhaustively the possibilities of further protection against famine in India by means of irrigation. They are especially directed to discover whether the cost of the new works now contemplated will be too high a price for the state to pay for the protection against famine which is thus afforded.

Obituary.—WILLIAM HENRY CARRINGTON, of London, December 26; HUGO PERNICE, of Greifswald, Germany, December 29, aged 72; EDMOND DESTREE, Professor of Clinical Medicine in the University of Brussels; EMERENCIANO ROIG Y BOFILL, of Barcelona; G. CHIARLEONI, Professor of Obstetrics in the University of Palermo; FR. MELENDEZ Y HERRERA, Professor of Topographic Anatomy in the Medical Faculty of Cadiz; THOMAS HYDE HILLS, of Cambridge, January 2, aged 50; AXEL KEY, of Stockholm, known throughout the world from his researches with Retzius on the finer structures of the nervous system, aged 70. HUGO V. ZIEMSEN of Munich, January 21, aged 73. Dr. Ziemssen was born at Greifswald and filled successively professorships at several German universities. In Munich he established a model scientific institute for clinical instruction and wrote important works on the cold-water treatment of typhoid, electrotherapeutics, gastric tumors, pneumonia and other topics. In cooperation with renowned specialists he published "Handbuch der speciellen Pathologie und Therapie in 17 volumes. He was former Privy Councillor, and with Zenker, since 1865, has edited the *Deutsche Archiv für klinische Medizin*.

GREAT BRITAIN.

A Uniform Standard of Qualification.—Thoughtful members of the medical profession deplore that there is not in the British empire, as there is in Germany, a state examination which every one should be compelled to pass before being allowed to enter on practice.

Increase of insanity in Great Britain, resulting in the depopulation of numerous rural districts, is attributed to consanguineous marriages. Physicians and clergymen in various counties are trying to induce the government to take measures preventing such marriages, or if such legislation is impossible to find some means for infusing fresh blood into rural districts.

The New Sydenham Society was established in 1858, with the object of publishing essays, monographs and translations of works which could not be issued otherwise. The list of publications numbers upwards of 170 volumes of the greatest scientific value. An effort is now being made to increase the membership, in order to extend its work. Jonathan Hutchinson, F.R.S., the general secretary, has requested the American agents of the society, to announce the publication of "An Atlas of Clinical Medicine, Surgery and Pathology," selected and arranged with the design to afford, in as complete a manner as possible, aids to diagnosis in all departments of practice. It is proposed to complete the work in five years, in fasciculi form, eight to ten plates issued every three months, in connection with the regular publications of the society.

CONTINENTAL EUROPE.

Scientific Research.—The Russian government, moved by the appeal of the Congress of Naturalists and Physicians has at last consented to the formation of a Russian association for scientific research.

Insanity in women teachers has been investigated by Professor Zimmer, of Berlin, who has derived his information from all the asylums in Germany, Austria, Switzerland and Russia, and found that in every 85 female patients there is one schoolteacher. In Prussia there is one teacher to every 350 women of the population.

Corpus Veterum Medicorum.—Under this title it is reported that the Berlin königliche Akademie der Wissenschaften and the Danish Academy at Copenhagen will prepare a collection of all the medical works of antiquity. To effect this, a thorough investigation of the Oriental libraries as well as those of Europe will be made.

Great Infant Mortality.—Medical reports state that there is an alarming deathrate among infants throughout Russia. In many places 40%, 50% and even more of the children die in their first year. This great mortality is attributed mainly to ignorance and neglect. The mothers work in the fields while their little ones are left alone. In one government the mortality of infants among Christians is said to be 342.1 per 1,000, while the deathrate among children of Mohammedan parents is 140.4 per 1,000. The Mohammedan law compels the mother to nurse her child.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

CASE OF ANTHRAX.

BY

C. E. RUTH, M.D.,

of Keokuk, Iowa.

The following case of anthrax, which I reported at a meeting of the Eastern Iowa Medical Society, December 10, may be of interest:

I operated upon the patient July 18, 1901. The infection occurred while caring for cattle in Kansas, skinning and handling their hides after they had died of some obscure disease. When the patient came into my hands he was in imminent danger of suffocation from postpharyngeal abscess, which had burrowed to near the clavicle on the left side. I opened it first through the mouth and then passed a probe down from the pharyngeal opening to the lowest point of the pus sac, which opened on to the tip of the probe behind the carotid sheath. Operation was done under cocaine. A drain was kept entirely through the tract and ends tied outside the mouth. The pus, at least a point in amount, was found to contain anthrax bacillus, streptococcus and staphylococcus. Recovery under bichlorid of mercury irrigation and drainage was rapid and complete.

THE DETRIMENTAL INFLUENCE OF ALCOHOL IN MEDICINE.¹

BY

EVAN O'NEILL KANE, M.D.,

of Kane, Pennsylvania.

The questions which present themselves to the conscientious physician are whether it is right to prescribe so dangerous a drug as alcohol? and whether the benefits claimed for its employment are a sufficient offset to the evils known to be attendant upon its administration? When we consider that annually nearly 100,000 persons die from drunkenness in the United States alone and that through it our almshouses, prisons, reformatories, insane asylums, homes for epileptics and feeble-minded, inebriate asylums, brothels, and criminal courts are crowded, and that the inherited tendency to the drink-habit are the necessary results to the third and fourth generation, the abandonment of alcoholic medication cannot be urged too strongly. It will be found that a valuable instrument has not been lost but a dangerous weapon discarded. The physician who abandons its use may find that some people may not employ him because they will be deprived of their daily ration of champagne, wine, or beer, but he will be more than compensated by the fact that he will have greater success in the treatment of his patients than when their blood was poisoned and senses benumbed by alcohol, and no one will fail to note the fact. The mortality rate will be much lower than before; the stage of convalescence much shorter, and recovery more complete.

The physician, however, may claim that his duty is to his patient; that he is employed to cure him; that he does not believe alcoholic medication is injurious but rather thinks nothing can suit the requirements of the case like alcohol. He may state that energy and the Almighty can attend to the moral aspect of the question for he has enough to do with his patient's physical welfare.

Plausible as this appears at first sight, it yet carries with it a grave fallacy. How many intelligent patients, if they could know the whole truth; the danger to themselves and to their progeny, of alcoholism with all its moral and physical degradation would willingly let its halter be thrown around their neck? They place their lives unreservedly in the physician's hands and whether that life be bounded by mortality or eternity, its limit is wider than the mere throes of today's agony or the weariness of tomorrow's convalescence. The physician has no right to merely cater to his patient's present

fears and weakness. The man who is ill is not able to be the judge of his own treatment, while the parent's anxiety over his stricken child unfits him for clear reasoning. But waiving the moral aspect of the question and returning to that of the present physical wellbeing of the patient, I repeat that the probability of a sound recovery will be far better without than with the addition of alcohol in the treatment of the patient. The entire abandonment of alcoholic medication by so many thinking physicians is no less noteworthy than is the rapidly narrowing sphere of usefulness admitted for it by its most ardent advocates. It is questionable whether liquor is now employed by the profession to one-fourth the extent it was 30 years ago. The claims then made for its use cannot now bear the light of the sound scientific reasoning or clinical observation to which every medicinal agent must be subjected at the present day. Many physicians are still living who can recall how steeped in whisky it was once believed that all sufferers with pulmonary tuberculosis must be. Now we know that alcohol is peculiarly injurious to those devitalized subjects on account of the greater activity of germ growth in the alcoholized tissues and the paralyzing effect of the drug upon the respiratory and cardiac nerves. Because of this action of alcohol upon the pneumogastric tissues and the tendency which it exhibits to congest the internal viscera its deleterious effect upon pneumonic patients is also well recognized, notwithstanding its once having been considered as essential to recovery.

It was formerly thought that no typhoid patient could recover without an abundant supply of brandy or whisky throughout the entire course of the fever. Gradually its administration has been relegated to the last weeks and then only in a limited number of cases. Now it is acknowledged that many of the distressing complications and sequels formerly supposed to belong to this disease are in reality due to a condition of alcoholism which greatly retards convalescence.

The change which has taken place in the treatment of shock is another noteworthy example of the altered light in which alcohol is now viewed. This condition used invariably to be combated by copious draughts of whisky, which, if vomited, was promptly forced in by rectum or hypodermically. Today men of experience do not rely upon it in these cases, recognizing its unreliability and the danger of its employment.

The inaccurate experiments recently made at the government's expense were at first thought to evidence the correctness of the belief that alcohol possessed a positive food value of peculiar utility in disease and of practical value in health. The deductions drawn from these experiments, however, were forced and the reasoning fallacious. Those experimented upon had become habituated to alcohol and for this and other reasons the investigations were proven absolutely worthless. A more accurate scientific study of the subject based upon scientific reasoning has since demonstrated that alcohol induces decomposition instead of preventing tissue change; for the nitrogenous elements are more rapidly broken down during its employment than during total abstinence. One may reasonably assume, therefore, that alcohol is no more a "food" than is morphin, cocain, or any other narcotic poison. It is possible, however, for it to actually add to the body-weight, by retaining within the tissues waste-products which will, in time, bring collapse. When summoned to the bedside of a pneumonic or typhoid patient, our first question should be, "Does he drink?" When answered in the affirmative we should not say, "I hoped as much, and I am glad to hear it, for I recognize in this rotund abdomen and these puffy cheeks a storehouse of valuable fuel to be fed upon during his illness." Nor do we say, "No need to examine the urine for albumin. Alcohol prevents renal disease." But, we do say, "Heart, brain, stomach, liver and kidneys, every organ is deranged. He is as unsound as a rotten apple. Let him straightway make his will unless the saloon has left nothing but debts for his widow and children." Alcohol is only a narcotic irritant poison. It is not really a stimulant although to some extent it does stimulate. Thus the delusive bounding of the heart and the full pulse which follow shortly upon its administration are due, not to increased arterial tension and cardiac vigor, but, on the contrary, to the rapid lessening of blood-pressure and general reduction of internal arterial tension, which a paralysis of the

¹ Read before the McKean County Medical Society, May 7, 1901.

vasomotor nerves induces through the resultant dilation of the surface capillaries. The skin being flushed and warmed, increases the delusive appearance of stimulation, while an actual reduction of body-temperature takes place. The heart is not in reality, truly stimulated into a state of more powerful action; it is only obliged to make redoubled efforts to accomplish its necessary task (that of forcing the blood to the periphery); for the same reason it may often plunge violently during the stages of hemorrhage. Without the necessary tonic stimulus from internal bloodpressure, it soon becomes fatigued with the additional work thrown upon it. The organ is made to labor under the direct benumbing influence of alcoholic narcotism and impoverished nutrition and it is natural, therefore, that heart failure occurs much earlier in cases of fever in which alcohol has been freely administered than in those in which it has not been employed, for the heart-muscle becomes worn out by overwork, poison, and starvation just at the time when the greatest effort is demanded of it.

Alcohol, while it appears to increase the muscular power, actually paralyzes, as was demonstrated by means of the ergograph. In unfatigued muscle, alcohol was found to lessen the extent of its maximum contraction, owing to the lessening of the peripheral irritability of the nervous system. In the fatigued muscle there was an increase in the working capacity. A fatigued muscle under the influence of alcohol never, however, attained to the working power of an unfatigued muscle, because the lessening of the peripheral nervous irritability by the alcohol interferes with the development of its fullest working powers. In all cases alcohol diminished the feeling of fatigue, and the work appeared easier. This explains why in undertaking a long march those who do not take alcohol are in a far better condition at the end of their journey than those who have used it, although the abstainers felt and complained of their fatigue more than their narcotized companions who were willing to stagger on long after they were really unfit. When it has been found necessary to continue the same exertion on successive days the abstainers have been fresh and vigorous at the commencement of each day's journey, becoming increasingly capable of endurance, while those who took alcohol became debilitated and incapable of bearing fatigue. In other words, the alcoholized subject being too deeply narcotized to appreciate the seriousness of his position acts and moves automatically without sense of pain or the injury thus inflicted. As I have already remarked, alcohol deceives us also as to body temperature. The blood is brought to the surface where it is rapidly cooled, a feeling of warmth being at the same time produced. A man may actually freeze through the medium of the very liquor which at first seemed to warm him, he may, however, continue to insist that he is not chilled after his fingers and toes have become blue, because the benumbing influence of the alcohol which at first brought a warm glow to his skin, later renders him incapable of appreciating the gravity of his condition. For the same reason he may think himself fully capable of enduring the burning rays of a tropic sun until he falls sunstruck. If, through overwork, pain, illness or other source of profound depression, the sufferer, following nature's laws, grows faint and swoons through sheer exhaustion, a draught of liquor bringing blood to his brain restores him to consciousness for a time. He may, through the same anodyne narcotic influence, which morphin and cocain also exert, be deceived into such an acquiescence in his fate as will enable him mechanically to act even sometimes to the point of death. This is not true stimulation, and the patient is in a worse, and not better condition through its employment.

As a tonic aid to digestion there can be no greater failure. By its employment our patient often eats more than he would without it, but when he does so he merely forces his stomach to receive more than nature's good judgment considers it capable of digesting. So long as alcohol is present in the stomach, digestion remains at a standstill, as the pepsin, then free, is deposited. As a result, the food passes out of the stomach down the alimentary canal in an only partially digested condition. Diarrhea or constipation and other digestive disturbances result from the irritation thus produced, while at the same time ptomaines are evolved, which pass into the circulation and bring about that chain of gouty or rheumatic phenomena

so common among dyspeptics who indulge in alcoholic liquors at their meals. As a sleep-producer it can only be relied upon with certainty by those who have become addicted to its use. As a promoter of fluency and rapidity of thought in the brain-worker it is questionable if he ever really derives any benefit from its employment, but rather he is made to imagine that he thinks and writes cleverly, just as the after-dinner speaker does through the delusive feeling of complacent self-sufficiency imparted by drink.

Finally, let me warn the physician who honestly believes in the virtues of alcohol for his patient, not to test them on himself. There is no profession involving so much exhaustion of mind and body as ours; none in which the temptation of the glass is so strong; none in which a greater clearness of judgment is required for the sake of our fellowmen. Would that I could add that there is no profession in which there are so many brains unpoisoned by alcohol! That good time is coming. It is not here yet.

ALBINISM IN THE NEGRO.

BY

ALFRED A. LOEB, M.D.,
of Philadelphia.

The following brief report may be of interest:

In December, 1900, whilst journeying along the west coast of Africa, I saw at Cape Palmas, Liberia, an albino boy, the son of Kroo parents. He was about 20 years of age and in every respect a true type of albinism in the negro. His skin was of rather a pinkish color, the eyes pink, the hair of the head and pubes reddish. His features were those of the native Kroo. His mother, father, brothers and sisters in no respect differed from the other Kroo men and women. The boy suffered greatly from photophobia and only under great persuasion could be induced to leave the dark corner of his mud hut. He never made any attempt to work until after sundown. He is held in the greatest reverence by his fellows.

EXCESSIVE DEVELOPMENT OF THE FETUS.

BY

JOHN KINNEMAN, M.D.,
of Goodland, Ind.

To the Editor of AMERICAN MEDICINE:—I desire to make the following report:

Mrs. S., a large, stout multipara, aged 26, married 9 years, and in every way healthy except for some varicose veins of the lower limbs, was taken in her sixth labor at 3.30 a.m., December 28, 1901. Examination three hours later revealed a large well proportioned pelvis, partial dilation of cervix, and head presenting in O. D. P.

After waiting six hours, during which time the labor was active and the progress slow, I applied forceps and delivered under incomplete anesthesia, a strong and vigorous male child. His weight undressed was 15½ pounds. The measurements were: Length 23 inches, circumference of head 16 inches, of chest 13½ inches, of wrist 3½ inches, of ankle 4 inches. Distance from umbilicus to crown 12½ inches. Term of gestation, so far as could be learned, was about 285 days. Former labors had been easy, markedly so in the second stage. Of the former births three were males, weighing each about 11 pounds, two females, weighing each about 9 pounds.

The mother and father are American born, the former of German, the latter of Scotch descent.

The rarity of such cases as above reported is great enough to make it worthy of comment. In 3,600 deliveries in the Rotunda Hospital, Dublin, only one child reached a weight of 11 pounds, while Pinard from an examination of the records of the Paris University found but one in 20,000 that weighed 5,300 grams, a little more than 12 pounds. Several cases have been reported of children delivered weighing more than 20 pounds. Probably the largest fetus on record was that of Mrs. Bates, the Nova Scotia giantess, a woman of 7 ft. 9 in. in height, whose husband was also of gigantic build, reaching 7 ft. 7 in. in height. The fetus weighed 28½ pounds and was 39 inches in length. It was lost in its birth as no forceps of sufficient size to grasp the head could be procured. An extraordinary case is that reported by Warren who delivered a woman in Derbyshire of male twins, one weighing 17½ and the other 18 pounds. Both the

children were muscular and well formed and the parents were of ordinary stature. The most frequent cause of excessive development is probably prolongation of pregnancy. It is also considered that multiparity and the excessive size of both parents are related to its occurrence.

CESAREAN SECTION COMPLICATED WITH LOW IMPLANTATION OF PLACENTA.

BY

OLIVER HOPKINSON, M.D.

Visiting Physician to the Philadelphia Lying-in Charity and Nurse Training School.

Mrs. Hattie W. (colored), aged 29, third pregnancy, was admitted to Philadelphia Lying-in Charity and Nurse Training School on July 10, 1901, when she came for the first time under my care. Her two previous confinements were terminated by difficult craniotomies.

Abdominal examination on admittance showed: Head freely movable, back anterior, little to left of median line, extremities to right. Maximum of heart little below and to left of umbilicus. Spines 25 cm.; crests 27 cm.; external conjugate 22 cm.; internal conjugate diagonal 10 cm.; true conjugate (estimated) about 8.25 c. m.

The pelvic bones were unusually thick and supplied with abundant adipose tissue, which facts partly account for the large Bandelocque diameter. The difficulties of former labors were no doubt due to the diminished true conjugate. In this case, the difference between external and internal measurements teaches us the danger of relying upon external pelvimetry alone. Owing to the difficulty of determining with accuracy the duration of pregnancy due to the excess of liquor amnii and not wishing to shorten the intrauterine life of the fetus, I decided to await the onset of labor.

Pains began on the morning of July 16, 1901, and as no progress was made in eight hours, the classical cesarean section was selected as the best method of operative interference.

Examination immediately before operation showed: Head freely movable, back to left, os uteri well dilated, membrane intact. Fetal heart strong and regular.

A longitudinal uterine incision was made starting at fundus. Before making the uterine incision I waited until the uterus was beginning a contraction, hoping thereby to minimize hemorrhage on account of diminished caliber of vessels.

The placenta was situated in right lower half of uterus, extending almost to external os. There was some hemorrhage, but not alarming, which ceased immediately after extraction. The uterus was closed with six fine silk sutures, abdomen with through-and-through silkwormgut.

Examination of child gave the following data: Sub-occipitobregmatic 9.25 cm., occipito-frontal 12 cm., biparietal 9.5 cm., circumference 34 cm., length 52 cm., weight 7½ pounds.

I am indebted to the resident physicians, Drs. Eleanor Hetrick and Elizabeth MacFarland, for their assistance at operation.

Patient and infant were discharged August 20, 1901, both in excellent condition.

A PROTEST AGAINST THE METRIC SYSTEM.

BY

A. P. REED, M.D.,
of Naples, Me.

To the Editor of AMERICAN MEDICINE:—In the paper you printed on the metric system in your issue of November 23 Dr. Morgan makes the plea of *simplicity* in its behalf. Now when a gr. has to be expressed 0.001, ½ gr. 0.01, 1 oz. 32.00, how can this plea apply? Isn't it clearly apparent that one is doing less work in writing the old than the new style? Really, I think this thing is being forced upon us in a rather rude way, and is popular with a certain class more because it is "French, you know," than from any particular merit it possesses. I have seen much of late in medical magazines printed in the metric style to the utter exclusion of the old system, and I consider it an imposition on the physician who knows nothing of the metric system and cares less. I do not hesitate to pronounce such a display as pedantic, without any consideration

of the more modest ones whatever! There are scores of physicians in every community of any size who do not take kindly to being snubbed—ignored—in this way, which is certainly the wrong way to forward a cause.

I find that some of the level heads are yet in the ranks of these old foggy (?) physicians, and that among the medical literati are quite as many cranks and more vanity than elsewhere.

I venture to suggest that medicine will prosper just as well under the old system of weights and measures as under this enforced system. At least it always has and gave perfect satisfaction to all except a minority of restless, ill-at-ease proclaimers of false philosophies. To these I would say: Do let those who want the old system have a chance at it, either in school or out.

RECIPROCITY IN STATE LICENSURE.

To the Editor of AMERICAN MEDICINE:—In your issue of December 28, 1901, you refer to the subject of state medical examinations. Recently I removed from New York to New Jersey, where I expected to register and partially resume the practice of my profession. But I am informed that I must undergo a State examination before I can legally practise here. I was graduated from the "Medical Department of the University of the City of New York" in 1849. I remember that my examination by Dr. Valentine Mott was so satisfactory that he complimented me very highly on not having missed a single question. I likewise hold a diploma from Dr. William Detmold's private school of medicine, and a commission from President Lincoln as Assistant Surgeon, U. S. V. To obtain the latter I underwent a six days' examination, of four hours a day, in Washington. I have been registered in Brooklyn ever since there has been a law requiring it. And yet when I wish to register here I am told all the above credentials go for nothing, and that I must submit to an examination by the State Board of New Jersey. A certificate from the State Board of New York would be accepted in lieu of an examination here; but, as I was registered previous to the existence of a State Board, I have no certificate of examination.

As you say, "it is a great hardship when a physician, registered and in good standing in one state, is obliged to undergo an examination for license to practise when removing to another state." It does seem to me that one registration should hold good for all the states. I am 75 years of age; I do not desire much practice, but I want the legal right to respond to a call if I should feel like doing so.

At my age it is very humiliating to be compelled to undergo an examination, having been in practice over 52 years. Much of the minutiae of the textbooks has escaped my memory, as it does in the case of most persons who have been long out of college, and who are not engaged in teaching. New subjects, as bacteriology, etc., now taught, were not known in my school days. A man may not be able to give the origin and insertion of many muscles, or name the foramina through which the cranial nerves pass out from the skull, etc., and still be a capable practitioner. It is impossible to retain all one learned in college days. When occasion requires it we have our books of reference to refresh our memories. Dr. Mott used to tell us that when he had an important operation to perform he always did it first on the cadaver.

I do not wish to be understood as opposing state examinations. I have always favored elevating the standard of medical education. In 1855 I offered a resolution at the meeting of the "American Medical Association," at Philadelphia, to the effect that the constitution of the association be so amended that it would be necessary for societies desiring representation in the association should require of all members received after the passage of this amendment should be graduates. Under the rule the amendment had to lie over a year. I did not call up the amendment at the next meeting, held at Detroit, as I was assured by many members it would not pass.

In conclusion, I would say that I trust this matter will be agitated until reciprocity in state registrations shall prevail throughout our country.

S.
Bloomfield, December 31, 1901.

ORIGINAL ARTICLES

THREE CASES OF PANCREATIC DISEASE.¹

BY

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of New York City.Professor of Clinical Surgery, Cornell University Medical College;
Surgeon to New York Hospital and St. Luke's Hospital.

As diseases of the pancreas are of rather uncommon occurrence, it may be of interest to relate the histories of three cases, which have come under my personal observation, and the recording of these cases is the main object of this paper. Before proceeding to the histories, however, it may be of interest also to briefly consider the diagnosis and etiology of pancreatic affections.

Among the many contributions which have been made to the literature of the subject perhaps two of the most important are the paper by Senn² on "The Surgery of the Pancreas," and the monograph on pancreatitis, by Fitz.³ Senn, for the purpose of placing the surgery of the pancreas on a solid footing, collected and arranged all of the previous clinical material, described the pathologic changes found on autopsy in these cases, and by a series of experiments on animals clearly demonstrated that surgical treatment, which up to that time was limited to cases of cyst, was indicated in cases of gangrene and suppuration of the gland. Fitz, in his admirable monograph, gave us the first satisfactory description of the acute inflammation of the gland, and in addition classified the disease into the hemorrhagic gangrenous and suppurative types.

Since the appearance of these contributions, the pancreas has received much attention, and many interesting pathologic and clinical facts have been added by others, but, it must be acknowledged, that they have not lessened the difficulties one has to contend with in arriving at a diagnosis. Owing to the situation of the gland deep in the abdomen and its near relations to neighboring organs, and owing to the fact that its functions are so intimately commingled with those of other organs of digestion and assimilation, it can easily be appreciated how difficult it is to correctly estimate the value of the symptoms, which are supposed to indicate interference with or abolition of the functional activity of the gland. Formerly the presence of fatty stools was considered an evidence of failing pancreatic secretion, lipuria was looked upon as an important symptom, and later on the presence of glycosuria was considered an important and frequent symptom of disease of the pancreas. Present authorities like Fitz, Oser, Korte and Lancereaux, while acknowledging that the presence of these symptoms are suggestive, state that they are by no means positive evidence that disease of the gland exists. Glycosuria and fatty stools have been present in cases in which on post-mortem the pancreas was found to be normal, and, on the other hand, the absence of these symptoms does not disprove the existence of such a lesion, as a small amount of healthy gland may perform its functions. It has been observed after the extirpation of the pancreas in animals, if a meat diet is given, that large quantities of undigested muscular fiber was found in the feces, and in cases where interference of pancreatic secretion has been suspected, it is suggested that the presence of this symptom may be of value in confirming the diagnosis. As the gastric juice also shares the functions of changing albumin into peptone, it rather lessens the value of the symptom; and should diarrhea exist, the presence of the undigested meat in the feces might be ascribed to the abnormal rapidity with which it is forced through the bowel.

Still another test of deficient pancreatic secretion is furnished by the administration of salol which is split up by the pancreatic juice into salicylic acid and phenol. The latter is excreted by the kidneys and if abundant, causes a dark-brown discoloration of the urine. Should this discoloration be wanting after the administration of a dram of salol, in divided doses in a day, it is claimed that the pancreatic secretion is wanting.

Other symptoms, as salivation, diarrhea, emaciation, bronzing of the skin, etc., which were formerly considered of value, are now known to have no diagnostic importance. Of all the symptoms mentioned, the most characteristic are fatty stools and glycosuria, and should they be found in the absence of jaundice or intestinal disease, pancreatic affection is probably the cause. According to Oser such an origin is practically certain if, in the absence of jaundice, fatty stools, azotorrhea, glycosuria and a tumor in the pancreatic region are present.

Of the local symptoms of pancreatic disease, pain and the presence of a tumor are frequently mentioned as characteristic. The pain in acute affections is generally very intense, but its site is very variable. It is usually referred to the epigastrium and it may radiate in various directions, as to either shoulder or arm, or along the left costal border to the scapula or downward into the abdomen. As a symptom, there is nothing characteristic in its site or character, it simulates exactly the pain of a perforative peritonitis, or the pain of intestinal obstruction. In not a few cases in which, from the site of the pain a lesion of the pancreas has been suspected, laparotomy has revealed an appendicitis. The presence of a tumor is suggestive, especially when combined with symptoms indicating disturbance of the gland functions, but as a symptom by itself it is of uncertain value. For example, cancer of the head of the pancreas may be mistaken for a similar growth in the pylorus, liver, duodenum, or transverse colon, or it may resemble an aneurysm. In cases of cyst, particularly when it arises from the tail of the gland, and when it can be accurately made out lying between the stomach and colon, a probable diagnosis is possible, and it has been made several times; but it is difficult, and mistakes have been frequent. Our position at present concerning the diagnosis of disease of the pancreas I think may be stated as follows: First, there is no single symptom or combination of symptoms which will enable us to make a positive diagnosis; second, the presence of symptoms indicating disturbance of gland function when combined with local symptoms will allow at times of a probable diagnosis; third, in the majority of cases, diagnosis is not only most difficult, but impossible.

Concerning the etiology of pancreatic diseases in general, one finds numerous predisposing and direct causes mentioned as etiologic factors, but the results of recent investigations plainly indicate that infection plays an important part in many varieties. Lancereaux, after an exhaustive classification of all the causes, states that pancreatic affections are due to a nervous agency or infection. An important contribution to the subject is Carnot's thesis, which is directed to the etiology of the different varieties of pancreatitis. He conducted a large number of experiments on animals, in which the pancreas was infected through the injection of various bacteria and toxins; at times through the arteries, at times through the ducts, and at times into the gland tissue itself. In addition the resisting power of the gland was lessened by the application of various toxins, alcohol, phosphorated oil, etc. After comparing the various results, he concluded that the changes produced depended more on the intensity of the tissue alterations than on the nature of the exciting agent. He observed that after a very acute infection a hemorrhagic pancreatitis followed in a few hours or days. A less virulent infection would result in a suppurative or gangrenous pancreatitis, while an affection still less severe caused more or less sclerosis of the gland. In comparing the lesions thus

¹ Read at the meeting of the New York Clinical Society, December 28, 1900.

² Transactions of the American Surgical Association, 1885.

³ The Middleton-Goldsmithe Lecture, 1888.

excited in animals with those found in men, it would seem that the exciting cause of hemorrhagic pancreatitis is the same as that of pancreatic cyst. The difference between the two lies in the degree of infection and the course of the inflammation; in the former, its course is rapid and death soon follows; in the latter, the progress is much slower and ends in the formation of a cyst. In the hemorrhagic form, which later becomes suppurative, the abscesses generally follow infection through the arteries, but in some cases they result from an infection starting in the intestine and spreading upward through the ducts of the gland. The organism most frequently found is the colon bacillus, although mixed infections are commonly present.

From Carnot's investigation we perceive that there is a close relation between the various forms of pancreatitis, and that the same cause may produce the hemorrhagic type ending in suppuration, gangrene, or a cyst, or a more or less complete sclerosis of the gland. In many cases of pancreatic calculi, a simultaneous existence of gallstones has been observed, and if the theory that gallstones is due to infection is true, it certainly strengthens the position of infection as an etiological factor in diseases of the pancreas. Concerning the treatment of diseases of the pancreas the indications are surgical, but owing to the difficulties of diagnosis its application is limited. In the future should we succeed in overcoming the difficulties and be able to make an early diagnosis, many of the cases which are now considered hopeless would be cured. The cases which I desire to report are as follows:

CASE I. Suppurative Pancreatitis.—M. C., 41 years old, porter, admitted to the New York Hospital August 8, 1896. Family history, good. Personal history, chancreoid 12 years ago, malaria 8 years ago; steady consumer of beer and whisky. Late in June, while lifting some heavy boxes, strained himself and had severe abdominal pain for some hours. Early in July he took two weeks vacation, the first of which was spent in drinking. The following week he began to feel sick and could not sleep, and at the end of the week severe abdominal pain and vomiting set in. The pain was general but most marked in the right side of the abdomen; the vomiting continued two days, and was of a bilious character. Swelling of the epigastric region was then noticed, and as constipation existed, he took several large doses of saline cathartics. Diarrhea followed, but no diminution in the epigastric swelling was observed. Appetite was lost, all food caused diarrhea, and starchy food was passed undigested. Profuse sweats occurred daily. The patient lost strength and weight, and on admission had lost 30 lbs. Ten days before admission he began to cough, and expectorated a moderate quantity of yellow sputum.

Admission.—Patient of medium stature, rather emaciated and with marked anemia. In epigastric region is a globular-shaped mass which extends from the xiphoid to the umbilicus and laterally from one free border of the ribs to the other.

The mass was more prominent on the right side of the median line. Slight tenderness on pressure, tumor slightly movable laterally, and moves up and down with respiration.

Percussion flat all over the tumor, and above is continuous with liver dullness, which extends to third right interspace. Skin nonadherent over tumor, which is tense and fluctuating, and, on pressure, there is elicited a peculiar crackling sensation over the entire mass.

No rigidity of abdominal wall. Stomach tympany pushed down and to the left. Intestines displaced downward. Some bronchitis of larger tubes. Heart normal. Temperature, 99°. Pulse, 92. Respiration, 20.

Urine yellow, acid, cloudy, 1.032, no sugar, no albumin. Microscopically some vesical epithelia; few leukocytes.

August 11.—Operation, ether, five-inch incision over center of tumor; peritoneum found adherent and was carefully separated from anterior surface of tumor, which appeared to be continuous with liver and derived from its anterior inferior aspect. Over anterior surface of tumor ran the round ligament of the liver. Stomach was seen to be pushed down and to the left. Colon and omentum lay below. Gallbladder not seen. Peritoneal cavity walled off by sponge and gauze packing, and a large trocar and canula plunged into the tumor. A large amount of thin, yellowish, purulent material gushed out through the canula, which was then withdrawn and the tumor opened through a three-inch incision in its anterior wall. A fair-sized cavity was exposed, which was found to run down behind the stomach. It was thick walled; its inner surface appeared fleshy, and was flecked with necrotic-looking material. No communication could be found between the cavity and the neighboring viscera. The cavity was carefully

sponged, its edges united by suture to the skin. Small gauze drain to peritoneal cavity in lower part of wound; rest of wound closed. Cavity packed with iodoform gauze, sterile gauze above; abdominal binder.

Operation lasted 1½ hours and at its expiration pulse was rapid and weak. Ordered stimulating enema, strychn. sulf. gr. $\frac{1}{10}$ every 2 hours. Patient responded promptly and was in satisfactory condition on following day. Gauze drain removed on August 13, cavity repacked. Steady improvement followed and by the fourteenth day the wound was practically healed. During this period the evening temperature averaged 99°, pulse 86. Pathologist reports that the fluid removed by aspiration was made up of pus, lumps of fat and pancreatic juice, the latter responding to all the tests.

September 4.—For the last ten days the temperature has been elevated in the afternoon, patient complains of loss of appetite, general malaise, and pain over liver. Examination revealed pain on pressure over epigastrium and liver; the latter is quite enlarged downward.

September 8.—Dr. Ball in consultation. Abscess of liver thought to be present.

September 11.—Ether anesthesia, peritoneal cavity opened through 4-inch vertical incision commencing on ninth costal cartilage. Liver extends 3 inches below free border of ribs, omentum adherent to under surface of liver and gallbladder. Adhesions broken up. Gallbladder found to be enlarged, otherwise normal. Transverse incision made through abdominal wall to the left and as far as scar of original operation. Colon and intestines pushed downward by gauze packing. Hand introduced into wound and a fibrous cord felt passing from the original wound to head of pancreas, which was enlarged and of hard consistency. Exploring needle inserted deeply in several places into right lobes of liver with negative results. At junction of right and left lobes, the liver was swollen and felt soft, and on inserting a needle just below the xiphoid, thick yellow pus was found at a depth of 1½ inches. Cavity opened through an incision and several ounces of pus evacuated. Another small abscess was found on under surface of left lobe and was evacuated. Puncture over eighth space, axillary line, withdrew nothing but blood. Cavities packed with gauze, wound partially closed, sterile dressing.

Following this operation there was no improvement, the temperature remained elevated, sweating was of frequent occurrence and the liver did not diminish in size. Late in September patient was seized with a violent cough, and expectorated large amounts of brownish-yellow sputum, which microscopically was found to contain pus, bile and liver-cells. The temperature then fell gradually, but the cough continued, while the emaciation and weakness steadily increased. Further surgical interference was refused and the patient was removed home from the hospital on October 28.

Efforts to ascertain the later history of the case were in vain, and without doubt he succumbed shortly after leaving the institution.

Remarks.—It has seemed to me from the history of the case that when the patient strained himself in June he suffered a slight trauma of the pancreas, which was not healed when he went on the spree some ten days later. As a result of the ingestion of a large amount of alcohol the catarrhal and septic condition of his pancreatic duct was greatly increased, and infection occurred at the site of the trauma, and suppuration followed.

After examination on admission the case was thought to be either a pancreatic cyst or an echinococcus of the liver. Pancreatic cyst was suspected, owing to the fact that the tumor followed traumatism, and was of rapid growth. It was tense, with slight fluctuation, felt like a cyst, and owing to the absence of elevation of temperature and pulse an acute inflammatory process was excluded.

From the apparent union of the cyst with the liver and from the peculiar crackling crepitus on percussion, echinococcus cyst was considered possible. At the operation the pancreas was neither felt nor seen, and it was not until the pathologist's report was received that we were certain as to the origin of the tumor. At the second operation when the liver was explored the obliterated cavity could easily be felt as a cord running from the original wound to the head of the pancreas, which was enlarged and of hard consistency. The case was one of peripancreatitis, starting near the head of the organ, and the abscess as it grew pressed forward and upward, finally presenting itself between the liver and stomach.

That it was not a cyst with subsequent suppuration of its contents is shown by the fact of the presence of a large amount of fat in the pus which was evacuated. At

no time was sugar present in the urine and free fat in the stools was always absent in spite of repeated examination for their presence. The suppuration in the liver, in my opinion, was due to infection through the common bile duct, and was not a result of the original operation, as the healing of the abscess-cavity was steady and rapid. The infection of the liver was probably due to the same agent as in the pancreas, but it is to be regretted that no bacteriologic examination was made. Owing to the extreme heat prevailing at the time, and some delay in getting at the material, the specimen was pronounced unfit for bacteriologic examination. Judging from the patient's condition when discharged, death must have soon followed, and I have always felt that had it not been for the liver infection the final result would have been different.

CASE II. Gangrenous Pancreatitis.—A. L., 57 years, chief engineer of ocean steamer, admitted to New York Hospital, September 18, 1897. Family history good. Personal history: until present illness has not had a day's sickness in 32 years; is a moderate consumer of alcohol. Ten days ago, while at sea, he was suddenly seized with an attack of abdominal pain accompanied with vomiting. The pain was continuous, most intense in the epigastric region, radiating from thence to both sides and downward into the abdomen, and it was only controlled by large doses of morphin. After lasting for three days it gradually subsided. The vomiting was frequent and copious, of a bilious character and continued for 36 hours.

Patient was constipated at the time of seizure and four days elapsed before the bowels could be moved; for the past three days has had diarrhea. Epigastric swelling appeared on the third day and was followed by gradual abdominal distention. Six days ago urination became frequent and painful; no blood in urine. Moderate amount of collapse for 24 hours after beginning of attack, but improvement followed after free stimulation. There has been a steady loss of strength and flesh. No appetite; at times there is great thirst. No history of fever, chills or sweating.

Admission.—Short, stout man; appears septic; skin rather cyanotic; no jaundice. Temperature 100.2°, pulse 120, respiration 32.

General abdominal distention, umbilicus protruding, tenderness above and to the right of umbilicus, with indistinct resistance at same place.

Percussion note tympanitic over entire abdomen; no mass felt anywhere.

Heart sounds feeble, particularly the first one at apex. Liver slightly enlarged, no tenderness on pressure. Lungs negative, except at base of right one, where a few small moist rales are heard. Urine acid, light yellow; sp. gr. 1.032, trace of albumin; 2% sugar. Few hyaline and granular casts. September 20.—General condition same; no change in abdomen; bowels move freely; micturition still frequent and painful. September 22.—Chill at 7.30 a. m.; temperature half hour later 105.6°, at 9 a. m. temperature 106.1°; gradual subsidence until 6 p. m., when it was 101.6°; profuse sweating in afternoon, pulse 126, respiration 34. September 24.—Chill 12.30 a. m.; temperature 106.8°, then fell, at 6 p. m., 99°. Examination of blood for plasmodium, negative; urine contains 2% sugar; stools contain no free fat; seen by medical consultant, who advised aspiration of right pleural cavity; result negative. September 26.—8.30 p. m., severe chill, temperature 107°; it gradually fell and at noon on following day was 100.1°; pulse 130; abdominal distention increased. September 27.—Temperature began to rise late in the evening; patient somewhat delirious and restless; pulse weaker, and death followed on the evening of the twenty-eighth. A few hours before death pulse was 140, temperature 105°.

Autopsy.—September 29.—Dr. Geo. Biggs. Inspection, no edema, abdomen greatly distended and very tense, no jaundice. Peritoneum, normal; cavity empty; stomach and intestines greatly distended with gas throughout, stomach in contact with abdominal wall and reaches a hand's breadth below ensiform. Liver extends 1 inch below free border. Fat tissue of omentum, mesentery, and retroperitoneal regions, show a very extensive fat necrosis, the fat nodules varying from $\frac{1}{4}$ to 1 cm. Some of the nodules slightly depressed in center, and have a hard capsule. At the base of the mesentery, there are areas of caseous material 1 cm. in diameter. There are many adhesions between adjacent surfaces of abdominal viscera; upon the breaking down of some of these over posterior wall of the stomach, there was an escape of considerable necrotic tissue, not offensive or purulent. It comes from a cavity bounded behind by a greatly enlarged pancreas and adjacent fatty tissues, in front by the stomach, transverse and descending colon, and adhesions uniting same. About 10 oz. of lumpy necrotic tissue filled the above space.

Kidneys flabby, granular, and contain numerous small hemorrhagic areas. Heart cavities small, dilated, both auriculo-ventricular valves relaxed, muscular tissue extremely relaxed, light in color. Aorta shows extensive atheromatous changes in thoracic portion. Lung congested and edematous.

Microscopic examination:—Heart muscle shows much fatty degeneration; necrotic tissue shows fat, granular matter and remains of pancreas. Cultures of necrotic tissue give pure cultures of streptococci. Cultures from organs show in places colonies of stubby bacilli.

Diagnosis: Fat necrosis of pancreas and abdominal fat.

Remarks.—This case began as one of acute hemorrhagic pancreatitis, of a somewhat severe type, which not terminating fatally in a few days assumed the gangrenous form of the disease. When first seen by the ship's doctor, intestinal obstruction was suspected, but on the fourth day, when a free movement of the bowels occurred, the diagnosis of obstruction was excluded.

On admission to the hospital no diagnosis was made, and during the ten days the patient was under observation, no positive diagnosis was arrived at. From the history of the onset of the attack, and the local tenderness and slight abdominal rigidity above, and that to the right of the umbilicus I suspected a localized epigastric peritonitis; together with the fact that the urine, which previous to this illness was always free from sugar, contained 2% of sugar, led me to mistrust that the pancreas was the seat of trouble. After a day or two of observation of the patient, I was in favor of an exploratory incision, but deferred to the opinion of my colleagues, who considered the patient beyond help. Had the exploration been made, it would probably have been of no service, as it was too late and because of the condition of the heart, arteries, kidneys, as shown by autopsy. As the patient succumbed only after almost three weeks' illness, it is natural to think that an early exploration might have secured a successful result.

Unfortunately, owing to the absence on shipboard of the necessary facilities for performing abdominal operations, early exploration was impossible. From our limited knowledge of acute pancreatitis and from the similarity of its symptoms with that of other affections of organs in the epigastric region, a definite diagnosis is impossible. We may recognize the existence of acute epigastric peritonitis, but owing to the number of its etiologic factors, the specific one is only ascertained by abdominal section. As in acute intestinal obstruction or in perforating gastric ulcer, early operation is necessary, so in acute hemorrhagic pancreatitis, it is most important that the primary hemorrhage should be checked so soon as possible. The destruction and necrosis of the gland tissue, as well as the extent of the fat necrosis depend on the amount of hemorrhage; and successful treatment depends in meeting the indications at an early stage. The abdomen should be opened, the pancreas sought for, blood clot and necrotic tissue removed and further damage prevented by careful gauze packing together with suitable drainage. This treatment has been successful in several cases of pancreatitis reported in the journals, and in almost every case the diagnosis was made by early exploratory incision.

Whenever, therefore, one meets with a case of acute epigastric peritonitis, where the etiology is obscure, the existence of pancreatitis should always be remembered, and if the patient's condition admits of operation, an early abdominal exploration should be made.

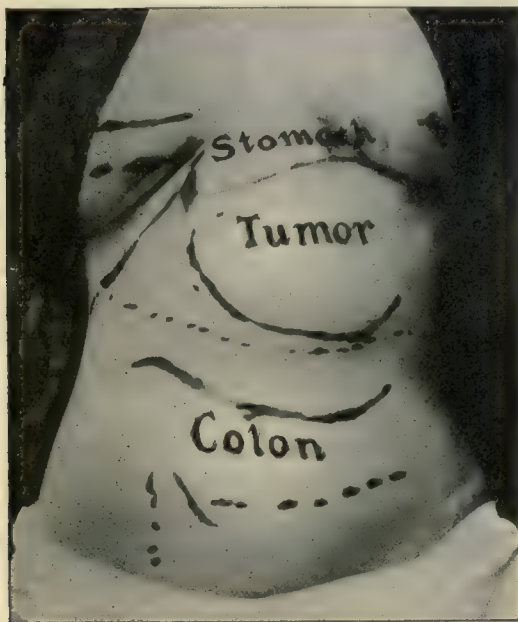
CASE III. Pancreatic Cyst.—M. D., female, 19 years old, admitted May 8, 1899, to St. Luke's Hospital. Family history: Father died of kidney trouble, mother of heart disease. Personal history: Patient had good health until 7 years ago, since then has suffered from attacks of gastritis, lasting three weeks at a time. The attacks were attended with vomiting of foul and greenish material, or coffee-grounds matter; no blood. During the attacks there was epigastric tenderness and sharp shooting-pains in the stomach and radiating to the back, pain worse after eating. No history of clay-colored or fatty stools, no jaundice, very constipated. Has had no appetite and has lost 10 pounds in the past month. Six weeks ago her physician discovered a tumor the size of an egg in the epigastric region; since then the tumor has steadily increased in size. The tumor appeared just after an attack of gastritis, but there is no history of sharp pain or collapse. Since then the patient has been free from pain or stomach symptoms. Last menstruation in March, had previously been regular.

Admission.—Patient well nourished, skin dirty-yellow, mucous membranes pale, slight acne about face. Tongue coated, teeth poor. Lungs normal. Heart negative, excepting a systolic apex murmur transmitted to left, no accentuation of second pulmonic. Liver, dullness begins at fourth right interspace and extends to free border, edge not felt. Stomach resonance a little higher than normal. There is a smooth, hard, tense, semifluctuating tumor, about the size of a large cocoanut, which is a little to the left of the median line in the epigastric and umbilical regions and extends into the left hypochondriac region. Its area of flatness begins just below the stomach and extends to the level of the umbilicus, where it meets the resonance of the transverse colon. The flatness runs to the left and backward to the spine, its upper border behind being $1\frac{1}{2}$ inches below the angle of the scapula. About two inches below the most prominent portion of the tumor in front, a free sharp smooth edge can be felt running through the umbilicus to the left in a curved direction. Right kidney palpable, freely movable. Temperature 100° , pulse 90, respiration 24. Urine light yellow, acid, sp. gr. 1.010, no sugar or albumin, contains few vesical epithelia.

Diagnosis, pancreatic cyst.

May 18.—*Operation,* ether anesthesia, through an incision in median line beginning just below the ensiform and continuing downward for four inches, the peritoneal cavity was opened. No adhesions found, stomach displaced upward, and colon downward.

Pearl-colored cyst, seen presenting behind the gastrocolic omentum, which was adherent to anterior wall of cyst. Peritoneal cavity was walled off by gauze packing, large aspirating needle thrust into cyst, and 30 oz. of clear straw-colored limpid



fluid withdrawn. As the wall of cyst collapsed, it was drawn up into abdominal wound and its cavity exposed through a three inch incision and several ounces of similar fluid removed by sponges. Cyst was thin-walled and lined with a smooth membrane, and ran upward behind stomach. Careful probing failed to reveal any communication between cavity of cyst and adjacent organs. Incision in cyst wall partially sutured with catgut, upper half of abdominal incision closed with silk sutures, cyst wall sutured with silk to parietal peritoneum in lower half of abdominal incision. Large rubber drainage tube inserted into cavity of cyst, edges of wound protected with rubber tissue and iodoform gauze, sterile gauze dressing over all. Operation lasted about an hour, patient sent to ward in good condition. Slight reaction followed operation, and convalescence was soon established.

The discharge from the cyst was profuse for about 10 days, and then it gradually decreased, requiring a change of dressing several times daily.

Pathologist reported that the fluid removed from the cyst was alkaline, sp. gr. 1.018, opalescent, and contained free fat cholesterolin and leukocytes. It emulsified fats, changed starch into glucose and digested albumin.

The convalescence was uneventful, the wound gradually became smaller, the discharge lessened, and on June 21 the patient was referred to the outpatient department with a narrow fistula discharging a small amount of thin yellowish fluid. The fistula was about five inches in depth, and passed downward into the left hypochondrium. Since discharge from the hospital the patient has been kept under observation, and while the fistula has never healed, there has

been a great improvement. She is strong and able to work, has no more attacks of indigestion, bowels are regular, and there has been a great increase in weight.

For a year after the operation a small rubber drainage tube was worn, but owing to the steady contraction of the wound in the abdominal wall, it was necessary to substitute a straight silver tube three inches in length and of 32 F. caliber. This prevents any retention of secretion and is worn with no discomfort, and at present one small dressing of gauze suffices for 24 hours. Should, however, she become excited or nervous, the secretion of pancreatic juice is greatly increased, and at such times frequent dressings are needed.

The discharge is still somewhat opalescent, thin; alkaline, and responds to most of the tests, characteristic of pancreatic juice.

Remarks.—This was case of pancreatic cyst in a young adult, and as far as could be ascertained at the time of operation the cyst was situated in the distal portion of the gland. The cause is obscure; there was no history of traumatism, and whether the attacks of pain and vomiting which occurred at intervals during the seven years bore any etiologic relation to the formation of the cyst is uncertain.

It must be observed that the cyst was first discovered after an attack, and since its appearance there has been a complete cessation of pain and vomiting. This fact may suggest pancreatic calculus as the cause, but the absence of progressive and extreme emaciation and debility, symptoms of value in the history of pancreatic calculi, is rather against calculus as the cause of obstruction.

At the time of operation careful search for the presence of a stone was made both with the finger and the probe, but with negative results. It was a retention cyst of rapid growth and caused by obstruction of one of the smaller ducts of the gland, the obstruction due either to calculus or obliteration of the small duct by inflammation. As the patient has been left with what appears to be a permanent fistula, this might have been prevented by an excision of the cyst rather than incision and drainage. This latter method was employed, as it is successful in the vast majority of cases, and in this case the cyst was so adherent to neighboring organs that it was thought safer to incise and drain. The diagnosis was made before the operation, after the stomach and transverse colon had been inflated with air. The cyst was most prominent in the left epigastrium and displaced the stomach upward and to the right, the colon downward, and dullness existed behind almost to the scapular angle. The definite location of the cyst, the history of rapid growth, the absence of cystic trouble elsewhere in the abdomen established the diagnosis. Aspiration was not resorted to, as its employment is attended with too many dangers and it should be discarded. It is to be noted that at no time has sugar been present in the urine and fatty stools have never been seen. At present the patient enjoys good health, works every day at her trade, has no trouble with digestion and is apparently cured. Applications of pure carbolic followed by pure nitric acid are made frequently to the interior of the fistula, and, while the fistula is shallower and smaller than about six months ago, it is quite uncertain whether it will be obliterated. Should it cause any disturbance with the general health of the patient then complete extirpation of the sac will be recommended.

The fistula at present is a little over 4 inches in depth and the capacity of what remains of the cyst is half an ounce.

The accompanying photograph gives a good idea of the relation of the cyst to the stomach and transverse colon as determined by percussion. The dotted line below the tumor represents the position and course of the free, sharp smooth edge felt when examined on admission.

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WHAT RELIANCE CAN BE PLACED UPON THE IMAGE PRODUCED BY THE X-RAY FROM A MEDICOLEGAL STANDPOINT ?¹

BY

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In presenting this subject for consideration, some of the more recently expressed views bearing on the subject will be quoted, and its value and accuracy as a method of diagnosis will be discussed.

Before taking up that part of the subject, it is well to study the conditions that have rendered any discussion necessary, and the position which the profession has held and should assume toward this method of diagnosis.

The Röntgen method of diagnosis is based on a new form of physical energy, the x-ray. This agent possesses peculiar properties that are well known, as are its characteristics and the laws that govern its production. The quality which adapts it to diagnosis, is its power to penetrate the tissues of the body, and produce shadows that differentiate by their densities between the various structures.

The accuracy of this method of diagnosis is due to the mechanical method in which the data secured are registered. The nature of the x-rays is not known, but the laws of physics that govern them are. They are rectilinear rays that cannot be refracted or deflected. They pass in straight lines, and can therefore be used as the basis for accurate mathematic calculation and the localization of minute foreign bodies.

The results achieved show its value and utility in detecting and locating foreign bodies, and in the diagnosis and treatment of fractures. It has proved itself accurate when employed with the necessary technic combined with professional knowledge and clinical experience.

The reason that so-called fallacies and errors have been found in this method, making it necessary to discuss its accuracy, is that as a method, of diagnosis it has been entrusted to persons deficient in that professional education that is essential to the accurate employment of any method of diagnosis.

The pictures made by lay operators have been accepted as valuable clinical data, and read, often incorrectly, by those who did not know how they were made. Can the medical or lay public be blamed for doubting their accuracy, or for believing that they can tell as much by this new method of examination as the members of the profession?

When the medical profession realizes that this is a method of diagnosis, and utilizes it as such; that it can be correctly employed in diagnosis only by a professional man, especially trained in its use, they will begin to derive from it the aid which it is capable of affording. Errors will be much less frequent when the diagnoses are made by professional men, expert in this method. The laity will then realize that they are incompetent to read, appreciate, or criticise surgical conditions shown by it.

In a recent paper (*British Medical Journal*, June 8, 1901) Mr. C. R. Golding-Bird has published some "Remarks on Skiagraphy and Fractures; Especially in the Medicolegal Relations." This paper may be taken as representing one view of the medical profession on this subject, and will be freely quoted.

In reference to the value and usefulness of this method, he says:

"As an aid to diagnosis none will now question the value of the x-rays; and whilst their employment is quite unnecessary in by far the larger proportion of cases one is called upon to treat, there is a certain class

of doubtful cases in which the use of the skiagraph is most advisable.

"All doubtful cases are of two kinds; one in which, certain of the existence of a fracture, the surgeon is yet in doubt as to its exact location, or its direction, or perhaps its involvement of a joint, and he requires all the information possible for the successful treatment of the case. The other, in which the very existence of fracture is doubtful; and whilst this doubt may not necessarily modify the line of treatment, yet should the patient afterward get skiagraphed on his own account, and be able to demonstrate a fracture, he might, if of a litigious temperament, make the position of his surgeon extremely awkward, to say the least of it."

These views seem hardly in accord with the progressive spirit of surgical science. He admits the benefits that can be derived from this method of diagnosis, and that it is able to furnish knowledge that can be secured in no other way, since it is especially useful in doubtful cases. Nevertheless he holds that it is unnecessary to employ so valuable a method in by far the larger proportion of cases. It is difficult to understand why benefits to be derived from any method of diagnosis should be deemed unnecessary in a large group of cases. The same doubtful elements that enter some cases may be present in others that appear perfectly clear. The application of all means of diagnosis at command is not too much for any case. The minute detail afforded by this method, of the character of the fracture, is invaluable in reducing and maintaining the fragments in position.

His second class of doubtful cases is one upon which this method has brought a strong light. There are better reasons for its employment than the danger of malpractice suits. The treatment as if a fracture existed of cases suspected of fracture is poor surgery today, since this method of diagnosis has made it possible to exclude or detect the fractures in nearly all parts of the body. The surgeon is now able to treat the actual injury by appropriate methods and save the patient the delay consequent upon the treatment of a suspected fracture that does not exist.

In referring to the difficulties in diagnosis in cases of Pott's disease, and hipjoint fracture, he says:—

"Both these cases occurred before the general use of the x-rays, but nowadays a surgeon, at any rate in a public institution, could hardly be held blameless were he to neglect their employment so long as a shadow of doubt remained in his mind as to the exact condition of the bone.

"In all cases, therefore, in which the nature of the accident leads to the possibility of any fracture which cannot with certainty be diagnosed, the surgeon should in *self-defense* give the patient the chance of skiagraphy to try and settle the point, though no practical outcome may result; for if he does not do this the patient may have a skiagraph taken on his own initiative, and much trouble result thereby."

Here again he admits the advantages and the duty of the surgeon in employing this method of diagnosis but falls short in scientific principle in basing its use on *self-defense*.

It is not to be supposed nor is it advisable to employ the Röntgen method in diagnosis of fractures to the exclusion of all other methods. All the means at command should be employed. The Röntgen diagnostician is not infallible. Other tissues than those this method recognizes may be injured and their lesion, unless recognized, may result in greater functional liability than arises from the injury to the bone. This method should not, however, be relegated to a secondary position. Greater detail and more accurate knowledge can be obtained by it than by any other method, with less pain to the patient, and less devitalization of the tissues surrounding the lesion, and less depression of the recuperative and reconstructive forces.

This is the true function of this method and it should

¹Read before the New Jersey State Medical Association at the annual meeting, June 27, 1901.

not be made to hold a secondary place such as the author quoted places it in. He says:—

"Though over-reliance on mechanical aid to diagnosis such as the x-ray, in fractures may not be so detrimental to the patient as when an exploratory operation is involved, yet, in my opinion, it is only as a subsidiary agent to diagnosis that skiagraphy should be employed, and even in this secondary capacity its evidence in cases of difficulty and doubt should be *received with caution, and only after due interpretation by some one whose experience warrants his speaking with authority.*"

Undoubtedly unless the skiagraphs have been made by "some one whose experience warrants his speaking with authority" and are interpreted by him with a full knowledge of the surgical pathology involved, it is certainly necessary to receive the diagnosis with great caution. Expert work and expert opinion are alone valuable in cases of doubt in any field of diagnosis. This is especially true of the Röntgen diagnosis.

The value and accuracy of the Röntgen ray image in medicolegal cases is entirely dependent upon the experience and professional skill of the expert, who made the skiagraph and translated it. The results of this method of examination are comparable with those of any other mechanical process of observation when human skill is demanded of the expert in the accurate employment of instruments of precision and the interpretation of their findings. These elements render the accuracy of this method very great but it cannot be infallible, as accuracy in making the observation and expert knowledge in reading the diagnosis are essential. It has the advantage, however, of producing mechanically images that can be compared with the normal often in the same individual. These images can be duplicated by other experts and their meaning discussed. It is necessarily secondary or opinion evidence but founded on tangible data.

The errors and vagaries attributed to this method of diagnosis are the result of a lack of knowledge in interpretation or skill in employing the rays. In the development of a new method of physical diagnosis, the errors should be steps by which knowledge is gained, and should not be held up as stumbling blocks. Their recognition and avoidance in the future marks the path of accurate progress. The mistaking of normal joint and epiphyseal lines for fracture lines, or epiphyses for fragments and the holding up of such mistakes as attesting the inaccuracy of this method is an index of the caliber of the critic. A knowledge of normal and pathologic anatomy, as viewed with the x-ray, is presupposed in the expert employing the Röntgen method of diagnosis, and inexperience is but a poor excuse for such errors, or the attributing of them to an accurate method.

One of the most valuable uses of this method of diagnosis is in determining the success which has followed attempts at reducing and setting fractures, and the efficiency of fixative methods employed. The questions that immediately present themselves are: What degree of accuracy in coaptation should be expected? Does the accuracy of this new method of diagnosis demand of the surgeon more accurate results, and how are they to be judged?

It is unreasonable and improper to demand of the surgeon more accurate results unless he is afforded a better opportunity to treat the injury. Unless this opportunity is afforded, a union which reestablishes the functional efficiency of the injured bone, commensurate with the severity of the injury that has been received, is all that should be expected. The Röntgen method of diagnosis has frequently shown that in cases in which perfect function has been restored, there may yet be asymmetry in the outline of the bones, and even an entire absence of apposition between the fractured surfaces.

The only method of treating fractures by which accurate coaptation and fixation can be secured is by open operation. Professor Von Bergman, of Berlin, said at the

last International Medical Congress that the treatment of fractures had made two very important progressive steps in the past 10 years. One is the operative treatment of certain simple fractures, in order to produce more exact coaptation of the fragments; and the other, in the field of diagnosis, through the study of their pathologic anatomy and the Röntgen method of diagnosis.

This method of treatment is inexpedient in the vast majority of cases, and its employment in uncomplicated cases is still *sub judice*.

In addition the Röntgen method does not recognize the injury that has been done to the softer structures. These injuries may be the cause of serious functional disability, and it is therefore essential that other methods of diagnosis should be taken into account in estimating the chances of recovery and method of treatment. Symmetry in the outline of the bones is not therefore to be demanded, and does not form any criterion of the efficiency of the treatment or of the extent of the total injury that was received.

The examination of a fracture by this method after it has been set and dressings applied will demonstrate the efficiency of the fixation apparatus and the accuracy of the reduction. It will often show the impossibility of reducing a fracture without operation, or of holding it in position by ordinary methods of fixation or extension. In such cases the meaning of the skiagraph should be explained to the patient or his representative as well as the necessity for operative intervention and its dangers. He should be given his choice between operation and a certain amount of disability.

Other questions that must be considered in studying the accuracy of this method are: Is it possible to miss seeing a fracture; to see a fracture when none exists; to show a fracture as persisting though long united; to intentionally or unintentionally produce distorted images?

The ability and experience of the operator are factors that must be taken into consideration in answering all these questions. Undoubtedly fractures can be overlooked by those defective in the technic essential to the exclusion of fractures, or by the inexperienced in reading the skiagraph though it shows the fracture. When, however, a skiagraph can be obtained that shows the cancellated structure of the bone or the medullary cavity of the long bones in contrast to their walls, the expert will have no difficulty in detecting a fracture, or in excluding all fractures.

There are yet certain portions of the body in which such accuracy cannot be obtained. The motion of the ribs, and the density of the body and skull prevent our recognition of fractures in certain bones notably of the spine and skull. The development of technic and further progress in instantaneous skiagraphy will probably overcome these difficulties. The method cannot be considered inaccurate because it is incapable of universal application. The accuracy that is attainable shows what will be accomplished by later developments.

The determination of the persistence of nonunion is practically impossible unless a displacement of the fragments is produced that can be detected by the skiagraph when two taken at different times are compared. The opacity of bone is dependent upon the presence of the earthy salts. Callus may be firm and union present long before the deposition of these salts makes the callus opaque to the x-ray.

Distortions can be produced in this form of expert testimony as well as in any other. They can be readily recognized by the expert and proved by subsequent examinations.

Skiagraphs that are to be submitted in evidence should be made with great care. The point at which the tube is perpendicular to the plate should be marked by the shadow of an opaque object, as the lead wafer of a localizing apparatus. The identity of the picture can be established by using lead letters placed beneath the limb

so that their shadows are cast upon the plate. It is thus impossible to erase or alter them. Data as to time, length of exposure, distance of tube, etc., can be written in ink on the plate when dry and signed by the operator. Any attempt to alter the writing or to manipulate the plate, except locally, is thus prevented, as the ink would otherwise run and destroy the plate.

Skiagraphs may be introduced as evidence for a number of purposes. To prove or disprove the presence of a fracture alleged to have been the result of accident or negligence. To show the extent of an injury that has been received in reference to the bones or their displacement. To show that proper treatment was or was not employed in suits for malpractice. Here also they may be of use in showing the extent of the injury and the insurmountable difficulties, in the way of treatment; or that the functional disability resulting was due in a great measure to the nature of the original injury, and was to be expected and could not be obviated by treatment.

Taken immediately after the fracture was set they can be employed to prove that the fracture was originally reduced and that the resulting deformity and disability followed, and may or may not have been due to the negligence of the patient, as shown by other testimony.

Whenever a skiagraph is introduced as evidence, an expert opinion should be had by both sides, and, if necessary, an examination of the patient by this method should be demanded by the opposing side. This is essential that the true value of the skiagraph in all its bearings upon the case may be brought out; as noted above, it will often show how great the injury has been and how difficult to treat, as well as showing the results of treatment.

The author already frequently quoted has said: "In skiagraphy, 'things are not what they seem' very often, and, when it is called for medicolegal purposes, only a skilled operator's picture should be used, and its interpretation be left to an expert who is a professional man, and at least well acquainted with x-ray work. The actual reading of the picture may be, and is in many cases, easy; but in charges of malpractice it is not the beauty of the bone scar that should determine the rights of the case—though this is the thing that is being ingeniously waved before the eyes of juries—but the relationship, if any, that the skiagraphic appearances bear to the clinical results produced by the treatment. It is this last that neither lawyer nor photographer can estimate, but a professional witness only."

Things will undoubtedly not be what they seem if in medicolegal work any but skilled professional operators and experts in this method of diagnosis are called upon, either to make the examination or translate the diagnosis. He must be more than well acquainted with x-ray work; he must have made the skiagraph and understand the technic of its production to be able to interpret it and be capable as an expert. His professional education and experience must be sufficient for him to appreciate and translate correctly the pathologic conditions that may be shown by the skiagraph. Neither lawyer, photographer nor a professional witness is capable of correctly reading the evidence shown in the skiagraph. The professional man who has by careful scientific study and clinical experience mastered the technic of this method of diagnosis and knows the errors that can be made, as well as how to employ it accurately, is the only person competent to give testimony.

These skiagraphs have been admitted as evidence and will be employed very frequently. When due care is given that they are made by competent professional experts and are fully explained, their importance in expert testimony will be very great, as their mechanical method of production assures a degree of accuracy that can be attained by no other method of diagnosis.

By a decision of the court (*Jameson v. Weld*, 45 a

299; 93 me. 345. American Digest 1900 A Aug. to Mch.) "it is within the discretion of the trial judge to admit in evidence an x-ray photograph; and his determination of whether it is sufficiently verified, appears to be representative of the object portrayed, and may be useful to the jury is not open to exception."

This clearly defines the position which the courts have assumed in reference to this method of diagnosis. The profession must see to it that this evidence is only given by expert, reliable professional men. Its true value and accuracy will then be evident.

This method of diagnosis should not be feared but courted for the scientific aid which it is capable of giving in the treatment of fractures. A more accurate method than any other, and capable of rendering the greatest service by demonstrating the value and efficiency of the methods of treatment, its employment should be demanded wherever it is feasible.

DIFFUSE PERITONITIS RESULTING FROM APPENDICITIS.

BY

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It is impossible in discussing peritonitis resulting from appendicitis entirely to exclude from mention the localized inflammations of the peritoneum, for the reason that not infrequently the two conditions are coexistent. A local suppurative process may be attended by a general nonsuppurative inflammation, and, on the other hand, the intestinal and cecal regions may alike be affected with a suppurative condition. It shall be, however, the aim of the writer, in this brief paper, to limit the discussion to those cases, the character of which is indicated in the title.

If we accept the statement of some of the German surgeons,¹ that 80% to 90% of all forms of peritonitis are due to perityphlitic causes, it will not be difficult for us to trace the origin of a large majority of the attacks.

Perforative and gangrenous appendicitis form the chief causes of diffuse peritonitis. It may arise either directly as a result of perforation of the appendix, or of acute gangrene of the appendix where that organ lies free in the peritoneal cavity, or as the result of the bursting of an abscess located primarily in the region of the cecum. Some authors regard the latter as the more fruitful cause, regardless of the fact that perityphlitic abscesses evacuate their contents into the general peritoneal cavity in only about 14% of the cases.² From a practical standpoint, an abscess about the cecum which becomes extraperitoneal by a chronic and insidious inflammation, giving rise to exudation and numerous adhesions, is a source of menace by no means trivial in spite of a popular opinion to the contrary. The adhesions, safe enough under general conditions, are frequently ruptured by the strain of an acute attack or by some sudden muscular activity. I have seen cases pre-

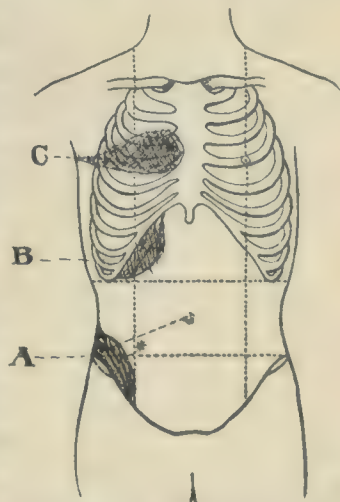


Diagram showing dulness at—*a*, the site of incision; *b*, the site of second operation; *c*, the position of abscess which ruptured into a bronchus.

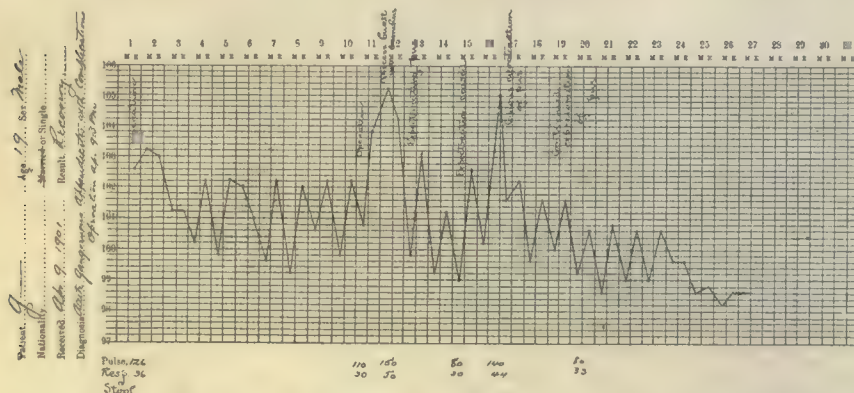
¹ Sonnenburg: Deutsche. med. Woch., Vol. 27, No 15.

² Bull, by Treves: Allbutt's Syst., Vol. III, p. 805.

senting tumor and fluctuation, in which rupture into the general cavity was occasioned during the stage of excitement of etherization just prior to operation, and during a paroxysm of sneezing. Mention must be made of instances in which diffuse peritonitis follows upon affections of the appendix, when no evidences of gangrene or perforation are apparent. In such cases, fulminating as they are sometimes styled, the infection is so widespread and rapid that macroscopic alteration of the tissues has no time to develop.

The exciting cause of peritonitis in each instance is to be found in bacterial invasion. Among the micro-organisms chiefly to be found, the colon bacillus, the ordinary cocci of suppuration, and the pneumococcus, take rank in the order mentioned. We may classify the various forms of diffuse peritonitis according to the presence or absence of exudation and the character of the exudate. It is admitted that such an arrangement does not smooth over the difficulty in diagnosis, nor does it indicate that each variety always will be accompanied by some definite clinical manifestation. The classification is chosen rather from pathologic interest, and because it carries us a step further than that ordinarily given. We have, therefore: (1) The nonexudative peritonitis; (2) the peritonitis with serous exudate; (3) peritonitis with serofibrinous or fibrinous exudate; (4) peritonitis with hemorrhagic exudate; (5) peritonitis with purulent exudate.

Under the last division there occur two varieties which are comparatively rare and deserve special men-



tion. They are styled, for want of better terms, (a) the progressive fibrinopurulent and (b) the diffuse ichoropurulent forms.

The ichoropurulent cases are generally fulminating in type. At operation or necropsy the serosa is found congested, edematous and quite friable. The intestines are commonly meteoric, and there is considerable ichorous pus between the coils. The lymph channels and the veins of the mesentery and omentum are thrombosed, and the entire contents of the peritoneal cavity look dark and grumous. The fibrinopurulent cases are benign in type and may assume a chronic course. We have learned from autopsies that there are two forms. The one shows a widespread diffused collection of pus and the other segregated areas of pus, entirely separate. Each of these pockets is capable of becoming absorbed or of leading to a pyemia. The appearances of the viscera in the cases of serous and serofibrinous diffuse peritonitis need no description, since it is these classes which the operator and the pathologist most frequently encounter. The hemorrhagic variety is exceedingly rare and falls under the pronounced toxic type which is characterized by bloody extravasations into the serous cavities, mucous surfaces and skin.

The question of supreme importance is, are we able to diagnose diffuse peritonitis and tell its kind and extent and differentiate it from the localized type? The various pathologic states do not bear with them the

symptoms or physical signs which will point directly to one form or another. The diagnosis is a difficult matter, particularly in the early stages. If a man is sick and has a universally swollen and painful abdomen, a flying pulse, collapse, temperature, continued vomiting and hiccough, cyanosed extremities, clammy sweat and anxious features, the diagnosis is easy; but take another man in whom these characteristic signs are absent, whose abdomen is soft and flat, the pulse 115 or 120 but of good quality, and in whom a general appearance of well-being and comparative comfort takes the place of restlessness and anxiety, what is there about the man which tells us that his abdomen should be opened? An indescribable something in his expression, perhaps, or a low posture in his bed or else the mere fact that he is so comfortable—too serene to augur good. Such instances and those which present a picture even more characteristic, demand the nicest exhibitions of judgment. From the standpoint of the patient's welfare a task of greatest importance is the differentiation between localized and diffuse inflammations. It may be said that to differentiate between the various forms of diffuse peritonitis is wellnigh impossible. In the attempt at differentiation there are several factors which materially aid us. Of these pain is the most important. It is the most weighty symptom of diffuse peritonitis. It copies Nothnagel's picture, being spontaneous, increased on pressure, and continuous. A sudden and violent onset is characteristic of peritonitis due to perforation. The abdomen is everywhere painful on movement and to pressure. The lum-

bar region and flanks are also painful. Pain is absent only in the fulminating septic cases when the patient succumbs before signs of injury to the peritoneum become apparent, and in those anomalous cases of diffuse purulent peritonitis in which all symptoms seem to lie latent. In the fibrinopurulent cases which assume a chronic aspect, spontaneous pain and the tenderness to pressure may be wanting. The pain may diminish considerably with the formation of exudate and meteorism.

Vomiting never fails to appear in acute diffuse cases, though it may be lacking in the progressive fibrinopurulent form.

Meteorism is a variable factor. In septic and in progressive fibrinopurulent cases it may be absent entirely, but in the diffuse ichoropurulent cases it is invariably present.

Closely associated with meteorism is paresis of the intestines. It is generally present in all instances of acute diffuse inflammation. I am of the opinion that paresis is frequently overlooked from the fact that many diagnosticians claim that the bowel is paretic only after meteorism has reached a grade which prevents peristalsis. The two conditions are closely associated, it is true, and while meteorism follows paresis and may be due to it, paresis is not due to distention but rather to profound shock to the nervous mechanism of the parts.

A beginning peritonitis or a ruptured appendix is the shock which places the bowel *hors du combat*, and the accumulation of gas is a natural result. It must not be understood that distention is always due to paresis. It may exist without it. It seems to be brought about, in the majority of instances, by some interference with the vascular supply. It is well known that experimental ligation of the mesenteric veins will always produce it, and certain it is that the phenomenon occurs chiefly in those cases in which the mesenteric veins are thrombosed.

The temperature is most variable. The character of the exudation does not influence it. The pulse is generally regular, frequent, small and compressible. The pulse and temperature relation is somewhat characteris-

tic. The more septic the peritonitis the lower the temperature and the weaker and more rapid the pulse. It is apparent that the recognition of any single form of acute diffuse peritonitis is a difficult matter. Auscultation and auscultatory percussion are valuable aids in establishing the presence of exudation. On deep breathing the friction sounds caused by rubbing of the intestinal coils may be heard, and we are able to map out by auscultatory percussion any considerable areas of exudation.

It is my desire to call particular attention to septic intoxication, which may complicate both local and general forms of peritonitis. This condition may result from absorption of toxins which are developed in localized abscesses. Dieulafoy has aptly called these abscesses *laboratories of toxins*. Septic intoxication may also result from a diffuse peritonitis of any variety. It is not easy to distinguish the type of inflammation by the intoxication. This complication is characterized chiefly by an icterus of light grade, so light sometimes as to leave the practitioner in doubt as to its presence, but generally of sufficient intensity to attract attention. There is no bile-pigment in the urine, but a slight albuminuria may exist. Mental aberration is pronounced, and may be exhibited in depression or exaltation. It is this class of cases which affords the surgeon the greatest concern. The prognosis is bad in every instance. Very few recover, even after the laboratory of toxins has been removed. The tendency to abscess formation in the liver and subphrenic region of the peritoneal cavity is most common.

For the sake of illustration, the notes of a case of diffuse ichoropurulent peritonitis resulting from a gangrenous appendix and complicated by septic intoxication are appended below.

CASE.—G., male, 19 years old. During a few months prior to illness he complained of occasional attacks of colic which would subside in a few hours. He was otherwise quite well. On the morning of April 5, 1901, he awoke with abdominal pain, ate little breakfast, and grew worse as the day wore on. Vomiting set in, and purgatives were taken, but had no effect. The pain was referred to the region of the umbilicus. The following day brought no respite from the pain and vomiting. Toward night there was a remission in the vomiting and the pain became more localized in the right iliac region. On April 7 the vomiting ceased. The pain continued severe. The skin was dry and warm, the expression anxious, the abdomen slightly distended, chiefly in the right iliac region. Marked rigidity of abdominal walls over right lower quadrant and great tenderness to pressure. Respiratory movements mostly costal. The temperature and pulse were normal, but on the following day a slight rise of temperature and acceleration of the pulse were observed. On April 9 it was apparent that the patient's condition was decidedly worse. The skin was markedly icteric, the abdomen uniformly distended and tympanitic except for a zone of dullness two inches wide just inside the right anterior superior spine. Constipation remained absolute.

Operation 3 p.m., April 9.—On opening the peritoneum several ounces of chocolate-colored, offensive pus escaped. General peritonitis was present. There was no attempt at walling off. The appendix was found sharply kinked and held down by a few old and very tough adhesions. The tip was gangrenous and contained a fecal concretion. The appendix was removed, the cavity flushed with saline solution, and a gauze wick introduced through the incision which was allowed to remain patent. At the time of the operation the temperature was 102.4°, pulse 126, respirations 30. For 36 hours following the patient's condition was desperate, respiration was rapid and entirely costal, the pulse very weak, the expression bad, and he complained of great tightness across the chest and of pain in the region of the liver. On April 11, the bowels moved for the first time. The icteric tint in the skin persisted. Stupor supervened, followed by marked restlessness and toxic delirium. There was a left external strabismus. These symptoms subsided after a few days, but the jaundice continued. The patient continued to complain of pain and tenderness in the region of the liver. There was one spot at the tip of the right ninth rib and another over the fifth rib in the anterior axillary line of the same side. Lateral pressure on the thorax as a whole was painful. There was no pain or particular tenderness on a line between the incision and the ninth rib nor in the loin behind. On the eighth day following operation there was dullness and slight tumefaction in the region near the ninth rib as shown in the diagram at B. Aspiration brought away pus and accordingly the patient was again anesthetized and the part explored. A smooth-walled abscess cavity containing a couple of ounces of white, creamy pus was evacuated. The abscess was beneath

the muscular walls and passed up and behind the costal margin. The patient was collapsed after the operation and reacted slowly after stimulation. It became apparent, however, that the trouble was not over, as indicated by the expression, the temperature and the thoracic pain. Examination of the thorax at this time showed nothing abnormal. Both operative wounds continued to do well. On the eleventh day the patient became very restless and soon began to cough up considerable quantities of foul pus. An abscess had burst into a bronchus. The condition became alarming, the temperature was 105.4°, pulse 150 and respiration 50. The icterus now began to subside rapidly. The cough and expectoration continued for five days and then ceased. It was apparent that the abscess had made but meager outlet for itself and that the fistula had closed. Two days later it opened again, following hemoptysis, and was accompanied by marked constitutional symptoms, temperature 105°, pulse 140, respiration 44. Physical signs now revealed altered respiratory sound and slight tympany in the right anterior aspect of the thorax between the third and fifth ribs as shown in the diagram at C. By auscultatory percussion the exact limits of lung tissue above, and liver below, could be mapped out. This time the communication between the abscess and bronchus remained free, and the patient began to improve rapidly. The wounds healed without incident, and four weeks after the first operation the patient sat in his chair. On May 25, he visited me at my office. Both wounds were entirely healed, and he expressed himself as feeling quite well.

The temperature chart shows the febrile course of the attack. The case is remarkable from the standpoint of its character, severity, and the complications which attended.

THE X-RAYS IN SOCALLED SPRAINS.

BY

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AND

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The term *sprain* has been used to designate the pathology of that class of injuries, to the various parts of the motive apparatus of the body, in which the symptoms are not in accord with the accepted ideas of fracture pathology. Sprains are a class of injuries of which the pathology has been considered more or less vague, and the results of treatment usually unsatisfactory. In the light of our present knowledge it would appear that the generally accepted definition of a sprain is incorrect and misleading, and that the true pathology is that of a fracture, a luxation, or both a fracture and a luxation, involving the same joint. The fractures in this particular class of injuries occur near a joint and frequently communicate with the joint cavity. That this view of the pathology of sprains is a correct one is proven by the fact that clinically these injuries are attended with results out of all proportion to the signs and symptoms of the condition. In fractures it is an accepted fact that the better the reduction and therefore of the apposition of the fractured ends, the less callus is manufactured, and the stronger is the resulting union. Excessive callus formation is due to incomplete adaptation of the fractured ends and if the separation be wide enough the resulting union will be fibrous. This fact is applicable to the class of fractures under consideration, for, while the bony tissue involved may be small, and the area insignificant, still the locality in or near a joint, makes an excess of callus a most important deterring factor to the subsequent restoration of function, and discontinuance of pain. A fracture of this character, or for that matter any fracture properly reduced and dressed, rapidly becomes comfortable and so remains. If pain continues after dressing, it usually indicates that the fracture is not properly reduced.

The symptoms of sprains are so familiar that it is not necessary to repeat them nor will it be necessary to go

into details or even describe the possible mechanic appliances that may be used in the treatment of these injuries. In this paper we cannot do more than call attention to a number of actual cases that have come under our observation, and so will simply indicate the location of, and the kind of fracture likely to be met in cases in which you would not expect to find so serious an injury. It must be remembered that many of the more pronounced cases, that we show here, were diagnosed as sprains, either by a corner druggist or by the patient himself, and not by a doctor, still this does not detract from their value as an object lesson. It is well to bear in mind that a patient who comes to you a week or ten days after meeting

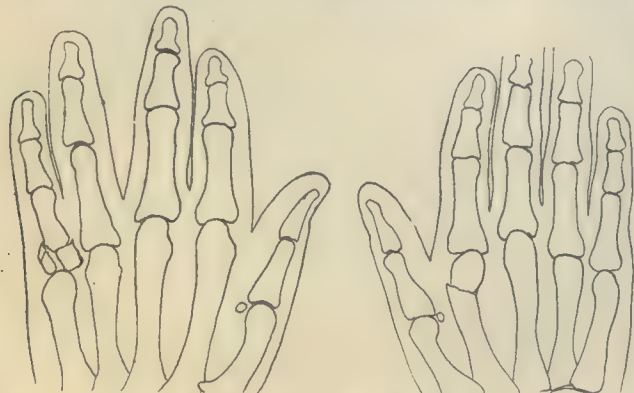


Fig. 1.—From Case No. 2009. Fracture of first phalanx, fifth finger. C. J., 18, slipped and struck his fingers against a box in falling.

Fig. 2.—From Case No. 4824. Fracture of second metacarpal. J. E., 16, hit another boy in a fight.

with an accident, and displays a wrist that is much swollen and rather painful, on which all imaginable household remedies have been tried without avail, is very likely to have a fracture of one or more of the bones of that joint, which has not been recognized by the patient or his solicitous friends because the injury did not at once and completely interfere with the function of the hand.

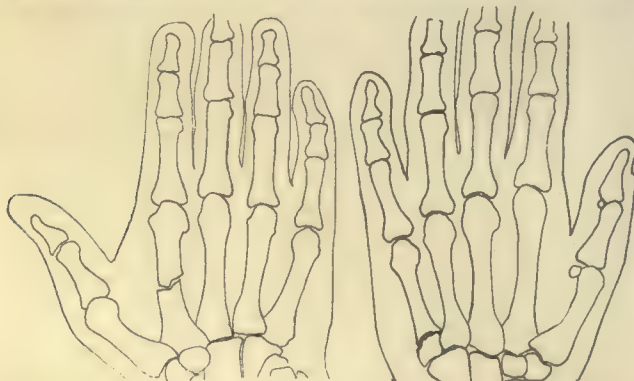


Fig. 3.—From Case No. 4864. Fracture of second metacarpal. S. M., 21, hurt his hand in a fight.

Fig. 4.—Fracture of fifth metacarpal from Case 2090, T. B., 36, struck his hand against a box.

The hand is peculiarly liable to injury at one or another of the numerous phalangeal or metacarpal articulations. A fracture when it occurs at one of the phalangeal articulations is not so likely to be overlooked, as one at the carpometacarpal, or metacarpophalangeal articulation.

Fig. 1 illustrates a case of fracture of one of the phalanges; it is an outline drawing from a case in which the patient said that some time previously he had struck the end of his finger against a box. It is readily seen how a similar accident could happen to any one of the fingers, and if not so extensive, as in this particular case, might easily escape detection by the ordinary means

of diagnosing, and still cause a considerable amount of pain, and if not properly treated might result in a partial or complete ankylosis of the joint.

An accident that is of much more frequent occurrence is illustrated in Fig. 2. These fractures of the metacarpals are usually caused by blows of the clinched fist



Fig. 5.—From Case No. 4882. Fracture of first metacarpal at base. J. W., 42, hurt his hand in a fight.

Fig. 6.—From Case 4867. Luxation of thumb at metacarpophalangeal articulation. C. K., 54, hurt his thumb some months ago while cracking ice.

against a solid or fairly resistant obstruction. Amateur pugilists are prone to this sort of injury. The picture shown here illustrates this feature also; it is an outline drawing from a radiograph of the hand of a young man of 16 years, who hit another in a fight. A particularly interesting feature of these fractures is the fact that the second, third, and fourth metacarpals are more frequently broken at either the phalangeal articulation or through some portion of the shaft of the bone, as illustrated in Figs. 2 and 3. The first and fifth metacarpals are more generally fractured at their carpal articulation, as is well shown in Figs. 4 and 5. The data that is given in connection with these outline drawings will sufficiently indicate the cause and nature of the various injuries so that it will not be necessary to repeat it.

Fig. 6 illustrates a condition that is rather out of the average run of cases. It is an outline drawing from the hand of a patient who was injured some three months before he sought medical aid; he finally, according to his story, went to a dispensary, where the doctor made an incision, thinking the swelling was due to an abscess. The patient, who was a German, was subsequently admitted to the German Hospital suffering from tuberculosis. It will be readily seen how easy it would be to mistake a case of this kind, when accompanied by an

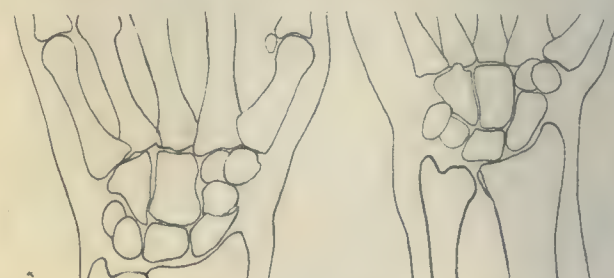


Fig. 7.—From Case 3727. Fracture of scaphoid. B. H., 21, fell from a wagon and struck on palm of hand.

Fig. 8.—From Case 4948. Separation between radius and ulna at lower articulation. L. W., 38, fell in getting off a car.

unintelligible or incomplete history, as a complication to a general condition that of itself would favor the theory of disease or abscess about, or in, the joint.

The wrist proper is more subject to these so-called sprains than any other joint. Probably the injury most

generally overlooked at this joint is a fracture of one or more of the carpal bones. Fig. 7 illustrates a case, and also suggests how difficult it would be to diagnose an injury of this kind correctly by means of the usual data and clinical signs. Next in frequency to carpal frac-



Fig. 9.—From Case 4871. Fracture both bones of forearm, lower third. E. R., 17 months, fell and hurt her arm about ten days ago.

tures are fractures of the styloid process of either the radius or the ulna, or the tearing away of a minute fragment from the lower portion of the radius. The importance of correctly diagnosing any of these injuries about the wrist is self-evident, for if they are allowed to go on their usual course of callus proliferation, inflammation

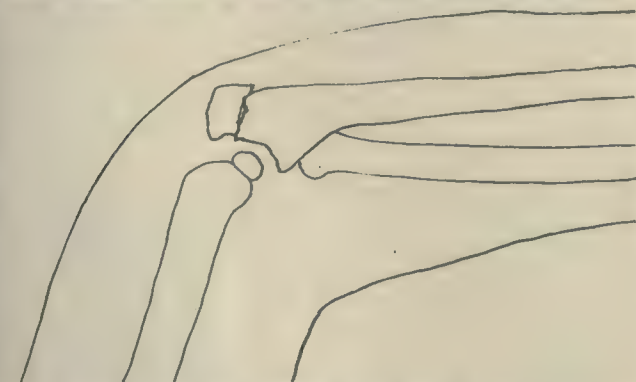


Fig. 10.—From Case 2986. Fracture upper end of ulna. O. F., 5, fell some three weeks ago striking on her elbow.

and subsequent degeneration, there is invariably more or less complete impairment of function as the ultimate result. The wrist is of such great importance from an economic point of view that too much stress cannot be laid on the importance of properly diagnosing and treating all injuries at or about this joint. Before proceed-



Fig. 11.—Same case as shown in Fig. 10, taken at an acute angle to magnify separation of fragments.

ing, however, we would like to call your attention to a luxation that occasionally occurs at this joint. It is well illustrated in Fig. 8, and consists of a marked separation of the long bones of the radioulnar articulation. Sometimes this separation is accompanied by a more or less extensive injury of one or both of the bones involved,

the resulting fracture is of course due to the tearing away of one or more of the ligaments that connect these two bones. Fractures in children, even when they are quite extensive, are not easily recognized. Fig. 9 will illustrate a case of this kind. This child fell some 10 days or two weeks before medical aid was sought. The picture shows that the fracture of the ulna was complete, with some deformity, while that of the radius was incomplete or greenstick.

Figures 10 and 11 illustrate another case of a similar character. In this case the injury occurred three weeks



Fig. 12.—From Case 4821. Forward luxation of head of radius. J. D., 3, fell from a swing.

before the patient was taken to a doctor. This latter case is also interesting on account of the peculiar nature of the injury, a fracture of the upper portion of the ulna in a child five years of age, is a lesion that is extremely rare. In looking over the literature on the subject of fractures of the olecranon we have not found any authentic case occurring in children under 10. Here, however, we have a fracture of this process occurring at least a year before the epiphysis of the bone at this point begins to ossify. Fig. 12 shows another condition that

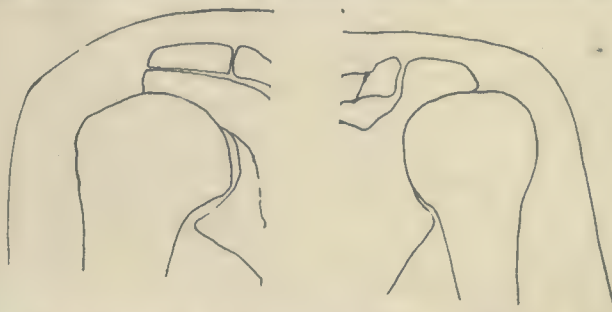


Fig. 13.—From Case 4896. Transverse fracture through acromion process. M. M., 34, fell from a second-story window.

Fig. 14.—From Case 4775. Fracture of clavicle near acromial end. J. M. G., 52, fell on his arm while getting off a car.

we sometimes find in the elbow-joint that is likely to be overlooked. It consists of a partial forward luxation of the head of the radius, and unless the lesion is recognized in time it will be difficult of reduction, and if not reduced will interfere to a considerable degree with the free and full use of this joint. In addition to these injuries we may of course have a tearing away of any one of the ligaments attached at or near this joint; these would of course give rise to the same symptoms and sequels that we have at any of the other articular surfaces.

Sprained shoulders are of frequent occurrence, and are usually very painful. Figs. 13 and 14 illustrate two

conditions that may be found; these pictures will also show, or rather indicate, the reason why an extensive injury near the shoulder-joint is sometimes overlooked. There are, of course, other injuries of a similar character that involve other portions of the bones of this joint, one of the more common being a sprain fracture of the head of the humerus, that usually accompanies a partial or complete luxation of that bone, and in at least two cases we have found an extensive fracture of the head of the humerus in what the patient had supposed was a severe sprain of the shoulder.

At the hip-joint we have found more or less extensive

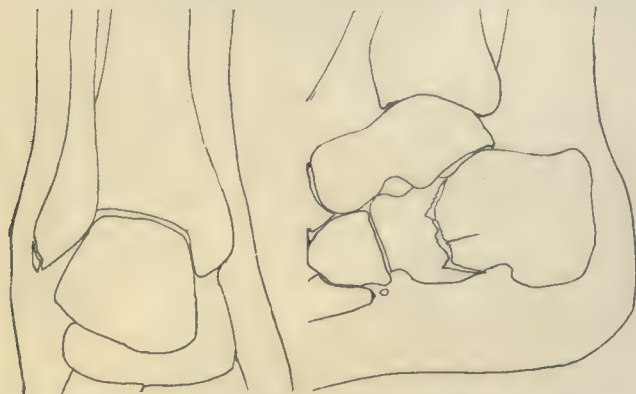


Fig. 15.—From Case 4771.—Sprain fracture of outer malleolus. C. T., 55, a horse stumbled and fell with and on him.

Fig. 16.—From Case 3725. Fracture of os calcis. C. L. P., 37, fell on scaffold and struck on his heel.

injuries of the femur at or near the great trochanter, and it is of course possible to have a tearing away of a spicule of bone at any one of the points where a ligament is attached. At the knee, one of the injuries that is likely to be overlooked is an incomplete or partial fracture of the patella. Another injury that is more common than is usually supposed is a luxation of the fibula at its upper articulation with the tibia; this injury is occasionally accompanied by a more or less extensive fracture of one or both of the long bones, but usually the fibula. The ankle, like the corresponding joint of the

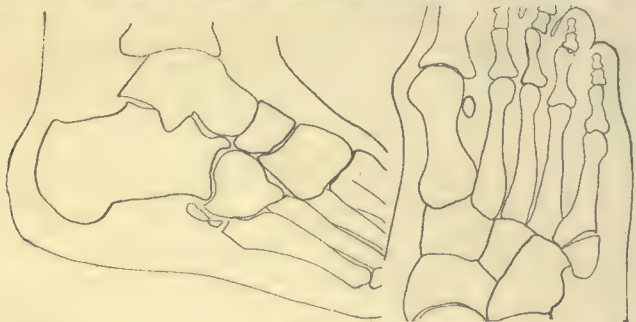


Fig. 17.—From Case No. 4786. Fracture of cuboid and upper portion of fifth metatarsal. M. O. N., 48, stepped on edge of an uneven piece of ground and twisted his foot.

Fig. 18.—Fracture of fifth metatarsal, from Case No. 4787. A. G. H., 41, hurt his foot running for a car.

upper extremity, is very readily sprained. Here again, as in the wrist, the lesions are varied and of frequent occurrence.

Fig. 15 illustrates a sprain fracture of the extreme lower end of the fibula. Occasionally we find a corresponding injury on the opposite side of the leg. Much more extensive fractures of either one or both bones, when not accompanied by some deformity, are occasionally overlooked. Even the x-rays, unless applied at the proper angle, would fail to demonstrate a fracture when there is no deformity. The train of symptoms that might follow as a result of neglect in a fracture at

this joint will appeal to all. At the ankle we also occasionally find a luxation corresponding to the one at the wrist, shown in Fig. 8, differing from this, however, in that the fibula, in addition to being displaced outward, is also, as a rule, thrown distinctly back. In the tarsus, the fractures that are likely to be mistaken for sprains are usually of either the astragalus or of the os calcis. Fig. 16 shows an extensive fracture of the latter bone that was allowed to go for days before the patient sought medical advice.

A fracture that is still more common is one that includes the upper portion of the tubercle of the fifth metatarsal and occasionally the cuboid bone. Fig. 17 shows the latter condition, and Fig. 18 the former. This variety of fracture appears to follow a sudden twist or bending of the foot. A possible error in interpreting an x-ray picture of this portion of the foot is the mistaking

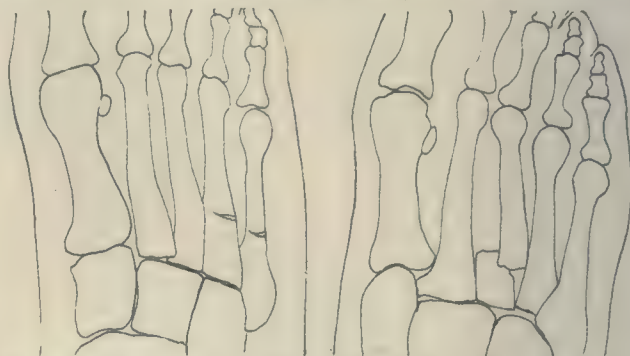


Fig. 19.—From Case No. 3771. Fracture of fourth and fifth metatarsals. S. O., 45, fell some weeks ago and sprained her foot.

Fig. 20.—From Case 4807. Fracture of third metatarsal. M. C., 32, fell a distance of 10 or 12 feet, landing flat on his feet.

of the sesamoid bone, that occasionally occurs in the peroneus longus at this point, for a pathologic lesion. This is quite possible on account of the variation that occurs in the normal shape and size of this bone.

Another possible result of a sprain is illustrated in Fig. 19, while Fig. 20 illustrates one of the most peculiar sprains that we have met with recently. This particular injury was occasioned by a fall of from 10 to 12 feet, the patient landing flat on his feet. Why a fracture of the third metatarsal near the tarsal articulation should be the only resulting injury is rather difficult to say, and would be hard to explain from a purely mechanic study of the origin of fractures.

These cases and illustrations, though meager, we trust are sufficient to suggest the possibilities of grave injuries and results which may be occasioned by apparently slight causes.

THIOSINAMIN IN CHRONIC JOINT AFFECTIONS.¹

BY

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The discovery of a drug which, given internally, is capable of causing scar-tissue to be absorbed from the skin and the cornea, is an interesting and certainly an unexpected recent development of medical science. The effect of drugs given internally is so difficult to watch, and the results of most of our drugs are so variously estimated by different observers, that it is pleasant to deal with one the action of which is on the surface, so that there can not be much difference of opinion in regard to it.

Thiosinamin is a white crystallin substance made

¹ Read before the Union Medical Association of Northeastern Ohio, November 12, 1901.

from mustard oil by heating with alcohol and ammonia. It was first used by von Hebra, of Vienna, in lupus, his paper on the subject appearing in 1892. The result of hypodermic injections of this substance is at once a decrease and then a very marked increase in the number of leukocytes in the blood. As the leukocytes are supposed to be the active agents in combating disease germs, thiosinamin has been used for this purpose in tuberculosis and in syphilis. So far it has not been shown to be useful in these diseases. A more important observation was made by Sinclair Tousey, of New York, who observed the disappearance of keloid tissue under its use, and a similar observation has been made in regard to scar-tissue in the cornea. Of these uses of thiosinamin I do not wish to speak in detail. It will suffice to call attention to the significant fact that the mind of the patient and the personal equation of the doctor are effectively excluded in rating the efficacy of the drug. The fact that the remedy injected hypodermically causes the removal of such fibrous tissues is highly suggestive, and it has seemed worth while to try its effects on fibrous formations in other parts of the body due to other causes. Its use in chronic rheumatism, not against the rheumatic processes proper, but to overcome the connective-tissue changes which impair the usefulness of the joints, seems especially worthy of investigation. There are certain theoretic considerations against its use in rheumatism, of which I will speak later. The history of a few cases will be given first. They are by no means conclusive, as they are few, but I wish to put them on record as a preliminary report.

CASE I.—This case is not of rheumatic origin. The patient, a man, aged 43, as the result of a railroad accident, had undergone amputation of the right thigh eight years before being seen. A year later he was fitted with an artificial leg, and pain at once appeared in the stump. The thigh was reamputated, the first operation having been about midway between the hip and the knee. In all, nine operations of this kind were performed in the vain effort to excise the painful nerve. At the last operation the nerve-trunks were excised deep in the pelvis, but the pain returned and was very severe at the time when the patient was seen. He was taking two grains of morphin a day to control the pain. On the theory that the pain was due to connective-tissue pressing on the nerve-fibers, thiosinamin was prescribed, one grain being given after each meal by the mouth in capsule. At the end of a week the patient was much improved. He had reduced his morphin by one-half, and was not suffering so severely, although he still had some pain. At the end of another week the patient's condition remained about the same. After this the pain increased for a time, and although the thiosinamin was pushed very vigorously no further improvement resulted. When last seen the patient was still suffering very severely. Whether for a time the remedy had a really favorable effect on this man's condition is a matter of doubt. The result was certainly not conclusive.

CASE II.—This patient was a man aged 19. He had had an attack of acute rheumatism five months previously in Algiers. On recovering from the acute attack the left wrist was very stiff, and there was atrophy of the muscles of the forearm, with a glossy skin and a blue and cold condition of the left hand. These conditions were marked when he was first seen, and were almost stationary, improvement if taking place being slow. Thiosinamin was prescribed for him, a grain being given in capsule form after each of his meals, with the idea that fibrous pressure in and about the joints was interfering with the nerve-supply, as well as hampering the mobility of the wrist. A week later the pain from which he had been suffering to a marked degree in the left arm and hand was almost gone. In the course of a month great improvement was noted in the power of the arm and hand, and the trophic disturbances were much better. Mobility of the joint increased from the first. The improvement was progressive and continuous, and two months after the first examination the patient was practically recovered and discharged.

CASE III.—J. A., aged 36, began to have curvature of the spine when about 12 years of age. His back tired easily and it was hard for him to do any work requiring stooping. Nine years before he was seen the walk became affected, and when seen he had a typical paraplegia of the spastic type, with a marked lateral curvature of the spine. The knee-jerks were markedly exaggerated and there was ankle-clonus. This was a case of the so-called twisted spine. In addition to this for five or six years there were sensations of numbness in the right hand, and three years ago he began to notice an enlargement of the right elbow and with this came wasting of the muscles of the hand. In this case thiosinamin was given primarily to affect the chronic arthritis in the elbow joint which was associated

with marked enlargements and was causing trophic disturbances from pressure on the nerve-trunks, and especially the ulnar nerve. The patient has been given three courses of treatment of six weeks each of thiosinamin, one grain being given in capsule after each meal. After the first course of six weeks the enlargements about the joint were smaller and he could more easily straighten his arm, the motion having been limited by the thickening of the tissues about the joint. Thus far there has been little or no improvement in the trophic disturbances in the hand, and in the walking. He has thought at times that he possibly walked a little better, but this is very doubtful.

CASE IV.—A woman aged 40, who has always been in good health until about four years ago. She then, as a result of exposure to cold, developed a rheumatic affection of one of the wrists. She has since then been greatly troubled by pain, redness, and swelling of the wrists and ankles, elbow and shoulder joints at times, and with this a progressive stiffening of some of the joints apparently due to the fibrous deposits, the finger-joints and wrists being especially disabled. Pain and tenderness come on, sometimes without obvious cause, sometimes from exposure. The general health has not suffered very markedly, although the patient is not quite so strong as formerly. In this case thiosinamin was given during two periods of six weeks each with the thought that possibly the limitations of joint-movements might be decreased by absorption of the fibrous deposits about the joints. The attacks of pain and tenderness continued at intervals during the administration of the drug, but were apparently not increased by it. The drug was discontinued, as it was thought that it could hardly be of service in the face of the continuance of an active rheumatic process.

CASES V AND VI.—These cases may be noted in brief. In one the result of the thiosinamin seems to have been entirely negative and in the other favorable. One patient after a very severe strain of the left shoulder by a fall from a carriage had for four or five years a pain which came on at times over the deltoid region running down over the outer aspect of the arm between the biceps and triceps muscles. No anesthesia or other signs of disturbed innervation could be found. It was thought that this pain might be due to fibrous tissue pressing on nerve-endings as a result of inflammation following the injury. Thiosinamin was given for a week or ten days. Since this time, about two months ago, the pain has practically not been noticed. It has never during the last five years been absent for so long a time.

The other case, somewhat similar in origin, was of very severe pain in the lumbar region. It was associated with tenderness on movement and was apparently due to a severe strain three years ago. No other cause could be ascertained, and as other therapeutic measures had been exhausted the patient was given thiosinamin for several weeks. No improvement followed, and, in fact, no observable effect was produced by the drug.

The fact that thiosinamin increases the leukocytes in the blood in very marked degree indicates that this explains its action on fibrous deposits. The relationship of leukocytosis with mucous membrane inflammations, such as colds and grip on the one hand, and rheumatism, gout and neuralgia on the other, has of late awakened much interest. A theory has been put forward recently, which, if true, would constitute a strong contraindication to the use of thiosinamin in rheumatic cases. It is observed that respiratory diseases increase with the coming of cold weather, and that following this increase comes a greater incidence of cases of rheumatism, which usually yield after the respiratory diseases become less frequent in the spring. It has been proved that uric acid is dependent for its production on cell-destruction. The leukocytosis due to mucous membrane diseases, while it is thought to play a part in recovery from those diseases, probably by combating the germs, leaves in the blood an increased number of leukocytes, which, as they are destroyed in the tissues, set free uric acid which is then deposited in joint or nerve-tissue, especially if those are subjected to cold.

The sequence would be this: The patient, as we say, takes cold; that is, the germs in the mucous membranes of the nose and throat begin to multiply finding a favorable nidus on account of diminished resisting power of the patient, from fatigue, exposure to cold or some other reason. The battle now begins between the germs and the leukocytes. So long as this contest goes on the leukocytes are pretty well occupied. When, however, the germs diminish in number the leukocytes are set free in the blood and exist in increased numbers. As a result of the bacterial poisoning due to the disease, or possibly the action of various ferments of which not

much is known, the leukocytes are destroyed and uric acid formed in the blood. Whether this uric acid is eliminated by the kidneys without damage to the patient, or is deposited in joint or nerve-trunks causing rheumatism and neuralgia, may depend on peculiarities of circulation on the part of the individual. The tendency is for its deposit at points of greatest resistance. In some patients the joints are very liable to these deposits. In other patients nerve-trunks are more apt to be affected. In any event, exposure of the parts to cold is likely to precipitate an attack.

It will be observed that if this theory is true, thiosinamin is decidedly contraindicated in rheumatic and neuralgic patients, as it causes marked leukocytosis. One would expect acute attacks to be set up by the administration of the drug. It has been of interest to note the fact that thus far in the course of my observations this has not been the case. From the results published by von Hebra, Tousey, Newton and others in regard to it, it may be said in general that it is, so far as we now know, useful in removing fibrous deposits due to disease and is not a germicide or an antirheumatic. This explains its apparent favorable effect and its ultimate failure to cure in cases of tuberculosis and lupus. Tousey also reports cases of carcinoma and sarcoma in which absorption of the fibrous material caused apparent bettering of the symptoms, but the patient ultimately died of the disease. It has heretofore been found useful in keloid, in corneal opacities (an excellent paper having been read on this subject recently by Dr. H. G. Sherman before the Cleveland Medical Society) and in catarrhal deafness, that is, deafness due to fibrous thickening of the structures of the middle ear. The tendency in all of these cases is to diminish and soften these deposits, the amount of improvement being greater when the deposits are recent and small in amount.

The few cases here reported make it probable that thiosinamin will be found useful in aiding the absorption of fibrous deposits due to rheumatism. If further investigation proves this to be the case, it will be seen that a wide range of usefulness is open for it among patients who have formed a large part of the material for osteopaths and other quacks.

A RAPID METHOD OF DETECTING BACILLUS COLI COMMUNIS IN WATER.

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The following method, or combination of methods, for the bacteriologic examination of water, has been used in the Laboratory of Hygiene, of the Vermont State Board of Health for the past four or five months. We think it possesses an advantage of greater rapidity and simplicity over other methods and, so far as we have been able to discover, it gives accurate results. In the search for *Bacillus coli communis* we have found the scheme especially useful. It only requires 72 hours to be sure of the presence of this organism, while specimens which do not contain glucose-fermenting bacteria can be declared negative in 24 hours.

BACTERIAL EXAMINATION OF WATER.

So soon as the water is received, steps should be taken to gain the following results: (1) An estimate of the total number of bacteria per cubic centimeter. (2) A determination of the presence or absence of *Bacillus coli communis*. (3) If this organism is present, an estimation of the number of bacilli per cubic centimeter.

Estimation of the Total Numbers.—The bottle containing the water is thoroughly agitated and 1 cc. of the

contents diluted by means of a sterilized pipet with 99 cc. of distilled water previously measured and sterilized in an 8-ounce bottle. The mixture is made thorough by shaking the bottle violently 25 times; 1 cc. is then taken from the diluted specimen by means of a sterilized pipet and mixed with a tube of plating agar melted at a temperature of 40° C.

This agar, containing 0.01 cc. of the original water, is then turned into a sterilized four-inch Petri dish and allowed to solidify on a level table. The plate is placed in a room temperature incubator (22° C.) and grown for 96 hours when it is removed and the number of colonies on the plate are counted. This number multiplied by 100 represents approximately the number of individuals per cc. of the original water.

Determination of the Presence of Bacillus Coli Communis.—A. A Smith's tube filled with a 2% glucose bouillon is inoculated with 1 cc. of the water to be examined and grown 24 hours at 38° C. If no gas is formed, the absence of the colon bacillus is shown.

B. If from 25% to 70% of gas is formed in the closed arm, a tube containing 10 cc. of neutral broth to which has been added 0.3 cc. Parietti's solution is inoculated with 0.5 cc. of the contents of A and grown 24 hours at 38° C.

C. A second Smith's tube is inoculated with 0.5 cc. of the contents of B and grown 24 hours at 33° C. (If there is no gas, we may be sure the gas producer in A was not the colon bacillus. If, on the other hand, gas is produced in this tube, we may be reasonably sure that the *Bacillus coli communis* is present.

D. Further confirmation may be obtained by ascertaining the gas formula from C. The formula for the colon group is $H/CO_2-2/1$, further.

E. A pure culture can be easily obtained from B by plating and the following reactions obtained: (1) Gelatin stab does not liquefy after seven days at 22° C. (2) Litmus milk reddens and coagulates in 24 hours at 37°. (3) Dunham's solution: Indol formed in three days at 37° C. (4) Morphology in bouillon: sluggishly motile (?) bacillus.

Estimation of Numbers of Bacillus coli communis.—At the same time the plates for total numbers are made, a litmus lactose agar plate of 0.5 cc. of the original water is made. After solidifying, this plate is inverted and grown 24 hours at 38° C., when the colonies of *Bacillus coli communis* may be identified as red colonies on a blue plate.

The following organisms have been subjected to this method, but only *Bacillus coli communis* and the allied bacillus of hog cholera survive the check solution B and grow in the second fermentation tube: *Bacillus pyocyaneus*; *Bacillus prodigiosus*; *Bacillus cloacae*; *Bacillus liquefaciens*; *Bacillus aerogenes capsulatus*; bacillus of lactic acid; *Bacillus lactis aerogenes*; *Bacillus coli communis*; bacillus of hog cholera. *Bacillus coli communis* from many sources has been tried and in all cases survived the process.

Up-to-date we have had 550 specimens of water put through this process and we have yet to find an organism surviving the check solution and growing with gas production in the second fermentation tube, which does not give every typical growth reaction characteristic of *Bacillus coli communis*.

Effect of Intense Light on Eyes.—The experience of Mr. Gatchell, chief electrician of the Union Furnace Company of Buffalo, in connection with the use of a powerful electric arc in the removal of a "salamander" from the blast furnace is interesting from the effect of the intense light on the eyes. The light was estimated to exceed 300,000 candle power, and Mr. Gatchell says: Nearly everybody who looked at the arc, even for a very few minutes, was affected with inflammation in their eyes of a very severe character, the only exceptions being two men who wore plain white glass spectacles, and they suffered no inconvenience, although one of them looked at the light a great deal.

HEMORRHAGIC TYPHOID FEVER. REPORT OF A CASE ENDING IN RECOVERY.

BY

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This generally fatal complication of typhoid fever is very rare, as is demonstrated by the few cases on record. It is for this reason that the following case, ending in recovery, is reported:

Miss B., aged 24. Previous condition and family history good. No history of any bleeding in her family or in herself.

When I first saw her I found that she had been having typical typhoid prodromal symptoms for two weeks, gradually getting worse. She has now a temperature of 104.5°; diarrhea, epistaxis, tympanitic abdomen, with pain and gurgling on pressure. Tongue coated, brownish in middle; headache; occasional chill and a slight cough.

Third day.—Rose spots. Widal reaction positive. Later, diazo reaction almost constant.

Fifth day.—Removed to Presbyterian Hospital as private patient.

During the next two weeks temperature gradually lowered under medication and sponges. She was very comfortable at all times. Had no headache, no diarrhea, nor other unpleasant condition. The disease seemed to indicate an early convalescence.

The first approach of the hemorrhagic condition was noticed about the twentieth day, when slight epistaxis occurred.

On the twenty-first day, epistaxis increased and small subconjunctival hemorrhage occurred in inner canthus of right eye, also small petechial hemorrhages along margin of lower lip with larger ones at the angles of the mouth. Oozing from the mouth rapidly increased, becoming quite free by the next day.

Twenty-second day.—Petechiae along the line of the lower lip increased in size, some of them becoming blebs one-quarter to three-eighths inch in diameter. Small hemorrhages appeared under conjunctiva of both eyes at the inner, outer and inferior portions. These extended and coalesced later.

Most of the oozing was now from under side of tongue, where the veins were dilated. Later, oozing from dorsum of tongue, and around teeth, and inner surface of lower gums, took place.

A few petechial spots now appeared on the body and limbs. These were very slightly raised, did not disappear on pressure, and were sharply defined, having a diameter of about one-sixteenth to one-eighth inch.

Twenty-third day.—Petechial spots on body, neck, limbs and face, increased in number. Nasal bleeding diminished, but bleeding is freer from the mouth and around teeth and gums. The subconjunctival hemorrhage now covers about three-quarters of the sclerotic; cornea is clear; vision perfect.

Twenty-fourth day.—Calcium chlorid gr. xx given four times a day. Less oozing from dorsum of tongue. New purpuric spots. Some of the old ones fading. No blood in feces, but there is a trace in the urine.

A gelatin mouth wash, alternating with one of a weak solution Tr. chlor. iron was given. Gelatin was also given by mouth as freely as possible and liquid gelatin by rectal enemas.

Twenty-fifth day.—Very anemic. Bleeding about same as yesterday.

Examination of blood:—Hemoglobin 30%, red blood-corpuscles, 2,140,000; white blood corpuscles, 8,600. Blood in urine increased and a trace was seen in feces. Most of the bleeding is from around teeth and inner surface of gums. Adrenalin chlorid solution applied locally, around gums and tongue.

Twenty-sixth day.—Bleeding diminishing. Ecchymoses over sides of face, under and over eyes, and on sides of neck, quite extensive. Parotid glands swollen and painful.

Puncture in lobe of ear from which test blood was taken continued to bleed for about 18 hours and was finally checked by a collodion dressing. The coagulation time was not taken, but on account of the long-continued oozing it is to be presumed the coagulation time was greatly lengthened.

Twenty-seventh day.—Bleeding has now nearly ceased. Calcium chlor., after three days' use, was stopped, and ol. terebinth m.x. given every four hours.

Twenty-eighth day.—Bleeding about stopped. Gums look much better and firmer. Ecchymoses clearing up. No new petechial spots. Bleeding has lasted eight days.

For the next six days the only unpleasant feature was the high evening temperatures, ranging to 104° and 105°.

Thirty-sixth day.—A trace of menstrual flow.

Thirty-eighth day.—For the next five days there was a relapse in the hemorrhagic condition, but much less severe than

the original attack. The bleeding occurred slightly from the nose, but principally from the gums. A few petechial spots on lips and many very small ones over the neck and shoulders were observed. A return to the calcium chlorid, gelatin and adrenalin chlorid was all that was necessary, the flow checking gradually.

The absorption of the petechial spots and ecchymoses was gradual, several days elapsing before the skin resumed its former appearance. The petechiae gradually spread out, became less sharply defined, many of them assuming the appearance of a bruise, $\frac{3}{8}$ inch or $\frac{1}{2}$ inch in diameter. The color became blue, faded to greenish, and finally disappeared. The large ecchymoses on face and neck grew paler in color over their whole extent.

In the conjunctiva the spreading of the hemorrhage did not occur. It became smaller and thinner, the bloodvessels making their appearance here and there as the thinning proceeded. The bright red color was retained until absorption was complete.

Further examinations of the blood were reported as follows:

Thirty-first day.—Hemoglobin, 30%; red blood-corpuscles, 2,240,000; white blood-corpuscles, 7,200.

Thirty-ninth day.—Hemoglobin, 42%.

Forty-ninth day.—Hemoglobin, 50%; red blood-corpuscles, 2,600,000; white blood-corpuscles, 5,400.

Fifty-ninth day.—Hemoglobin, 52%; red blood-corpuscles, 2,610,000; white blood-corpuscles, 7,300.

Seventy-second day.—Hemoglobin, 55%; red blood-corpuscles, 2,874,000; white blood-corpuscles, 5,600.

After the last hemorrhage convalescence was very slow but continuous; so that it was not until the sixty-sixth day that she was able to be out of bed.

Hemorrhage from bowel (except a trace) did not occur. The small quantity of blood seen in the feces may have resulted from blood being swallowed.

The quantity of blood in the urine was small; just about enough to give a distinct red tinge to it.

There was practically no tendency to abscess or breaking down of tissue. During the first period of bleeding a small furuncle appeared in the axilla, but gave no trouble. Later, about the fifty-sixth day, a gingival abscess formed and was incised, giving rise to no further trouble than pain and a slight rise of temperature for a few evenings.

General Treatment.—Although many drugs have been recommended for the hemorrhagic diathesis, it is really a question whether more than a very few are available for this condition. Ol. terebinth seems to hold a firm place. Not only does it seem to control hemorrhage, but it may correct the condition leading to the hemorrhage; in other words, it is regarded as a very good prophylactic remedy in typhoid fever and in other hemorrhagic conditions.

Calcium chlorid, in condition of slow coagulability of the blood, favors more rapid coagulation. In hemorrhagic conditions when this is often lacking, it will reduce coagulation time. The usual dose is 20 gr. 4 to 6 times a day. As Hamburger¹ points out, this coagulation-producing condition may be only temporary. This seemed to be apparent in the case I report, in which there was a relapse of the bleeding after withdrawal of calcium chlorid and turpentine. As Hamburger says, the only way to ascertain the action of calcium chlorid is by repeated coagulation tests.

Gelatin was used to its fullest limit. As a mouth wash; as much as she could eat of orange gelatin; and per rectum with salt and whiskey as much as could be tolerated.

There is no doubt but that gelatin is making a place for itself as a hemostatic. The recent favorable reports of its use in aneurysm and hemorrhage speak well for it. In our patient it was not used intravenously, although it has its use when so employed.

Normal salt solution for lowered bloodpressure, or to stimulate a lagging and weak heart may be called for, as after any profuse hemorrhage one or two pints thrown into the circulation, either intravenously or by hypodermoclysis, will often be followed by a quick response. We reserved it as a last resort, but were not obliged to, use it, fearing the formation of a hematoma.

Heart stimulation is usually demanded. Whisky, ammonia, or strychnia will usually meet the indication.

Adrenalin chlorid solution is now demanding attention. We used it late in the disease, and it is difficult to say just how much good it produced. In diseases of the

vessel-walls it would undoubtedly be of great service. If the fault is in the blood itself the use of this agent might not produce much or any good result. In our case it undoubtedly did do good, for the bleeding gradually decreased after its local use, although a lessened oozing continued for several days during its use.

The local use of astringent washes, such as tannin, tr. chlorid of iron, peroxid of hydrogen, or nitrate of silver, all have their uses. But with any or all, the importance of cleanliness in the mouth must be borne in mind. The tongue rapidly becomes coated, and the breath very foul from the rapid decomposition of the blood, or from other causes, thus calling for frequent cleansing. Spongy and tender gums especially need attention.

Hamburger¹, in his admirable paper, goes into the symptoms, etiology and pathology of hemorrhagic typhoid fever, and cites about all the cases on record to May 1, 1899, as follow: Trousseau, 1; Basle statistics, 3 out of 1900 cases; Weil, 1; Uskow, 4 out of 6513 cases; Roger, 2; Ferréal, 1; Adami, 1; Nicholls, 4; Wagner, 3; Schreschkow, 1; and his own case, making in all 22 cases.

Later, Opie² cites one case treated at Johns Hopkins Hospital, which ended fatally. And Eshner³ reports two cases treated at the Philadelphia Hospital, both ending fatally.

Hamburger's and Opie's cases are the only ones that have occurred at Johns Hopkins' Hospital in over 1000 cases of typhoid fever up to January, 1901.

In July of this year a ward patient at the Presbyterian Hospital, Philadelphia, under the care of Dr. R. G. Curtin, developed hemorrhagic symptoms. The patient had two large bowel hemorrhages, and the bleeding from the nose was very troublesome, necessitating plugging.

He had a moderate amount of bleeding from lips and gums for seven days, but no petechial spots. The patient recovered.

The statement made by Hamburger¹ that about two-thirds of the patients die, seems to be borne out by the few published cases.

As to the pathology and etiology of the disease there seems to be no fixed opinion. These matters are very fully discussed by Hamburger¹, Opie² and Eshner³ in their several papers on the subject.

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¹ Hemorrhagic Typhoid Fever, by L. P. Hamburger, M.D., in *Studies in Typhoid Fever*. No. 3, Vol. 8, Johns Hopkins' Hospital Reports.

² Hemorrhagic Typhoid Fever, by Eugene L. Opie, M.D., in *Johns Hopkins' Hospital Bulletin*, July, 1901.

³ Hemorrhagic Typhoid Fever, by A. A. Eshner, M.D., in *American Journal Medical Science*, March, 1901.

A Congress on Pellagra.—An Italian congress on pellagra will be held at Bologna in May, 1902, in which the etiology, treatment and prophylaxis of the disease will be discussed.

Analysis of Beer.—The military authorities in India have ordered that all beer issued to the troops, whether country brewed or imported, shall be periodically subjected to chemie analysis.

Serum Against Snake-bite.—Dr. Calmette, Director of the Pasteur Institute, at Lille, has shown the resemblance between the poison secreted by the salivary glands of snakes and the poison of such diseases as plague or diphtheria, and that seropathic treatment is applicable to snake-bites with even greater success. The snake venom is extracted by pressing the jaw, and after being dried a 1% solution in salt water is prepared. Rabbits and other animals inoculated with increasing doses of this become immune to doses 200 times greater than a mortal dose. A horse after six months' immunization can stand venom enough to kill 200 horses not treated. Immunized horses furnish the antitoxic serum for inoculating against snake-bites, and six to eight liters of blood, yielding two to three liters of active serum can be drawn from them every two or three weeks. The immunizing of the horse must, however, be repeated after a time. Ten to 20 cc. of the serum injected under the skin of the abdomen, where it is readily absorbed, will prove efficacious, if the patient is not yet in a state of asphyxia. In India, where more than 20,000 persons die annually from snake-bite, this serum would no doubt prove a valuable life-saving agent, if there only could be some one at hand to inject the serum as soon as a poor native is bitten. Unfortunately, nearly all die hours before aid can be summoned.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

January 18, 1902. [Vol. xxxviii, No. 3.]

1. The Pontobulbar Heat Center. EDWARD T. REICHERT.
2. Pernicious Anemia—the Statistics of a Series of 40 Cases. THOMAS McCRAE.
3. The Pharmacology of the Suprarenal Gland and a Method of Assaying its Products. E. M. HOUGHTON.
4. The Blood-Pressure Raising Principles of the Suprarenal Gland. JOKICHI TAKAMINE.
5. Neglected, but Valuable, Therapeutic Measures. GEORGE F. BUTLER.
6. Tuberculosis in State Institutions. H. M. BRACKEN.
7. Public Sanitariums. C. P. AMBLEK.
8. Consideration of Some Important Subjects Connected with the Treatment of Pneumonia. EDWARD F. WELLS.
9. Cases of Sarcoma and of Hodgkin's Disease Treated by Exposure to X-Rays. A Preliminary Report. WILLIAM ALLEN PUSEY.
10. Surgical Correction of Malformation and Speech Defects Due to or Associated with Hare-Lip and Cleft Palate. GEORGE V. I. BROWN.
11. Traumatic Arterio-Venous Aneurysms of the Subclavian Vessels, with an Analytic Study of 15 Reported Cases, including One Operated Upon. RUDOLPH MATAS.

1.—The Pontobulbar Heat Center.—After a statement of the conclusions arrived at from a critical review of published experiments bearing upon the thermogenic mechanism, Reichert presents the results of his own experiments, according with those of Wood. It is shown that injury of the caudate nuclei the rise of temperature is due to excitation of a thermoaccelerator center because similar irritation of parts in front of, above and beneath, do not give rise to any notable increase. Efferent fibers should run through the crura, pons and bulb into the spinal cord, and irritation along this course should be followed by increase of temperature, providing shock, vasomotor disturbances, etc., do not interfere; but irritation of the pathway should cause less increase than irritation of the center. The increase following section of the crura is explainable only by the presence of accelerator fibers; that the increase is less than from section of the caudate nuclei is due to absence of accelerator cells. The increase on section of the pons which lies in this pathway, and also lies closer to the neutralizing influence of vasomotor disturbance, is much greater than that following irritation of the caudate nuclei, and can be accounted for only by admitting the existence of a more powerful thermoaccelerator center here. A chart showing the characteristic curve for each locality is given. That the centers are functionally different is shown by the absence of all effect on temperature from the administration of cocaine and morphin after section of the caudate nuclei and of the crura. [H.M.]

2.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 479.

3 and 4.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 540.

5.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 492.

6 and 7.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 545.

8.—Treatment of Pneumonia.—As in many healthy persons the pneumococcus is present in the upper respiratory passages it is probable that pneumonia is due to aspiration. Discharges from these passages should be treated in such manner that the germs cannot gain access in the form of dust or spray to the respirable air. Pneumonic sputum should not be allowed to become dry and should be burned, and acid, followed by alkaline solutions, should be used to cleanse mouth, nose and throat. Capillary paresis interfering with proper tissue nutrition calls for mercurial and saline cathartics, bleeding to 500 or 750 cc., free perspiration, administration of fluids, digitalis and adrenalin. Leukocytosis should be encouraged and nucleic acid is suggested. The blood platelets and coagulability of the blood are lessened by its use. Lime and gelatin should be avoided as favoring coagulation. Milk and other foods should be well salted and saline enemata administered as the absence of chlorids from the urine suggests their need in the blood. Abdominal symptoms should be carefully looked for and intestinal paresis avoided by regular evacuation, proper diet and an antiseptic as salol. Oxygen inhalations, begun as soon as there is progressive increase in frequency and shallowness of breathing, acts beneficially as a respiratory stimulant. Rapidity of change in the patient's condition should be anticipated and met by unremitting attention. [H.M.]

9.—Sarcoma and Hodgkin's Disease Treated by X-Rays.—A patient from the left side of whose neck a sarcoma

had been recently removed by knife, was sent with a similar but larger tumor on the right for preliminary treatment with x-rays. The exposure was for 15 minutes daily at 5 cm. The effect was magical. In 10 days it had shrunk perceptibly, and in about five weeks there was no trace of the disease left except a small, freely-movable, painless gland no larger than an almond kernel. After three months there is no evidence of recurrence. In two other cases only relief from pain is reported, probably from having reached too advanced a stage. Two cases of Hodgkin's disease are reported in which the swelling rapidly subsided. [H.M.]

11.—See AMERICAN MEDICINE, Vol. I, No. 8, p. 335.

Boston Medical and Surgical Journal.

January 16, 1902. [Vol. CXLVI, No. 3.]

1. Difficulties in the Diagnosis of Syphilis. JAMES C. WHITE.
2. Needless Laparotomies, with a Report of Eight Cases. JOHN C. MUNRO.
3. The Vagus Reflex. THOMAS J. MAYS.
4. Auscultation of the Knee Joint. WILLIAM ERNEST BLODGETT.

1.—**Needless Laparotomies.**—Munro insists that in his own experience he has often been puzzled as to the true condition of a patient with complaint pointing to abdominal lesion. He cites eight cases of laparotomies performed, which he now thinks were useless. A history of each case accompanies the article, also the diagnosis previous to operation and the corrected diagnosis. These cases do not include those upon which exploratory operation was done to determine the nature of the malady, but cases in which a wrong diagnosis was made and in which care and closer attention should have prevented operation. [A.B.C.]

2.—**Difficulties in the Diagnosis of Syphilis.**—White gives a general review of the difficulties often attending the diagnosis of syphilis, deprecates the early use of iodids in the early treatment, for not only is it mistaken therapy, but, combined with mercury, it is apt to produce a rash which itself strongly simulates that of syphilis. Variola and varicella may be mistaken for syphilis, also pityriasis rosea, eczema, psoriasis, ecthyma, pemphigus, seborrhea, leukoderma, leprosy, etc., may be mistaken for this disease. One must have the courage to make a diagnosis of syphilis wherever seen, regardless of the social position of the patient. Insist on prolonged treatment. The author warns his patient that three years of treatment will probably be necessary, and interdicts marriage as long as there is the slightest danger. [A.B.C.]

3.—**The Vagus Reflex.**—Experience has confirmed the observation made two years ago that there is increased sensitiveness of the vagus on the side affected in pulmonary tuberculosis, and that it is a frequent premonitory symptom of the disease. The results of counterirritation over the vagus are presented in a study of seven cases of reflex disturbance, including cough, asthma, constant distress and fullness in the occipital region with vomiting and spasm of the laryngeal muscles, general loss of strength with painfully tired feeling in the legs, severe paroxysmal headaches with pain in right arm and blood-streaked expectoration, etc. It is difficult to explain some of the reflexes by vagus compression; these, however, were relieved by injections of silver nitrate, 2.5%, over the nerve. [H.M.]

4.—**Auscultation of the Knee-Joint.**—Auscultation can be applied to any of the large joints by means of the full-sized Bowles stethoscope with a soft rubber cap spring over the diaphragm. All muscular contraction must be excluded, as it produces a humming sound, and the joint sounds themselves may be altered by the increased pressure. The method of moving the joint is described. The sounds are of three kinds—snapping or creaking, grating and squeaking. A graphic method of recording the kind, intensity and frequency with the joint in different degrees of flexion is prescribed. The sounds are increased in the old and decreased in children. The squeak can be obtained from lateral movement in half of the cases examined. Paralysis and general anesthesia do not alter sounds. They are coarsest and roughest in rheumatoid arthritis with atrophy of the cartilage. When there is hypertrophy of the cartilage and outgrowth of bone the sounds are less harsh.

To arrive at any trustworthy conclusions the ear must be trained. [H.M.]

Medical Record.

January 18, 1902. [Vol. 6, No. 3.]

1. Prognosis: Its Therapeutic Value. HENRY FREEMAN WALKER.
2. The Pathologic and Therapeutic Aspects of the Effects of Röntgen Rays. CARL BECK.
3. Suprapubic Cystotomy in Operations Upon the Prostate. HOWARD LILIENTHAL.
4. Alcoholic Amaurosis. FRANK VAN FLEET.
5. Report of a Case of Addison's Disease. EDGAR MOORE GREEN.

1.—**Prognosis.**—Walker emphasizes the importance of a favorable prognosis in effecting a cure. The personal equation must be taken into account in doubtful cases. The young and the old should never be given up extreme age increases expectation of recovery in pneumonia. A favorable prognosis may be given in several forms of heart and Bright's disease. Fears may be disclosed to the family but not to the patient himself. [H.M.]

2.—**Pathologic and Therapeutic Aspects of the Röntgen Rays.**—Carl Beck discusses the x-rays in its relation to the integument of the human body. He concludes that its therapeutic value in the treatment of such affections as favus, eczema, psoriasis, rosacea, acne vulgaris, tuberculosis of the skin, etc., is fully demonstrated, and he believes that the future will disclose some remarkable advances in the use of this peculiar agent. Röntgen light burns are discussed. They do not differ essentially from ordinary burns except that they are not so soon manifested and they often heal more slowly. The treatment for them is the same as for burns acquired in the ordinary way. [A.B.C.]

3.—**Suprapubic Cystotomy in Operation Upon the Prostate.**—Lilienthal gives a general review of the literature on the subjects. He believes that with rare exceptions the first effort in the treatment of an enlarged prostate should consist of suprapubic cystotomy—this is advantageous in many ways, permitting a full and free view of the seat of trouble, providing an outlet for the bladder, giving the widest field for operation. He has performed suprapubic enucleation of the prostate seven times—one patient died, another was not improved, and five made complete recoveries. A history of each case is appended. [A.B.C.]

4.—**Alcoholic Amaurosis.**—Van Fleet refers to a case, reported by de Schweinitz, of a person suffering complete loss of sight after ingesting a quantity of methyl alcohol; and also to a similar case reported by himself. He now reports the case of a woman who drank heavily of ethyl alcohol, remained on a spree for some days, with complete loss of sight resulting. His own is the only case known of by him in which amaurosis was caused by ethyl alcohol. He concludes that cases of this class demonstrate to the physician two plain duties. First, to point out to the public the fact that wood alcohol is a positively dangerous substance to take internally, and which may even produce permanent blindness if the fumes are inhaled for a long time. Possibly other forms of alcohol may produce the same results if concentrated. Second, to point out to health authorities the fact, if it is a fact, that the cupidity and avarice of certain unscrupulous manufacturers and dealers in alcohol and alcoholic preparations may lead them to substitute methyl alcohol for the ordinary alcohol of commerce, because the former is cheaper, and that this substitution may work injury to consumers. [A.B.C.]

New York Medical Journal.

January 11, 1902. [Vol. LXXV, No. 2.]

1. The Operative Treatment of Traumatic Intracranial Lesions. CHARLES PHELPS.
2. On the Feasibility and Management of a Hygienic Cure of Pulmonary Tuberculosis Outside of Closed Sanatoriums. CHARLES L. MINOR. (Concluded.)
3. The Plastic Use of the Uterus in Cystocele Operations. JOSEPH BRETTAURE.
4. Inflammation and Sclerosis. CLARENCE L. KILBOURN.

1.—**Treatment of Traumatic Intracranial Lesions.**—Phelps first gives a brief review of the treatment of cranial fractures. He believes that even a rational suspicion of the existence of a simple fracture, as in case of hematoma with a

history of considerable violence inflicted upon the head, with or without concurrent symptoms of intracranial lesion, demands explorative incision. If osseous depression, even though confined to the outer table, or a puncture or a much comminuted or fissured fracture is revealed, conjoined exploration and treatment should be extended. If the fissure is fine and closed, the probabilities of a more extensive concealed osseous lesion are insufficient to warrant further intervention in the absence of symptoms of intracranial complication. In the presence of such symptoms, while it is probable that they are independent of the osseous wound, trephining is indicated at the site of injury, not only because of possible error in this inference, but because it affords the best chance of reaching and relieving the intracranial complication. Phelps classifies intracranial injuries in accordance with their structural lesions, rather than from their symptoms. Primary traumatic intracranial lesions are thus classified: (1) Hemorrhages; (2) contusions; (3) brain lacerations. Hemorrhages are subdivided into: (a) Supradural or epidural; (b) pial; and (c) cortical. Contusions are: (a) Meningeal and (b) cerebral. Trephining for the relief of subdural hemorrhage approximates in safety and effectiveness the simpler operations for the management of cranial wounds, and if hemorrhage is comparatively uncomplicated and is localized in an accessible situation, may be as clearly indicated. The time of election for intervention will be after the establishment of full or partial reaction. When shock exists with one exception, no question of operation should be entertained until reaction has been established. The exception is in case of hemorrhage in which the failure of full reaction, or the progressively increasing gravity of pressure symptoms, indicates that the effusion of blood still continues. [C.A.O.]

2.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 503.

3.—Plastic Use of the Uterus in Cystocele Operations.—

Brettauer reports three cases in which he made plastic use of the uterus in cystocele operations. An incision was made through the anterior vaginal wall, from the urethra near its orifice to the cervix; two flaps are bluntly dissected, the bladder loosened and pushed upward as far as possible; the vesicouterine fold of the peritoneum is then opened and the fundus of the uterus dislocated through it. In two cases in which the uterus was retroflexed, this was done by means of a sound. The posterior surface of the uterus is now fastened with three sutures of chromic gut to the flaps of the anterior wall of the vagina, about one-half inch from their edges. In the first case the flaps were not resected, but sewn together with a running suture, and a colpoperineorrhaphy added in the usual way; in the second and third cases, the flaps were united after resecting a strip about one-fourth of an inch in width. The postoperative course of these three cases was in every respect normal. [C.A.O.]

4.—Inflammation and Sclerosis.—Kilbourn gives examples of the incorrect use of the ending "itis" when applied to conditions in which the pathology does not warrant it, as in chronic interstitial nephritis, chronic myocarditis and endocarditis, endarteritis chronica deformans, chronic diffuse meningocephalitis, chronic anterior poliomyelitis, chronic prostatitis, etc., conditions which are in reality a sclerosis. [C.A.O.]

Medical News.

January 18, 1902. [Vol. LXXX, No. 3.]

1. Congenital Atresia and Stenosis of the Rectum and Anus. W. REYNOLDS WILSON.
2. General Medical Treatment of Syphilis. G. FRANK LYDSTON.
3. A Conservative Element in Acute Mastoid Surgery. EDWIN W. PYLE.
4. The Class of Cases of Simple Chronic Glaucoma in Which Operation is Not Advisable. CHARLES STEDMAN BULL.
5. A Review of the Subject of Actinomycosis, with Reports of a Case of Actinomycosis Abdominalis. A. VANDERVEER and ARTHUR W. ELTING.

1.—Congenital Atresia and Stenosis of the Rectum and Anus.—Wilson gives a general review of the process of fetal development and the probable causes of these deformities. Concerning treatment. The object is to establish the normal anat-

omic condition as far as possible. This should be brought about by connecting the blind extremity of the gut with the anal depression, but when this is impracticable an opening directly into the intestinal tract without regard to the anatomic relation of the rectum and anus became necessary. In most cases the indications for operation are urgent. The necessity for immediate intervention is not likely to exist in simple stenosis, nor in instances of deviation of the rectal canal without obstruction. In atresia of the rectum there is no definite and unmistakable way of determining how near to the perineum the blind end extends. [A.B.C.]

2.—General Medical Treatment of Syphilis.—Lydston insists that mistakes are often made by a routine course of treatment in this disease. The hygienic condition of the patient should be looked after very carefully, and all the eliminating organs should be in most thorough order. So-called idiosyncrasy to the iodids is often overcome by causing the patient to take copious draughts of water. The hot bath is almost indispensable in many cases, and the simultaneous injection of hot water is very beneficial. Laxatives are often necessary. Potassium chlorate in 10-grain doses three times daily often acts as a good substitute when mercury and the iodids are not tolerated. Tonics are often necessary. If the trouble in refractory cases is with the stomach, essence of pepsin, combined with the iodids, is valuable. [A.B.C.]

3.—A Conservative Element in Mastoid Surgery.—

Pyle sums up his advocacy of conservatism in mastoid surgery as follows: To counsel delay with the use of antiphlogistic measures in acute mastoid inflammation is wiser than to encourage hasty operative procedures under blundering conceptions. The truth of this is most apparent to those who see the result of inefficient surgery, and emphasize the necessity for careful instruction in such measures as all can apply with equal celerity and exactness. In no other ailment is it more imperative to know the significance of early rest and medication to reduce arterial tension, the importance of paracentesis to unload obstructed capillaries, the value of the ice-coil to retard bacterial activity, the wisdom of thermal douching to prevent mural implantation, to relieve congestion, edema and pain. In no other ailment is it more imperative to mitigate suffering for a reasonable period of 24 hours. Even in recourse to analgesics, the periosteal character of the pain and the fact that temporary relief is sometimes the beginning of convalescence should be borne in mind. While observing the patient, every local, general and detergent effort should be made to abort operative necessities. The intelligent application of such is not so confusing as poor surgery, nor should an occasional failure establish a general abolition. [A.B.C.]

4.—Operation Not Indicated in all Cases of Simple Chronic Glaucoma.—

Bull maintains that it is not always easy to differentiate simple chronic glaucoma from simple atrophy of the optic nerve, and some other eye affections. Without increase of tension there is no glaucoma, and the eyes of different persons differ as to apparent tension, hence the difficulty. He would operate only in the early stages of simple chronic glaucoma, while the retina yet responds to light. For those cases in which operation is not indicated he retards the progress of the disease almost solely with myotics. A hygienic life is of course advocated. [A.B.C.]

5.—Actinomycosis.—

VanderVeer and Elting give a general review of what is known of actinomycosis, the manner in which it affects animals and man, and they report a case, occurring in a laboring man of 45. His illness began with a pain in the stomach and sharp cramps in the lower abdomen. This subsided, but about three months later, he noticed a small tumor in the region of the umbilicus and extending into the left inguinal region. An operation was performed which showed the peritoneum adherent to coils of intestines, with a flat tumor springing from the left iliac crest. The operation was in February, 1901, and several suppurating sinuses still persist; the patient, however, is improving. Infection was carried to the nose, causing a tumor the size of a hen's egg; this, however, broke down, and is disappearing. Several illustrations accompany the article. [A.B.C.]

Philadelphia Medical Journal.

January 18, 1902. [Vol. 9, No. 3.]

1. Results of Operative Treatment for the different forms of Puerperal Sepsis. BARTON COOKE HIRST.
2. Decreasing Fecundity Concomitant with the Progress of Obstetric and Gynecologic Science. GEORGE J. ENGELMANN.
3. The Obstetric Forceps. LAPHORN SMITH.
4. Primary Carcinoma of the Uterine Fundus. J. M. BALDY.
5. A New Method of Tamponing the Uterus Post-partum: The Wood-Holmes Introducer. RUDOLPH WIESER HOLMES.
6. The Immediate Repair of Injuries of Parturition. A. L. BEAHAN.
7. Remarks on Early Ectopic Gestation. E. K. BROWD.
8. Puerperal Myelitis. Report of a Case Following Abortion—with Remarks. HARRY MORRELL.
9. On the Desirability of Further Data Concerning the Prevention of Ophthalmia Neonatorum. LUCIEN HOWE.
10. Outline of the Surgical Treatment of Acute Pancreatic Injuries. B. E. HADRA.
11. Some Experiments on the Formation of Bile Pigment and Bile Acids; a Contribution to Our Knowledge of Icterus. ALFRED C. CROFTAN. (Concluded.)

1.—Results of Operative Treatment for Puerperal Sepsis.—Hirst believes that no part of gynecology shows a more gratifying advance in recent years than the operative treatment of puerperal sepsis. He details 11 cases as examples of what can be done, and of the conditions demanding surgical interference. [F.C.H.]

2.—Decreasing Fecundity.—The object of Engelmann's paper is to present clearly the existing conditions and the facts in the case, which, as a rule, are to be found in statistical rather than in medical studies. He endeavors to prove that the birth-rate in this country is lower than that of any European country excepting France; that the birth-rate of the American-born population is much below that of France; and that the fecundity of the American women is lower than that of the women of any other country. [F.C.H.]

3.—The Obstetric Forceps.—Laphorn-Smith believes it to be a good working rule never to use the forceps until the woman has been 24 hours in labor, if a first confinement, or 12 hours if a second or subsequent one, unless there is some urgent indication. Under no circumstances should the forceps be applied to save one's own time. The use and abuse of the forceps in general are discussed. [F.C.H.]

4.—Primary Carcinoma of the Uterine Fundus.—Baldy details three cases of primary carcinoma of the uterine fundus in which the patients had passed the menopause, and after an interval of a few years a show of blood occurred from the vagina. He makes an earnest plea for the immediate examination of all cases, when there is a history of bloody discharge following the menopause, as it invariably betokens uterine malignancy. [F.C.H.]

5.—A New Method of Tamponing the Uterus Post Partum.—Holmes describes his modification of the Wood's packer, which he claims to be efficacious for tamponing the uterus in cases of postpartum hemorrhage. [F.C.H.]

6.—The Immediate Repair of Injuries of Parturition.—As truly stated by Beahan, the repair of the recently lacerated cervix should become as popularized as that of the perineum, and both should be pushed forward in professional esteem. The paucity of literature on early repair of cervical laceration, and the small amount of work done in this direction is surprising. Parturition injuries of every kind should have immediate attention. [F.C.H.]

7.—Remarks on Early Ectopic Gestation.—Browd recapitulates as follows: Early ectopic pregnancy runs a treacherous and uncertain course; symptoms of pain, tumor or oozing of blood are not the absolute signs of an early ectopic gestation, but their existence must be considered "*cum grano salis*," and each case must be observed *per se*; a clear history cannot always be obtained from the patient, and the period of lactation will darken still more the clinical history; and microscopic examinations of the uterine scrapings, the presence of decidual cells and of chorionic villi are considered important by many, but are held unimportant by an equal number. [F.C.H.]

8.—Puerperal Myelitis.—Morell reports a case of puerperal myelitis following an abortion at the end of a three months' gestation. Paralysis may occur after labor, abortion or pelvic inflammation; that occurring after labor usually results from pressure neuritis, and that coming on after

abortion or pelvic inflammation is likely to be due to myelitis from infection. [F.C.H.]

10.—The Surgical Treatment of Acute Pancreatic Injuries.—Hadra gives a short outline of what should be done in the treatment of acute pancreatic injuries. As to diagnosis it will be well to view pancreatic injuries in the list of possibilities and probabilities in every instance where the section of the body between the level of the seventh rib and that of the umbilicus is concerned. [F.C.H.]

11.—Some Experiments on the Formation of Bile Pigment and Bile Acids.—Croftan gives the following three arguments in favor of the formation of bile acids and bile pigment in the liver alone: (1) The blood entering the liver contains no bile pigment and no bile acids; if these substances, therefore, are not known to enter the liver and are still excreted by the organ, they must necessarily be formed by the liver alone. (2) Ligation of the ducts of the liver is followed by the appearance of the bile acids and bile pigments in the tissues, the blood and the urine. (3) After extirpation of the liver in frogs, bile pigment and bile acids are not found in the blood, the tissues nor the urine. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Diagnosis of Influenza.—While ordinarily the diagnosis of influenza is comparatively easy, and can be made upon the existence of the peculiar pains—the patients generally saying that they feel as if they had been beaten with a stick—the soreness of the eyeballs, the headache, and the alternating flashes of heat and chilliness, there are times when the diagnosis is extremely difficult, and at this season the initial symptoms of smallpox are not rarely mistaken for influenza. A pathognomonic sign of the latter disease would, therefore, be most welcome, the more so, as hematology is of but little help, and bacteriologic examination in influenza is attended by many difficulties.

Felix Franke, of Braunschweig, has recently proclaimed the discovery of such a sign. It consists in the presence of a broad, dark-red band on the anterior half-arches, situated from one to two millimeters back of the free edge, with which it runs parallel. Its width is variable. Ordinarily from six to seven millimeters, it may not be more than three millimeters wide. The uvula remains entirely free, and there is generally a sharp line of demarcation between it and the upper border of the red band. The color of the latter is commonly a vivid red; sometimes, however, it is darkened, or even bluish-red. Aside from the change in color, there appears to be no alteration in the tissues of the faucial arches; nor are there, as a rule, any marked symptoms in this region. At times, however, pain, a frequent desire to swallow, a sensation as of a foreign body, and—more or less characteristically—a sense of choking, are present; and these subjective symptoms not rarely persist for a month or more.

Franke also maintains that the tongue in influenza has a characteristic appearance, consisting in a swelling of the papillas on the anterior portion of the organ. The lingual phenomenon is best marked in patients who have had several attacks of influenza. In nearly all the cases of the disease Franke was also able to demonstrate enlargement of the spleen by percussion; not by palpation.

These pathognomonic signs—viz., the band-like redness of the half-arches and the swelling of the papillas of the tongue—certainly deserve investigation; but whether they really merit the supreme confidence which their discoverer reposes in them, is doubtful. Franke has been very liberal with the diagnosis of influenza, of which he has seen thousands of cases. He speaks of chronic influenza extending over a period of eight or nine months, basing his diagnosis in such cases solely

upon the lingual and faucial signs and upon the success of treatment. The latter principally consisted in the use of phenacetin and other coal-tar products, such as pyramidon and kryofin. As this is by no means a specific treatment, its success or failure cannot be considered as aiding in the diagnosis of influenza. This disease can hardly be held to be the only condition capable of explaining the cases cited by Franke. These considerations, however, should not deter physicians from testing the reliability of the faucial and the lingual signs.

The Branchiogenic Organs of Man.—Erdheim¹ discusses the origin of the epithelial bodies or parathyroids, of which there are four, two on each side. It has been held that these bodies are composed of embryonal thyroid-gland tissue which has not gone on to full development, and that they are capable of vicariously substituting for the thyroid gland; but recent studies show that the parathyroids are not aberrant portions of the thyroid gland and that they are never transformed into thyroidal tissue. The bodies appear to be formed from the third and fourth visceral clefts, those from the fourth eventually coming to lie higher than those from the third. Sometimes the bodies are enclosed in the thyroid gland itself. In cases of aplasia of the thyroid gland the parathyroids have generally been found present; at times they were cystic. From the study of his own case and the few recorded in the literature, Erdheim concludes that cysts are more common in the lower parathyroids than in the upper. In his case, the cysts of the upper parathyroids did not contain any thyroidal tissue, probably because they were not formed from the lateral thyroid anlage, but from a vestige of the fourth visceral arch. In the newborn the epithelial bodies are solid, but in the second year of life they become trabeculated through disintegration of the parenchyma. Up to the third month of life the cells of the parathyroids are large and pale; later they become smaller. The oxyphile cells described by Welsh appear in increasing numbers after the tenth year. In the fifth year fat cells begin to appear in the stroma. Fatty changes also manifest themselves quite early in the epithelial cells themselves. Hemorrhages are occasionally present. In connection with anomalies in the development of the thyroid gland, cystic adenomas of the ductus lingualis are comparatively frequent. [D.R.]

The Disappearance of the Addiment from Antimicrobial Serums.—Walker² in a previous communication showed by animal experimentation that the bacteriolytic addiment of fresh normal serum tends to disappear with considerable rapidity, and is no longer present in a serum which has been kept for several days. In order to examine further the phenomena of its disappearance, a number of rabbits were immunized by the successive injection of increasing doses of living typhoid cultures, and were subsequently bled for the preparation of the serum. The serums thus obtained were examined for bacteriolytic action on *Bacillus typhosus*, and were compared with the fresh serums of five normal healthy rabbits. From the results of the investigations (given in tabular form) it appears that the bacteriolytic power of a fresh serum rapidly diminishes both in the immune and normal serums, and ceases to be recognizable within a few days from the time of the bleeding. Hence it appears that as regards experiments in bacteriolysis the age of the serum which supplies the addiment is a factor of the first importance, and that observations on bacteriolytic action with an addiment-containing serum cannot be properly compared unless they are performed at the same time, since the bacteriolytic addiment of a given serum may undergo considerable diminution in a few hours. This fact may throw some light upon the want of harmony in many of the results which have been published, and certainly affects the value of a number of recorded observations. [A.O.J.K.]

The Pathogenesis of Paralysis Agitans.—Schwenn³ reports a case of paralysis agitans in a man who, at the time of his death, was only 43½ years of age. The disease had begun at the early age of 38. The important feature of the case is that

the findings of the nervous system were not complicated by senile changes. Clinically, the case was interesting on account of the fact that, toward the end, disturbances of speech, respiration and swallowing developed. There also occurred intermittent attacks of spasms of the muscles of mastication. The autopsy revealed nothing of importance macroscopically. Microscopically, neither in the brain nor in the spinal cord could anything abnormal be discovered: the muscles, however, presented interesting changes. There was an increase of the nuclei in the interstitial connective tissue, and the author is of the opinion that in this lesion is contained the essence of Parkinson's disease. [D.R.]

Epilepsy.—Broadbent,¹ in a clinical lecture on epilepsy, discusses the symptoms, causation, pathology, prognosis and treatment of the disorder. The most important causal element is undoubtedly an inherited tendency of the nervous system, that varies greatly in degree in different individuals; but sufficient importance has not been assigned to the sensory nerves in the causation of epilepsy. The pathology of the disorder is largely conjectural. The prognosis depends mainly on the question how far the disorder is due to a tendency inherent in the nervous system, how far to causes outside the nervous system which might either generate or aggravate the tendency, or, the tendency being there, provoke attacks. In the treatment the patient should lead an outdoor life, and should be provided with work in which he can take an interest and occupy his time. Broadbent's practice in the treatment is to diminish the frequency and severity of the fits by the use of the bromids, while the cure of the disease, the removal of the instability of the nervous system, is sought by other means, such as the correcting of functional and other derangements. [A.O.J.K.]

Double Bell's Palsy.—Fry² reports a case of diplegia facialis, the result of exposure to cold, with a previous history of mild rheumatic symptoms. For a year the patient had been troubled with spasm of the left upper eyelid, which has been noted on several occasions as preceding cases of facial paralysis. In this case the paralysis appeared first on the left, then on the right side, preceded by considerable pain, radiating from the occipital region. The distribution and character of the pain together with the subsequent appearance of the paralysis were characteristic of the peripheral type. The movements of the soft palate and the sense of taste were unimpaired. Fry describes the peculiar blankness of a face thus affected as almost weird, and having a morbid fascination. The patient was unable to close his eyes, the eyeballs merely rolling upward, thus emphasizing the fact that the eyes play a less important part in facial expression than is usually supposed. The patient was unable to eat solids, the speech was lingual, and the lower lip was only prevented from hanging downward by frequent raising with the finger. A faradic current caused the cervical muscles to react, but not those of the face. An improvement set in after two weeks. [H.H.C.]

Renal Disease and the Circulation.—Broadbent³ points out that the primary and dominant effect of disease of the kidneys on the motion of the blood is obstruction in the capillaries and arterioles, provoked by the presence in the blood of nitrogenized waste that it is the office of the kidneys to eliminate. It is believed that the primary seat of the obstruction is in the capillaries and that the contraction of the arterioles is secondary to this. There is capillary repulsion as well as capillary attraction as a physical phenomenon. In consequence of obstruction in the arterio-capillary network the heart must contract with increased vigor that the blood may move at anything like the normal rate—there therefore ensue a high blood pressure (fulness of the arteries between the beats) and hypertrophy of the left ventricle. As the changes in the heart and vessels advance the symptoms attending disease of the kidneys develop—headache, troubles with digestion, loss of flesh, breathlessness, sleeplessness, irregular action of the heart, and in later stages, perhaps, attacks of nocturnal dyspnea. Edema, indicative of heart-failure, may come on at a late period of the disease, or it may be determined by an attack of bronchitis, influenza, or

¹ Wiener klinische Wochenschrift, October 10, 1901.

² Lancet, January 4, 1902.

³ Deutsche Archiv f. klin. Med., lxx, Hft. 3-4.

¹ British Medical Journal, January 4, 1902.

² St. Louis Medical Journal, December, 1901.

³ Practitioner, November, 1901.

serious overexertion or fatigue. In chronic tubal nephritis, whether primary or consequent upon an acute attack, a moderate degree of arterial tension usually prevails, and it is not through cardiovascular changes that a fatal termination is brought about. Cardiovascular changes play an important part in producing phenomena that are considered to be the direct effects of uremic poisoning—convulsions, Cheyne-Stokes breathing, etc. The therapeutic indications to be derived from the cardiovascular condition resulting from renal disease are immediate and free venesection, and reduction of the intraarterial tension by the use of nitroglycerin, the nitrites, erythrol tetranitrate, mercurial aperients, etc. [A.O.J.K.]

Uremia.—Bradford¹ defines uremia as a toxic condition arising usually in the course of acute or chronic renal disease, and allied to other toxic conditions, such as acetoneuria and cholemia. It may be the first symptom that directs attention to the existence of a serious underlying disease. After discussing different theories that have been advanced to explain the phenomena of uremia, the results of certain experimental investigations, the presumed effects of internal sections, etc., Bradford states that the only securely established facts are that mere retention of the normal constituents of the urine is not capable of producing uremia; that in uremia there is an extensive disintegration of the proteid tissues of the body; and that although in many cases of uremia there is in the final stages some suppression, partial or complete, of the urinary secretion, this is by no means invariable, and that certainly fatal uremia may be seen with an abundant secretion of urine. From the clinical point of view uremia may be divided into the acute, the chronic, and the so-called latent forms—the features of each of which are discussed in detail. [A.O.J.K.]

Frequency of Gallstones.—C. D. Mosher² has made a valuable study of the subject in persons of different ages in 1,055 autopsies, and has illustrated his paper by a series of instructive diagrams. The following conclusions are drawn: Nationality: "Gallstones are less frequent in the United States than in Germany, the United States showing a frequency of 6.94%, Germany of 12%." Age: "The frequency of gallstones in a given number of cases will increase with the age of the patients examined. Gallstones are rare before the thirtieth year." Color: "Gallstones are more frequent in the white than in the black race, the American cases showing a frequency of 7.85% in the white race and 5.51% in the negro." Sex: "Women are more liable to have gallstones than are men, the American cases showing the frequency in 618 women to be 9.37%, and in 1,037 men to be 5.94%. The American women have gallstones only about half as frequently as the German women." [C.S.D.]

Diabetes Mellitus.—Opie's³ observation that "diabetes mellitus when the result of a lesion of the pancreas is caused by the destruction of the islands of Langerhans and occurs only when these bodies are in part or wholly destroyed" is one of prime import, and marks a new step in the understanding of this disease. The small polygonal, nongranular cells, forming masses without any central lumen and scattered throughout the pancreas were first described by Langerhans in 1869. They distinguish the pancreas from other glands. Opie has described more fully his cases in a recent number of the *Journal of Experimental Medicine*. [C.S.D.]

Determination of Size of Organs.—After referring to Buck's recent article on auscultatory percussion, Reichmann⁴ describes his method of ascertaining the size and limits of the internal organs. Near the center of the organ to be examined he places the stethoscope, and then, instead of ordinary percussion in the neighborhood, he employs a short, straight, wooden rod with rounded lower end, and notches up and down the sides. This is held firmly in place, the rounded end resting on the skin, and the index finger resting on the upper end of the rod. With the middle finger he then gently strokes the rod from above downward, the result being a distinctly audible friction sound so long as the rod is over the organ; when, however, the rod is placed at a point beyond the limits of the organ, the friction sound becomes either inaudible or extremely faint and apparently far away. [H.H.C.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The results of radical operation for rectal carcinoma have never been very encouraging, but since the introduction of Kraske's operation and particularly during the past ten years they have considerably improved. With the possible exception of Kraske himself probably no operator has had so great experience with the radical operation for rectal carcinoma as Hochenegg, of Vienna, whose results in 158 cases are reported by his assistant Lorenz in the *Archiv für klinische Chirurgie*, 1901, Band 63, Heft 4. This number of cases has been operated upon during the fourteen years since 1887, but does not include nearly all the cases under observation, for in 105 cases too extensive for radical operation colostomy was performed and 68 were discharged as inoperable; thus 331 cases were under observation. In judging of results it is of first importance to find where the line is drawn between operable and inoperable cases, for if only favorable cases are chosen of course the result must be better than if the doubtful cases be given a chance. Hochenegg does not seem to be timid about undertaking operation in doubtful cases. The contraindications to operation which he mentions are: Firm fixation of the tumor in the pelvis from the extent of the growth, involvement of the urethra or bladder, extensive glandular involvement, extreme cachexia or certain evidence of internal metastasis. In not quite two-thirds of the cases amputation of rectum was performed, while in the remaining cases, resection of the rectum with preliminary resection of the sacrum, in most cases was done. Whenever it was found possible without endangering the blood supply, the intestine above the point of resection was freed and drawn down through the anal part of the intestine, and sutured to the skin outside the anus. This could, of course, be done only when the rectum near the anus was not diseased; and before drawing the upper portion down the anal portion was everted and its mucous membrane dissected off. This is called the drawing-through method ("Durchziehmethode") and it gave better functional results as well as a mortality from wound infection less than half as great as simple resection.

The immediate mortality varied with the seat of disease and the injury to neighboring organs in extensive operations. Opening the peritoneum of itself did not appreciably increase the mortality, but in high-seated carcinoma above the reach of the examining finger the more extensive operation raised the mortality to 25%. The absolute immediate mortality was not quite 13% while if heart and lung affections and other causes not directly due to the operation be excluded it was 9%. As regards the functional result nearly half of the cases operated upon by the "Durchziehmethode" had complete control of the bowel, while by ordinary resection a little over a third had complete control. Taken all together about 30% had no control, and 28% only partial control. Possibly in many cases in the future, control may be gained by using Gersuny's paraffin injection method after operation.

But the permanent results should interest us most of all in Lorenz's paper. After counting out those who died soon after the operation and those lost track of, definite reports were obtained from 100 patients three or more years after operation. Of this number 17 died within the first year, 13 during the second year, 9 during the third year and 5 during the fourth year from recurrence of the disease. This leaves 16% of the cases that may be reasonably considered cured, a very good showing for this otherwise hopeless condition.

The value of careful records and of following cases to the ultimate result is well shown in this series. This gives us definite and most important information when we are considering the advisability of operation. The

¹ Practitioner, November, 1901.

² Bulletin of the Johns Hopkins Hospital, August, 1901.

³ Deutsche medicinische Wochenschrift, November 14, 1901.

lack of such careful record-keeping is a great fault of most American hospitals. The large number of cases in which there was either a palliative operation or no operation (over one-half of the 331 cases) indicates at once the chief reason of the unfavorable results of the radical operation (158 cases); the fact that the disease is usually recognized and turned over to the surgeon too late. Such failure to make an early diagnosis is almost invariably due to the fact that general practitioners of medicine do not yet recognize the importance of a rectal examination in all cases in which any rectal disease might be suspected. Unfavorable though the results are, they need not be considered so discouraging when we think of the extent of the disease, the weakness and cachexia of the patients and the other difficulties against which the surgeon had to contend in late cases with advanced disease. Even with the much more extensive operations which were performed during the last seven than first seven years with this series of cases the mortality was not greater than when most of the operations were simple amputations of the rectum. Metastasis in rectal carcinoma usually occurs late. With these improved methods, and most important of all when medical men learn not to treat every rectal case palliatively for hemorrhoids for months without inserting a finger in the rectum, we may hope for a much larger percentage of cures. Even were the results much worse no surgeon could feel fairly justified in refusing to operate in suitable cases.

Resection of the Trigemini.—Schloffer¹ describes a successful operation performed by him on a man of 42, who for seven years had suffered with trifacial neuralgia in an aggravated form. The operation differed from that of Krause in that, following Lexer's method, the flap included not only the lateral cranial wall, but also the temporarily resected zygoma. [H.H.C.]

In the introduction of nephrectomy and cholecystotomy it is not alone that the Middle West has contributed to the advancement of surgery, but a series of such papers as Dr. Tinker² has given us, would reveal the fact that American preeminence in operative surgery has been, to a very considerable extent, won by the progressive, self-reliant physicians, who have helped to build the great inland states of the Union. The first nephrectomy was performed by Dr. Erastus B. Wolcott, of Milwaukee, June 4, 1861. The first cholecystotomy was performed by John Hough Bobbs, of Indianapolis, Indiana, June 15, 1867. [C.S.D.]

Spina Bifida.—After describing the various forms of spina bifida, C. Bayer³ gives in detail his method of operation. In general it consists, (1) of reduction of the sac by excision of all superfluous tissue; (2) reposition of the medullary or nervous tissue displaced, and protection of the latter by suturing over it the two carefully adjusted lateral flaps of the meninges; and (3) plastic closure of the spinal fissure by means of two lateral flaps of fascia and muscle before the final closure of the cutaneous wound. An upper and lower, or two lateral cutaneous flaps are made at the base of the sac of such a size as to accurately close the wound after operation. These flaps should consist of skin only, except toward their bases where some fat may be included. Care should be taken not to injure the underlying meninges. The flap preparation should be done quickly and carefully on account of the marked vascularity of the subcutaneous tissue. Should the entire sac be covered with skin, that portion of the latter still remaining upon the sac after the flap preparation must be removed before further procedure. The naked meningeal sac is then punctured, allowed to collapse and replaced in toto unopened. Should, however, the area medulovascular be exposed, in which case few operations are successful, the former must be preserved, since it represents a portion of the spinal cord. In such a case a circular incision should be made in the meningeal sac and the superfluous

membrane removed, care being taken to leave all nervous tissue untouched. After careful reposition of the latter, the meningeal flaps thus formed are accurately sutured over the nervous elements. For further protection, and as a substitute for the absent neural arches of the vertebra, two lateral flaps are prepared from the fascia lumbodorsalis and the dorsal musculature. These are drawn toward the median line and sutured, after which the cutaneous wound is closed. An osteoplastic operation may be performed under favorable circumstances, by means of which a natural bony protection to the underlying soft parts may be provided. [H.H.C.]

Congenital Macroglossia.—Forsell¹ reports this case with operation and recovery in a boy of 3. At the birth of the child a bluish-red patch, the size of a one-cent piece was noticed on the under surface of the tongue, which was otherwise normal in size and shape. This patch grew larger, and when the boy was one month old a doctor was consulted, who made an incision in the tumor, which was attended by considerable hemorrhage. From this time the tongue began to grow rapidly until a large portion extended outside the mouth. The difficulty in feeding steadily increased, until liquid food alone, and that by drop only, could ingested. He had never been able to speak intelligibly. The protruding portion of the tongue was excised, this operation being preceded by tracheotomy as a safeguard. The boy was seen again four months later and found to have made a complete and apparently permanent recovery. [A.E.E.]

Successful Operation for Non-union of Fracture of Humerus.—Kaiser¹ reports that after several unsuccessful attempts to bring about union in a fracture of the humerus of six months' standing in a man of 57, he finally succeeded by the following procedure: A longitudinal incision was made in the periosteum of both fragments, and the periosteum loosened from the bone. A lamella of bone covered with periosteum, 12 cm. long and 3 cm. wide was chiseled off from the left tibia, and this lamella was placed over the pseudarthrosis and beneath the uplifted periosteum of the fragments. By x-ray examination four months later the transplanted lamella of the periosteum-bone could be seen to be considerably thickened, forming an oblong callus nearly 1 cm. thick along the outer surface of the humerus. A thick, rounded, circumscribed callus could also be seen on the median side of the fracture. [A.E.E.]

X-Ray Burns and Their Treatment.—Huntington² considers the term x-ray burn a misnomer. Recent studies of Rudis-Jicinski indicate that this lesion is an acute, subacute or chronic necrobiosis dependent upon irritation of the peripheral sensory nerves with secondary paralysis of the vasomotor system of the affected areas. Spasmodic contraction of arterioles follows, malnutrition, and necrosis is the result. The arterioles and veins are thickened and the lumen correspondingly narrowed. The medical treatment of these ulcers is most unsatisfactory and in considering the surgical treatment it should be borne in mind that the process is usually a slowly progressive degenerative one without definite limitation. Hence if excision of the ulcer is performed extreme boldness is necessary so that all tissues supplied by defective bloodvessels shall be removed. Huntington reports a case in which an x-ray burn resulted after several exposures over the right rectus muscle above the umbilicus. There was extensive dermatitis, the size of a tea saucer, and an incorrigible ulcer gradually developed. Strong antiseptic lotions were applied preliminary to operation which was performed several months after the appearance of the ulcer. The ulcer was circumscribed by an incision extending through a thick layer of fat to the sheath of the right rectus. The fat offered so much resistance to the knife as to suggest an abnormal condition. Consequently the marginal fat was removed for a distance and the overlying skin left as a loose flap which was sutured to the sheath of the rectus muscle. Thiersch skin-grafts were applied over this area and an uninterrupted recovery followed. Huntington believes that the use of silver foil as a dressing for such skin grafts is very advantageous. [M.B.T.]

¹ Prager medicinische Wochenschrift, Vol. xxvi, No. 44.

² Bulletin of the Johns Hopkins Hospital, August, 1901.

³ Prager medicinische Wochenschrift, Vol. xxvi, Nos. 31-42.

¹ Hygiea. Journal of the Swedish Medical Society of Stockholm, November, 1901.

² Annals of Surgery, December, 1901, Vol. xxxiv, No. 6.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Transversal Incision in Celiotomy.—Küstner, of Breslau, in 1896, published a method of transversal suprapubic division of the skin in performing abdominal section. It consisted in a transverse division of the skin, subcutaneous tissue and fat down to the aponeurosis of the abdominal muscles, above the symphysis near the upper border of the suprapubic growth of hair. This transverse incision was then extended with hooks, and the abdomen opened longitudinally, splitting the aponeurosis, dividing the muscle and opening the peritoneum in the usual manner. Four years later Pfannenstiel modified this method by dividing the aponeurosis transversely also. In October, 1901, Cumston, of Boston, reported a series of 45 cases in which the following method was employed: The incision was made at the upper limit of the pubic hair, transversely, following a line parallel to the upper limits, about a centimeter below the base of the hairy triangle. The skin and cellular tissue were cut through until the fascia was reached; the upper border of the wound was rapidly dissected off the fascia by a few snips of the scissors, and held up by a retractor; the lower edge of the wound was also dissected off and drawn down by a retractor, elongating the incision. In this manner a rectangular wound can be made sufficiently large to incise the fascia vertically to the extent of five or six centimeters. Cumston considers that this incision can be used to advantage in all operations involving plastic work upon the tubes or ovaries as well as for extirpation of a hydrosalpinx or even a pyosalpinx, if the lesion is not too extensive or if it is on one side only; and, in fact, that it may be employed in all cases in which a twelve centimeter incision is sufficient for the easy accomplishment of the necessary intrapelvic work. Still more recently, Kreutzmann, of San Francisco, has reported a series of five cases in which Küstner's method was used.

Although the presence of a disfiguring scar in the abdomen has been used as an argument against the traditional median incision, we most heartily agree with Kreutzmann in the statement that "no matter how much women may undress when they dress, it is more than improbable that the décolleté will ever reach so low that the scars on the abdominal wall will ever be exposed to admiring gazers." In fact, in reviewing the work of these operators, we find few cogent arguments that would influence us in the adoption of this method. One of the chief desires of the celiotomist is to prevent post-operative hernia, and the factors which are predisposing causes of such a condition are failure of union of the fascial layer, the most important structure of the abdominal wall, which failure may be due to the interposition of muscle or peritoneum between the layers of the fascia; the retraction of the fascia before the formation of a firmly binding cicatrix; suppuration in the incision; the use of drainage tubes and gauze, extraperitoneal treatment of the stump after hysteromyomectomy; and incomplete closure of the abdominal walls; and these complications are just as liable to occur in the transverse as in the median incision. The method of closing the abdominal incision has much more to do with the prevention of hernia than the direction of the incision through the abdominal parietes. Innovations are not always advances, and we do not always benefit the patient by the adoption of new methods and the desertion of the old and well-tried ones without better reasons than have been advanced in favor of the transversal suprapubic incision. [W.K.]

Abdominal Panhysterectomy for Cancer of the Uterus.—In a large majority of cases of cancer of the uterus there can be no doubt, says A. H. N. Lewers,¹ that the vaginal

route is the most suitable for its removal. Usually in cancer of the cervix the body of the uterus is not enlarged and can readily be removed by the vagina. Some authorities claim that the lymphatic glands are always involved, and their removal requires abdominal section. But Lewers has performed 40 vaginal hysterectomies for cancer, and in 12 of these there has been no recurrence after from two to seven years, hence it is clear that the glands were not involved. He reports two cases in which he employed abdominal section; in the first because of the narrowness of the vagina, and in the second because the disease had extended to the right appendages. The latter an instance of a columnar celled primary carcinoma of the body of the uterus originating in the endometrium and extending very nearly to the internal os. [W.K.]

Upon Sterility.—Chrobak¹ discusses the causes of sterility and their remedy. These may exist in the woman's general condition, as sterility is frequently due to chlorosis, anemia, intestinal disorders, or to the use of known medicaments, as iodoform, quicksilver, morphin, etc. Or its cause may be gynecologic and yield to local treatment. Many writers consider that lack of sensual sensibility may be the cause; but Chrobak thinks that this itself is usually due to some pathologic condition, such as slight hypoplasia of the uterus with amenorrhea or scant menstruation, or lactation, atrophy, etc. In such cases some strong stimulus to the uterus should be employed, as electricity, massage, the sound, or sometimes pessary treatment; frequently, under such methods, a normal sexual sensibility is restored. He mentions other conditions which require blunt dilation of the cervix; others in which dissection is necessary, a transverse incision of the vaginal wall, or perhaps some plastic operation, as perineorrhaphy, colporrhaphy or colpoperineorrhaphy. But he concludes with the remark that all the care which may be directed to uterine anomalies will be fruitless unless full attention is given to the general condition of the individual; that the physician as well as the gynecologist may be needed. [W.K.]

Deciduoma Malignum.—W. E. Fothergill² says over 100 cases have been recorded. The condition may be summarized as a birth, abortion or hydatiform mole followed by constant or repeated hemorrhages and later by putrid discharges with septic fever; increasing size and irregular shape of the uterus, progressive anemia, metastases, cough, dyspnea and hemoptysis, and fatal termination within six or seven months. The hydatid mole is the most frequent forerunner. Death may occur from hemorrhage, anemia, sepsis or embolism. The uterus generally contains friable masses of extravasated blood and narcotic tissue infiltrated by new growths of uterine muscle. The metastases are carried by the blood stream. Uterine mucosa is generally absent from the growth. The cellular elements are, (1) large, individual cells of varied shape with large nuclei and clearly defined protoplasm, often vacuolated, and (2) irregularly shaped masses of protoplasm, vacuolated and containing numerous nuclei of varied shape. Those who consider the growth a uterine sarcoma hold that both elements are from the mesoblast. Those who think it an epithelioma turn to the placenta. The outer layer of the young placenta consists of protoplasm not differentiated into cells but containing numerous nuclei and known as the syncytium. Between this and the mesoblastic connective tissue portion of chorion and villi is sometimes a layer of individual cells. These are considered the forerunners of two elements in the new growth. The result is always fatal unless the uterus and all removable diseased structures are operated on as soon as diagnosis is made. [H.M.]

Hyperplastic Glandular Endometritis.—After discussing the subject of endometritis in general Palmer Findley³ concludes that it is impossible to distinguish noninfective hyperplasia from that of infective origin. He, however, believes that glandular hypertrophy, adenomas and polyps may exist as benign forms of newgrowth within the uterus. He describes a specimen, removed from a woman of 23, which presented a polyp of the cervix. The surface and glandular epithelium were both normal. The entire endometrium, however, pre-

¹ Wiener klinische Wochenschrift, December 19, 1901.² Medical Chronicle, June and July, 1901.³ American Journal of Obstetrics, September, 1901.¹ Lancet, January 4, 1902.

sented a condition of cystic glandular hyperplasia. The mucosa was 4 times the normal thickness. [J.W.H.]

Hysterectomy During Pregnancy and in Puerperium.—Bland-Sutton¹ reports two contrasting cases of hysterectomy for fibroid. The first was that of a woman of 28, suffering from fibroids impacted by pregnancy and the uterus so much displaced that abortion was sure to occur. Hence immediate operation was advised and performed. There was found a large tumor in the anterior wall impacted in the pelvis; the gravid-uterine body was situated in the hypogastrium, and the tumor in the posterior wall of the uterus occupied the right iliac fossa. These were removed by supravaginal hysterectomy; ovaries and tubes were retained, and the patient made a quick and satisfactory recovery. The tumors on section exhibited irregular dark red streaks, and the larger one had undergone myxomatous changes and was diffuent in the central portion. The second case was that of a married woman of 36 who had been delivered of a healthy child in 1896, and two years later a fibroid the size of a turkey's egg was detected in the hypogastrium. A few days after the delivery of a second child in 1901, the fibroid became tender and repeated hemorrhages set in, so that it became necessary to remove the tumor with the uterus and the tubes which contained pus. Five weeks later the patient left the hospital convalescent. The tumor on section was the color of mahogany, and its central part soft and diffuent. A careful study of a number of fibroids obtained from gravid uteri shows that under these conditions fibroids are very prone to undergo degenerative changes, and are especially liable to soften. A peculiar alteration in color is another feature, since the fibroid in pregnancy usually assumes a deep red or mahogany tint. In the early stages this color is in streaks, but as the pregnancy advances the whole tumor becomes affected. The clinical facts of these two cases are interesting from another point of view. In ordinary circumstances fibroids are painless tumors, hence it may be taken as an axiom that when a fibroid becomes painful it signifies that the tumor is undergoing secondary changes or that some complication has arisen in the pelvis. [W.K.]

Factors in Menstruation.—H. E. Giles² says race influence is subordinated to that of climate. The curve of latitude corresponding to various ages is given. The mean age of puberty is 14.5, forming a kind of menstrual equator. Puberty is established earlier in towns than in the country, among the wealthy than among the poor, in the robust than in the delicate, and in brunets than in positive blondes, being latest in subblondes. The periodicity of menstruation is more irregular in those who begin early or late than it is in those who first menstruate between 13 and 17. The duration of the flow is proportional to the amount lost, and the amount is greatest in those who begin early and least in those who begin late, is more abundant in warm climates and among brunettes. Physical fatigue shortens the intervals and increases the pain and quantity; 35% menstruate painlessly at first. The pain varies with the quantity lost, and not inversely. Numerous tables are given illustrating the relationship of the various factors. [H.M.]

Vesicovaginal Fistula.—N. Wolkowitsch³ describes in detail his method of closing a vesicovaginal fistula by means of the uterus brought downward for that purpose. He has employed this operation in eight cases. In six of these he had to do with a vesicovaginal fistula in the true sense of that term, and in five the results were very satisfactory. In the sixth there occurred a necrosis of the cervix and other complications. In the other two, to the fistula was added a urethral defect. In one, after this was sutured incontinence continued for a few weeks as the bladder would hold only a spoonful of urine; but a systematic introduction of hot salt solution distended the bladder and increased its capacity with a resulting continence. In the other case an artificial urethra was necessary. [W.K.]

Calibration of the Female Meatus Urinarius by means of the urethral calibrator devised by H. A. Kelly,⁴ shows the average diameters of the meatus to be 7.59 mm.; in nulliparous women, however, it is 7.83 mm. [C.S.D.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

The Prevention of Oxalate Lithiasis.—Professor A. Kemper¹ points out that oxalate calculi occur oftener than has been supposed. Hitherto the only prophylaxis has been to forbid the use of such vegetables as are rich in oxalic acid, especially spinage. But this is insufficient, for although not more than 15% of the oxalic acid taken with such food reappears in the urine, 10% passing with the feces, and the remaining 75% being decomposed by intestinal bacteria and ferments, oxalic acid will often be found in the urine in considerable quantity, even when all food containing it is withheld, the source being the creatin of decomposed muscle. The question, however, is not to render the urine free of oxalic acid, but to prevent the precipitation and concrement of calcium oxalate. From a number of experiments which the author carried out in union with Dr. Tritscher, he found that urine rich in magnesia and containing relatively little lime will hold the oxalates in solution. Patients kept on a milk diet, for instance, will excrete a minimum amount of oxalic acid, and yet oxalate sediments will frequently occur in the urine, because milk contains very little magnesia. As a prophylactic diet, then, the author recommends an abundance of meat, fat, bread, all kinds of farinaceous food, rice and legumes, apples and pears, but forbids the use of milk, eggs, tea and cocoa. A small amount of vegetables, except spinage, because of the oxalic acid it contains, and cabbage, which is rich in lime, may be permitted. Let the patient drink freely. There is no objection to coffee, nor to alcohol, on account of oxaluria. Two grams of magnesium sulfate taken daily will prove advantageous. [J.C.S.]

Cerebrin in Epilepsy.—Based on four months' observation of 20 old and stubborn cases in the insane asylum at Samara, Russia, M. Lion¹ extols the cerebrin treatment of epilepsy. Our mistake has hitherto been, he says, to merely aim at suppressing the attacks, hence the bromin treatment and bromin diet. But this is like hoping to exhaust the root of a tree by cutting off the branches. Numerous experiments have shown that normal brain and nerve tissue possess power to counteract or render harmless, by contact, tetanus poison and other toxins, and also alkaloids as strychnia and morphia, as well as other toxic substances. The improvement in the worst forms of epilepsy was immediate. Characteristic symptoms disappeared, attacks did not recur or became milder, dangerous subjects became tame and good natured individuals, the physis condition changed markedly, and instead of the stupid, unsocial, mentally diseased, one saw more or less normal beings. "One must see the change to appreciate it," says the author. In chronic alcoholism with delirium, cerebrin was found equally efficacious. The preparation used was the "Cerebrinum-Poehl" or "Opocerebrinum-Poehl" prepared in the laboratory of Professor Poehl in powder or tablet form. The dose given was gram 0.6 (9 grains) daily. [J.C.S.]

Diet of the Sick.—N. S. Davis, Jr. (Vol. 6 of Cohen's "System of Physiologic Therapeutics") cautions against making appetite the guide in feeding the sick. They often require food when they do not desire it, need kinds that they relish little, and are satisfied before they have taken enough. However, it is best to gratify the taste of the sick so far as it is wise and practicable. If they are quickly satiated, food may have to be given with frequency, not because they crave it, but because it is needed. To maintain health, it has been found best to eat at regular times. Although those who are sick may have to eat more frequently than those who are well, they also should be fed at regular times. Appetite—that is, the appreciation of food—is preserved and whetted by daintiness in serving. Only about so much food as the sick person ought to eat should be brought to him, for if a large quantity is placed before him, the sight of it is often distasteful. Therefore, it is frequently best to serve a meal in courses, bringing to the patient one article of food at a time. It should be served on dishes as pretty and attractive as possible, and with extreme neatness. So soon as a dish is emptied it should be taken away. These

¹ Lancet, January 4, 1902.

² Medical Chronicle, June and July, 1901.

³ Centralbl. f. Gynäk., October 26, 1901.

⁴ Bulletin of the Johns Hopkins Hospital, August, 1901.

¹ Berliner Klinische Wochenschrift, December, 30, 1901.

matters of detail, which pertain to the training of nurses, are of the utmost importance when there is little or no desire for food, when appetite is capricious, or when it is desirable to force upon the sick more food than is craved. Only food that is fresh and in perfect condition should be given to those who are ill. As a rule, it should not be twice cooked. Unpleasant odors, repulsive sights, disagreeable tastes, often disgust those who are not well and create a repugnance to all food. Eating should be made as easy as possible for those who are weak. They should not be allowed to grow weary by sitting in an uncomfortable position or by sitting too long. Patients, when they are feeble, should not be awakened for food except under conditions of special urgency. Food, preferably in liquid form, should always be readily accessible at night, so that the nurse may give it in case a patient awakens. Those who are too weak to help themselves must be fed. While they are upon a liquid diet their food may be given to them most comfortably through a glass tube, by means of which it can be sucked from a cup or bowl. A short drink of water can often be better given by raising the patient's head gently upon his pillow and placing a small cup to his lips. Those who are unconscious, but able to swallow, may be fed from a spoon or by a medicine dropper. If a patient cannot swallow, rectal feeding or the stomach-tube must be resorted to.

The Use of Validol.—Georg Schwersenski (*Therapeutische Monatshefte*, Vol. xv, Nos. 5, 6, May and June, 1901), gives a report on Validol, a chemie combination of menthol and valerianic acid, containing 30% of free menthol and first introduced by him in 1897. After an exhaustive review of the literature bearing on the therapeutic value of menthol he contends that the difficulties in administering the latter drug, on account of its irritating qualities, (which are but slightly diminished by suspending it in oily solution, and, if anything, increased in a solution of chloroform and alcohol), have been swept away by the introduction of validol and permits the employment of menthol both internally and locally by disguising all its irritating properties without diminishing its efficacy. The dose of validol internally is from 5 to 10 drops three times a day; locally 10% to 15% ointments are recommended. The action is in every respect the same as that of menthol, and it is accordingly recommended in all conditions in which menthol is employed. Schwersenski reviews a great variety of conditions in which validol has proved its usefulness. In gastralgia and cardialgia it reduces the sensitiveness of the nerve endings in the gastric mucous membrane and, by producing a temporary hyperemia, secures a better blood supply, rendering the mucous membrane more resistant and better able to perform its function. It is recommended for acute coryza, for migraine and other forms of headache, especially in neurasthenia; as a prophylactic against seasickness, and to combat the headache, nausea and depression that follow a night of debauch. The drug for this purpose is applied both locally and internally, 1 drop being applied to each naris, 5 drops rubbed on the forehead, and from 5 to 10 drops administered internally on sugar. It fails to control vomiting due to some "distant reflex influence" such as brain tumor, meningitis, uremia, Addison's disease, gastric crisis, etc., but in true nervous vomiting and in the vomiting due to the spasms of hepatic colic it has been very useful. Locally it may be used in the treatment of certain forms of eczema, as it has a marked stimulating action on the nutrition of the skin. It is also of value in skin diseases associated with a great deal of itching and in pruritus. Applied to the precordia in the form of an ointment it is said to control the pain of angina pectoris. The author epitomizes its advantages as follows: (1) It is an excellent antispasmodic; (2) it is a welcome remedy in various hysteric conditions; (3) it is useful in migraine; (4) as a specific in acute alcoholic intoxication it has no peer; (5) it is useful in reflex neuroses; (6) its local action on the skin and on the mucous membranes of various organs may be utilized in pruritus, gastralgia and coryza; and (7) it is a good stomachic. Schwersenski also claims that Validolum camphoratum is a valuable antispasmodic and cardiac excitant in conditions of extreme debility. This is a 10% solution of triturated camphor in validol, combining the action of two well-proved antispas-

modies, validol and common camphor. The oily nature of validol neutralizes the irritating properties of camphor and menthol and an ideal antispasmodic is the result. While validol may be entrusted to the general public as a pleasant household remedy for the manifold conditions of exhaustion met with in everyday life, validolum camphoratum is reserved exclusively for extreme conditions of exhaustion in acute and chronic diseases whenever it is desired to administer camphor in an acceptable form. As a cardiac excitant it is as efficient as any other remedy of this class in the pharmacopeia. In addition, it is of great value as a local analgesic, a pellet of cotton saturated with validolum camphoratum and introduced into a carious tooth is useful in allaying toothache. [R.M.G.]

The treatment of favus with formaldehyde has proven successful at the hands of Solovier and Demidov,² Russian military surgeons. A compress wet with a 1% solution of formalin was used. [C.S.D.]

Potato Diet in Diabetes.—M. Mossé,³ professor of the faculty of Toulouse, not only supports the theory recently put forward by Dujardin-Beaumetz that of all starchy substances potato is the least harmful to diabetics, but he holds that it is actually beneficial and constitutes an essential element in the treatment of diabetes. M. Mossé gives potato in place of the ordinary ration of bread in proportion of three times the weight. Far from increasing the sugar the use of potato diminishes its output, and clinical examination of the urine shows that the carbohydrates of the potato are absorbed and utilized. The results are better in that form of diabetes which is marked by thinness than in the fat form. The potato containing weight for weight twice the amount of water that bread does and nearly the same quantity of potassium salts, a patient taking three times as much by weight of potato as he would of bread gets six times as much water and three times as much potassium salts, while the starchy matter remains unchanged. Potassium salts are an integral part of the alkaline treatment of diabetes, and the good which they do easily counterbalances the harm done by the ingestion of the starchy matter. Under the potato treatment the sugar disappears and the appetite and general health improve. [J.C.S.]

Therapeutic Applications of Lecithin.—Lenn (*Journal des Praticiens*, June 22, 1901) states that according to the researches of Desgrez and Zaky, lecithin produces: (1) A favorable action on nutritive changes, characterized by a notable increase in the elimination of urea. (2) Fixation of the phosphorus. (3) Increased weight. It is particularly of value in cases of neurasthenia, for the general feebleness of convalescents, and in chloroanemia. Excellent results have followed its use in diabetes, and in tuberculosis, especially in the first stage. Lecithin may be given to adults in doses of from 2 to 4 grains daily, preferably one-half hour after meals. Alcohol and powdered marshmallow should be the only excipients used in making it into pills. The effect of the drug is generally manifested between the fifth and tenth days. As it has no toxic effect it may be administered in larger doses and for a prolonged period. [L.F.A.]

Sodium and Magnesium Cacodylates: Their Modes of Employment and Action.—Burlureaux (*Journal des Praticiens*, April 27, 1901) cautions against the administration of the cacodylates by the mouth or rectum, because, when in contact with the mucous membranes a poisonous oxid of cacodyl is formed which is eliminated with difficulty. Sodium cacodylate should be given subcutaneously in the dose of from $\frac{1}{2}$ grain to 1 $\frac{1}{2}$ grains. An injection of $\frac{1}{2}$ grain may be given daily for 15 days with an interval of 8 days, or 3 injections a week for 2 or 3 months. Burlureaux has obtained remarkable results from the use of sodium cacodylate in those cases in which nutrition was low and in which the appetite and forces were failing. If vitality is inhibited, the cacodylate arouses the latent forces within the system. If, on the contrary, there is no reserve force, the cacodylate cannot create it and its action is negative. Magnesium cacodylate is a salt very rich in cacodylic acid and very soluble in water. Burlureaux at first used 5% solutions,

² La Semaine Médicale, October 2, 1901.

³ The Lancet, January 4, 1902.

of which 16 minims was injected subcutaneously. The strength of the solutions was increased so high as 25% as the tolerance to the drug was established. The author employed these injections in dyspeptics, neurasthenics, and in patients convalescing from grip. In all instances there followed a rapid increase in the appetite, and marked gain in strength and general improvement.

Concerning the Treatment of the Apparently Unaffected or at Most but Slightly Involved Eye in Primary Glaucoma.—G. E. deSchweinitz (*Philadelphia Medical Journal*, September 21, 1901) describes the signs by which one may reasonably infer that the apparently sound eye will suffer an attack like its fellow, in a case of monolateral acute glaucoma. They are: (a) Shallowness of the anterior chamber, beginning opacity in the lens with swelling, a high degree of hypermetropia, and smallness of the corneal diameter. (b) The mydriatic test suggested by Jackson, Harlan and Brailey. This consists in the instillation of a solution of homatropin into the eye which is under suspicion, and noting whether it produces any rise in intraocular tension, or pulsation of the blood-vessels of the fundus. (c) The palpation test, by which finger-pressure on the globe, so slight that in a healthy eye it would not cause pulsation of the blood-vessels of the fundus, would cause them to pulsate in the eye under suspicion. (d) The history of prodromal glaucomatous phenomena. If these signs are positive an iridectomy should be performed upon the eye so soon as the anterior chamber is restored on the opposite side; in the meantime the eye should be kept under the influence of a myotic. Similar advice is given for cases of chronic congestive glaucoma. Chronic noninflammatory glaucoma is less frequently truly monolateral. The signs by which one may reasonably infer that the apparently sound eye will pass gradually into a condition resembling its fellow are the following: (a) Ophthalmoscopic evidence furnished by the formation of a cup becoming pathologic on the temporal side. (b) Periods of increased intraocular tension detected by placing the educated finger-tips upon the sclera itself. (c) Alterations in the visual field. (d) De Wecker's sclerotomy test, which consists in performing anterior sclerotomy in doubtful cases. If the symptoms are ameliorated, especially if the visual field enlarges, the suspicion is confirmed, and iridectomy may be performed. De Schweinitz has had no experience with this test. [L.F.A.]

The Use of Drugs in Pulmonary Tuberculosis.—W. R. Huggard (*The Therapist*, September 16, 1901) determines the method for treating pulmonary tuberculosis by the condition of the patient's digestive system, general health and the state of nutrition. If digestion is poor the only drugs indicated are those which will restore it to a normal condition. If digestion is good, the general condition satisfactory, and the patient is improving, no drugs are used unless some definite indication is present. Among the most important indications for drugs are persistent afternoon pyrexia in spite of absolute rest out of doors, and a tendency to febrile attacks or to slight inflammatory attacks, which is usually associated with impaired nutrition and a low state of general health. In these conditions, arsenic, strychnin, quinin and salol are among the most useful tonics. Progressive softening, excessive cough, overabundant expectoration of extremely purulent or nummular character, and, more rarely, scanty expectoration, require treatment. Huggard believes that drugs which are useful in these conditions have a favorable influence on the course of the disease, in addition to the temporary relief from discomfort which they afford. Some of the best drugs for this purpose are: Formaldehyd vapor, creosote and its derivatives, except guaiacol carbonate, which Huggard considers inert, terpin hydrate, oil of cinnamon, myrtol, the balsams, and the lime salts. In sluggish, chronic softening counterirritation with iodine or fly-blisters is of the greatest service. [L.F.A.]

The Value of Veratrum Viride in Puerperal Eclampsia.—The *Therapeutic Gazette*, August 15, 1901, publishes the following opinions of the value of veratrum viride in puerperal eclampsia: J. C. Edgar considers the drug almost equal to chloroform for the immediate control of puerperal convulsions. When the pulse is strong and rapid he believes it offers the most certain means at our command for temporarily, and even

permanently, controlling the spasms. When the pulse is weak he uses morphin hypodermically, chloroform inhalations, and chloral by the rectum, with stimulation, if necessary. He employs 10 to 20 minims of the fluid extract, or half that quantity of Norwood's tincture subcutaneously, every 20 minutes or half-hour until the pulse continues at less than 60 to the minute. The patient should be kept recumbent during this treatment. R. C. Norris employed veratrum viride successfully when bleeding was indicated, and considers it second only to free purgation with salines. He believes that the hypodermic injection of 20 minims of the fluid extract, as frequently advised, is too great an initial dose. He employs eight minims of the fluid extract, and repeats the administration in five minim doses sufficiently often to keep the pulse-rate between 70 and 80. B. C. Hirst has great confidence in the efficacy of veratrum viride in puerperal eclampsia, and used 20 minims of the fluid extract hypodermically as a beginning dose. He employs it only in sthenic cases. E. P. Davis obtained the best results with the drug in the treatment of eclampsia by the hypodermic injection of 10 drops of the tincture every hour until the pulse fell below 90, and its tension was decidedly lessened. No unfavorable result was observed during or after its use. G. M. Boyd believes that the use of veratrum viride in eclampsia is of very doubtful value. He employed it to its full physiologic effect with no resultant improvement in the patient's condition. W. R. Wilson places no dependence upon the drug in this condition, believing that eclampsia can be treated best by the establishment of prompt elimination. J. W. Williams is of the opinion that other measures are more rational in the treatment of this disease. E. Reynolds has no faith in the virtues of veratrum viride in the treatment of eclampsia. [L.F.A.]

ORTHOPEDICS

DR. H. AUGUSTUS WILSON

Operative correction of deformities made a pronounced advance in the latter part of the first half of the last century by the scientific application of subcutaneous tenotomy. The name was originated by Andry in 1741, and the scientific indications for its employment were first described by Delpach. It remained, however, for Stromeyer, of Hanover, to perform the first operation in 1831. In 1834 it was used for the first time in America by David L. Rogers, of New York.

Diverse views were held as to the disposition to be made of the divided tendon, many preferring close apposition of the divided ends and subsequent stretching of the newly-formed reparative tissue; others immediately corrected the deformity, thereby separating the cut ends to the necessary extent and depending upon nature's recuperative powers to fill in the gap. In the method of immediate replacement the fear of nonunion ignored the danger of obtaining an attenuated band. Sir Astley Cooper's animal experiments clearly demonstrated the process of repair in divided tendons and established the desirability of immediate correction of the deformity with its accompanying separation of the cut ends of the tendon.

Subcutaneous tenotomy is best described as being made through a small opening through the skin the better to conceal the uncertain destruction beneath.

Surgeons all over the world have become impressed with the great disadvantages of the small skin puncture, the necessity for which ceased to exist upon the adoption of modern surgical technic. With careful asepsis the length of the skin incision is of trivial subsequent importance, but at the time of the operation it permits the operator to see and feel the structures requiring his skill, and enables him to avoid unnecessary wounding of surrounding tissues.

Through the open wound, methods of precision are possible for purposes of suturing, for lengthening, for

shortening, and for transplanting, that were formerly impracticable. Illustrations of the importance of open procedures are afforded by the accurate methods of tenotomy devised by Anderson, Czerny, Duplay, Esmarch, Keen, Le Fort, Le Dentu, Rugh, Schwartz, Tillaux, Trnka, Wilson, Wöfler, Willetts and others.

The advantages of tenotomy are that by its use more accurate correction and better usefulness are obtainable than by relying solely upon mechanic appliances. It has never been satisfactorily demonstrated that a shortened tendon could be stretched. When the resulting apparent correction has been obtained by mechanic means only, it has most likely been produced by the yielding of other structures than the tendon, hence precise tenotomy in conjunction with scientific mechanic aid are the procedures of today.

Intermittent Hydrops.—E. G. Brackett¹ reports two cases of this unusual malady, giving the details and followed by a careful review of the literature, 68 references being appended. It is somewhat discouraging to find so accurate an observer forced to say that "When we come to the question of the real nature of the disease, we find a series of facts and plenty of theories, all of which are somewhat inadequate to explain the facts."

Tendon Transplantation for the Relief of Paralytic Talipes.—M. D. Dickinson² describes the operation of attaching tendons of living to those of paralyzed muscles, which is a modern method of obtaining an approach to normal function. It was first performed by Nicoladoni in 1882, and Parish, of New York, made the first attempt in America in 1890. Its application to the relief of paralytic talipes is becoming more common since the permanency of the results are becoming assured. It is better to select a tendon of the same group, although one of antagonistic function may be taken when necessary. The prognosis depends upon the extent of the paralysis. The most effective results follow when but a single muscle is paralyzed. Plaster-of-paris holds the foot in an over-corrected position for several weeks. Mechanic support is required until the functional result is assured.

Congenital Talipes Equinovarus.—Peckham³ divides these cases into three classes—those which may be cured by manual manipulation alone, those treated with plaster-of-paris and those which require operative interference. Several cases descriptive of these three classes are detailed. [F.C.H.]

A Discussion on Injuries to Joints, with Special Reference to Their Immediate and Remote Treatment by Massage and Movement.—Howard Marsh⁴ believes that massage and exercises are capable of doing great harm when inappropriately applied and yet they are potent factors for good in suitable cases under surgical supervision, with reference to the experience of the manipulator, duration of each sitting, the effect being produced, etc. He cites a case of unrecognized gout in which the patient was made to suffer untold agony unnecessarily. A number of cases where tuberculosis of joints was not recognized and the process made more active. A case where massage and exercises were continued for nine weeks where a rupture of the tendo-Achilles was overlooked. A supposed hysteric knee was massaged for six weeks when a small swelling was noticed which proved to be sarcoma and the limb amputated a few days later. "It must be remembered that such occurrences can be avoided only if the surgeon keeps a close eye on what is going on." Considerable attention is devoted to the physiology of massage and diagnosis as well as to the indications for efficient mechanotherapy. The unreliability of pain as a symptom is emphasized. Muscle wasting may result from prolonged muscle tension, joint stiffness, pain or nerve disturbance, and care is required to determine its diagnostic importance. Marsh urges the great importance of critical diagnosis preceding treatment.

The Treatment, Nonoperative and Operative, of Congenital Dislocation of the Hip.—F. F. Burchard⁵ says no

really efficient apparatus has yet been constructed, and then proceeds to review the appliances devised by Hoffa, Mikulicz, and Schede and the bloodless method of Paci, Schede, and Lorenz, and claims that in the majority of cases reduction is easy but that the head almost invariably leaves the acetabulum. Except in a few isolated cases, no cure is effected. Reposition by operation is urged and the many methods of Hoffa, Lorenz, Lane and his own are described, omitting the important methods of Bradford and Whitman. Emphasis is given to the statement that "True cure can only be expected in suitably selected cases." The advantages of the ages of from two to five are urged.

Cervical Ribs.—Frederick Kammerer¹ reports the case of a woman of 35. No radiograph could be obtained before operation, but one was taken afterward and accompanies the paper. Extensive reference to the literature of the subject is appended.

Congenital Elevation of the Shoulder.—Joel E. Goldthwait and Charles F. Painter² report two cases illustrating the types of the deformity treated by operation. One case was thought to be due entirely to imperfect development of the muscular structures. The other, the position of the shoulder was associated with an embryologic condition. There was a distinct articulation between the vertebra and the upper angle of the scapula. Reference is made to Rager's review of the literature of the subject in "Zeitschr. f. Orthopädi," Chir. Bd. ix, H. I. Joseph M. Spellissy, at the meeting of the Philadelphia Academy of Surgery on January 5, reported two cases of congenitally misplaced scapula. The cases were quite similar in all their aspects. The scapulas were high on the shoulders, their spines being their highest points. Radiographs showed the character of the malformations and did not reveal any associated explanatory conditions. While not absolutely rigid the range of motion of the scapula in each case was decidedly limited.

The Management of Weak Feet.—Henry Ling Taylor³ finds city life conducive to weak feet, because of the lessened vigor of city children and also on account of the increased strain to which they are subjected. He heartily condemns stiff ankle shoes as irrational and as accomplishing no good end, their use rather increasing the weakness of the parts. The disadvantages of toeing-out are enumerated, and it is stated as being an unnatural posture tending to produce improper use. He says: "Since shoe-wearing is more or less harmful, let us discard shoes entirely in infancy, when they serve no good purpose, and also encourage barefoot walking as occasion offers, in the country or at the seashore, at least in our children."

The Mechanics of Lateral Curvature as Applied to the Treatment of Severe Cases (Second Paper).—Robert W. Lovett⁴ presents decidedly the most important addition to the scientific study of scoliosis in recent years. The study of the subject is first from a purely mechanic standpoint, with its application to the spines of cadavers, artists' models and then to scoliotic patients. Following this there is the orthopedic study and its value in overcoming the routine plans of treatment, emphasizing individuality of cases and the necessity for greater precision in diagnosis of location and character and applied therapeutics. The subject is discussed under six headings, and concludes that cases with fixed bony curves cannot be treated upon the same theory as those with flexible curves. Forceful correction has place only as a preliminary to gymnastic treatment. The use of corrective jackets is discouraged, except occasionally as a temporary measure to secure better foundation for physical culture.

The Rational Treatment of Lateral Curvature of the Spine.—Louis A. Weigel⁵ considers the successful treatment of these cases an unsolved problem. The best results obtainable are out of proportion to the correction of distortions of other parts of the body. Explanation of this is found in the character of the structures involved, difficulty of access and of applying direct effective corrective measures. Mechanic correction by the apparatus of C. Fayette Taylor is exemplified,

¹ Boston Medical and Surgical Journal, October 31, 1901.

² Albany Medical Journal, January, 1902.

³ American Gynecological and Obstetrical Journal, December, 1901.

⁴ British Medical Journal, October 19, 1901.

¹ Annals of Surgery, November, 1901.

² Boston Med. and Surg. Journal, December 26, 1901.

³ Jour. Physical Therapeutics, October 15, 1901.

⁴ Boston Medical and Surgical Journal, October 31, 1901.

⁵ Journal of Physical Therapeutics, October 15, 1901.

and a modification by Wiegel is described which possesses many advantages of convenience and utility. In very rigid cases the author finds advantage in the powerful corrective appliance which he has modified from those devised by Schede, of Hanover, Bradford and Brackett, of Boston. After securing flexibility of the spine, the patient is carefully drilled in selected exercises, which is urged should be under the personal supervision of the physician. Strong condemnation is given to the exclusive use of any form of mechanic support, which he says "is practised only by those who have no proper conception of the aims and object in view." The limited careful use of suitable support has its advantages, but discernment is demanded to accomplish its usefulness and avoid its dangers.

THE PUBLIC SERVICE

Changes in the Medical Corps of the U. S. Marine Hospital Service for the week ended January 16, 1902:

GLENNAN, A. H., surgeon, detailed to represent the service at meeting of International Sanitary Conference at Havana, Cuba, February 15—January 11, 1902.

GUITERAS, G. M., passed assistant surgeon, detailed to represent the service at meeting of International Sanitary Conference at Havana, Cuba, February 15—January 11, 1902.

DECKER, C. E., assistant surgeon, granted leave of absence on account of sickness, for 30 days from January 15—January 16, 1902.

LAVINDER, C. H., Bureau letter of January 2, 1902, granting Assistant Surgeon Lavinder leave of absence for 2 days, amended so that said leave shall be for 1 day only—January 11, 1902.

CRAIG, R. C., acting assistant surgeon, to report to Surgeon F. W. Mead for duty—January 15, 1902.

SWEETING, C. B., acting assistant surgeon, granted leave of absence for 5 days from January 23—January 16, 1902.

Changes in the Medical Corps of the U. S. Army for the week ended January 18, 1902:

BELL, Major WILLIAM D., surgeon, is relieved from duty at Binalonan, and will proceed to Dagupan, Pangasinan, P. I., for duty.

RAYMOND, Captain THOMAS U., assistant surgeon, is assigned to duty as attending surgeon and examiner of recruits in Chicago, Ill., relieving Major Henry I. Raymond, surgeon.

HART, JAMES W., contract surgeon, will proceed to Fort Hancock for temporary duty; upon completion of which he will return to his proper station, Fort Washington.

HAVARD, Lieutenant Colonel VALERY, deputy surgeon general, is detailed to represent the medical department of the Army at the meeting of the Pan-American Sanitary Congress, to be held in the city of Havana, Cuba, February 15, 1902, in addition to the officers designated in orders of December 20, 1901, Lieutenant Colonel Havard will proceed to Havana in time to reach that place on or about February 15, 1902, and upon the adjournment of the congress will rejoin his proper station at Fort Monroe.

DISNEY, Captain FRANK A. E., assistant surgeon, having tendered his resignation, is honorably discharged, to take effect January 20. Captain Disney will proceed to his home.

SILER, Contract Surgeon JOSEPH F., now at Opelika, Ala., is relieved from further duty in the division of the Philippines, and will proceed to Fort McPherson for duty.

GERAHTY, Hospital Steward ROBERT F., Presidio, will be sent to Army and Navy General Hospital, Hot Springs, Ark., for treatment in the hospital.

BANISTER, Major JOHN M., surgeon, in addition to the duty with the troops on the transport Buford, required of him by orders of December 13, is assigned to duty as transport surgeon on that transport during the voyage from New York City to the Philippine Islands.

HALWOOD, JAMES B., and GUY STONE, contract surgeons, now at San Francisco, Cal., are relieved from further duty in the division of the Philippines, and will report for assignment to temporary duty at the General Hospital, Presidio.

CRAMPTON, Major LOUIS W., surgeon, having reported his arrival at San Francisco, Cal., will repair to Washington, D. C., and report to the surgeon general of the Army for instructions.

MCVEAN, Contract Surgeon WILLIAM A., is relieved from duty at the General Hospital, Presidio, and will report for transportation to Manila, P. I., where he will report for assignment to duty.

HALL, Contract Surgeon HENRY M., is relieved from duty as transport surgeon of the transport Buford, and will report on the transport McClellan for duty as surgeon on the latter transport.

RICHARDSON, G. H., First Lieutenant, assistant surgeon, granted leave for 20 days, from March 7, with permission to leave the limits of the department of Colorado.

KULP, Captain JOHN S., assistant surgeon, attending surgeon and examiner of troops in New York City, will repair to Washington, D. C., and report to the surgeon general of the Army on business pertaining to the medical department, and upon the completion of this duty will return to his proper station.

FLETCHER, RICHARD M., Jr., contract surgeon, granted leave for 27 days from about January 25.

WAKEMAN, Major WILLIAM J., surgeon, is relieved from further duty in the division of the Philippines, and will proceed to San Francisco, Cal., and report by telegraph to the adjutant general of the Army for orders.

The following-named contract surgeons will proceed from the places designated to San Francisco, Cal., and report for transportation to the Philippine Islands, where they will report to the commanding general, division of the Philippines, for assignment to duty: Charles C. Billingslea, from Westminster, Md.; George B. Jones, from Rushville, Ind.

BARRY, EDMUND, contract surgeon, is relieved from duty at the General Hospital, Presidio, and will proceed to Fort Dade, for duty to relieve Contract Surgeon Joseph J. Shafer, who will proceed to his home, Atlanta, Ga., for annulment of contract.

Changes in the Medical Corps of the U. S. Navy for the week ended January 18, 1902:

PAYNE, J. H., assistant surgeon, detached from the Isla de Cuba, January 10, and ordered home.

KITE, I. W., surgeon, ordered to the Norfolk Navy Yard, January 13.

PERCY, H. T., surgeon, detached from the Norfolk Navy Yard and ordered to the League Island Navy Yard for duty at the Naval recruiting rendezvous, Philadelphia, January 13.

ARNOLD, W. F., detached from the New Orleans, January 15, and to duty at Guam.

KENNEDY, J. T., assistant surgeon, detached from the Brooklyn, January 15, and ordered to the Helena.

BACKUS, J. W., assistant surgeon, detached from the Brooklyn, January 15, and ordered to the Princeton.

HOLCOMB, R. C., assistant surgeon, detached from the Helena, January 15, and ordered to Manila.

PLUMMER, R. W., assistant surgeon, detached from the Princeton, January 15, and ordered to New Orleans.

WARD, B. R., passed assistant surgeon, detached from the Boston Navy Yard, January 15, and ordered to the Constellation.

BRAISTED, W. C., passed assistant surgeon, detached from recruiting duty, January 15, and ordered to the naval hospital at New York.

PRYOR, J. C., passed assistant surgeon, detached from the Naval Hospital, New York, January 16, and ordered to the Naval Hospital, Newport, R. I.

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Special Therapeutic Institutions.—Dr. Dawson Williams, the editor of the *British Medical Journal*, recently delivered a noteworthy address in England (v. *The Practitioner*, December, 1901) designed to stimulate the establishment and greater efficiency of special institutions for the care and treatment of the sick, such for instance as hydropathic sanatoriums, hospitals for the tuberculous, for children with chronic diseases, etc. It is true that with us the trend has already begun in this direction, not a few benefactors having recognized the wisdom of a greater variety in the objects of hospital work, and the better success of devoting special attention to classified types of disease. There has long been a sorry lack of imagination and a more pitiable failure in the adaptation of means to ends upon the part of the charitable. Our establishment of special colonies for epileptics, seaside homes, institutions for crippled children, lying-in-hospitals, etc., are but illustrations of the greater good men may do with money and attention when they devote both to an observation of actual conditions, instead of dumping their benefactions with monotonous negligence into the stereotyped blank forms of endowment furnished them by mail upon their deathbeds.

Medicine and Religion.—We have frequently called attention to the fact that there is no aspect or part of life in which medicine is not a powerful factor. It is impossible to exclude the physician or his science from the work or councils either of saints or sinners. That infant mortality should depend upon religion would at first sight appear absurd, and that it should be to the disadvantage of the Christian faith is more unexpected and regrettable. Russian medical reports show an alarming rate of infant mortality, reaching in some districts as high as 40% and 50% during the first year of life. Among the causes of this waste of young life is prominently mentioned the growing custom of employing wet nurses, with the result that the children of wet nurses are themselves neglected and fed upon other food than mother's milk. Among the Mohammedan population it is said the infant mortality is very much less because of the law that every mother must nurse her own children. There is no doubt also that the habit of employing wet nurses greatly increases sexual immorality, and the weakening of the bonds of family life, with all their well-known evil consequences.

A New Era at the Philadelphia Hospital.—The Bureau of Charities, in a commendable spirit of enlightenment, is endeavoring to make of the famous Blockley Hospital a teaching institution of the first rank, and one that will vie with the great hospitals of Europe. Under the present regime, the physicians upon the staff have the privilege of giving instruction in the wards, as well as in the clinical and anatomic amphitheatres; and the students are availing themselves with avidity of these opportunities, particularly that of the ward instruction.

Improvements are contemplated that will, in a considerable degree, modernize the hospital, and will give additional facilities for teaching in branches in which the instruction in most of the medical schools of this country is deficient. A new children's hospital is in process of construction, venereal and obstetric wards will be built, and every opportunity will be afforded for the objective study of disease. The new era will not only benefit the medical students of Philadelphia, but it will unquestionably redound to the signal advantage of the patients, for whom, after all, the hospital exists. Their ailments will be more carefully investigated, and their treatment more intelligently supervised.

The removal of the Almshouse and of the Insane Department will be of incalculable benefit to the hospital, primarily in lessening the chronic state of overcrowding and, in the case of the removal of the Almshouse, in taking away from the Hospital the stigma of being a pauper institution, which has in the past done much to limit its usefulness. Philadelphia owes in a large degree her reputation as a medical center to old Blockley, and there is every reason to believe that so far as the Hospital is concerned, this reputation is in no danger of being dimmed.

The Practical Operation of Vaccination Statutes.—In many states and countries laws have been enacted which relate to the practice of vaccination. These statutes have differed very much not only in their character as relates to compulsion or voluntary methods in relation to vaccination, but also in the matter of their enforcement.

Most of the other states of the Union have laws upon this subject, dating back in some instances as far as 1808 or 1809, and while many of these laws contain compulsory clauses, it is rare to find at the present day any large

community in any state, in which all of the inhabitants over one year old are protected by vaccination.

It is this unvaccinated residuum which constitutes a serious menace to every city and state, especially in times of epidemic prevalence of smallpox. This has been the experience in those communities in this country where records have been kept of the condition of those attacked with smallpox with reference to the fact of vaccination. The records of Sheffield and of London in England upon the same subject all point to this fact of the vastly greater immunity enjoyed by the vaccinated as compared with the unvaccinated, and as to the diminished fatality in the former when attacked. After many years of rebellious resistance to the existing law in England, the question of repealing or modifying the statute was taken up by Parliament and referred to a committee, which after sitting for several years and hearing a multitude of witnesses pro and con, reported in a series of volumes which constitute a library of information upon the subject, the result of the report being the enactment of a statute providing that

"No parent or other person shall be liable to any penalty under the vaccination act, if within four months from the birth of the child he satisfies two justices, or a stipendiary, or metropolitan police magistrate, in petty sessions, that he *conscientiously believes* that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices or magistrate, of such conscientious objection."

This law was enacted August 12, 1898, and by December 31 of the same year, 230,147 persons were exempted from vaccination.¹

The test of a new law, however, is in the courts, and the first trial of an appeal under this act occurred June 27, 1899, at Sheffield, in the case of Regina vs. Welby, ex-parte Bird. The following comments upon this case are made by Dr. Hime in his "Practical Guide to the Public Health Acts" (p. 53, appendix):

"The absurdity of the provisions of section 2 of the vaccination act of 1898, which require that the parents or person responsible for having a child vaccinated must 'satisfy' the magistrate before whom he is brought, that he 'conscientiously believes' that vaccination would be prejudicial to the health of his child' in order to escape liability to a penalty under section 29 or section 30 of the Vaccination Act of 1867, was fully demonstrated in the above case, which formed the ground of the first appeal under this section.

"One Walter Bird had endeavored to 'satisfy' the stipendiary magistrate of Sheffield as to his child, as required by section 2 of the act, but failed to do so. Being convinced that the stipendiary ought to have been 'satisfied,' he applied for and obtained a rule from the Court of King's Bench, calling on the stipendiary to show cause why a mandamus should not issue directing him to hear and determine the case, as he had declined to grant exemption to the child on the ground that he did not believe that Bird conscientiously believed that vaccination would be injurious to the child."

In granting the rule, the Lord Chief Justice said, *inter alia*:

"The section clearly said that the magistrate was to be satisfied, not in his opinion that vaccination would be prejudicial to the health of the child, but satisfied that the applicant conscientiously believed that vaccination would be prejudicial to the child."

When the case came on for a hearing before the Divisional Court, after the affidavits of the parents had been read and explained by counsel, who stated that the parents had been prosecuted, and had suffered great inconvenience; Justice Channell said: "The magistrate said in his affidavit,

"A certificate was not given because I was not satisfied that he believed that vaccination would be prejudicial to the health of the child." "They could not grant a *mandamus* to compel him to be satisfied. . . . He has to satisfy the magistrate of his belief, and he has not done so. Even if the magistrate is wrong, we cannot make him be satisfied."

The rule was discharged. The absurdity of an Act containing such indefinite provisions as the *satisfaction* of an ordinary local justice as to the *conscientious objections* of a parent is sufficiently apparent. To define a conscientious objection is no easy task.

In France there is no compulsory law, and as a result the ratio of the vaccinated community in each department differs greatly, in some departments the number of the unvaccinated being as great as 90% of the whole. As a consequence, epidemics of smallpox are of frequent occurrence. In some years the epidemics have been disastrous in the loss of life which has attended them. A system of voluntary vaccination exists in Paris, encouraged by the Academy of Medicine and the Vaccinal Institute.

It is refreshing to turn from these unsatisfactory conditions to the German Empire, in which the following law was enacted in 1874:

"Every child must be vaccinated in the calendar year which follows the year of its birth, unless the physician certifies that the child has had smallpox.

"All pupils of public or private schools (Sunday schools and evening schools excepted) must be revaccinated in their twelfth year, unless they have had smallpox, or have been successfully vaccinated within five years.

"All vaccinated persons must present themselves for examination not earlier than the sixth day, and not later than the eighth day after vaccination. Vaccination is gratuitous, and is performed in March and September. (*Reich. Impfgesetz.*, April 8, 1874)."

The practical operation of this law is to secure the vaccination of each child as early as the September of the year following the year of its birth, so that if a child is born in January, it may be 20 months old before it must be submitted for vaccination, and if born in December, it may be eight months old.

As a result of this law we find in the last report which has come to hand (that of 1898) that 2,914,427 children were vaccinated in that year, and 2,863,111 in the previous year. Of these numbers, about 56% were primary vaccinations of infants, and 44% were revaccinations of school children. (*Die Ergebnisse des Impfgeschäfts in Deutschen Reiche für das Jahr, 1898.*)

Thus it appears that the people of the German Empire are the most thoroughly vaccinated nation in the world at the present time, and as a consequence they are also the most free from the plague of smallpox. In fact, epidemics of that disease have been made practically impossible in Germany since the enactment of the law of 1874. A troupe of unvaccinated negro minstrels from Africa, while performing in Berlin, were attacked with smallpox, and cases occasionally occur among

¹ Hime's Practical Guide to the Public Health Acts, Appendix, p. 83.

immigrants from Russia and Austria, but these cannot properly be charged to Germany.

Opposition to vaccination laws exists to a greater or less degree in many countries, but in none of them has it reached so chronic a stage of organization as in England. In Germany such opposition is more rare. In the report of the Imperial Board of Health, it is stated that women bringing children to be vaccinated occasionally wipe away the lymph from the scarifications with the hand, or suck it out with the mouth, or remove it with a handkerchief. An instance is given in one of their reports in which two women, who had thus removed or attempted to remove the lymph with their handkerchiefs, were found a few days afterward with well developed vaccine vesicles upon their noses in each instance.

The Endowment of Medical Journals.—*The Dial* of Chicago is rightly insistent that only by the endowment of the newspaper can it be placed as it should be upon the same plane as the university. Both institutions, to achieve their ideals, must be freed from the necessity of making themselves pay. With clear discrimination and pertinence, it says:

During the recent political campaign in the city of its publication, a great newspaper was enlisted heart and soul upon the side of civic righteousness. Yet in the very thick of the contest, its columns gave daily display, in the form of paid advertisements, to the specious special pleadings of the partisans of corruption and civic disgrace. There was no disguise about the proceedings; the advertisements were marked as such, and, according to the accepted ethical code of the journalist's profession, the thing was perfectly legitimate. Yet a higher code than this is readily conceivable, and such a code would be made possible by the endowment of journalism. Since we are determined to view the ideal newspaper as belonging in the same category with the university, the absurdity of the existing practice appears clearly enough when we point out that its educational analog would be offered by a university that should open certain of its classrooms to the advocates of dishonest money and faith-healing and astrology, thus flouting the very image of truth, in whose name alone a university has the right to exist. The fact that the institution derived support from this barter of its shelter and its sanction would not condone such an offense against educational morality, nor rightly considered, is the corresponding offense on the part of a newspaper to be condoned.

If true of the newspaper, how much more strikingly is it so of the professional journal. One of the most pressing duties of medical men is to secure for their journals endowments which shall render it unnecessary for editors and publishers "to make it pay." Now that the foundations of professional organization have been laid, our next most imperative obligation is to stamp out the abuses and disgraces of our professional journalism. The leaders of the profession may not longer indulge their indifference to this source of degradation.

Alcoholism.—We hope that every subscriber to *AMERICAN MEDICINE* will read the article in the foregoing issue by Dr. Stern, on "Alcoholism and Crime." If near 70% of all crime is due to intemperance then it is nonsense for us to stand and watch the ruin with indifference. The German Empire spends \$750,000,000 on drink. An employer of many skilled workmen in

Germany says the cheapness of German beer is one of the chief causes of the failure of Germany to keep up with other nations in the race for commercial supremacy. The "brains and bodies of the men are sodden with beer day and night." One effort in Berlin to get the workmen in one factory to do away with excesses in drinking resulted in an increase of 10% in product per man. The following are said to be trustworthy figures:

The per capita consumption of alcoholic beverages in the United States for 1899 was: Beer, 13.3 gallons; spirits, 1.10 gallons; wine, .33 gallon. These amounts, both for Canada and America, compare favorably with the relatively large consumption of European countries. Thus, in 1900 the per capita consumption in England was: Beer, 31.7 gallons; spirits, 1.12 gallons; wine, .39 gallon. In Germany: Beer, 27.5 gallons; spirits, 1.94 gallons; wine, 1.45 gallons. In France: Beer, 6.2 gallons; spirits, 2.02 gallons; wine, 25.4 gallons.

Is it possible that to this cause may be largely ascribed the marvelous success of America in the industrial leadership of the world. It is especially noteworthy that in Germany and England, whether from financial or philanthropic reasons, the attention of the best minds is being more and more directed to the awful importance of this civilization-wrecking vice. In Germany, the University of Breslau recently lent its great hall to the society for combating the abuse of spirituous liquors. The president, Baron von Diergardt, declared that three milliards of marks were spent annually in the empire for intoxicating liquors and only twelve milliards for food. He said that the campaign against alcohol was closely connected with the struggle against tuberculosis. Millions are spent on hospitals, asylums and sanitariums, but the root of the evil is neglected. The professors of the Breslau University have issued an appeal to the students pointing out the evils of indulgence in alcoholic liquors, and protesting against the folly and indecency of drinking contests.

In England there is a profound and widespread interest in various methods of fighting the evil, but most in the institution of public-house trust companies. The aims of these companies are epitomized in the sentence, *Fight intemperance with alcohol*. The method is by managing drinking places so that intoxicating liquors sold shall be pure, and that the pecuniary interests of the manager shall consist in getting people to take nonalcoholic drinks and in selling food. Cleanliness and morality are to be encouraged in all possible ways, and the number of drinking places is to be kept down to that absolutely required.

Scholarship and its Importance.—"Why has Germany's productive scholarship attained the power to mould the thoughts of the world, while America's so far has not done so to any considerable extent? Why are German universities such fertile ground that in them even the smallest talent comes to flower and American universities such sterile ground that here often the finest energies are destined to wither?"

In his very suggestive book entitled "American Traits," Professor Münsterberg asks these questions and by a comparison of the conditions in this country and in Germany endeavors to show some of the reforms which are needed. As a test for a man's scholarship he

states that the man must show that he has mastered methods of science by being able to advance it. The productive scholarship of the German universities, the power of doing independent work is the informing spirit and no teacher is ever appointed a university docent who has not proved his power over methods by publications which have in some point advanced human knowledge. A university should not be a better equipped college for imparting information, not a place where everybody can learn everything, but where men can learn the methods of dealing with any subject. They should teach the stating of problems so that their students are self-dependent and able to stand on their own feet. Several factors prevent such a condition of affairs in America. Productive scholarship is not recognized by the public as of paramount importance. Until the public realizes the importance of independent research work, until they discriminate between the professor who is a good teacher, writes textbooks, magazine essays and popular lectures and the man who really advances science, American scholarship can never reach the level which American civilization has attained in so many other directions and which might be expected from the large external resources of the highest institutions of learning.

The low money valuation of scholarship is another factor. With the exception of the leading universities the young scholar sees productive work so lightly valued that he must consider it a very unsafe investment of energy. So long as America's best scholars are so poorly paid that they feel pushed into pursuits antagonistic to scholarship, the true spirit of productive scholarship will be crushed; not only an undignified state of things but one of the greatest dangers to the civilization of the country. In Germany the appreciation of the financial value of scholarship is much more high. There, many professors have much higher incomes than the highest officers of the state, who are their administrative superiors. Germany would never have reached that leading position in scholarship which is hers if she had treated her scholars like clerks and school teachers, for whom the demand and supply can regulate the price mechanically. Münsterberg quotes an eminent foreign scholar's statement as follows: "No, the American is not anxious for the money itself; but money is to him the measure of success and therefore the career needs the backing of money to raise it to social respect and attractiveness, to win over the finest minds." Another factor which militates against American scholarship is the part which politics and favoritism play in our educational institutions. In Germany a local candidate has no advantage over any one else, for the outlook covers all docents who have entered the arena of scholarly literature. No government can appoint a professor who has not been proposed by the faculty composed of professional scholars whose greatest interest is to keep high the level of productive scholarship in their university. How different in this country, where most frequently politics, money and social standing have the greatest influence. It is not because of lack of good material that America has not

produced many great scholars. Münsterberg says, "In carefully watching year after year American students I am fully convinced that their talent for productive scholarship is certainly not less than that of the best German students."

The civilization of a nation is expressed not by its material achievements but by the energies which are working in it toward the moral life, the search for truth and creation of the beautiful. This is evidenced by the support which is being given to the study of art and science in recent years. In medical work, in which the prospects in the past have been so discouraging, the splendid Rockefeller foundations already offer opportunities to many deserving men. The splendid donation of Pierpont Morgan to Harvard University Medical School and the interest which Carnegie has been taking in research indicates the probability that other splendid donations are likely to follow. The fact that America, even under the most adverse circumstances, has accomplished something, strongly inspires the hope that it will do great things when once circumstances shall be as favorable as they are in Germany. Pre-eminence in scholarship as in other things is not a question of country, and even during the comparatively short history of our country the medical centers of the world have shifted largely from England, Holland, and France to Germany. During the first century and a half of the history of this country its people were engaged in the struggle for mere existence, and only within the past fifty years have they become wealthy enough and relieved of the burden of conquering the savages and the soil so that they could devote themselves to scholarship and the higher arts of civilization.

Mosquitos and Politics.—If we may trust newspaper reports, and if there is any possibility of understanding New Jersey politics, the movement to exterminate the mosquito in that state may become a powerful factor in the strange methods of legislative action. Factions are already forming, and all politicians are being drawn into one or the other party, the one to vote money for the death of the mosquito, the other favoring its existence. The argument of those who oppose the passage of the extermination bill, is not that they love malaria more, but that they love rheumatism less, and a considerable body of wise legislators are scientifically convinced that the mosquito-bitten man is free from rheumatism. A cynic has suggested that a new bill should be passed compelling all mosquitos to bite a legislator, and thus bring the winged pests to a violent end.

Hysteric Zoophilia.—The following is excerpted from a recent newspaper:

"Dog's NURSING.—A case was heard at the Brompton County Court on Friday, in which some suggestive evidence was given of the medical treatment of dogs. The proprietor of a dog's infirmary sued Mr. H. C. — for the board and lodging of seven dogs and the *régime* was explained. They are fed on essence of meat, washed down with port wine, and have, as a digestive, eggs beaten up in milk and arrow-root. Medicated baths and tonics are also supplied, and occasionally the animals

are treated to a day in the country. This course of hygiene necessitated an expenditure of ten shillings a week. The defendant pleaded that the charges were excessive, but the Judge awarded the plaintiff \$125. How many hospital patients receive such treatment?"

Benevolence that studies only proximate effects, without considering remote results and consequences, is ill-advised and misdirected. Compassion for the weak and helpless is noble and virtuous; but when the tendencies of unselfishness are allowed to operate without control or supervision, they may assume grotesque forms, as in this case, and in their ultimate consequences do harm to weak and strong alike. The most absurd and inconsistent expression of perverted benevolence is seen in the distorted attitude of many pseudosentimentalists toward the lower animals.

Humors of the Smallpox Epidemic.—A patient quarantined for a time upon the street corner of a busy street and surrounded by policemen, at a respectful distance, is an occurrence described by the newspapers. Another is the instance of the altruistic patient who would not use the ambulance in which to be conveyed to the hospital, for fear it would be infected by him, but who walked through many crowded streets thither. A third story is that of a wild crowd with cries of *Stop, Thief*, madly pursuing a frightened man running for his life. Finally a panting policeman overtook the crowd, and yelled, "He is not a thief, he has the smallpox!" There was a sudden change of mind upon the part of the thief-catchers.

EDITORIAL ECHOES

The Country Doctor.—Just across the border in Maryland a few years ago an old country doctor died. He had given a half century to the people of his county. He had never declined to answer a call, however bad the weather or however poor the patient. In a material sense his life was not a great success, for he cared little for money and generally gave away what he got. But after his death the people realized what he had been to them and their children and their children's children. So they met and raised a goodly sum and erected a monument to him. It was one of the most genuine tributes to simple goodness ever known. But in all counties and in all sections are country doctors who deserve larger appreciation while they live and noble memorials after they die.—[*The Philadelphia Times*.]

"Eclecticism" and Serum Therapy.—The proper caper in these piping times is to inject the products of animal decomposition into the blood currents of innocent sick people. The fact that such practice never cures and frequently kills, makes no difference—a theory is to be subserved. "By all the canons of abstract therapy," say the faddists, "antitoxin *should* cure diphtheria; it is not our fault if it does not do it." It is deplorable that it plainly and doubtlessly slaughters so many innocents, but it is sanctioned by the bulged of brow; it is *regular* and that settles it. If a new batch of children die from the effects of antitoxin, the editor will publish it as a news item, but there will be no editorial comment. To raise a question as to the therapeutic impeccability of antitoxin would be heterodoxy. A majority of practising and practical physicians oppose antitoxin.—[*The Eclectic Medical Gleaner*.]

BOOK REVIEWS

An American Textbook of Pathology for the Use of Students and Practitioners of Medicine and Surgery. Edited by LUDVIG HEKTEON, M.D., Professor of Pathology in Rush Medical College in affiliations with the University of Chicago, and DAVID RIESMAN, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic; Instructor in Clinical Medicine, University of Pennsylvania. Octavo, 1,245 pages; 443 illustrations, 66 of which are in colors. Philadelphia and London: W. B. Saunders & Company, 1901. Cloth, \$7.50; sheep or half morocco, \$8.50.

The publication of the American Textbook of Pathology, "the outcome of a desire on the part of the editors and the publishers to place in the hands of the medical student and the physician a comprehensive textbook upon the essential principles and facts in general pathology and pathologic anatomy," has been awaited with considerable interest. Upon examination it proves to be not only a comprehensive, but also a very meritorious volume. Llewellys F. Barker contributes a brief though readable introduction. The chapter on general morbid processes by one of the editors, Ludvig Hekteon, that on intoxications by Victor C. Vaughan, and that on the general pathology of fever by William S. Carter, are really among the best chapters in the book. The chapters on tumors and on pathogenic microparasites, by A. P. Ohlmacher, though in the main accurate, are somewhat disappointing, especially in the absence of reference to certain debated questions in connection, for instance, with angiosarcomas and allied forms of tumors, etc. Perhaps, though, this is a purely personal view of the matter. The short chapter on animal parasites by Louis J. Mitchell is very good. A good elementary chapter on teratology is contributed by Henry F. Lewis. In the section devoted to special pathology, chapters are contributed as follows: On the blood and blood-making organs, by Richard C. Cabot; on the circulatory system, by A. A. Stevens; on the nervous system, by Joseph Collins; on the osseous system, and on the ductless glands, by one of the editors, Ludvig Hekteon; on the voluntary muscles, tendons, tendon-sheaths and bursae, by Aldred S. Warthin; on the digestive system, by Albert G. Nicholls; on the respiratory system, by Joseph McFarland; on the urinary system, by one of the editors, David Riesman; on the female genital system, by H. D. Beyea; on the breast, by J. Collins Warren; on the skin, by Frank H. Montgomery; on the eye, by Ward A. Holden, and on the ear, by James A. Spalding. There can be no question that the book is the most representative that has appeared in English. It is especially praiseworthy and valuable in that throughout pathologic problems are treated with particular reference to their bearings upon practical medicine and surgery. Inasmuch as the importance of pathology is becoming more generally recognized, as pathology forms the basis of practical medicine and surgery, as he who would be a good diagnostician and a rational therapist must understand disease—must know pathology, and inasmuch as of the books on pathology in English this best fulfils the requirements of a reliable and comprehensive guide, it can be heartily recommended. It has, however, two serious defects—the one irremediable—the inequality in scientific value of the contributions of the different writers; the other remediable—the scarcity, in some chapters, the absence of references to the literature, a most serious defect. Let us hope that in a second edition, even if it be necessary "to dwarf all individuality," the editors will insist upon the incorporation of references, one of the most valuable features of the books of Ziegler, Birch-Hirschfeld, etc. We fail to observe any reference to the pathology of the pacinian corpuscle and of the hemolymph glands, subjects upon which one of the contributors to the volume (Warthin) has much enlightened us. From the publishers' point of view the book is very handsome; the illustrations are many, and the colored illustrations especially are of a very high order of merit. In fact the pictorial feature of the book really forms, as is claimed, a complete atlas of pathologic anatomy and histology.

A System of Physiologic Therapeutics: A Practical Exposition of the Methods, other than Drug-giving, Useful in

the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College; Physician to the Philadelphia Hospital and to the Rush Hospital for Consumption; Consulting Physician to the Jewish Hospital, etc. Vol. III and IV—Climatology, Health Resorts, Mineral Springs. By F. PARKES WEBER, M.A., M.D., F.R.C.P. (Lond.), Physician to the German Hospital, Dalston; Assistant Physician, North London Hospital for Consumption; Author of "The Mineral Waters and Health Resorts of Europe," with the Collaboration for America of GUY HINSDALE, A.M., M.D., Secretary of the American Climatological Association; President of the Pennsylvania Society for the Prevention of Tuberculosis; formerly Lecturer on Medical Climatology in the University of Pennsylvania. In two Books. Book I—Principles of Climatology, Ocean Voyages, Mediterranean, European and British Health Resorts. Book II—Health Resorts of Africa, Asia, Australia and America; Special Therapeutics. With a Special Article on the Hawaiian Islands by DR. TITUS COAN, of New York. Vol. III, 336 pages; Vol. IV, 420 pages. Illustrated with maps. Philadelphia: P. Blakiston's Son & Company, 1901. Eleven volumes, \$22.00.

In a previous issue we had occasion to commend the plan and scope, the object and aim, of this System of Physiologic Therapeutics. The high order of merit set by Volumes I and II is fully sustained by Volumes III and IV. Part I consists of a discussion of the physics, physiology and general therapeutics of climate, and includes a classification of climates and the characteristics and general effects of the different classes of climate. Part II consists of a description of health resorts. Herein are discussed in detail ocean climates and sea voyages, Mediterranean climates and the island resorts in the Atlantic Ocean, European coast resorts and the resorts of inland Europe, the climatology of the British Islands and of the towns of Europe, the health resorts of Africa, Asia, the Pacific Islands, South America, Central America, the West Indies and Bermuda, and finally the climatology and health resorts of Canada, the United States, Mexico and the neighboring islands. Part III consists of climatotherapeutics, and herein are discussed the general management of patients at health resorts and the special climatotherapeutic indications of different diseases. The books throughout are eminently practical—theoretic discussions having been limited to fundamental principles. Thus we find pointed out not only the advantages and disadvantages of the different climates and altitudes, but also the variations and extremes of temperature and barometer, the average rain-fall, analyses of water, the social character of the health resorts, hotel accommodations, etc. Dr. Hinsdale's observations upon the health resorts of the United States will be found of especial value to American practitioners, constituting, as they do, the fullest account of these resorts that has been published. In this connection, an editorial preface calls attention to the necessity for more wide dissemination of the knowledge of the climatic and balneotherapeutic advantages of the western continent, which are not less than those of the old world, and suggests that better organization of facilities for the care of invalids will soon build up American resorts. The discussion of special climatotherapeutics is of the greatest practical value. It consists of a careful consideration of the objects to be sought by climatic treatment in special morbid conditions, and for especial classes of patients, and a description of the types of climatic resorts at which these objects may be obtained. The value of the books is much enhanced by a number of very good maps and charts, the work of Dr. W. F. R. Phillips, of the United States Weather Bureau. Dr. Coan's article on Hawaii is the first adequate study of this character, and like the articles on the West Indies and South America, is likely to be of great service to physicians who may be consulted by patients contemplating commercial journeys. The indexes are of unique excellence and will greatly facilitate ready reference. The lists of sanatoriums alone are a striking evidence of the thoroughness of the work of authors and editor. As a contribution to physiologic therapeutics the books are of very high merit, and they should command a welcome place in the library of every practicing physician.

Park's Surgery.—A Treatise on Surgery by American Authors. For Students and Practitioners of Surgery and

Medicine. Edited by ROSWELL PARK, A.M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, Buffalo, N. Y.; Member of the Congress of German Surgeons; Fellow of the American Surgical Association; ex-President Medical Society of the State of New York; Surgeon to the Buffalo General Hospital, etc. New (third) Edition in one Royal Octavo Volume of 1408 pages, with 692 engravings and 64 full-page plates in colors and monochrome. Cloth, \$7.00 net; leather, \$8.00 net. Lea Brothers & Co., New York and Philadelphia.

A new edition of Park's Surgery, the third in five years, speaks well for the book and for the activity of American interest in its subject. The reduction of this splendid work to one volume has been admirably accomplished by Dr. Park without in any way detracting from its value. The new and original method of treating certain topics followed in the previous edition, such as the distinction between hyperemia and inflammation, the insistence upon the practical importance of bacteriology, and the development of the subjects of autointoxication, the surgical sequels of acute nonsurgical diseases, and the surgical pathology of the blood, has been followed, and a fuller presentation of the latest advances in these rapidly developing lines given. The subject of blood examination applied to surgery has developed an importance warranting a special chapter new in this edition. It has been most ably contributed by Dr. Irving P. Lyon. The researches of Dr. Harvey R. Gaylord as to the cause of morbid growths renders the chapter on tumors of especial value, as presenting the latest and most noted advances in this field. The chapter on surgical gynecology has been ably prepared by Dr. Montgomery A. Crockett, and the chapters on fractures and dislocations have been revised by the editor. Authorities of the highest standing have contributed to its various chapters, and the result is that the book represents the best special knowledge on each subject. Students and practitioners alike will find in this single volume a fully modern, comprehensive and authoritative exposition of surgery, and surgeons will find it equally suited to their needs.

A Treatise on Appendicitis.—By GEORGE RYERSON FOWLER, M.D., Professor of Surgery in the New York Polyclinic; Examiner in Surgery, Medical Examining Board of the Regents of the University of the State of New York; Surgeon to the Methodist Episcopal Hospital; Surgeon-in-chief to the Brooklyn Hospital; Senior Surgeon to the German Hospital; Consulting Surgeon to St. Mary's Hospital, the Relief Hospital, and the Norwegian Hospital; Fellow of the New York Surgical Society; Fellow of the American Surgical Association; Fellow of the New York Academy of Medicine; ex-President of the Medical Society of the County of Kings; ex-President of the Brooklyn Surgical Society.

In its second edition this valuable work is enlarged and in part rewritten, comprising a volume of 235 pages, with many appropriate illustrations, to which are added some 13 plates. The whole subject of appendicitis, with the etiology, symptoms, treatment and prognosis, is brought entirely up to date by one competent to speak with authority, basing as he does his views on a very large personal experience. A new chapter marks out the pathway to a differential diagnosis between appendicitis and the various abdominal lesions which may be mistaken therefor; another discusses the treatment in those cases wherein medical treatment only must of necessity be resorted to.

The work is tersely and concisely written, and it will form a valuable addition to the library of both the physician and the surgeon.

Microbes and Health, by SAMUEL J. WILSON, M.D., Member of the Clinton County Medical Society, the Central Michigan Medical Society, the Michigan State Medical Society. Pages 321. Published by the Author, 1901.

In this small book, "the author has endeavored to give a rational cause for disease, especially those diseases that are contagious, or those said to be caused by germs." The "endeavor" consists of quotations from prose and from poetry, bad English, innuendoes, false logic, erroneous deductions, and negations of established truths. The less said about it the better.

AMERICAN NEWS AND NOTES.

GENERAL.

Health of Havana.—The general health is considered excellent. Not a case of yellow fever has been reported for the past three months, and during the month of December there has been no smallpox. A large decrease in the percentage of deaths of the different diseases is very noticeable.

Pure Food Law.—At the annual convention of the National League of Commission Merchants held in Philadelphia, a resolution was adopted asking Congress to pass the pure food law. The statement was made that in spite of prohibitory laws in 32 states, 5,000 carloads of imitation butter were sold each year.

Surra, the disease caused by the parasite *Trypanosoma evansi*, which affects mules, horses and camels, is reported as having invaded the Philippines and making great havoc among the horses and mules. In Manila alone the quartermaster's department has lost 300 horses within 4 months. The disease was at first diagnosed as glanders.

To Prevent Disease.—Resolutions providing that the United States maintain a rigid border quarantine to protect the country from imported diseases and that the Marine-Hospital Service be made part of the national health commission, were discussed by the National Board of Trade at its annual meeting, held recently at Washington, D. C.

Concession of Soil for Hospital Purposes.—The president of the republic of Nicaragua as a recognition of the services rendered by the American minister, William Lawrence Merry, in the interests of the construction of the Isthmian canal through Nicaraguan territory, has ceded to the United States land on the Island of Ometepe equal in area to 100 city lots. This land will be known as Mount Merry and will be devoted exclusively to hospital purposes. The gift becomes effective so soon as work is started upon the canal.

EASTERN STATES.

Boston Health Board.—Dr. S. H. Durgin has been reappointed chairman after occupying that position for a period of 30 years, thus fully equipping him for rendering the city efficient service.

Farming Out Licenses.—The Connecticut State Board of Pharmacy has discovered the existence of extensive farming out of druggists' licenses to unregistered pharmacists. The commissioners have concluded to revoke permanently any license that has been lent or sold in this manner, and also to check effectually the prevailing practice of leaving drug stores in charge of unregistered clerks.

Medical Relief Bill.—A bill introduced by Representative Hays, of Lowell, Mass., for the benefit of Dr. Whiteside, of Billerica, who was not permitted to register without undergoing a general medical examination, while his recent practice and study had been of a specialty, makes the following amendment to chapter 458 of the Acts of 1894: "The Board of Registration in Medicine shall issue, without examination, a certificate of registration to any graduate of a legally chartered medical college of the State of Massachusetts who was at the time of the passage of chapter 458, Acts of 1894, attending or taking a post-graduate course outside the limits of the Commonwealth of Massachusetts; providing such persons shall produce satisfactory evidence that they were entitled to registration under the original provisions of said act." Dr. Whiteside is a graduate of the Harvard Medical School and had practised three years in Cambridge previous to the passage of the act.

NEW YORK.

An epidemic of measles, with hundreds of cases, is reported in Flushing, New York. The Board of Health are using every precaution to check the spread of the disease.

Cancer Investigation.—Dr. H. R. Gaylord, director of the New York State Cancer Laboratory, at Buffalo, has been elected a foreign member of the German Cancer Investigation Committee.

Special Corks for Poison.—A bill was introduced January 21 in the New York Senate by Mr. Marshall which provides that no person—pharmacist, physician or any other—shall sell or dispense upon prescription or otherwise any poison or poisonous drug or preparation in a vial or bottle unless such vial or bottle be corked in such a manner as to apprise by the sense of touch the person uncorking the same that the contents thereof are poisonous.

Vaccine and Antitoxin.—The investigations by the Medical Association of the county of New York, of the conditions under which diphtheria antitoxin and vaccine virus were manufactured by the Board of Health has resulted in a most

satisfactory report. They state the men engaged for this work represent the highest professional and scientific skill and that the methods used are beyond criticism. They also report that they have been unable to find any recorded case of tetanus following the use of these products.

Osteopathy Bill.—A delegation from the New York Medical Association appeared before the Judiciary Committee of the State Legislature on January 29 to oppose this bill on the grounds that it allows the members of the Osteopathic Society to register and receive a license to practise without examination and permits graduates of the Western osteopathic colleges to practise in New York State on presentation of their diplomas and a payment of \$10. The bill also allows them to sign birth and death certificates, and their handling of contagious diseases is a menace to the community.

The transference of dying patients from one hospital to another, with a view of reducing mortality rates, has induced the Commissioner of Charities to issue an order forbidding the removal or discharge of any patient under treatment in the hospitals in this department, when a physician decides that death may occur within three days, unless the patient is violent, when he may be transferred if the hospital in which he is does not contain proper facilities for safe restraint. If a patient is received in any hospital by transfer from some other hospital or institution within or without this department and should die within three days after admission, the matter must be reported at once to the commission.

PHILADELPHIA, PENNSYLVANIA, ETC.

Marriage Prohibited.—The councils of a number of the boroughs in the vicinity of Pittston, Penna., have issued an order forbidding marriage until smallpox has been successfully eliminated from that section. Posters to this effect have been placed along the highways, and a number of persons contemplating marriage have been notified to postpone the ceremony, under penalty of imprisonment.

New Insane Hospital.—The selection of a site and plans for a new hospital for the treatment of the insane is now under consideration. The sum of \$400,000 has been appropriated for the proposed hospital. The neurological staff of the Philadelphia Hospital states that owing to the overcrowded conditions present in that hospital, there is imperative need for the new building for the chronic insane.

Tetanus Following Vaccination.—Dr. Joseph McFarland, of 421 West Price Street, Germantown, Pa., writes to AMERICAN MEDICINE: "I will be greatly obliged to any of your readers who may have had or know of cases of tetanus following vaccination if they will communicate with me concerning them. I am engaged in a critical analysis of such cases in the hope of determining their etiology, and desire to secure all the data possible."

Vaccination Orders.—In consequence of an outbreak of smallpox in Scranton, Pa., aggravated by a false diagnosis of the first cases, the International Correspondence Schools and Colliery Engineer Company has notified the 1,200 employees in its offices to be vaccinated at once. The Scranton Lace Company has ordered its 400 employees to be vaccinated immediately, and a similar order has been issued to the 1,700 employees of the Sauquoit silk mill.

Extermination of Mosquitos.—At the next session of the New Jersey State Legislature the state entomologist, T. B. Smith, will urge the passage of a bill asking an appropriation of \$10,000 to be devoted to investigations concerning mosquitos, and if it is found necessary to provide means for their extermination. A few years ago proposed legislation against the mosquito in New Jersey met violent opposition because the bite of the mosquito was held a cure for rheumatism.

Smallpox.—A review of the statistics for the past week shows that the number of cases is increasing, and that now all parts of the city are represented in the reports. The mortality was as high as at any time since the outbreak. The health authorities will continue to enforce vaccination in the lodging-house section, and every precaution will be taken to prevent the increase of the disease. During the week several schools were closed for fumigation. The Nurses' Home at Seventeenth and Arch Streets was placed under quarantine because one of the nurses developed smallpox. There were 50 nurses in the building at the time.

Necessity of Vaccination.—The Philadelphia County Medical Society have expressed themselves unanimously as a body in favor of impressing upon the community that universal vaccination is the only effectual means of successfully eliminating smallpox. Although they testify to a thorough appreciation of fumigation and disinfection as valuable aids in this work, they claim that full reliance cannot be possibly placed on these alone, for smallpox patients are mediums of infection which cannot possibly be influenced by disinfection. The Society also passed a resolution deprecating the publication of adverse criticisms of vaccination as detrimental to the best interests of the public health.

SOUTHERN STATES.

Aid to Hospital Service.—A trolley car with all the necessary appliances for the care of the sick will be introduced into Baltimore. The hospital car will always be in readiness to answer calls, will have right of way and its passage must be assisted in every way by other traffic.

The Medical Society of the District of Columbia at a recent meeting elected the following officers to serve during the present year: President, Dr. Samuel S. Adams; vice-presidents, Drs. J. W. Chappell and A. R. Shands; treasurer, Dr. C. W. Franzoni; corresponding secretary, Dr. Thomas C. Smith; recording secretary, Dr. Francis P. Morgan; librarian, Dr. Edwin L. Morgan.

War on Tuberculosis.—A joint meeting of the Maryland Public Health Association, the Medical and Clinical Faculty of Maryland, and the Laennec Society, an institution adjunct to the Johns Hopkins Medical Society for the Study of Tuberculosis, will be held in Baltimore, January 28, to consider the recommendations of the State Board of Health and the governor, looking to the prevention and treatment of tuberculosis. The State Sanatorium idea which was suggested by the Board of Health will be prominently exploited, and plans will probably be made to present a strong case for the legislature.

Poisonous Drugs.—The draft of a bill to restrict the sale of poisonous drugs in the District of Columbia has been prepared by Dr. William C. Woodward, the health officer, who claims that legislation on this subject is urgently needed. The bill has been submitted to the attorney for approval as to its legal form and will later be presented to Congress. Among other things the bill provides that no person shall retail any drug or drugs in quantity containing a toxic dose for an adult unless the receptacle containing the drug is plainly labelled with the popular name of the drug, directions for its use and an intelligible statement as to the treatment if poisoned thereby. The person to whom the poison is sold, without a prescription from an authorized physician, must be over 16 years of age, be intelligent as to the nature of the drug and must certify that it is to be used for a legitimate purpose. In a book kept for the purpose must be entered the date of sale, the names and addresses of the persons to whom delivered and for whom intended, the name and quantity of the poison sold, the purpose for which it was intended, and the name of the dispenser. This book must be open for inspection by the police and must be kept at least 5 years after the last entry is made. Persons habitually addicted to the use of drugs shall only obtain them upon a written prescription by a physician. Also records must be kept of all prescriptions. On the outside of the receptacle holding the prescription must be legibly written the number, date on which it is made up, directions for its use or other memoranda given by the prescribing physician, the name of such physician, and the place where the prescription was dispensed.

WESTERN STATES.

Vaccination of Students.—A case of smallpox occurring in a student of the medical department of the University of Minnesota has induced 3,000 students of the University to submit to vaccination.

Leper Hospital.—The San Francisco Board of Health ask that the purchasing of a site for a leper hospital be postponed until Congress takes final action on the Wilcox bill, which provides first, for the transfer of the Molokai leper colony and second, that all lepers in the country be under jurisdiction of the United States.

Smallpox a Crime.—In a recent address, Dr. H. M. Bracken of the Minnesota State Board of Health made the statement that as a thorough demonstration of the preventive value of smallpox had been given there was no excuse for smallpox in civilized countries. Therefore anyone of adult years contracting the disease ought first to be cured and then sent to prison for 90 days.

Medical Federation.—The State Health Boards of Illinois, Indiana, Ohio, Iowa, Wisconsin and Michigan have entered into an organization for mutual advantage in the federation of reciprocal state medical and examining boards and for the prevention and cure of infectious diseases. The officers elected were: President, J. H. Carrens, Two Rivers, Wis.; vice-president, James M. Dinneen, Fort Wayne, Ind.; secretary, R. D. Harrison, Sault Ste. Marie, Mich., and treasurer, W. A. Spurgeon, Muncie, Ind.

Railway Surgical Association.—The company surgeons of the Chicago and Alton Railway have organized the Chicago and Alton Railway Surgical Association, the first institution of the kind in America. Dr. W. R. Rhodes, of Mexico, Mo., is president. Dr. Howard Crutcher, of Chicago, consulting surgeon, stated that President Felton had instructed him to prepare medicine cases not to exceed seven pounds in weight to be placed on all passenger trains for use of any physician, also emergency packages for use in freight yards and on freight trains, for use of the laity.

FOREIGN NEWS AND NOTES

GENERAL.

Homeopathy.—A recent report states that the sanitary council of Japan has prohibited the practice of homeopathy in that country.

Spitting Nuisance in Australia.—A bill recently passed by the Municipal Council of Bathurst, New South Wales, provides that a penalty not exceeding £5 be enforced on any person found expectorating upon the footpaths or streets of the borough. A law has also become operative in North Sydney that inflicts a fine of £1 for spitting on the footpaths. The Board of Health, of Melbourne, are considering an amendment to the present spitting ordinance, which they state is impossible to enforce as it now stands.

GREAT BRITAIN.

Hydrophobia.—The restrictions placed on the importation of dogs from Ireland and the muzzling order in operation in South Wales have been revoked by the Board of Agriculture. This action is due to the fact that not a case of hydrophobia has been reported in the United Kingdom for several months. Never before has there been such freedom from the disease, and great credit is given to the people for their loyal cooperation in the attempt to eradicate it. However, a measure which is hoped will prevent the reintroduction of rabies from abroad has been adopted. It states that after March 15 next, any imported dog must be "detained and isolated at the expense of its owner upon premises in the occupation or under the control of a veterinary surgeon for a period of six calendar months from the date of landing."

Prize Essays.—The conditions of competition for the prizes offered for the best essays and plans for tuberculosis sanatoriums for which purpose the sum of £800 has been set aside from the Cassel fund given to King Edward, has been published as follows:

(1) Medical men of all nationalities may compete. The papers may be either the work of a medical man or the joint production of a medical man and an architect. (2) The sanatorium is intended for 100 tuberculous patients—50 males and 50 females. (3) Of the total number of beds, 88 will be assigned to the more necessitous classes, whilst 12 will be reserved for the well-to-do. (4) The accommodation for all patients is to be comfortable, a separate room being provided for each. Superior arrangements to be made for the more wealthy patients. (5) It may be taken for granted that the sanatorium will be erected on an elevated and sloping site, with a sunny exposure, and well sheltered from cold winds. It will have a farm at a convenient distance, and be surrounded by extensive grounds, well wooded, and affording ample space for exercises of various kinds. The soil will be dry and permeable, and the water supply abundant. (6) The sanatorium must be fitted with the latest sanitary arrangements, and equipped with all requirements for scientific research. Provision should also be made for the recreation of the patients. (7) Economy in construction will be an important consideration, but it must not interfere with the reasonable comfort of the patients or the efficiency of the institution. (8) The essays must be in English and type-written. (9) The essays must not bear the name or names of their authors, but should have a motto, and each essay should be accompanied by a sealed envelope bearing the motto on the outside and containing the full name and address of the author or authors inside. (10) All essays and plans to be sent, postage paid, on or before the fifteenth of April, 1902, to one of the secretaries to the Advisory Committee, Dr. P. Horton-Smith, 15 Upper Brook Street, W. London; or Dr. J. Broadbent, 35 Seymour Street, W. London. (11) Three money prizes of £500, £200 and £100 respectively will be awarded in order of merit on the recommendation of the Advisory Committee for the three best essays, provided they come up to the requisite standard of excellence. Brevity will be an important consideration and a summary of the main features of the scheme should be appended to the paper. Unsuccessful papers will be returned to the authors.

CONTINENTAL EUROPE.

Phototherapy.—For the establishment of an institute of phototherapy in Madrid, the Queen Regent has given 10,000 pesetas.

Accident to Professor Virchow.—Professor Rudolph Virchow slipped and fell on January 5, while alighting from a street car, and fractured his thigh. His condition is reported as causing apprehension among his physicians on account of his growing weakness.

To Combat Tuberculosis.—Frank H. Mason, U. S. consul-general at Berlin, in a communication of December 18 to the Surgeon-General of the U. S. Marine-Hospital Service, states that the government has granted a subvention of 150,000 marks for experiments by the Imperial health office regarding the identity of human and bovine tuberculosis.

Prophylaxis of Venereal Diseases.—The French Minister of the Interior has appointed a commission to inquire into the various questions connected with syphilis and other venereal diseases, their frequency, the condition and management of the various institutions existing in France for their treatment, and into the best means, both legislative and administrative, for preventing the spread of such complaints.

OBITUARIES.

J. T. Eskridge.—The death of Dr. Eskridge removes from our ranks one of the best known and most honored of American neurologists. As a young man in Philadelphia the promise of a successful career was blighted by the onset of tuberculosis, and he had to seek health amid new surroundings in the West. In Denver he found many warm friends, and came in contact with many bright, energetic young minds. Few men have so fully utilized their opportunities, with the result that from no city in the West, except Chicago, have so many important communications on neurology come as from the clinic of Professor Eskridge. He became by careful study a skilled and accurate observer, and his papers on aphasia and on localizing affections of the brain and cord are among the most valuable in recent American literature. The lesson of his life is easy to read—the man (if of the right sort) makes his opportunities.

Hugo von Ziemssen.—On January 21, Hugo v. Ziemssen, the great Munich clinician, passed away at the age of 73 years. Like Virchow, he was a native of Pomerania. He began his medical studies in Greifswald, his native city, and finished them in Berlin. To the former city he returned, and became an assistant of Röhle and of Nlemeyer. From Greifswald he was called to Erlangen, and thence, 27 years ago, to Munich. Von Ziemssen is best remembered as the editor of that stupendous pioneer work, "von Ziemssen's Handbuch der speciellen Pathologie und Therapie"—known in its English translation as "The Cyclopaedia of Medicine." Although not a man of great originality of thought, he was an excellent teacher, and his followers and disciples may be counted by thousands. He was one of the early advocates of the cold-water treatment of typhoid fever, and did much to place electricity in medicine upon a scientific basis. He was also very active in the agitation for the establishment of sanatoriums for the tuberculous poor. One remarkable feature, which is somewhat characteristic of the German academic teacher, was his abiding interest, until his death, in the advances of medicine.

Dominick George Bodkin, one of the best known physicians of Brooklyn, January 26, aged 69. He belonged to all the local medical societies, and was a member of the American Medical Congress. He served as surgeon under General Canby in the Civil War.

Emil Scheffer, of Louisville, Ky., January 22, aged 90. Professor Scheffer discovered the formulas for making pepsin in its dry and liquid forms.

James Farrington, of Rochester, N. H., a practising physician for more than 50 years and widely known throughout the state, January 19, aged 80.

Dr. Le Baron, founder and honorary president of the Society of Medical Practitioners of the Seine, January 2, aged 47.

Margaret Gardiner, a member of the staff of the Ohio State Insane Asylum at Toledo, Ohio, January 27, aged 23.

S. Seabury Jones, of New York City, consulting physician of the Workhouse and Almshouse, January 21, aged 55.

Joseph W. B. Kamerer, of Greensburg, Pa., a prominent physician of Westmoreland County, January 13, aged 56.

Lachlan Tyler, son of John Tyler, tenth President of the United States, in New York, January 27, aged 50.

Francis Clemens, Jr., of Paoli, Pa., drowned in Ridley Creek, January 21, while on professional duty.

John L. Crawford, of Tallahassee, Fla., January 24, aged 86. He had been Secretary of State since 1881.

Henry D. Kline, of Seattle, Washington, president of the King County Medical Society, January 19.

Charles G. Sproull, of Philadelphia, a practitioner in New York for the past ten years, January 26.

Joseph Abell Baden, of Baltimore, a veteran of the Confederate service, January 20, aged 68.

John R. Spurrier, of Rushville, Ind., January 9, aged 73. He was a surgeon of the Civil War.

Thomas Johnson, a prominent physician of Readington, L. I., January 19, aged 87.

Warren Montgomery Sweetland of Highland Park, Ill., January 23, aged 82.

R. B. Grimes, a veteran of the Civil War, in Cheyenne, January 27.

Wordsworth Poole, physician to the British Legation, at Peking.

Terrence W. Sparham, of Brockville, Ont., January 11, aged 49.

William C. David, of West Superior, Wis., January 9, aged 40.

Charles Roberts, of Tunbridge Wells, England, December 31.

Robert Leper Sweny, of Marion, Ohio, January 12, aged 80.

James H. Romeyn, of Keeseville, N. Y., January 25, aged 77.

Westly Martin, of Brookhaven, Miss., January 25, aged 81.

Peter K. Furbeck, in Saratoga, N. Y., January 17, aged 67.

Frank E. Williams, of Wrexham, England, December 25.

George H. Stone, of Forestville, Vt., January 23, aged 28.

Robert A. Brunson, of Norfolk, Cal., January 7, aged 80.

David Randall, of New York City, January 24, aged 11.

A. J. Hines, of Doylestown, Pa., January 21, aged 75.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

ALCOHOLISM AND CRIME—HOW WE SHOULD DEAL WITH THE CRIMINAL ALCOHOLIC.

BY

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Judges of criminals, prison wardens, and the police, unanimously concede that at least 70% of all perpetrated crimes are directly or indirectly attributable to alcoholism. This unusually large percentage applies principally to such offenses as the disregard of the rights of others, and contempt for law and order, and to such crimes as assault, rape, disturbance of domestic peace, manslaughter and robbery, for to all of these the habitual drunkard seems to be particularly prone. Such misdemeanors are frequently committed in a moment of passion, hence entirely unpremeditated, and so soon as the perpetrator regains his normal senses he is seized with remorse. While the sober man, it is true, is also subject to sudden and violent emotions, he is, nevertheless, by exercise of his will power, able to curb and control the impulsive and irrational dictates of his passions. He is well aware of the consequences awaiting him upon the perpetration of a crime, and weighing them in his mind, will either abandon his project or exert his utmost precaution while executing it. While the sober man is master of his impulses, the drunkard is a slave to his emotions and passions. At the slightest provocation the inebriate may commit an assault or even manslaughter, and if an opportunity offers itself, he may commit moral delinquencies, as rape, etc. But he rarely commits such offenses as are the result of premeditation or design. Of all those convicted of perjury, but 26% or 27% are addicted to alcohol, for perjury is based on some subtle motive—either love of money or the endeavor to save another from punishment—in fact, motives originating only in the unclouded mind of the sober. Furthermore, amongst incendiaries we find but 45% are alcoholics, for arson is premeditated and usually executed with a distinct purpose in view.

Alcohol habitually used affects principally the brain and nervous system, which lose their normal degree of resistance; their vitality and healthy activity are reduced, and a general deterioration of brain and nerve substance is the inevitable result. More remote consequences are general retrogression of intellect, debased standard of morality, and complete or partial loss of will-power. We need not descend to the confirmed drunkard to find evidence of general deterioration. Even in the milder form of habitual drunkenness we find similar conditions. The habitual alcoholic shows signs of premature deterioration; his mind is more or less inactive, his general bearing is undignified, his sentiments are more vulgar, and his sense of truthfulness is deficient. His standard of morals is lowered, his love of family gradually declines, and an indifference as to the future of his offspring becomes apparent. Furthermore, he develops ruder and brutish affections, becomes irritable, jealous, and peevish, and obstinately adheres to his preconceived irrational ideas and notions. The "bonhomie" and congeniality of certain drinkers is virtually but a species of indifference, but one of the protean manifestations of chronic alcoholism.

Of all the pernicious effects of alcoholism, none is so deplorable as the fact that the offspring must suffer for the cravings of its parent. The degeneration of children of drunkards is a fact which is still more apparent when both parents have been habitual alcoholists. The chronic alcoholic affection of the brain is more or less a disease of character. The character of the drunkard is abnormal, his standard of morals is lowered, and he conceives an entirely new moral code incomprehensible to the sober. The habitual alcoholic, like the morphin habitue, and like certain types of the insane, lives in a world of his own. He has his delusions and hallucinations, and while subject to them he is unable to distinguish between right and wrong. The chronic alcoholic is a psychopath, who

ought to be adjudged and treated accordingly. The heavy drinker, bereft of any moral sense, is without any ambition or energy. He is a coward at heart, but under the influence of alcohol he may vacuously commit a daring act of the consequences of which, however, he has no clear conception. He cannot resist temptation, and in the association with criminals he soon becomes a criminal himself. His will-power, self-determination, and clear judgment being undermined, he is often a willing tool for their adventures and culpable enterprises. Hence, association with low characters is another cause of the further downfall of drunkards.

According to our present laws, the habitual or periodic drunkard who has committed a slight offense is imprisoned in a penitentiary or a workhouse, where he is in close proximity and contact with criminals. Necessarily, this must be detrimental to him who is so little capable of exerting self-determination. The alcoholic who was perhaps but an accidental offender, may thus become an incorrigible criminal. Prison statistics prove that the more frequently an alcoholic is incarcerated, the more incapable of reformation he becomes.

If the purpose of punishment is prevention of crime, reformation of criminals and the protection of society, then the prison is the wrong place for the inebriate offender. There the alcoholic is rarely cured of his disease; there he develops a still stronger craving for liquors, and from there, in the great majority of instances, he graduates a full-fledged criminal, a fact of which every police officer of experience, philanthropic institutions, and magistrates are well aware. But in spite of the disastrous condition confronting them, they have not devised any means to successfully cope with it. As the main object of sanitary science and modern medicine is prophylaxis of disease, so prevention of crime should be the endeavor of the sociologist and legislator. Agreed, if we are convinced that the drunkard is prone to commit crime, there is no reason why he should not be confined before he has occasion to do wrong. There ought to be attached to every police court an experienced medical officer, whose duty it would be to inquire into the antecedents pertaining to the physical and mental condition of the accused, and to determine whether he is suffering from the consequences of an alcoholic toxicosis. This officer should classify the different types of inebriates at least into two great groups: (a) the occasional offenders, and (b) the confirmed alcoholists. The result of his examination should be taken into due account by the police magistrate, who should sentence both the first offender and the "rounder" to confinement in public reformatories devoted to their detention, and to the rational treatment of drunkards. The two classes would be kept separately in these institutions, or what would be still better, separate institutions should be provided for the treatment of culprits of each of these groups.

The asylum or institution, which should be managed by a special Honorary State Board, or by a Commissioner, should be established in farming districts, so that the convicted drunkard may engage in agricultural pursuits, which, in the great majority of instances, are best suited to his peculiar mental and bodily conditions. An institution of that character, conducted on a liberal and scientific basis, where moral, dietetic and medicinal treatment go hand in hand; where the convict is put to such manual labor as his constitution demands and permits, where rest and recreation are prescribed as the individual case exacts, such an institution will produce far superior results than may be obtained in general penitentiaries and behind prison bars. At least a part of the revenue derived from the liquor tax should be appropriated to defray the expenses of these penal institutions. To what better advantage and purpose could this revenue be devoted than for the amelioration of the spiritual and bodily condition of these individuals, who, by their incessant consumption of alcoholic beverages in public places, are almost the main source of the liquor tax income? The establishment of asylums for the criminal alcoholic would cause the transfer of at least half the inmates from the penitentiaries. A comparatively large sum, therefore, which is annually expended for the maintenance of the latter could then be devoted to the support of these institutions. Furthermore, some penitentiaries, particularly those in rural districts, could be transformed into asylums for the criminal alcoholic,

such changes involving little labor or expense. With some good-will, and with the assistance of the medical and legal professions, the object in view may be readily called into existence, so much the more so as it is not a question of funds, but only one of system.

The criminal alcoholic who has spent his penal servitude—which should continue until he is cured, or if incurable, indefinitely—in an institution of such a character, leaves it regenerated. With the newly-acquired or regained energy and vigor, the former alcoholic is well equipped to start afresh in life—a healthy man, alive to the interests of home, community and country, and a useful member of that society which today condemns him and considers him an outcast.

CORRECTIVE EXERCISES FOR A CASE OF LATERAL CURVATURE OF THE SPINE.

BY

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In the belief that no one set of exercises is suitable for different cases of lateral curvature of the spine, but that each must have individual attention, I have selected a typical example from the patients at the Children's Hospital, noted in order the exercises I have given her, and taken a few photographs to show what these exercises will do. The treatment of lateral curvature has been especially under consideration during the past 20 years, and today plaster-of-paris, steel supports, and recumbency have given way to gymnastics and forcible correction in the hands of orthopedic surgeons. Illustrations of the evil effects of the popular plaster-of-paris jackets may be found without number in books pertaining to the subject, and yet physicians and some surgeons still adhere to the old methods. Two months ago I saw a girl aged 15 years with marked curvature encased in a plaster jacket which held her tightly in her deformed position as if the object of the treatment were to obtain ankylosis of the vertebral column. She had been having a new jacket applied every six months while the curves



No. 1.

No. 2.

increased. It is needless to say that the plaster was removed and a series of exercises and forcible correction in the modified Hoffa machine instituted.

In selecting a series of exercises for a patient the keynote position is first obtained and the patient is so well instructed as regards this that she can voluntarily assume it at all times. With heels together, toes pointing slightly outward, shoulders and head drawn backward and figure erect, she places her hands on her hips and stretches her trunk upward, straightening the spine as far as possible and keeping shoulders on a level. The surgeon must now continue the correction, while the patient maintains this strained position with her hands dropped to the sides. Placing one hand on the ribs on the convex side and the other hand on the opposite shoulder the trunk is swayed in its relation to the pelvis until the whole figure assumes a better position. In dorsal curvature to the right the sway is to the left and *vice versa*. Also the bulging ribs are compressed by the palm, thus rotating the bodies of the vertebrae as far as possible. The attempt of the patient to maintain this last change brings into play the deeper spinal muscles and its repetition teaches the patient to voluntarily assume the corrected position. The projection of the hip on the concave side of a lumbar curvature may be modified by

advancement of the pelvis on this side, causing rotation of the lumbar vertebrae; the motion involved taking place in the lower spinal region while the upper spinal position remains unchanged. A comparison of Figs. 1 and 2 demonstrates this keynote position in which the patient, after repeated efforts, is enabled to assume and maintain the various corrections above enumerated. Having once mastered this, exercises are commenced and the instructor finds that again and again the exercise must be discontinued and the keynote position regained, for the patient removing her attention from the strained posture loses part of the correction. In every exercise the patient must have her mind concentrated on this position until she can unconsciously hold it during her gymnastics and continue an improved position during the rest of the day. The objects of the exercise are to strengthen the weakened muscles, stretch the contracted ligaments and tissues, straighten the spine still more, and to teach the pupil to gain and hold a correct attitude while she walks, stands and sits.

To select proper exercises for any individual case the instructor must know the pathology of lateral curvature and make use of that knowledge. He must watch the effect of each movement, viewing alternately the back and chest of his patient, and see that the deformity is not increased in one part while diminished in another. An excellent rule for determining whether or not an exercise is suitable is to have the patient do the opposite—i. e., if she has raised a weight in the left hand and the deformity lessens let the weight be raised by the right

hand and see a proportionate increase of deformity. As improvement is obtained repeated changes are in order, more bilateral work is given, and general exercises for all the different groups of muscles of the body are of great service. Finally the patient may be dismissed when improvement is at its maximum, with orders to con-



No. 3.

No. 4.

tinue gymnastics and to report for inspection occasionally during adolescence.

EXERCISES GIVEN TO SPECIAL CASE.

1. The keynote position as seen in Fig. 2.
2. Retaining the erect posture the patient walks forward a dozen steps, then backward to starting-point and repeats.
3. Taking a dumbbell or weight in left hand the patient raises it above the head and repeats the movement until exhausted. (See Fig. 3.)
4. Raising the left arm outward from the body until horizontal the patient swings it around in front of body to the right. This vigorous movement straightens the spine and forces out the sunken ribs on the left side, as seen in Fig. 4.
5. The patient, with arms extended above the head and hands clasped, bends laterally to the right trying to overcome the dorsal curve and to refrain from bending in the lumbar region. (See Fig. 5.)
6. Respiratory exercises. Forced inspirations and expirations.
7. The right arm is raised in front of the body to a horizontal plane and is swung repeatedly backward in the horizontal plane as far as possible.
8. Extending both arms above head and clasping hands the patient rises on toes and descends about 30 times.
9. Maintaining the spine in its best position and arms parallel to the trunk, the patient bends forward and downward and returns, all of the movement occurring at the pelvis and lower lumbar region. At first the pelvis is steadied by the instructor. This exercises equally the spinal muscles.
10. The patient standing with right side toward the wall and about three feet from it, places palm of right hand against the

wall, raises the extended left arm out, up and over head till fingertips touch right forearm. Forceful movement is required and the elbow is flexed at the latter part of the exercise. An attempt is made to bend the spine laterally in the dorsal region, puckering in the projecting ribs and lessening the dorsal curve. This swing of the arm pulls the spinous processes in the dorsal region to the left through traction on the trapezius and rhomboid muscles and lessens the rotation of the bodies of the vertebrae.

11. An exercise similar to the last in which the palm of the right hand of the patient is placed on the bulging ribs instead of against the wall. The left arm is thrown over the head to the right, the patient attempts to bend in the spine in the dorsal region and the right hand assists by direct pressure.

12. Placing hands on hips the patient kicks out sharply with the right leg sideways from the body. Coincidentally the spinal muscles are called into play and the spine straightens. In patients with marked secondary curve in the lumbar region, better effects are seen with movement outward of the left leg.

13. Standing on toes with heels together and hands on hips the patient bends her knees squatting down, then rising with about ten repetitions of the movement.

14. Lying on the floor face downward and hands clasped behind the head, the patient raises head and shoulders, hyperextending the spine. The breath is not held during this difficult exercise. The instructor has two duties—to steady the pelvis and prevent exaggeration of the dorsal curve.

15. Again lying on the floor with face downward and arms by the sides, the patient swings the left arm up over head to the right, as in exercise No. 10, while the instructor steadies the pelvis and forcibly compresses the ribs on the convex side of the curve.

The patient whose exercises have been enumerated has also been treated by forcible correction in the modified Hoffa machine, and has worn for a few hours each day a corrective jacket, which continues the corrective force applied by the machine. This case is an example of the ordinary type of lateral curvature as seen in the adolescent, and the treatment as outlined here is meant for similar cases, and not for patients whose curvatures are due to empyema, paralysis, congenital deformity, etc.

In closing, we may quote the following sentences from two authors: "It is by means of frequent and forcible temporary reductions of deformities, by voluntary muscular action, that we can hope to improve and do improve those cases which are amenable to any form of active treatment." (Teschner.)

"It may be stated that any treatment that makes the spine more flexible, that overcomes faulty attitudes and that strengthens the muscles must be of benefit to the patient, the degree of benefit corresponding to the persistence and energy of the pupil and the instructor rather than to any particular theory on which such treatment is based." (Whitman.)

Against Tuberculosis.—A bill has been introduced by Dr. F. Moliner, a member of the Spanish Chamber of Deputies, providing for the establishment of government sanatoriums for all the tuberculous poor of Spain. For this purpose a sum of 5,000,000 pesetas will be earmarked in the budget annually, and the Queen Regent has ordered that 20,000 pesetas shall be given toward the furtherance of the plan. In Portugal a circular has been issued to the bishops of all the dioceses, asking them to include in the educational courses in the ecclesiastical seminaries, hygienic instruction, especially that relating to tuberculosis. This met willing assent and the appointment of competent lecturers.



No. 5.

THE EPIDEMIC OF SO-CALLED SMALLPOX.¹

BY

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The title of this paper shows that I do not desire to fix the name of the disease which I am about to discuss, and which has been so generally prevalent throughout the United States during the past 2 years—a disease that some very prominent physicians have pronounced without doubt to be *variola vera*, while others equally prominent think it is not. I simply desire to note my clinical observations, and offer a few thoughts gathered in an experience with about 300 cases supported by reports I have obtained from other sources. These cases all occurred within a radius of 8 miles. I shall not dwell on the etiology of this disease, as it is not positively settled as to whether smallpox is caused from a special protozoon or not. This disease is acute contagious and infectious, and my observation leads me to believe that it is more contagious than infectious, although I cannot at present prove it. Yet I am certain that it is not so infectious as we have been taught to believe smallpox, and I think there is little danger in carrying the poison in your clothing. It is certainly not so infectious as measles. The period of incubation of smallpox is 10 to 15 days, rarely longer. In this disease, it is 18 to 21 days, and sometimes longer. A child's nurse who had just recovered from the disease called to see the child and took it upon her lap; the child began to show prodromic symptoms 18 days later. Two children slept in the room with a sick sister, on whom an eruption appeared during the night; the next morning the 2 children were isolated but they contracted the disease, the first symptoms appearing 19 and 21 days later. In another instance the mother was in bed with typhoid fever, and occupied the same room with a son who was sick with this disease; she did not contract it, but her daughter who was nurse did, and remained in bed 3 days before she was able to resume her duties as nurse; the mother showed symptoms 21 days after this. I could cite others, but none in which the date of exposure was clearly defined, showed any symptoms of infection earlier than the eighteenth day. There was an initial scarlatinal or erythematous rash in 6% or 7% of the cases. It usually appeared within the first 24 or 36 hours. The regular eruption appearing usually on the evening of the second day, seldom on the third, and very rarely so late as the fourth day. Its first appearance was on the face and head, extending to the extremities in 24 to 36 hours, going through the stages of papule, vesicle, pustule, and crust, as follows:

Papules first day, vesicle second day and half of third day, these filling with milky serum the second half of third and on fourth day, becoming pustular on the fifth and sixth days and crusts forming by the sixth and seventh days, these falling off within the next 2 days. While vesicular, they have a reddened areola and are filled with a clear serum or lymph that becomes milky in appearance as they pass to the pustular stage. While filled with this serum or milky fluid they are globular, or even conoidal in appearance, and if punctured in this stage, about one-half of them will collapse in the center, leaving the borders elevated, the others will not, their contents being superficial to the corium of the dermis. They do not burst or ooze of their own accord, but dry into scabs or crusts, a few of them then becoming umbilicated. When the crusts drop off, there is left a smooth shiny red spot, or an elevated red base, that is not so smooth, which returns in a week or 10 days to the level of the surrounding surface. The red spots regain their normal color in from 10 days to 2 weeks in the white race, while in the negro they are either dark or light spots, and require from 1 to 4 months in which to fade. There was a slight pitting in 2% or 3% of the cases, which was probably as much from the patient's picking the crusts as otherwise, as a large number of the pits were not depressions of the whole pox surface, but a few pin-point depressions at one or more of its sides. There is a slight itching on the appearance of the papule, but very little, if any, later. There was very little odor and this only in very few cases. There is a general bad feeling with headache, backache, and other pains. In smallpox, we expect a severe lumbago, caused from toxins producing congestion of the lumbar muscles or of the spinal cord. The patients observed rarely complained more of pain in the loins than in the head. There is some nausea and a few patients

vomit. The majority, however, have slight aches and no nausea.

In smallpox we expect a temperature of 103° to 106°, an average of 104½°. In this disease there was usually an elevation reaching from 100° to 103°. In many patients the temperature was not elevated at all. I have seen it as high as 105°, the average is about 102°. On the appearance of the eruption, the fever invariably declines and generally disappears in a day or two. In severe cases it continues so late as the fifth and sixth days, but in every instance there is a gradual decline on the appearance of the eruption, and it never returned after the pustulation or maturation of the eruption. Complications of smallpox are to be dreaded. There were no complications in this epidemic; not more than 5% approached the confluent form. I treated the confluent form in a patient who was a week out of bed after 6 weeks of typhoid fever. I had 2 cases of la grippe followed in the second week by bronchitis, with this disease occurring about the seventh and tenth days of the bronchitis; all made the ordinary recovery, those with la grippe and bronchitis having no fever after the second day of eruption. The fever in the typhoid case declined on the appearance of the eruption. The confluent cases were mostly in syphilitics. An old man of 74 years, suffering with Bright's disease, had an ordinary case of this disease, with recovery. The statistics of the dermatologic clinic of the Good Samaritan Dispensary, New York, show that 14% of the vaccinations have complications.

In the 300 cases above mentioned there was but 1 death, that of a man who had been sick 5 days previous to sending for medical aid. He died in 24 hours after calling for medical attention. Therefore the mortality in this community was 1/3 of 1%, and so far as I can find is not more than 2% throughout the United States. That is as low as any one has yet ventured to place the mortality in varioloid; the older writers placed it at 7% and 8%, and smallpox at 25% and 40%. Only about 1/3 of the patients in this epidemic call a physician, and probably half of these do so more for diagnostic purposes than for treatment. When treatment is required, a laxative with attention to the secretions and something to palliate the aches until the eruption appears is usually sufficient. An antiseptic lotion may be used, but if it is desired to have the crusts dry quickly ointments must be avoided. We are asked to believe that the mildness of this epidemic of smallpox has resulted from repeated and systematic vaccination of the patients themselves or their ancestors, and yet in the country there are at least 50% of the people who have not been vaccinated, and a large percentage of that number do not know whether their forefathers ever were vaccinated. This class claim that the reason that vaccination does not protect is because it was improperly done or spurious virus was used. The medical profession seem united in the belief that vaccination protects from, or modifies smallpox and yet there are many who believe that vaccination neither prevents a person from taking the disease nor modifies the course.

Dr. T. J. Happel,² of Clinton, Tenn., gives in detail a number of cases in patients who have been previously vaccinated, and others whom he vaccinated 1, 2, and 3 weeks or more before they had the disease, and therefore, concludes that this disease is neither prevented nor modified by the vaccination. I have not had so good an opportunity to prove the protective qualities of vaccination as Dr. Happel, as I had not observed any recent vaccinations. I treated several patients who had been vaccinated 1 and 2 years and longer. Casual observation of those vaccinated seemed to show that they were not quite so susceptible to the disease as those who had never been vaccinated, yet when the former patients did succumb to the poison, I could not see that the course or severity was in any way modified. I examined 10 patients who had this disease the second time, one within 2 months of the first attack, the others within 4 months. In these recurrent cases, 2 were more severe than the first attack, one of them being the return case within 2 months; 3 of the recurrent cases were milder than the former attack, while the other 5 were about the same as the previous illness. Should not the disease itself afford a better and longer protection than vaccination?

¹ Read at a recent meeting of the Missouri State Medical Association.² Journal of the American Medical Association, August, 1900.² Journal of the American Medical Association, September 8, 1900.

ORIGINAL ARTICLES

ON THE VALUE TO THE PHYSICIAN OF MODERN METHODS OF DIAGNOSIS.¹

BY

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On this occasion I wish once more to express to you my thorough appreciation of the great honor which my election to the Presidency of the Medical Society of the State of New York implied, and to thank you heartily for this proud distinction.

The development of medical science has been so rapid that to those who have been in practice 20 or even 15 years, who have not kept pace with the advances and the scientific movement, the language of the medicine of today is almost unintelligible. Indeed, medicine has been metamorphosed from an art into a science, to the everlasting credit of an unselfish profession and to the benefit of mankind.

Rational medicine requires for its successful practice a scientific fundament. It is not long since our methods of investigation were crude and faulty; instruments of precision were wanting, and the many refinements of diagnosis which we now possess were either undiscovered or the few in use were to be found only in the larger universities.

It gradually became evident, however, that to complete the education of the physician it was necessary to establish the laboratory (that true workshop of the physician) where he might study the conditions which exist in health; learn to appreciate the changes wrought by disease; gather lessons from the thorough study of physiologic chemistry, and record many facts concerning the modification of perverted functions by the application of remedies. Without these object lessons many of the astounding advances of modern medicine could not have been made. By the aid of these, medicine has made greater progress during the past three decades than had previously been made in as many centuries.

The scientist must of necessity be a revolutionist. All things he must prove for himself. Richet has truly said: "By experiment and by science, medicine is compelled to march forward." This is as true today as it was in the time of Harvey, and should prompt us to encourage in all fields of medicine, wherever permissible, original painstaking experiment and the conscientious application of positive conclusions to the recognition and treatment of disease.

Unalterable and earnest in the belief that modern methods of diagnosis have proven themselves of the greatest advantage to the physician in the study of disease, and with a conviction deeply grounded, much against my will, that only a minority of the medical profession has adopted these refinements, by the use of which medicine in its science becomes more and more exact, I have concluded on this occasion to address you "On the Value to the Physician of Modern Methods of Diagnosis."

The profession, as organized in our Society, has always represented a progressive element in medicine; has demonstrated its willingness to enlarge and enrich its field of usefulness and influence; has striven to disseminate knowledge far beyond the limits of our own state; and it is because of this encouraging past and the promising present, which cements the past and the future, that I bring this subject to your notice, that our influence may be exerted in behalf of methods in diagnosis which rest on a scientific foundation, and which prove, when impartially reviewed, to be of inestimable value to the suffering.

We are not to rest content with the uncertain methods of our forefathers, which seemed to them, as they seem to many today, to unearth the entire truth, but with Lessing we must proclaim: "Not the bare truth which everybody possesses, or thinks he possesses, but the earnest endeavor which he has made to understand the whole truth—to get at the foundation of it—makes the worth of a man. For it is not through its possession, but rather through the search for the truth that his powers are enlarged, which alone makes for his growth toward perfection. Possession makes him quiet, indolent, proud." Ours is a profession which can ill afford to be satisfied with possession which makes it innocuous and proud. Ours is the task of blasting in the quarries of the unknown, where are hidden innumerable precious truths awaiting development. Thus may our art "gain the reach and certitude of sway over disease which we all yearn for it to possess."

Sir Michael Foster has recently said: "The phenomena of disease, being phenomena of living beings, present themselves in most, if not in all, cases, as problems, as mixed problems of physics, chemistry and biology, to be grappled with by the doctor as they are grappled with by the physicist, the chemist and the biologist." To this quotation, I add the words of our own philosopher and pathologist Welch, recently given to the profession at the Virchow dinner. "General pathology must call to its service not only morbid anatomy, but also experiment and clinical medicine; nor is practical medicine to be founded upon pathologic anatomy and general pathology alone, important as they are to the physician in many ways. Clinical medicine, as well as every other department of medicine, must be investigated by itself, deriving, as should every science, all the aid it can from allied sciences."

Our appreciation of clinical diagnosis by means of microscopic and chemic methods is well demonstrated by the hearty welcome with which the original work of von Jaksch and later the volume of Simon's, both on clinical diagnosis based on newer methods, were received by the progressive internists. We were eager for more exact knowledge—for science to aid us in our art. The statement by Simon, that "Diagnosis is now the password in medical science," needs to be realized by many who continue satisfied with the uncertain methods of the past. The value of the application of the knowledge of physiologic chemistry to the recognition of disease is splendidly illustrated by the certainty with which many diseases of the stomach and intestines are thereby recognized. Here I may be permitted to quote from a former address.

"With the discovery of free hydrochloric acid in the gastric mucus, by Prout in 1824, and the demonstration of pepsin by Schwann in 1836, the first data for an ultimate and more thorough understanding of the physiologic and chemic functions of the stomach were given. These discoveries, with those of Reaumur and Spallanzani, formed the foundation upon which ultimate gastric pathology was to rest, and upon which a structure has been erected to which modern medicine points with just pride.

"The way to pathology is through physiology," says Ewald, "and the more we deal with this subject, the firmer is the truth of that statement impressed upon our minds. It is not the study of the peptonizing function alone which claims our attention, but it is the proper understanding of the entire work which is performed in this human laboratory, including a large part of the alimentary canal, and a thorough appreciation of the relations which each function bears to the others, that makes a rational anatomic diagnosis and indications for treatment possible and in many cases positive."

When Kussmaul, in 1869, first used the stomach pump and tube in the treatment of disease, Liebermeister correctly prophesied that this maneuver would probably mark an epoch in gastric pathology and therapy. When

¹ President's address, delivered at the ninety-sixth meeting of the Medical Society of the State of New York, held in Albany, January 28, 29 and 30, 1902.

Leube, in 1871, first recommended the stomach tube for purposes of diagnosis, he cleared the way for the ready diagnosis of stomach disease. Without the method evolved from Leube's original innovation, gastric diagnosis would soon fail and the treatment of stomach disease would once more become as unscientific as of yore.

The diagnostic value of the absence or diminution of free HCl in the stomach secretion, associated more particularly with pyloric cancer and ultimate dilation, was first systematically investigated by R. von den Velden, at Kussmaul's clinic in Strassburg. Golding Bird called attention to this fact in 1842, and it seems strange that this information was ignored by the profession for diagnostic purposes during so many years.

I found in my investigations of gastric cancer, reported in 1893, in 120 tests, free HCl absent in 92.7%, and present (as a rule feebly) in 7.3%; and from a larger number of cases since studied, material change in these figures is not justified.

The diagnosis of cancer of the stomach from the absence or presence of free HCl *alone* ought never to be made, but associated with other symptoms leaning toward malignancy, we may assume with considerable certainty that the demonstration of the presence of HCl argues against the existence of cancer. The cases, according to Ewald, "in which there is a positive reaction to the carefully applied tests are so rare that they have very little bearing on the question." Since the introduction of these chemic tests for the recognition of diseases of the stomach, we have learned much which is of value relative to blood changes in these and other diseases. Thus in some cases of latent or progressive cancer of the stomach, atrophy of the gastric follicles and pernicious anemia or other diseases associated with cachexia, stomach symptoms, and blood changes, the combined results of gastric tests with the blood examinations, *made repeatedly*, give facts which we must possess to clear the horizon and justify positive diagnosis.

Henry's observation showing that the reduction of red blood-corpuscles in cancer of the stomach does not keep pace with cachexia, while in pernicious anemia the cachexia does not keep pace with the reduction of red blood-corpuscles, has been corroborated many times and is of great diagnostic value.

For the surgeon, the knowledge gained by our new methods in stomach disease is strongly confirmatory. With a growing experience we are justified in entertaining for the future a well-founded hope of recognizing malignant disease of the stomach early, when as the surgeon's helpmates we shall save or prolong many lives in comparative comfort.

By these methods of diagnosis the dietetics and therapeutics of gastrointestinal diseases have been placed upon a more solid and scientific basis.

The satisfaction experienced by the physician in outlining a diet which he knows will positively find a suitable reception and ultimate assimilation, must be sufficient recompense for the time occupied in studying the individual case.

Time will not permit the rehearsal of profitable experiences in this field. The recognition by our positive methods of qualitative and quantitative changes in the secretory function of the stomach has ended the suffering of many chronic invalids. The recognition of hyperacidity and hypersecretion has relieved many unfortunate sufferers from uncontrollable pain, waning strength, and wasting muscle, with rebellious stomach symptoms. Scientific diagnosis in these cases, followed by rational treatment, yields brilliant results. No physician can do justice to himself or to his charge, who is unable when the case demands it, to apply the simple methods which without great labor or loss of time make clear to him the working ability of the stomach in its secretory, motor and absorptive parts.

No one who has worked in the broad field of medicine, unless finally biased by narrow and special prac-

tice, contends that in all diseases of the stomach we need the test meal and the knowledge gained by its chemic examination for the recognition of disease. We shall always meet a large number of cases, however, with uncertain symptoms, with strong suspicions of disturbed gastric function; cases with features of malignancy, though without positive physical signs; cases in which the question of the benign or the malignant nature of the underlying process needs prompt recognition, in which we shall be able to add a strong link by the correct interpretation of data gained by methods founded upon our knowledge of physiologic chemistry.

In this connection I must call your attention to the great value of inflation of the stomach with air, or carbonic acid gas. In office practice we often gain knowledge of the relative size and position of the stomach, its relation to the neighboring organs, and of its walls, as well as the resistance of these, by the administration of a Seidlitz powder, each part separately, to allow the escape of gas in the stomach to distend it. More satisfactory, in cases in which this maneuver fails, is the inflation with air through the stomach tube. The failure to inflate the stomach by these means, with associated symptoms of malignancy, the absence of tumor and free HCl, would lead to a suspicion of infiltrating disease of the stomach wall. In some cases adhesions to the surrounding organs have thus been recognized, while in a case of ulcerating cancer it was found that the adherent transverse colon was readily distended with the tube in the stomach, because of communication which existed between these viscera as the result of ulcerative changes.

The distention of the large intestine with air is frequently of great value in the localization of abdominal diseases; particularly useful in the recognition of renal growths in which the distended gut is found anterior to the growth. These methods are too rarely used, but will not be discarded when fairly tested.

The precipitation by centrifugal force of cellular elements from the stomach contents with microscopic and bacteriologic examinations will often prove of great therapeutic and diagnostic value.

In connection with the diagnosis of syphilitic diseases, a fact which has been too often overlooked and which is rarely mentioned, is the tolerance of the iodids in specific cases of ulcer and gastritis, and the ready relief experienced. Under ordinary circumstances the symptoms of these patients are almost immediately aggravated.

The application of centrifugal force to clinical medicine is of recent date. Steinbeck, of Stockholm, a medical student, first described the use of the centrifuge for the precipitation of sediments from urine, sputum, and other pathologic fluids. Litten, at the Congress of Internal Medicine in 1891 made a strong argument in favor of its use; von Jaksch described the positive advantage of the combination of the centrifuge and Biedert's method in cases in which he was unable to find bacilli after patient search. Freeborn, of New York, in 1891, demonstrated a home-made machine capable of 950 revolutions per minute. Gerster and Sondern followed with contributions on this subject, and in 1894 Elsner and Hawley, after a considerable experience with the instrument, dilated on the clinical value of the centrifuge.

Experience with the centrifuge has proven it to be of inestimable value. It is one of the few aids to diagnosis which has been generally adopted, and today there is practically no laboratory or hospital in which it is not found.

The time gained by centrifugalizing urine is of great advantage, when an unaltered urine is desired (fermentation not having taken place); the early precipitate shows epithelial casts and other structures before changes in shape, size, and contour occur, and these without bacterial contamination. By the use of the centrifuge, insoluble and suspended elements are precipitated.

Blood may be precipitated when present in such small proportion that no other method would show it. It is invaluable to the insurance examiner in aiding to discover the underlying condition in cases of so-called transitory, cyclic, or puzzling permanent albuminuria. It is our most reliable aid in detecting early primary genitourinary tuberculosis. It precipitates small quantities of albumin with picric acid, and makes possible the immediate application of Esbach's test, thus saving 24 hours.

The bacteriologic examination of serous exudates and other pathologic fluids is expedited by its use, as is also the examination of sputum for tubercle bacilli when they are present in small numbers.

I found that in 21% of urine analyses, the centrifuge yielded results which led to greater accuracy in diagnosis than could have been otherwise obtained.

In doubtful cases of renal calculus, the methods of Kelly, including the distention of the kidney and its pelvis with water, after his improved maneuver, gives information which cannot be obtained without exploratory operation. The added evidence furnished by the x-ray examination and the skiagram will often furnish proof which justifies accurate and scientific diagnoses, though the clinical history may be meager and unsatisfactory. These and similar methods, with painstaking bedside study, may arouse suspicions which must finally lead to positive conclusions.

The birth of a new science, hematology, founded upon accurately interpreted data, has added great pleasure and material profit to the study of many conditions, formerly puzzling in their differentiation, and unsatisfactory as to their treatment. No diagnostic methods in medicine give more conclusive evidence or offer more incontrovertible pictures than are revealed by those which we today include in our examinations of the blood. When I hold that these methods have not only been profitable, but have given the diagnostician genuine pleasure, I speak without exaggeration.

It is not the object of the evenly balanced physician to replace the knowledge gained at the bedside, by laboratory findings, or to limit diagnosis by considering only facts made positive by microscopic examination and staining of the blood, but to *add* the exact knowledge which was unattainable before the advent of hematology. Let him who has never relied upon blood examination for assistance in diagnosis, work but a short time in this field, and he will unfold a chapter to which he will revert for information; upon which he will learn to place great reliance as he becomes more and more conversant and expert in technic.

Blood examination means much more than would appear on the surface to those who are unacquainted with hematologic methods. From a narrow conception of the true significance of the anemias, we have broadened the field until we hold without fear of successful contradiction, that the positive diagnosis of the simplest form cannot be made without the aid of data obtainable by blood examination.

Clinically the picture of a grave anemia, nonmalignant, is often identical with that of pernicious anemia. Pernicious anemia may in some of its stages simulate exactly in subjective symptoms and in many of its objective features, a true leukemia, while Hodgkin's disease may present symptoms not unlike malignant disease, lymphatic or mixed leukemia. The missing link in the differential diagnosis can be furnished only by laboratory examination of the blood.

Without the quantitative test for hemoglobin, we would often fail in our differentiation of the anemias, while our treatment would continue to be irrational.

Differential blood counts and staining methods give data which justify the positive differentiation of the various forms of anemia, known as leukemia. Thus we have learned to recognize the pathognomonic lymphocyte of lymphatic leukemia and the myelocyte of the

myelogenous or splenomyelogenous variety of the disease.

Who shall be able to compute for the profession the gain which has accrued from our ability to diagnose malaria from the presence in the blood of its protozoan? Our ready method of demonstrating the organism of malaria has made positive the nature of many most difficult and troublesome conditions. Add to this the readiness with which after the method of Sittman we recognize bacterial contamination of the blood, and you have included methods by which medicine has become more exact and satisfactory. In many epidemics we meet continued fevers without characteristic symptoms of typhoid, which can only be diagnosed by the systematic use of the Widal agglutination test. The percentage of failures is relatively small, while the positive information, so much needed in doubtful cases, is often, though not always, obtained. Absence of leukocytosis or a diminution below the normal of leukocytes with fever, with the absence of other objective features, has often justified the diagnosis of typhoid before a positive Widal test was obtainable. The presence of leukocytosis with chills and fever, or with continued fever, with or without local symptoms, has often led to conclusions which have been life-saving in their effect. Sudden and persistent leukocytosis in typhoid fever, and in other conditions not usually associated with polymorphonuclear leukocytic increase, points to complications the nature of which may be surmised with great certainty when the result of the blood examination is considered with the associated subjective and objective symptoms.

The revelations of a leukocyte count in a case recently seen, in which irregular fever and chills followed dysentery, without more than a slight tenderness in the right hypochondrium, with slightly enlarged liver, furnished the information which made pus accumulation probable and justified exploration. An abscess of the liver was found.

Puzzling cases in which tuberculous diseases require differentiation are often cleared by a count of the leukocytes. This method of differentiation is one which we will often use, and unless we have mixed infection with tuberculosis the absence of leukocytosis may be considered an important factor in diagnosis.

Thus in tuberculous peritonitis the leukocyte count is not materially increased. Leukocytosis with brain symptoms argues in favor of nontubercular meningitis.

Much has been written recently on the condition of the blood in surgical diseases, particularly in appendicitis. In connection with this disease we must not fail to give an existing leukocytosis the prominence which it deserves. To depend upon the results of the blood examination without giving to other symptoms, in a suspected case of appendicitis, their proper import, would lead to unpardonable error.

The diagnosis of trichina spiralis may and has been corroborated in doubtful cases by the presence of eosinophilia. Eosinophilic increase may become an aid in the recognition of scarlet fever when other data are wanting or meager.

The detection of indican, with or without leukocytosis, gives information of value in occasional doubtful intestinal and abdominal diseases.

It has been said that the time occupied in making blood examinations is out of all proportion to the knowledge acquired—an unjust and untrue charge. To gain exact information is our aim at any expense of time, but fortunately a thorough blood examination can be completed in less than 1½ hours, while in the majority of cases with our newer methods and better technic, one-half that time will suffice to give the information needed. The successful and busy physician ought to be willing to relegate this work to those less occupied; he will always be able to find trained assistants to complete this work for him. The simple and rapid methods of

staining malarial and other blood films without fixation, after the method of Romanowsky and with the Jenner panoptic stain, reduce materially the time necessary for gaining satisfactory results.

The bacteriologic diagnosis of certain diseases has become a matter of routine with the scientific worker. To the bacteriologist we look for the solution of many important problems in the prevention and recognition of disease. The number of lives annually saved by the application of bacteriologic methods to the diagnosis of disease cannot be estimated.

When we consider the advantage of bacteriologic examination of the blood, including culture experiments, we are led into a broad field in which the practising physician cannot do more than accept the knowledge gained from the well-equipped laboratory, over which special workers must always preside.

We have not received the encouragement which we deserve from the state in our efforts to prevent and diagnose disease. The policy of the state in this direction has been niggardly and short-sighted. Every section of the state should have a well-equipped laboratory where thorough bacteriologic work is done to give the aid to the profession, which for public safety is often needed promptly, and where many difficult questions can be definitely settled. Thus I have found during the past year counties in which there were no facilities for making cultures in cases of diphtheria, or for the application of bacteriologic methods to the recognition or treatment of disease. Such faulty policy can only end in disaster and useless sacrifice of precious lives. I fear that many in our profession, as well as our legislators, have failed to appreciate what a leading part the microscope and bacteriology play, for an improved diagnosis is but a small portion of the gain to be derived from a scientific study of the causes of disease. "A new direction has been given to treatment."

The enormous advantages of serum diagnosis were well illustrated during the Spanish War, when the fevers prevalent among the American soldiers in Cuba and Porto Rico, were claiming so many victims, and the differential diagnosis of typhoid, malaria and dysenteries was of such transcendent importance. The blood of 95% of the typhoids showed a positive serum reaction, the malarias were easily recognized by the characteristic protozoa, while the dysenteries gave no positive blood picture.

Cases of typhoid associated with jaundice, are mentioned by Cabot, in which the diagnosis of yellow fever was eliminated by the immediate typhoid serum reaction. Cabot says, and it is true of serum diagnosis: "The whole process can easily and safely be carried out by the physician in his office without any laboratory facilities and without half the skill or labor necessary to examine the urinary sediments."

Much has been written during the past few years on the advantage of lumbar puncture in doubtful cases of brain disease, particularly in tuberculous meningitis. Microscopic examination of the fluid has often been negative. Langer sought to aid diagnosis by incubating the fluid withdrawn, but the patients died as a rule before conclusions were reached.

For animal experimentation large quantities of fluid are required, even for intraperitoneal injection, and positive results are too long postponed.

It is doubtful whether in case of failure to demonstrate microscopically the presence of tubercle bacilli in the fluid withdrawn, we shall succeed by experiment of any kind in establishing a diagnosis with sufficient rapidity to be of any value to the physician.

It has been found that sugar is usually present in the meningeal fluid in cases of brain tumor, while in tuberculous meningitis it is absent as a rule. It will be preferable to depend on the ophthalmoscope in these cases without the puncture. Lumbar puncture in the hands of the inexperienced or uncleanly is not without its dangers.

It is not at all likely that it will ever be adopted by the general profession for diagnostic purposes; indeed in the majority of cases we are not dependent upon the information which it has been supposed by some to convey.

In occasional cases the diagnosis of malignant disease may be strengthened by the examination of serous effusions and tissue removed after some one of the improved methods.

Cancer cells are no longer considered characteristic. Dock has shown that similar cells are found in cancerous, tuberculous and other effusions. The presence of many cells in serous effusions showing mitosis, either typical or atypical in type, is strongly suggestive of malignant growth.

Centrifugalized specimens may, however, be examined for evidences of mitosis with negative result. The specific gravity of cancerous effusion is low, tuberculous higher, varying between 1,020 and 1,028. The presence of a large amount of blood has in several cases of cancerous effusions raised the specific gravity to 1,020 or even 1,022.

Simon says: "Clinically, it is frequently difficult to distinguish between transudates and exudates, and large ovarian, pancreatic and hydatid cysts, as well as cystic kidneys, may as times be mistaken for ascites. In such cases a careful chemic and microscopic examination of the fluid in question may be of decided value. Very frequently, moreover, it is possible only in this manner to determine the true nature of the disease, and the importance of freely using the trocar and the aspirating-needle in diagnosis cannot be too strongly advocated."

The use of the Röntgen rays in medicine seems almost uncanny. It is doubtful whether with our present technique we gain many pictures which justify positive conclusions in the study of internal diseases. The greater reliance must still be placed on associated physical signs and subjective symptoms. Certain it is that a correct interpretation of the skiagram requires great experience, and the production of the shadow must always be relegated to those whose practices are limited and who have much time and patience to give to this work. I know of no field in which greater perseverance and attention to detail are needed.

We have received valuable aid from the x-ray examinations in diseases of the lungs and heart, especially when accurate knowledge as to size and movement are needed. The diagnosis of intrathoracic growths and aneurysms has been strengthened by the fluoroscope and skiagram, without ignoring associated clinical manifestations. This method of inspection has been of greater advantage to the surgeon than to the physician, but to deny its value in medicine would be absurd and unjust.

Changes in the bone, about the joints, and gouty deposits, have been satisfactorily demonstrated. Dense foreign bodies in internal organs, such as calculi, are very often demonstrated by the Röntgen rays. Porous calculi have escaped detection in several cases examined by this method. If the negative picture had been depended upon, one case seen recently in which there were over 500 calculi in the gallbladder, would have remained unoperated.

Skiagraphy may be said to be in its infancy, but we are encouraged by the labors of Williams, Leonard, Stubbart and others, to hope for great assistance in the future from the use of the Röntgen rays in medicine.

The recent introduction of an apparatus for giving stereoscopic vision by the x-ray is believed by some to add materially to the practical value in medicine and surgery of this method of examination. The usual silhouette effect is replaced by a picture which stands out distinctly, showing the space relations of the object viewed.

We are not to be discouraged by the fact that radiographs which seem unsatisfactory to the majority of

ordinary observers, are readily interpreted by the expert, for in cases in which we must place considerable dependence upon these pictures as giving evidence of pathologic change, we shall give the opinion of the x-ray expert the importance which it deserves, remembering always that we have received but a link, and to strengthen the chain requires the thorough application of other confirmatory methods.

The scientific diagnosis of many diseases of the nervous system has been materially aided by our knowledge of the electric reactions of the different tissues in health and disease. To those only who have a thorough conception of the newer anatomy and pathology of the nervous system, will electricity give any assistance in diagnosis. Here, as in the localization of central and peripheral nervous lesions, physiologic knowledge remains the groundwork upon which diagnosis must be built.

Bennett has, after patient clinical observation in this field of diagnosis, demonstrated the truth of the statement that "Like all of our methods of physical diagnosis, electricity must not be depended upon alone as the sole means by which we are to arrive at a just conclusion in investigating the nature of disease. It is only one of the aids we employ, but which in conjunction with other facts and observations is a most powerful auxiliary." There are a sufficient number of instances in which electricity offers data for diagnosis which cannot be obtained from any other source, and for this reason the general practitioner, as well as the specialist, must acquaint himself with the method of its application and must possess the underlying knowledge which makes rational conclusion possible. Though electricity may not be absolutely necessary for the diagnosis of the various paralyses, it remains the means of giving it "a facility and precision which has become indispensable to the neurologist."

Electric reactions, associated with a thorough study of the deep and superficial reflexes, lead to the interpretation of phenomena upon which depend localization and diagnosis in many puzzling conditions.

An instrument of precision too little employed by the general practitioners is the ophthalmoscope, for the introduction of which the memory of von Helmholtz will always be revered. If the information obtained from its use were limited to the eye, we would not consider its value on this occasion; it gives information regarding the existence and nature of pathologic conditions elsewhere than in the eye, which is often obtainable in no other way.

Gowers, in his classic work on "Medical Ophthalmoscopy," says: "This information depends upon the circumstances that we have under observation. 1. The termination of an artery and the commencement of a vein, with blood circulating in each. 2. The termination of a nerve, which, from its close proximity to the brain, and from other circumstances, undergoes significant changes in various diseases of the brain, and in affections of other parts of the nervous system. 3. A nervous structure, the retina, and a vascular structure, the choroid, which also suffer in a peculiar way in many general diseases."

We do not contend that the general practitioner must of necessity become an expert in the use of the ophthalmoscope, but we believe that he must depend upon its revelations if he would recognize early certain diseases of the brain, arterial degeneration, and renal complications. Time does not allow on this occasion of an extensive argument in favor of the more frequent use of the ophthalmoscope by the physician; many cases might be taken from the records of those who have learned to use this instrument in general medical practice, which justify the great satisfaction with which its use is continued. We have only to refer to the significance of optic neuritis with brain symptoms, however vague; the presence of choroidal tuberculosis in advance of other positive symptoms; the presence of albuminuric retinitis

in cases of nonalbuminuric nephritis, and the presence of retinitis and changed vessels in comparatively young subjects with transitory albuminuria and tube casts, to show the value of the ophthalmoscope to the everyday doctor.

Those who for any reason are unable to refer these cases to special workers in this field should educate themselves by postgraduate study in the use of the ophthalmoscope for the recognition of the grosser pathologic changes in the eye.

In the preparation of this address, the fact is appreciated that reference has been made to only a few of the newer methods, upon which the profession is today leaning, as aids in diagnosis. Limited time does not permit the consideration of many of the methods which are of undoubted value as adjuvants in the recognition of disease. What I wish to impress is the importance of working systematically and scientifically, however busy we may be in our practices.

"Qui bene diagnoscit, bene medebitur."

It is no secret that the charge has been made that too many patients in this country are often ignorantly and incompetently treated, and our medical schools and system of medical education are held responsible for this state of affairs. We must admit that we too often fail to stimulate the "Scientific sense"; men are not educated to work systematically. Raise as high as you can the requirements for admission into the profession; gain the best timber possible, which will always include a majority receptive and earnest, and these serious charges will be less frequently made. We shall never be able to impress all with the enormous responsibility under which many almost stagger in medicine.

Many agencies have influenced American medicine. Whether these originated from communion with Louis, Laennec, Trousseau or Charcot in France; whether they were led by the Berlin school, the immortal Schoenlein, Traube or Virchow, and their followers; or were founded upon the methods of the Vienna school, from which radiated the benign influence of Bamberger, Duschek, Skoda and a score of others; or were the products of our own enlightened masters of medicine—and we have had many—each had a scientific fundament, and each vied with the other in unearthing new truths to be applied to the recognition of disease and its treatment.

The clinical medicine of the past may with reason be compared to a rude and hardy plant, now grown in spite of neglect, to a colossal tree with innumerable branches, richly laden with fruit, its roots reaching far into the fertile soil for nutriment. This soil must be nurtured and sustained else the tree will fade and die. The new must become an integral part of our being; the new of today is often enriched by the new of yesterday. True it is that "Stagnation is something more than death." The physician of today has countless advantages over his forebears; his training makes him more enlightened; he has been forced to equip himself for his life's work. The advantages offered for the thorough and scientific study of disease were never before equalled in this or any other country.

A generous public, by the free giving of material aid encourages the solution of scientific problems related to disease and its prevention by scientific methods. In return, it has a right to demand the product of our best, our most conscientious efforts. Are we not also prompted by selfish motives to work scientifically? Our only safeguard against quackery is "continued recurrence to the scientific basis on which the practice of medicine rests."

We must gain exact knowledge in order to derive satisfaction from our practice. Even with increasing knowledge the layman's demands may in many cases be far beyond our ability to supply.

We can ill afford to encourage iconoclasts in medicine. Fortunate for us that we have no Paracelsus—a badly-balanced genius—no dangerous revolutionist at work to

reject all that has been taught because of a pronounced taste for a single science. There will always be extremists against whom the evenly-balanced must array themselves. The application of modern methods in the diagnosis of disease must always remain supplementary to bedside study, but no one who has taken advantage of laboratory methods will deny that much may be learned, by laboratory study, of the greatest scientific and practical importance, without which we would be poor indeed. The practical diagnostician will not be narrowed by the association of laboratory methods with clinical data; he will not become theoretic, but more practical; he will become a more acute and cautious observer because of his training; he will "acquire knowledge at first hand," and make fewer hurried diagnoses; he will be prompted to do more original work.

There are those who, in spite of the fact that we are encouraged in all educational matters to develop the observant sense, continue to decry all laboratory and scientific methods. The scientist is charged with being a dreamer and impractical. "There are some, indeed, who would tell you that the scientific man is ill-fated for anything but science; that he cannot be punctual, businesslike, a plain speaker, pious, or I know not what else." "It would be difficult to find greater nonsense in any of the books or journals on a modern book-stall." "There is nothing that a man may not be at the same time that he is scientific."—Paget.

Failures in practice are by no means limited to the scientific. This fact requires no extended argument. Did Schoenlin's practical work in Berlin suffer because of his scientific attainments or because he became the pioneer in Germany in the introduction of physiologic methods, the microscope, and chemic analysis in the study of his clinical material?

Haller had made the attempt a hundred years before, but the scientific fundment supplied by pathologic anatomy was wanting. Hippocrates auscultated, and a hundred years before Laennec, Anenbrugger attempted to introduce percussion as a diagnostic agent. These attempts bore no fruit; pathologic anatomy was needed to make clear the meaning of physical signs. It is by no means to be considered an accident that among the greatest advances in medicine made during the century just closed, was the introduction of pathologic anatomy and auscultation into the clinic: both were introduced by the same clear mind, Laennec. He is one of the greatest physicians in history. Allbutt has said "he deserves to stand by the side of Hippocrates, Galen, Harvey and Sydenham. His work was a revelation of the morbid anatomy of the internal organs during the life of the patient."

The physician who is truly successful in practice must depend in a great degree upon the good opinion of his fellow practitioners. Laymen have not the positive means of gauging our ability which those possess who are fitted to judge.

Nothing commends itself to the professional mind as does the thorough scientific investigation of individual cases. Certainly there are among those who have no medical education some who judge reasonably of the physician's worth, but the number of these is few. Of the majority we may say they are the most ignorant who are most positive and loudest in their praise or denunciation, and these are often the most influential.

Herbert Spencer has well said, "Had we time to master all subjects, we need not be particular."

"Could a man be secure
That his days would endure
As of old, for a thousand long years,
What things might he know!
What deeds might he do!
And all without hurry or care."

Bearing in mind our limited time for acquisition and action, the question which is of such transcendent moment is whether the methods recently introduced are

of sufficient benefit in the study of disease to claim our attention and time. We must determine, in other words, "the relative values of knowledge." If we consider the relative worth of these methods to the clinician from an unbiased standpoint, we must conclude in favor of the adequateness of the advantages. There is certainly a proportion between the required labor and the probable benefit. The young man needs the knowledge and training which the thorough study of disease develops, while those who have grown old in the treadmill must take advantage of modern methods and ideas to retain their standing in the profession.

Sir James Paget, in his memoirs recently published, writing on the "Ways Into Practice," and the "Various Ways Out of Practice," speaks candidly on the conditions which affect success and invite retrogression. Between the lines one can read the thoughts of this clear-minded gentleman physician and the appreciation by him of the importance to the honest worker of receiving, after a sufficient period of probation, the methods which were included in the armamentarium of his juniors and pupils.

To those who are practising at a distance from centers where men are devoting themselves to the accurate methods in medicine, a word of warning may not be misplaced at this time. Your influence will not endure if you persist in ignoring methods which have been tried and found useful. You will finally hold only a remnant of your present clientèle. In spite of the fact that the public has never been more credulous or more ready to encourage quackery, the services demanded from the physician were never before expected to be of so high an order. His search must always be after the end of science. "The real and legitimate goal of all sciences is the endowment of human life with new inventions and riches." The individual has a right to demand of his physician accurate recording of all facts relating to his condition, with a painstaking investigation of every detail which the case offers, by *every method needed for accurate observation and ultimate diagnosis*. Believing that modern methods of diagnosis lead to the trustworthy interpretation of symptoms, with a firm belief in the superior ability of those who have adopted these methods, the lay world is fast removing its former prejudices against hospitals where medicine and surgery are practised rationally. The consulting rooms of those who are known to employ the most thorough methods are filled with all classes of clients. There is a feeling abroad which calls for thoroughness from those charged with the recognition and treatment of disease.

The period has not yet been reached when we can truthfully deny that our art is in advance of scientific direction and explanation. Now, as always, we need common sense as well as knowledge, with ready decision and resourcefulness. This no college or teacher can supply. We must never allow our critical faculties to exceed the practical. It has been truly said that "practice without scientific reedification soon degenerates into stereotyped and sterile routine." No amount of extra labor bestowed on the study of disease will prove irksome to him who possesses the true scientific spirit; on the other hand, the consciousness of a duty thoroughly and consistently performed, will prove an ample reward.

Out of the clinical laboratory "the new medicine is to come—the medicine which, penetrating into the intimate processes of Nature, learns to turn Nature to her own correction; the clinical laboratory is to be the scene of the study of the origins of disease."

"A life full of work and labor is no burden, but a boon, an enjoyment." This served as the text of Virchow's original thesis. His life has been sweetened by the conscientious and scientific application of his great powers, and it is this spirit which will continue to inspire the physician.

The moral force of scientific methods in medicine is the greatest factor in modern medical practice.

ERYSIPELAS IN THE NEGRO. REPORT OF A CASE OF THE SO CALLED SPONTANEOUS TYPE. SUMMARY OF THE LITERATURE ON THE SUBJECT.

BY

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Erysipelas in general is a very extensive subject, but in all its literature there is but one clinical report of a case occurring in a negro patient. The silence of medical writers on this phase of the disease has led to the idea that negroes are immune to erysipelas. In Dr. Gould's Year Book for 1901, the editor makes the following statement: "It has been considered by some that the negro is entirely refractory to the streptococcus, but this (M. Prat's) case, and others observed, demonstrate that this is not true." After investigating this question, I have found that although there may be very few cases of erysipelas in negroes among dispensary patients in medical colleges in the North, or in the practice of the average physician, yet those who have an extensive negro practice in either the North or the South have met many cases.

I believe the subject is important, first, because such a case involves some difficulty in diagnosis, and second, because it would be interesting to know if erysipelas pursued the same clinical course among negroes as among white patients. The factor which makes a diagnosis difficult is the presence in negroes of a dark pigment which may be sufficient in amount to mask the characteristic red flush of erysipelas. The same difficulty arises in any disease in which the diagnosis rests largely upon a change in the color of the skin. I have had one negro patient afflicted with erysipelas. The history of the case is as follows:

Synopsis: Spontaneous erysipelas coincident with menstruation in a coal-black negro woman debilitated by long sickness and just entering the menopause. Streptococci in the blebs. Symptoms and course typical. Recovery complete.

CASE.—Mrs. R. is a coal-black negro woman, aged 45. Her previous medical history is irrelevant. On Friday, June 28, 1901, while the patient was menstruating, the attack began, with sore throat and painful lymphatic enlargement on the left side of the neck. On the third day these symptoms had almost subsided when swelling appeared on the bridge of the nose. The patient came into the dispensary on the fourth day, walking from her home, three blocks distant. The symptoms which impressed the patient most were the sore throat, a painful "kernel" in the neck and a swelling and feeling of tenseness in the region of the nose. These symptoms occurring together in a negress, to me suggested syphilis. However, finding the temperature to be 103.4° F., I suspected something else, and at this juncture the patient's husband kindly suggested that the trouble might be erysipelas. I then noticed the hard induration on the nose and found the characteristic projections extending from its periphery into the surrounding normal tissues. No cutaneous flush could be demonstrated. Small whitish blebs were already visible. The parts were hot, tender, and gave a feeling of tenseness to the patient. On inquiry, I found the patient complained of constipation, excessive thirst, loss of appetite and feverishness. The onset had been unaccompanied by chill, nausea, or headache, and there was no delirium except on the third day, when the rash appeared. On the fifth day, the rash involved practically all of the face, reaching up on the forehead so far as the hair-line. The eyes were swollen almost shut, and there was tenderness of all the swollen parts, of the ears and of the scalp. Some of the blebs on the nose had reached the size of a pea and were discharging freely a fluid which showed, when smeared on a slide and stained with methylene blue, many chains of streptococci and leukocytes in large numbers. Temperature, 101.4°. On the ninth day, the disease came to a standstill and the temperature became normal. From the tenth to the fourteenth day, the temperature was subnormal. After the fever had left, the patient complained of great weakness and aching in the bones. On the fifteenth day, the patient had a chill, with nausea and vomiting. I examined the patient carefully for signs of a recurrence, but found none, nor did I find anything to account for these symptoms. The patient attributed them to the fact that she had been menstruating ever since the attack of erysipelas came on. I gave an alum douche which stopped the flow. Desquamation was completed by the seventeenth day, and on the twenty-fourth day the patient was up and doing her housework.

I consider the following points of this case to be interesting: (1) The patient was a coal-black negro. (2) The erysipelas of the face was preceded by the common symptoms of sore throat, and enlargement of the cervical lymphatic glands. (3) Infection occurred during the menstrual period, which was prolonged for a week or more. The woman's previous menstrual history was entirely normal. (4) The patient was 45 years old, just entering the menopause.

The study of my case was so interesting that I became curious to see what experience others had had with this phase of erysipelas. Very little has been written on the subject. I have found the following reference in the literature:

CASES REPORTED IN THE LITERATURE.

In answer to a query in the *Medical Brief*, St. Louis, 1897, Dr. G. W. White¹ stated that he had observed a case of true facial and general erysipelas in a negro.

In 1899 M. Prat,² a French physician, reported a case in a Senegal negro in Africa. The patient was 18 years old. The onset was characterized by nasal catarrh, headache, persistent earache, sore throat and lymphatic enlargement in the cervical region. There was delirium one night. After the process had subsided there was subnormal temperature part of the time. The patient was able to return to work one month after the attack began. The main features corresponded closely with those of my case.

Dr. R. M. Cunningham³ reported two fatal cases of primary erysipelas in negro convicts, and three cases in which erysipelas arose as a complication.

In the report⁴ of the U. S. Marine-Hospital Service for 1887, under the heading, "Phagedena, Erysipelas, etc.," I find a total of six cases.

Dr. Rudolph Matas,⁵ in a paper read before the American Surgical Association, in 1896, gave the following figures, compiled from the cases of erysipelas in the Charity Hospital of New Orleans during the decennium, 1884-1894: Erysipelas—whites, 314 cases, with 32 deaths; colored, 80 cases, with 20 deaths. In 10 years there were 70 cases in every 10,000 white patients, and 42 cases in every 10,000 colored patients. The mortality was 7 in 10,000 whites and 10 in 10,000 colored.

Dr. Matas sums the matter up as follows: "We must therefore conclude from this that in our hospital experience erysipelas is more common among the whites; though, as usual, the mortality among the negroes is greater. The conclusions drawn from our statistics are also in harmony with those obtained from the study of the abscess group, and confirm my impression that the negro is not more subject, and is possibly less liable to both the acute circumscribed and the progressive pyogenic infections."

Dr. L. M. Tiffany⁶ states that in a negro the skin pigment may obscure a commencing erysipelas. Dr. Daniel Williams told me that he had seen many cases of erysipelas among colored people in his private practice and in hospitals, and was surprised that anyone considered the negroes immune to it.

Dr. Alex. Lane, of Chicago, has had one case of spontaneous erysipelas and two cases in which erysipelas complicated wounds in the scalp.

Dr. Bertram Sippy, of Rush Medical College, has seen one case. The patient, a colored porter, had the facial type of erysipelas with marked bleb formation, and was very delirious during the height of the disease. Altogether I have found 98 authenticated cases.

Just as this paper is going to press, Dr. Bayard Holmes showed me a case of erysipelas in a negro, which arose in a gunshot wound of the arm. The blebs appeared on the third day. The streptococcus was found by culture on gelatin, but could not be found in the smears. The bacteriologic examinations were made by Dr. Bremkin.

Conclusions.—1. The negro possesses no special immunity against erysipelas. The impression that he is immune is due to the following causes: *a.* The average physician does not have an extensive practice among the negroes. *b.* In the North, negroes frequently have a superstitious dread of a hospital, and hence do not always apply for treatment. *c.* The physicians who have had such cases have not, as a rule, reported them. *d.* The disease is sometimes unrecognized when it does occur.

2. As interpreted by the course the disease took in my case, the picture of facial erysipelas in a negro is the following: *a.* The onset is attended with enlargement of the cervical glands, sore throat and high fever. The swelling generally begins around the nose or mouth.

b. No cutaneous flush is visible in a very dark negro. c. Hardened projections can be felt at the periphery of the inflamed area. d. The blebs, which occurred early in my case, are very distinct, showing as whitish patches in sharp contrast with the dark skin. e. Desquamation begins in a part as soon as the inflammation has subsided, and may be complete in one place while the erysipelatous process is active in another. f. The general symptoms are those that accompany most of the acute fevers.

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THE PASSING OF DRUG GIVING.

BY

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Drug giving as a function of the physician is rapidly decreasing in importance. Each year sees more than or else fall into complete desuetude. A quarter of a one time-honored remedy become limited in its use century ago the medical student loaded the pages of his note books with complex formulas, each containing from two to ten different ingredients, to be cherished until the time should come when he would be a giver of drugs. These formulas were definite instruments that the fathers in the profession used to cure disease. Each disease had its treatment indicated in sets of formulas, some to be given if it ran an uncomplicated course, others to be given to meet complications and crises.

Later there grew up a hope for specifics. It being the belief of many that the time would come when each disease would have a sure remedy which would invariably cure, the three natural kingdoms were diligently searched for those always effective drugs which the medical world believed would one day reward the patient investigator. A few specifics were found; among them mercury and the bark of the cinchona. Investigations into the causes of disease, and the consequent discoveries, made necessary a recasting of therapeutic measures. These were modified and much simplified and a vast number of remedies, chiefly drugs, were allowed to fall into disuse. The discovery that most diseases are the result of some form of germ invasion practically left the profession without a single rational remedy for any disease excepting those for which specific remedies had been discovered. Rational treatment demanded a medicine which might be taken without harm to the human organism, and which would destroy the invading germs or make the poisons generated by them innocuous—a germicide or an antidote. Of remedies of this kind the profession was absolutely empty-handed, and therefore was compelled to continue treating diseases as before, with drugs and baths to reduce temperature, with drugs to stimulate the action of the heart and measures to support nutrition. The discovery of the bacterial origin of disease nevertheless bred distrust in the efficiency of many drugs and led to a curtailment of their use. The establishment of the germ theory was of slow growth, extending over a period of 25 years or more; and just how much effect it had in diminishing drug giving by the profession can be learned only by comparing the remedies ordinarily used for the common febrile diseases 25 years ago with those used at the present time.

We are still sadly lacking in rational remedies to cure disease; but there is something to be hoped for in

the production of antitoxins, for by their development nearly all acute febrile diseases are self-limited. In diphtheria our efforts have been attended by marked success; for since the use of antitoxin generated by inoculating the horse with the disease, mortality has been reduced more than 50%.

The success attending vaccination with the kine-pox as a protection against smallpox, and of the treatment of persons bitten by rabid animals with increasingly potent rabic virus, and of diphtheria with antitoxin, have led us to hope for and believe in kindred methods for the treatment of other diseases; but so far our hopes have not been realized and are not likely to be so in anything like their full measure. Of the other antitoxins which have been made, none has justified our expectations. We take too much for granted when we conclude that an antitoxin identical with that produced in the human subject could be obtained by inoculating one of the lower animals with the same disease. Many of the germ diseases which afflict human beings are unknown to the lower animals, and are not naturally contracted by them. Diphtheria, smallpox, and rabies are exceptions to the rule. The first-named disease is common in domestic animals (cat), kine-pox has been proved to be smallpox in the cow, and rabies is properly a disease of the lower animals. That in these diseases vaccination, or the giving of antitoxin, has proven valuable is significant. The courses which these diseases run in the lower animals is identical with that in man, excepting in the case of kine-pox, and here the difference is one of degree and not of kind. Ought we to expect, in the light of the foregoing facts, a valuable antitoxin to be produced in an animal not subject, under normal circumstances, to the disease with which we have inoculated him? While the antitoxin of diphtheria is almost uniformly efficacious that of the streptococcus and of tetanus are disappointing. Perhaps we shall, by and by, fully demonstrate that in only those diseases which are common to both man and the lower animals can there be produced in the latter an antitoxin valuable for treatment of the disease in the former. There is always hope that chemistry will unlock the secrets of immunization and point out the exact nature of those valuable chemic bodies which confer immunity or make so many diseases self-limited, and it is not unthinkable that synthetic chemistry may sometime imitate nature and build them up in the laboratory. At present that time seems distant, for the subject is surrounded by many perplexing conditions. Whatever this solution may be, or whenever it shall be made, it is quite certain that we shall never return to the polypharmacy of our fathers in the profession. We have given up the thought of discovering specifics as that term has been commonly used, and this means less drug giving; the half-empiric, always hopeful physician of two or three generations ago was willing to try a multitude of drugs in the hope of enriching the armamentarium by a single specific. We may seek other specifics, such as a universal germicide which may be given safely; or one or many chemic antidotes for the toxins of disease; but the search for these will not increase the amount of drugs used. All will be tested in the laboratory before they are administered as medicines.

In still other directions investigations are going on which may result in discoveries which will very much decrease the amount of drugs given. Take the case of the most important of our specifics. No remedy, with possibly the single exception of opium and its derivative morphin, has been so extensively used as quinin. Not only has it been exhibited in cases of malarial fevers, for which it is a specific, but it has been generally given in febrile diseases. Recently its use in the latter has been largely curtailed; but unacclimated persons going to malarial lands take it with them, and whole armies going to the tropics to campaign take it in quantity as a

very necessary part of their equipment. Now comes the investigator to say that all forms of malarial fever are due to the bite of the mosquito. Prevent the mosquito from biting humanity and there will be small use for quinin. Grains will suffice where pounds were necessary before.

Has tuberculosis an unsuspected habitat, and is this also true of diphtheria, smallpox, scarlet fever and other bacterial diseases? Is it possible that many disease-producing germs develop in, and are disseminated by, hitherto unsuspected agencies? If so, and these agencies are discovered, the use of medicines will be still further curtailed.

It is perfectly safe to state, as a general proposition, that the more exact our knowledge as to the cause of a disease, the fewer the remedies we will employ in treating it. The nearer we can strike an effective blow at the source of the disease the less will be our need for giving drugs, and if it be made possible for us to destroy these minute enemies of man before they can effect the invasion of the human body, we shall have no need of medicines at all to treat this class of diseases. Let us but consider the effects in this direction which have been wrought by the discovery that the mosquito is also the disseminator of yellow fever. Petroleum to destroy the germ carrier, and mechanic appliances, such as wire and cloth mosquito-netting screens to protect the body from bites, will take the place of the unlimited pounds and gallons of drugs which were formerly used in every epidemic of this dreaded scourge. Just glance over the pages of any comprehensive Practice of Medicine published 15 or 16 years ago, and note the drugs used in, or recommended for, yellow fever—emetics, purgatives, sudorifics, ipecac, castor-oil, calomel, the salines, jaborandi, mustard, quinin, as much as 20 grains at a single dose, with a half dram of tincture of opium; mucilages, linseed, slippery elm, gum arabic, opium, potassium bromid, chloral, external applications of ammonia, camphor and common salt, embrocations of turpentine, gelsemium, digitalis, aconite, veratrum viride, ergot, turpentine (internally), gallic acid, tincture of chlorid of iron, sodium bicarbonate, morphin, creasote, seltzer, apollinaris, champagne, chloroform and cantharides. This is a formidable list, but who shall say that any one of them has not fulfilled some purpose and been of some use when intelligently given? At any rate, the profession will look with small favor upon the therapeutic nihilist who is disposed to sneer at the physician who relies upon drugs in the absence of other things.

Whatever future discoveries and inventions may bring forth, the total abolition of drug giving is very remote—as remote as the time when man shall cease to infringe the laws of health and chastity, and to beget degenerate offspring. Iron and other tonics, drugs for the abolition or assuagement of pain, drugs for relief of nervous irritation and for promotion of sleep, artificial digestive ferments, eliminatives for him who has gorged himself with more food than his organism needs, will be used until the advent of the millenium.

The mere giving of drugs is a very unimportant part of the physician's duties. When he gives fewer drugs he will understand thoroughly the action of those which he does give, selecting each with that precise judgment which can be obtained only from a most thorough knowledge of diseased conditions, and which requires a thorough and exact scientific training. Perhaps the average layman will some day learn the importance of giving his physician the task not of merely making him well, but of keeping him from becoming ill; not of administering drugs to him, but of so judiciously advising him that his need for drug-swallowing shall be decreased tenfold.

The Depopulation of France.—During the year 1900 the excess of deaths over births was 25,988.

THE COMPARATIVE VALUE OF THE THORNER STATIONARY OPHTHALMOSCOPE.

BY

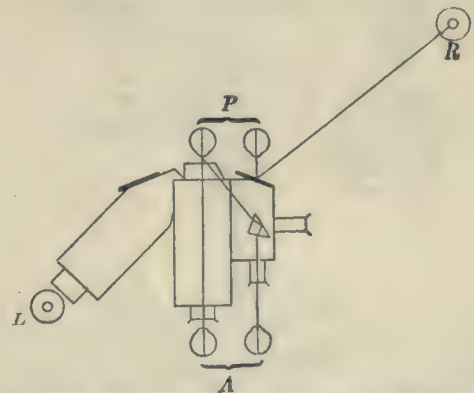
HOWARD F. HANSELL, M.D.,

of Philadelphia.

The interesting account of the evolution of the ophthalmoscope, by Gould (Norris and Oliver, "System of Diseases of the Eye"), the historic exhibition of its many varieties, by Friedenwald (Meeting Ophthal. Sect. Amer. Med. Asso., 1901), and the address before the Medical and Chirurgical Faculty of Maryland (*N. Y. Med. Jour.*, June 22, 1901) emphasize how many and great have been the improvements from 1851, the date of invention of the Helmholtz crude instrument, up to the commencement of the twentieth century, 50 years later.

At the October (1901) meeting of the Section on Ophthalmology of the College of Physicians, of Philadelphia, I presented a recently imported stationary ophthalmoscope designed by Dr. Walter Thorner, of Berlin. It had already been brought to the notice of the profession at the International Ophthalmologic Congress, held at Utrecht, in 1899, and described in the *Zeit. für Psych. u. Phys. der Sinnesorgane*, Bd. xx, 1899 (and in *The Keystone*, February, 1900).

This instrument can never replace or substitute the hand ophthalmoscope, for manifest reasons—namely, its size, nonportability, inferiority in the study of lens and vitreous opacities, and its indifferent measurement of the state of refraction of the eye under examination. Notwith-



L.—light or source of illumination; P—patient; A—observer; R—reflected direction of gaze of eye not under examination.

standing these objections—which are unworthy of consideration, since they suggest claims that are not made—the instrument has great merit; indeed, it is almost indispensable for those interested in ophthalmoscopy and the relation of general disease to fundus changes. Not only is it helpful to the ophthalmic specialist as an adjunct or as complementary to the hand ophthalmoscope in affording a beautifully illuminated view of the magnified fundus, in which the details and the extent of the field are a veritable revelation, but also to the student or practitioner of general medicine, who has never learned to use the hand ophthalmoscope in the diagnosis of fundus lesions.

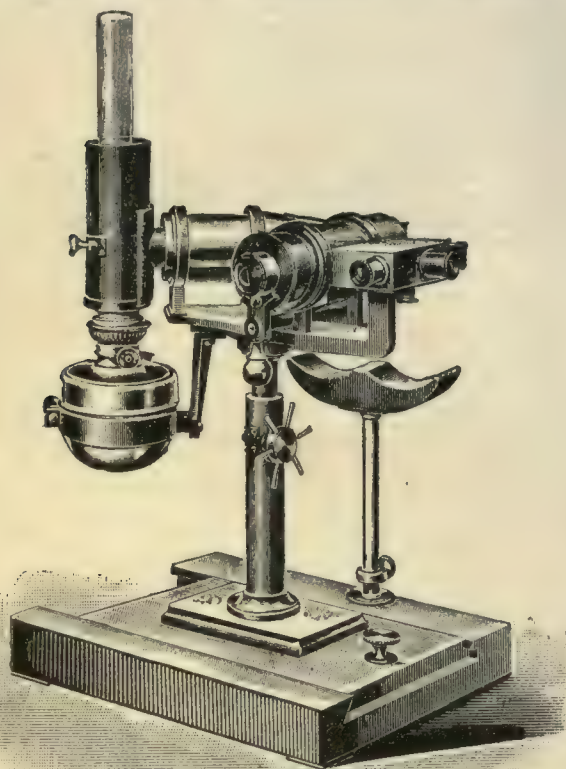
Its supplementary usefulness is shown:

1. In teaching, one is able to demonstrate to a student, physician, or other person, satisfactorily and rapidly, the fundus of a patient whose pupil is dilated. On several occasions I have shown to 25 or 30 students of the graduating class of Jefferson College, men entirely unacquainted with any ophthalmoscope or fundus picture, except as book illustrations, in one hour or less, every detail of the eyegrounds of several patients, without difficulty and without uncertainty.

2. In sketching or painting healthy or diseased eyegrounds, the artist's hands are free to hold the pencil or

brush, and no time is lost in laying down and picking up the ophthalmoscope or in searching for the part of the fundus previously portrayed in order to make a complete picture. Moreover, moderate illumination of the room is no disadvantage. The skilful artist, without strain on his imagination, *must* make a true-to-life picture as readily as he would copy a slide under the microscope.

3. In diagnosis, (a) a comparatively large part of the fundus is held under examination at one time. For example, the field includes the papilla, the fovea and the regions between and adjacent to both; or by altering the direction of the gaze of the other eye to objects in different parts of the room as they are seen through small mirrors fixed on the instrument, all sections of the fundus are successively seen. Hence, the relative size and the distance apart, as well as the exact position of all the factors that make up the picture of the fundus, are noted. (b) Since the magnification is that of the direct method, and the illumination by the small oil



lamp is all that could be desired, no lesion, however small or faint, visible with the hand ophthalmoscope, can escape observation and others heretofore invisible are brought plainly into view (I have been able to discover fine granular lesions in the foveal region of a patient who was considered to have "amblyopia without evident ophthalmoscopic findings"). These pictures have forced me to modify to a certain extent my conception of the state of the retina and choroid in health and in some of the diseases that I have encountered. (c) The adjustment possible with the instrument for errors of refraction enables one to focus readily and quickly and with no friction.*

The Normal Fundus.—The arteries are in some cases pulsating and tortuous suggestive of disturbance of the general circulation, and yet in the individuals in whom these phenomena were observed there were no indications of disease of the heart or of the bloodvessels. Two

*The ophthalmoscope is not designed for the determination of the degree of the refraction error, in its present condition. Dr. Thorner purposes to modify it to include the measurement of refraction.

cases were in young men, apparently perfectly healthy and with insignificant errors of refraction. The pulsation, or undulation, commencing on the disk, could be followed into the retina for a distance of several disk diameters, and in both cases was more distinct in the superior than in the inferior artery. While it is possible that the pulsation was communicated from the adjacent vein, I was unable to establish this origin. On the contrary, the closest inspection failed to modify the conclusion that the arterial pulsation was spontaneous, and that its pulse was communicated to the vein. It is probable that both spontaneous pulse and tortuosity of the principal arteries will be found to be the rule rather than the exception under better conditions of illumination than is afforded by the ordinary ophthalmoscopes. In corroboration of this opinion, Wolfe says (*Annals of Ophthalm.*, October, 1901) that he has repeatedly observed, by means of his new electric ophthalmoscope, arterial pulsation, and believes that venous pulsation is always a result of contact between the artery and the vein.

The foveal region stands out with distinctness and offers a striking contrast to the adjoining fundus. Its area is about that of the disk, or a little larger; its color is a deep red, its outlines are clearly defined, and in its center is a small, bright, yellow-white point, the macula. In young persons in whom the "shot-silk" or "watered-silk" retina is seen, the light of the lamp is reflected brilliantly from the limits of the foveal area, and even the yellow spot itself apparently changes in size and shape under the slightest movement of the ball. Not only is the shot-silk display brilliant in and around the foveal region, but glistens with wonderful brightness from vessel to vessel, and is as elusive as the will-o'-the-wisp.

The optic disk is, in the majority of patients, surrounded by a zone of darker color than that of the rest of the fundus. The diameter of this zone is equal to double that of the nerve head. Its edges are not sharply defined like those of the fovea, but imperceptibly lose themselves in the adjacent fundus. The discoloration is probably caused by pigment of the retina or choroid, presumably the former, which, most abundant immediately at the border of the disk, becomes less and less dense until it assumes the density of the pigment-coat overlying the choroid in the residue of its extent. The appearance is quite distinct from the red of the fovea, which is a deepening of the normal tint of the fundus, in that it is not an increase of color, but of pigmentation, and closely resembles the fundus color tone as seen in the negro.

In the study of the papilla I have not been able to discover that the Thorner is superior to the hand ophthalmoscope. It is true that the excavation, the lamina, the vessels and the border stand out in greater clearness, perhaps, from the stronger illumination, but this very illumination is no advantage in examination of cases of edema or other nearly transparent exudation, since, because one sees through it, it will probably escape observation. To avoid this danger the intensity of light can be dimmed by means of a glass with which the instrument is provided.

The diseased fundus, including coloboma of the choroid, albuminuric retinitis, central retinochoroiditis, atrophy of retina and choroid, optic neuritis, embolism of the central retinal artery, and of optic nerve atrophy:

Coloboma.—The patient was a boy, aged 16, with a congenital fissure of the iris, ciliary body and choroid in the lower quadrant, extending beyond and including the nerve head. The retinal vessels may be easily followed as they course over the white expanse of sclera. As they approach the border of the choroid they gently or abruptly seek a more anterior plane, ascending to the normal retinal level. The choroidal edges are sharply bounded by pigment throughout their entire circumference. The disk is *not* outlined from the surrounding

sciera, but presents exactly the same degree of whiteness. Its site can be recognized only by the bloodvessels which have the same arrangement as in normal eyes. There is no other evidence of the position or even the presence of the optic nerve head.

Albuminuric Retinitis.—I examined the patient at first with the hand ophthalmoscope and made the diagnosis of optic neuritis of mild degree, edema of the retina and a few fine hemorrhages. With the Thorner I found that the hemorrhages were far more numerous than I had supposed. They were small, round and had invaded a large area of the retina surrounding the disk and extending far out toward the periphery, standing out in striking contrast to the pale retina. The edema showed best in the foveal region, where there was a wall of swelling marking the normal boundaries over which the small vessels ran, penetrating almost so far as the macula.

Central Retinochoroiditis.—The differentiation between the retinal exudation, the choroidal atrophy and the exposed sclera corresponded exactly with the morbid process as revealed under the microscope, namely, the disappearance by absorption of the retina and choroid in the center of the diseased patch, and the infiltration of exudation and partial destruction of these two membranes in the remainder of the area of the disease. The patch contained a variety of colors; the white of the sclera, the yellow of the exudation, the black of the heaped-up pigment, the red of the hemorrhage and the pink of the neighboring healthy fundus, together making a picture as beautiful as it was remarkable.

Congenital Chorioretinal Atrophy.—The case was that of a woman who had always been blind in the right eye. The entire fundus was a mass of black, red, and white. No trace of healthy tissue could be found. It presented nothing that could not well be seen with the ordinary ophthalmoscope, and the only advantage possessed by the Thorner was the greater brilliancy and extent of the picture.

Optic Neuritis.—The pathologic changes in this case were limited to the disk and its immediate neighborhood, an area of the fundus readily included in the field of the hand ophthalmoscope, and although they were very evident under the condition of reduced illumination, they could be no better seen.

Embolism.—The large field, including the nerve and the foveal region was of great advantage in studying this case. The little central red spot, round and sharply defined, marking the site of the macula, stood out in bold contrast to the surrounding whiteness of the infiltrated retina. The arteries and veins were readily distinguishable from one another, greatly reduced in caliber and in part obliterated, and could well be followed as they pursued their regular course. The diagnosis of embolism was made the instant the eye came under observation, since the condition of the nerve and retina characteristic of embolism was seen without the slightest difficulty.

Optic Nerve Atrophy.—The superiority of the Thorner instrument was shown in this case as in most of the others by the extent of the field under observation, by which the abnormal whiteness of the nerve head was in striking contrast to the pink tone of a large section of the normal colored pink fundus and also by the facility with which the narrowed and nearly bloodless vessels were followed to their peripheral endings.

A Compliment to the United States Army Medical Department.—The Canadian Government will send a contingent of 1,000 men to South Africa about the middle of January, and accompanying the body of troops will be a 100-bed field hospital with five medical officers. Agents of the British army were in Washington recently securing samples of water sterilizers, filters, medical and surgical field chests, a portable acetylene field operating light, and other material, all of which have been adopted by the British army, as well as our new ambulance and the new style of ventilator tents—a practical indorsement of the equipment of our Army Medical Department.

"THE VEXED QUESTION OF VACCINATION" AGAIN: HAVE WE A STANDARD GLYCERINATED VIRUS?

BY

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In my article published in the *Memphis Medical Monthly*, August, 1901, I summarized my views on glycerinated lymph in the following words:

"If the glycerinated lymph which we have in this country does not protect against smallpox;

"Or, (if protecting) causes sorer arms and greater local and constitutional disturbance than the dried form;

"Or, even causes sore arms in those known to be immune to smallpox;

"Of what possible advantage can this virus be, except when it is necessary to be sent long distances?"

But slightly modified this is still my opinion. The change I would make is that never should glycerinated virus be used when it is possible to obtain the dry virus—and this should be produced by an experienced propagator, and under every antiseptic precaution.

To the above conclusions I wish to add that as between the dried lymph and the glycerinated of equal immunizing power, I believe there will be a larger proportion of "infected and bad arms" from the use of the glycerinated virus than from the dried, and, if any serious result should occur, the chances are at least two to one that such will follow the use of the glycerinated variety.

At the time my first article (*Memphis Medical Monthly*, June, 1900) was written, I was under the impression that the virus used in this section was a type of all glycerinated lymph. Afterward I found (or think I did) that it only represented a *type* of virus, in which, according to my judgment, the "refining" had been carried too far, its efficiency having thus been sacrificed. At that time I was at a loss to understand the results described by Dr. Guest, of Louisville (*Pediatrics*, March 1, 1900). In studying the subject I concluded Dr. Guest was using a glycerinated virus of what I should call a *different type*. Let me here inquire—Have we a standard?

Dr. Charles Good (*AMERICAN MEDICINE*, November 16) criticises my articles (*Memphis Medical Monthly*, June, 1900; *ibid*, August, 1901). I will not consume space to discuss the criticisms in detail. Some are apparently just, some very unjust. I ask any fair-minded physician, sufficiently interested in the subject, to compare the articles and the doctor's comments and quotations.

When my first article was sent to the editor, I wrote him that I was sure my estimate of 25% of those who had been successfully vaccinated with the glycerinated lymph (kind was specified in the original) and who were, in my opinion, still liable to smallpox, was far too conservative, but I preferred to err on the "conservative" side of the question. My second estimate was made a year later, when I had accumulated considerably more evidence, and had witnessed smallpox at a quarantine settlement, among those thus vaccinated. There I saw a physician, formerly a strong believer in vaccination, lose his faith in it. The city Health Officer of Clarksville (Dr. Hughes) and I argued the point with him that he should not hold vaccination responsible because a *type* of lymph had failed. This physician later had his faith fully restored by noting the immunity enjoyed by those vaccinated with other virus. Clarksville quarantined against Guthrie, admitting the properly vaccinated, but specifying that certificates of vaccinations done with the glycerinated lymph the year before would not be accepted. This is a fact known to every citizen of Clarksville and of Guthrie. Such vaccinations were simply furnishing grist for the antivaccinationists, and they were using it, too.

I have been trying for two years to get some physician, favorably situated for proper investigations, to insti-

tute a thorough study of the subject, and have sent to a number of them much of my accumulated evidence. I can ill afford the time already given the subject. What I have written has been for the good of vaccination as it has appeared to me. If Dr. Good does not know that hundreds of the best physicians all over the country consider the dried virus far superior to the glycerinated, he is ignorant of the feeling upon the subject; and more than one producer is seriously questioning whether or not to continue the production of this form. Considering the high place held by glycerinated virus three years ago, the change is remarkable! The glycerinated virus was tried and found wanting. The Southern Kentucky Medical Association, which met recently at Bowling Green, Ky., under the auspices of the State Board of Health, condemned the use of the glycerinated virus.

Dr. Good states:

"Dr. Runyon and the majority of his friends do not disguise their opinion that they consider the fault to be found with the glycerinated lymph is that it is too weak. 'I believe,' says Dr. Runyon, 'if glycerin and water were added to vaccine virus in sufficient purity and quantity, and then kept long enough for it to destroy all pathogenic bacteria, the protective power of the lymph would be impaired or destroyed.' This he states in direct opposition to his star witness, Dr. Welch, of Philadelphia, who is quoted as saying that his great objection to the glycerinated virus is the 'excessive inflammatory action and destruction of tissue not infrequently attending its use,' and 'I have even seen it cause sore arms in persons whom I knew were immune to smallpox.' Now our friends have the choice of the particular horn of the dilemma on which they wish to be impaled. Is their objection to glycerinated vaccine based on the fact that it is too strong or too weak—that it does not cause typical scars or that its action in this regard is too pronounced? Until they agree among themselves on this point you will probably agree with me that their case is a decidedly weak one to put up against a product that has received the endorsement of our own and so many other governments, and is preferred in actual use by all but an insignificant section of the medical profession."

This paragraph needs considerable comment.

As to whether the virus was "too weak or too strong," that "it does not cause typical scars, or that its action in this regard is too pronounced," I might answer both. It depends upon which "horn of the dilemma" you wish to be impaled; *i. e.*, upon which type of glycerinated lymph is used. The type used in this section (except some of that at Trenton) was "too weak." That fact is indicated clearly in my first paper, and also in the one published in the *Georgia Jour. Med. and Surgery*, September, 1901. That used by Dr. Welch was of a different producer. The inflammatory action from this lymph was frequently excessive, due, I think, to the presence of other germs than those of vaccine. In such a case, one may be sure that he has "scar" enough, and usually (I believe almost invariably) protection with it. From this lymph the evolution from time of insertion is rapid—from the type used in this section very tardy—from the more potent, results typical of vaccinia, but often exaggerated, are generally obtained, as indicated by Dr. Welch, but leaving behind often a slough followed by a large scar:—from the weaker a vaccinia(?) decidedly atypical—the whole process, local and constitutional, being comparatively an abridgment of what was always considered necessary till the introduction of glycerinated lymph, and leaving behind a very superficial scar, and one which I would not pronounce "good." There occur a few exceptions, for which I allowed in my paper. Which is the standard lymph?

Dr. Good says, "Until they agree among themselves," etc. The advocates of glycerinated lymph should first agree among themselves, as this is comparatively new and is recommended to displace virus that has given good results for many years.

From AMERICAN MEDICINE, November 2, "Some Experiences on Vaccination," by Dr. Edward Watson, I take the following:—

"It, however, differs a little from the older lymph in the rapidity with which it 'takes.' Often it is as far advanced on

the sixth day as the former lymph was on the ninth, and begins to fade by the seventh day. * * * In regard to its early and rapid course, it is possible that by mingling the virus with glycerin it has been made more active as its period has shortened, and that we have unwittingly produced a new, and, perhaps, more valuable form of virus."

Dr. Hugo Erichsen, in an essay, "Modern Vaccination," says:—

"Aseptic vaccine, on the other hand, produces neither violent local or constitutional reaction, and there is practically no loss of tissue, the cicatrix being so small as to be scarcely noticeable. * * * With glycerinated virus the period of incubation varies from a week to two weeks. The extension of the period of incubation when glycerinated vaccine is employed has been explained on the score of its greater thoroughness in action. It is said to permeate the system more thoroughly."

The following is from an editorial in the *Lancet* of April 28, 1900:—

"Without entering into the question as to how far the '*areola*' (italics mine) is an essential part of the vaccine vesicle or not, it does certainly appear as if much that has often been regarded as essential is not so much due to the action of the vaccinal organism itself as to organisms acting as irritants upon the cutaneous tissues. The purer the lymph, apparently the longer is the time taken for the formation of the vesicle and the less marked the stage of so-called '*maturity*' or pustulation. Indeed, there is reason to believe that the immunity conferred by vaccination is just as marked when the local effects practically stop short at the characteristic vesiculation. For as our report says: 'One statement that may be accepted without reserve is that if the lymph be free from bacteria (especially streptococci and staphylococci) and typical vesicles slow of development with little inflammatory areola and late in coming to maturity be obtained, there need be no fear that the patient is not properly vaccinated.'"

Which is the standard?

Now as regards proper vaccination, I take the following from "Instructions for Vaccinators," issued by the local Government Board of England (Report 1886-1887):—

"8. Scrupulously observe in your inspections every sign which tests the efficiency and purity of your lymph. Note any case wherein the vaccine vesicle is unduly hastened or otherwise irregular in its development, or wherein any undue local irritation arises; and if similar results ensue in other cases vaccinated with the same lymph, desist at once from employing it. Consider that your lymph ought to be changed if your cases, at the usual time of inspection, on the day week after vaccination, show any conspicuous areolas round their vesicles."

And this from the *Philadelphia Medical Journal*, November 23: "The Characteristics of Genuine Vaccinia," by Drs. Welch and Schamberg:

"Any result which deviates to any considerable extent from the description of primary vaccination given by Jenner should not be regarded as genuine."

I believe Drs. Welch and Schamberg are perfectly correct in this, and I have so stated in several articles before this. But according to this standard our cases reported were not successfully vaccinated—that is, they did not have typical vaccinia; *but they were successfully vaccinated according to the type of virus used by us, as is abundantly attested by numbers of physicians.*

It is distinctly stated, quoting from Dr. Robinson (*Memphis Medical Monthly*, June, 1900):

"He further reports that he revaccinated 12 persons, using points (dry), who had recently been vaccinated successfully (?) with tubes—that is, they had the ordinary sore arms following such vaccinations."

That such persons when revaccinated with the points (dry) did have vaccinia, and that such when exposed to smallpox took the disease, are facts that may be disputed but cannot be disproved. There was in evidence, regarding this virus, the testimony of numbers of physicians who had vaccinated hundreds with this virus. A number of these physicians stated that a sore arm, etc., was not necessary and that the scar left was nil or almost imperceptible. Some reported hundreds of vaccinations and not one of the vaccinated lost a day on this account, etc. That our experience was not simply a local one, numbers of letters in my possession show.

From the *Cincinnati Lancet-Clinic* of November 23, I quote the following:

"The report from Clarksville, Tenn., as to the use of glycerinated virus is so full and explicit—so true, too, to any one who has ever used certain points extensively," etc.

This experience appears to have extended beyond the confines of our own country, as the following (from *AMERICAN MEDICINE*, July 6, 1901), indicates:

"At the recent annual meeting of the Association of Executive Health Officers of Ontario, at Brantford, the question of the failure of vaccine as effective protection against smallpox was discussed. Many representative Ontario physicians united in testifying that a large number of vaccinations were worthless as protection against the disease. Various causes were ascribed, including careless handling and administration by doctors, careless transportation by railways, but chiefly the desire of the manufacturers to carry the refining too far and to sacrifice the practical for the scientific or commercial side." (Italics mine.)

Here, as with us, I think the trouble must have been from the use of an over-sterile lymph.

Tuesday, December 10, 1901, while in Guthrie, Dr. J. M. Robinson (Health Officer of Guthrie) and I inspected the arms of 18 of those successfully vaccinated with the glycerinated lymph used there, with the following showing:

Nine had the superficial scars following the use of this lymph.

One had a good scar. Of the 10 none had been exposed to smallpox, so far as known. I am satisfied from my experience that the nine referred to are now susceptible to revaccination or to smallpox.

Three had varioloid in the spring, having been successfully vaccinated the previous fall. Of the three, one had a faint and superficial scar; one a good scar, from this type of lymph it would really be considered a fair scar; the third had a very superficial scar, except right in the center it appeared to be deeper than generally seen after use of this virus. This was the mildest case.

Five had smallpox in the spring after a successful vaccination the fall or winter before. Of the five, one had a good scar but it was not typically foveated. He said his arm was very sore and made him sick, and that he lost two or three days on this account. He had confluent smallpox. (See cut, *Memphis Medical Monthly*, August, 1901, upper left corner opposite page 9.) He will carry the marks of his vaccination and variola to his grave. Two had fair scars and severe smallpox. Two others had scars large enough, but they were very superficial.

Of those inspected were a mother and four children. The four children had been successfully vaccinated with the glycerinated lymph, and a few months later had smallpox. The mother had been successfully vaccinated when a child (form of virus not known). She nursed the children throughout their sickness, and never had a symptom of varioloid.

As to the differences in the evidence regarding "scars" of those reporting to me, I wish to state I was compiling evidence, not manufacturing it. Hence differences occurred, due to individual opinions. If one stated the scar was "good," it was so stated; if another declared the "scar" following such vaccinations was "not good," down it went just as stated to me. All the physicians quoted are as anxious for the truth as is Dr. Good.

Now, turning to the other "horn of the dilemma" upon which Dr. Good is impaled, I quote the following from the concluding paragraph of Dr. McCormack's report, "Smallpox in Kentucky" (*The Journal*, November 16, 1901):

"One of the greatest of our difficulties was in securing satisfactory and reliable vaccine virus. In my experience, infected and bad arms followed the use of the glycerinated lymph much more frequently than of the dry points, and this accounts for much of the opposition we have had to vaccination."

I do not question thousands of excellent results having been obtained from glycerinated virus when the sterilizing process had not been carried too far, but, as stated above, when any serious result occurs the chances are that such is much more likely to follow the use of this virus.

I here call attention to the following suggestive fact: In looking through several textbooks I do not find

tetanus mentioned as a complication or sequel of vaccination; yet we all know, in exceedingly rare instances, a case here and there has occurred.

Now, look around you! When did vaccination in this country ever have to bear the opprobrium it does now? On the one hand I point you to Guthrie, Ontario, etc., and on the other to the not infrequently excessively sore and ulcerated arms and to the possibility—remote though it be—of a repetition of such results as occurred at Cleveland, Bristol, Camden, etc. When had the anti-vaccinationists so much apparent justification? It is my opinion such would not have happened if the dried lymph prepared in the old way, but under strict antiseptic precautions, had been used.

There occur to me several possible reasons why glycerinated lymph is more likely to be followed by tetanic infection:

1. In making the glycerinated virus, parts of the vesicle are used, which was formerly considered unsafe.

2. The germs of tetanus being anaerobic and very resistant to ordinary germicides, possibly find suitable media in the liquid virus (for, so far as I have been able to learn, tetanus when it occurred has almost invariably followed the use of this virus). The incubation period seems to exclude this.

3. Glycerinated lymph is slow in drying, and may thus become contaminated by germs floating in the air, from clothing, etc.

4. This is a point to which I call special attention. The germs of tetanus almost invariably require the assistance of other germs to prepare the soil, else they will not develop.—(Dercum-Keating's *Cyclopedia-Supplement*). May not the slough (superficial gangrene, for such it is) not infrequently following the use of certain types of the glycerinated lymph, supply the ideal soil? Then the tetanus germs develop, if present in the vaccine, or otherwise reaching the wound.

From a card issued by a certain vaccine propagator, I copy the following instructions as to how to vaccinate with glycerinated virus:

"As glycerinated lymph will not dry, the surface should be covered with a ventilated aluminum shield, to prevent the absorption of dangerous germs (especially tetanus), which are found on the clothing, in the dust of the street, etc., in great quantities, and make the use of fluid lymph very dangerous."

To this I reply that one patient, of whose case I have the history, was vaccinated with every antiseptic precaution, and a shield applied—yet tetanus developed.

Another fact that I have noted in collecting the histories of cases of tetanus following vaccination is this: That so far as I can ascertain, the cases all developed between the fourteenth and the twenty-fifth days, except one; this developed about the twenty-eighth day.

I also call attention to the fact that while the ulcers following vaccination with the glycerinated lymph often persisted for weeks or months, yet, so far as I know, no case of tetanus following vaccination has occurred later than the twenty-eighth day. This is mentioned for the consideration of the profession.

In conclusion, I will state that not a physician in this section of Tennessee or Kentucky, that I am aware of, (and I know most of them) will use glycerinated lymph if the dried can be had. Upon inquiry at our wholesale drug stores I was told no glycerinated virus had been sold during our last epidemic of smallpox, and that they did not recall a single inquiry for it. Numbers of the health officers of the country—and among them some of the most prominent members of the American Medical Association—condemn it; and I was recently told by an official that his State Board intended to take action condemning this virus.

Of the 18 cases of tetanus following vaccination whose histories I have been able to collect, 16 have followed vaccinations with the new forms of lymph. One (at Camden) is said to have followed the use of dry lymph,

but whose, and how the point was charged, is not stated; and in one case I have not been able to ascertain by whom, or with what form of lymph, the patient was vaccinated. One other, included in the 16 mentioned above, followed the use of the pulp-charged point, but I do not know how the virus was prepared.

If I am wrong upon this subject, I would like very much to know it, for surely no sane man who has investigated the subject can doubt the wisdom of vaccination.

In my first article, in referring to glycerinated lymph, I put in italics these words:

"I think it a dangerous virus for general use and a virus calculated to bring discredit upon this great life-saving discovery."

This prophecy has been fulfilled.

A DURHAM TUBE IN THE RIGHT BRONCHUS.¹

BY

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of Troy, N. Y.

The main purpose of this paper is to call attention to a fault in the construction of some of the Durham tracheotomy tubes as made by even our best instrument makers. The principles underlying this tube render it in my judgment the best available for those who do not have access to a large collection of tubes, for the movable

collar allows adjustment to tracheas of varying depth so that the curved extremity shall have its opening directly into the lumen of the windpipe without pressure on the anterior or posterior mucous coat of the trachea. Such pressure is often unavoidable when the windpipe is deep and the hard rubber tubes that must be the regular segment of a circle are used.



CASE.—The patient was a woman, aged 42. She was admitted to

the Samaritan Hospital in the service of Dr. W. W. Seymour on August 2, 1900, for laryngeal obstruction. The local and general conditions rendered the case very grave, but a tracheotomy by Dr. Seymour under cocaine and careful subsequent treatment, resulted in relief so that when she came in my service, October 1, she was making rapid progress toward recovery, which favorable course continued under the care of Dr. F. K. Roarke, who has charge of the nose and throat work of the hospital and in whose care I placed her for local treatment of the laryngeal trouble. On October 29, Dr. Roarke informed me that he regarded the improvement so great that it would be safe to remove the tube, which we concluded to do on the following day. On the next morning (October 30) I was notified that the outer tube could not be found, and there was much cough and disturbed respiration. A careful examination of the patient and her surroundings led to the conclusion that the outer tube had passed into the trachea, and at the request of Dr. Roarke we proceeded to operate promptly.

After the induction of anesthesia she was placed in extreme Trendelenburg position to favor gravitation of blood from the bronchi, and the tissues were incised from the site of the tracheal opening to the sternum and the trachea laid bare, before opening it to a point well behind the sternum. In doing this the isthmus of the thyroid was incised between two ligatures, but some difficulty was found in locating the trachea owing to former inflammation in the locality; and in the effort to expose the windpipe, which was deflected to one side, considerable hemorrhage was encountered that could only be readily controlled by gauze packing, which was left in the wound for a few days after the operation. The trachea being opened below the original site of tracheotomy the lost tube could not be seen,

hence the incision was extended well down toward the vicinity of the bifurcation, the edges of the wound held apart, when with a finger the missing tube was felt in the right bronchus, the upper extremity of the tube being well within the bronchus. By holding the incised edges of the trachea well apart, Dr. Roarke was able by means of a head mirror to see the upper edge of the tube, and dexterously grasping it with forceps, one leg of which was placed within the tube, he promptly delivered it. The condition of the patient was such as to create anxiety for several days, both from the shock of the operation and the threatening bronchopneumonia, but she finally began to improve, and a few days ago she greeted me in the hallway of the hospital during a visit thereto, and presented the appearance of splendid physical womanhood.

Attention to the principles on which the Durham tube is constructed shows its advantages, and the defect by which this accident was possible. There are four parts belonging to the complete apparatus as now used by me, noted in the cut at *a*, *b*, *c*, and *e*. At *c* is seen the outer tube that fits into the collar *e*. This collar can be fixed by means of a set screw at any point on the tube (*e*) according to the thickness of the cervical tissues in front of the trachea; and on securing the shield by tapes around the neck, the extremity of the tube is adjusted to rest properly within the trachea.

For facility of introduction a pilot with a spiral to allow of ready adjustment within the outer tube is shown at *a*, which during use gives place to the inner tube, also constructed with a spiral to allow of easy introduction and withdrawal for cleansing. You will observe that the outer tube figured at *c* has a flange to prevent its escape through the collar and into the trachea. It was the want of this collar that permitted the tube shown at *d* to escape from the shield, the set screw presumably becoming loose and thus finding its way into the bronchus. The tube shown at *d* was the one that was the offender in the case related, and is placed in contrast with tube *c* to illustrate the fault in the construction.

THE ABANDONMENT OF DIGITAL EXAMINATION BY THE VAGINA IN LABOR.

BY

W. A. BRIGGS, M.D.,

of Sacramento, Cal.

Progressive medicine must be constructive as well as destructive. When, therefore, the obstetrician proposes either to restrict greatly or wholly to abandon digital examination per vaginam in labor he should be prepared to suggest some procedure possessing either greater advantages or fewer inconveniences. Such a method it is the purpose of this paper to develop. The information sought by digital examination per vaginam in labor is chiefly: (1) The size and form of the pelvic cavity; (2) the presentation, size, mobility and progress of the fetus and the position of the presenting part; (3) the condition of the cervix and other soft parts, including the amniotic sac.

This information is indispensable to the intelligent conduct of labor, and if it could not be obtained by other means than digital examination per vaginam the present discussion would be wholly unprofitable. Fortunately it can be obtained by other means more fully and more exactly, at an earlier period of labor and also, which in my opinion constitutes an inestimable advantage, without the possibility of infecting the genital tract. These means, are the usual ones of abdominal palpation and auscultation and antepartum pelvimetry, which need not detain us here, except that I would urge their more systematic use, and two others to which I now desire to call especial attention. These are digital examination per rectum, simple and bimanual, and palpation of the perineum.

The technic of digital examination per rectum is essentially that of digital examination per vaginam, and is as follows: Cleanse and disinfect the vulva and adja-

¹ Read at the meeting of the New York State Medical Association October 24, 1901.

cent parts; place the patient on her back, with the knees well flexed, close to the edge of the bed; sit beside the bed on a low chair facing the patient; introduce the disinfected and gloved right hand under the patient's right knee and the index finger into the rectum, carrying, if possible, its tip to the sacral promontory, and the tip of the thumb to the pubic synchondrosis, and by their divergence estimate the conjugate diameter; place the left hand on the lower abdomen just above the pubis, and by gentle bimanual palpation map out the presenting part and determine its size, position, descent, mobility and stage of evolution; should the head present, dip the fingers of the left hand down about the chin or the occiput, and the position may be determined even if the fontanels and sagittal suture cannot be felt. With the tip of the finger carefully search for the os and cervix, and if they cannot be recognized continue the search during and after a pain when, if dilation has begun, the alternate tension and relaxation of the cervical ring and of the bag of waters will direct attention aright; the sagittal suture and fontanels should be sought and identified; should the head recede before the examining finger it may be fixed by the left hand from above and even made more accessible by being crowded farther down in the pelvis.

To one making such an examination for the first time the ease and simplicity of its technic and the clearness of its results are little less than surprising. The presentation of the fetus, the position, size, mobility, progress, and landmarks of the presenting part, the os, the cervix, the bag of waters, all may be made out with clearness and precision. Diagnosis of the position may be made at an earlier stage by the rectum than by the vagina. Palpation of the vulva and perineum is by no means so important as rectal examination, but when the head descends well into the pelvis it will determine the mobility and the progress of the presenting part and obviate the necessity of an internal examination. This is best made by separating the index and the second fingers of the pronated or supinated hand and pressing their tips (one on either side of the commissure) against the vulva or perineum during and after a pain. These means, abdominal palpation and auscultation, antepartum pelvimetry, digital examination per rectum, simple and bimanual, and palpation of the perineum intelligently and systematically applied will, in all but operative cases, obviate the necessity of invading the vagina in any way. This, at any rate, is the conclusion seemingly warranted by careful study and observation in a fairly large number of cases.

Pure Milk.—As an outcome of the grave concern felt at the great infant mortality in France, the *Matin* has organized a Citizen's League for the Protection of Human Life, and a vigorous crusade has been started against the adulteration of milk, to which this excessive mortality is largely attributed. President Loubet, Fallières, president of the Senate, and Deschanel, president of the Chamber of Deputies are reported as patrons of the crusade, and the names in the directorate include those of Drs. Brouardel, Budin, and D'Arsonval, members of the Academy of Medicine; M. Emile Roux, head of the Pasteur Institute, and Berhelot, the famous chemist. The league purposes collecting funds and providing a system that will enable the municipal authorities to inspect every gallon of milk offered for sale.

Mechanical Theory of Vision.—M. A. Pizon proposes to substitute a mechanical theory of vision for the chemic theory, which leaves many phenomena unexplained. He has shown that in the visual organs of all the vertebrates and invertebrates, simple or complex, the pigmentary granules that accompany the visual cells are, without exception, in rapid motion like that of micrococci. The presence of these granules in immediate contact with the visual cells and the constancy of their motions lead naturally to the conclusion that they serve as intermediaries in the excitation of the cells. The granules acquire their energy from the light and transmit it to the rods and cones of the retina with which they are in contact, and from them it travels along the optic nerve. This simple theory removes several difficulties in the theory of vision, and changes the received notions of the importance of the purple of the retina.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

January 25, 1902. [Vol. XXXVIII, No. 4.]

1. The Diagnosis of Smallpox. JAY F. SCHAMBERG.
2. Vaccine Virus—Its Preparation and the Complications Attending Its Use. JOSEPH MCFARLAND.
3. Reversibility of Enzymes, and Its Application to Physiologic and Pathologic Processes. H. GIDEON WELLS.
4. Pulmonary Fearlessness. W. T. ENGLISH.
5. The Experience of Syracuse, N. Y., With the Compulsory Tuberculin Test of all Dairies Furnishing Milk to the City. V. S. MOORE.
6. Climatology of Arizona, with Especial Reference to the Climatic Treatment of Pulmonary Tuberculosis. ROBERT W. CRAIG.
7. Blood Examination from the Standpoint of the General Practitioner. F. W. HIGGINS.
8. Brain Tumor Developing in a Case of Peripheral Neuritis, the Latter Obscuring Diagnosis—Operative Removal of Tumor—Recovery. G. W. MCCASKEY and MILES F. PORTEK.
9. Surgical Correction of Malformation and Speech Defects Due to or Associated with Harelip and Cleft Palate. GEORGE V. I. BROWN. (Continued.)
10. Traumatic Arteriovenous Aneurysms of the Subclavian Vessels, with an Analytic Study of the 15 Reported Cases, Including One Operated Upon. RUDOLPH MATAS. (Continued from p. 176.)
11. Report of a Death from Chloroform Anesthesia, Being the First in a Practice of 16 Years, and Including no less than 2,000 Chloroform Anesthetics. BAYARD HOLMES.
12. Case of Necrosis of Bones of the Skull. W. U. COLE.

1.—See AMERICAN MEDICINE, Vol. II, No. 23, p. 899.

2.—**Vaccine Virus.**—After a general consideration of the relations of cowpox and smallpox and immunizing methods, the preparation of bovine virus under antiseptic precautions is described. Every vaccine contains not only the specific organisms but those normally living on the skin and those accidentally entering from stable dust. The dry point is rich in these. Glycerin slowly destroys them, the vaccine organism being most resistant. In order to insure an active virus it is usually placed on sale before all the extraneous bacteria are destroyed. Antiseptic viruses made by addition of a germicide are still in the experimental stage. The accidents and complications of vaccination are due to carelessness, the absence of the usual precautions in surgical operations and the lack of suitable dressings. [H.M.]

3.—**Reversibility of Enzymes.**—The history of investigations bearing on the synthetic action of histozyme, maltase and lipase is given. Lipolysis produces a mixture of fatty acid, glycerin and fat. The acid and glycerin being diffusible are absorbed into the intestinal wall, hence an equilibrium is not reached in the intestinal canal, so the splitting continues. In the epithelial cells the lipase attempts to establish equilibrium by recombining the diffused liquids into fat. As a result more acid and glycerin are absorbed, while on the other side of the cell the tissue fluids containing relatively little of these substances will attempt to establish an osmotic equilibrium which is quite independent of the clinical equilibrium. In the blood serum is more lipase continuing the various processes. Throughout the body there is a constant splitting and building. Fat enters and leaves cells and is utilized only in the form of its acid and alcohol. Fat is a resting stage in its own metabolism. The attempt at equilibrium is perpetuated by the destruction of some of the substances by oxidation and by elimination and ingestion of new material. It is neither proved nor disproved that proteids can produce fat. We know no enzyme capable of combining the lower fatty acids into the higher. Fatty degeneration has been shown to be fatty infiltration. May it not be that certain poisons, as phosphorus, cause fatty degeneration by destroying the ferments that oxidize the fat while not destroying the lipase which forms it? [H.M.]

4.—**Pulmonary Fearlessness.**—Those fears which in primeval days prompted the exercise of the pulmonary sentience or indirectly necessitated excessive activity of the lungs added to the efficiency of these organs by cultivating their primary somatic and neural energy, increasing intercourse between the nerves of the breathing apparatus and the higher centers. The normal child regards confinement within small areas as an alienation from safety. Caves, small apartments, dense forests, etc., produce fear effects through respiratory restraint. In most cases the archaic fear promptings subside after 8 years of age. The stages of fear obsolescence are a part of the phenomena of lung degeneration. To complete the symptomatology of pulmonary tuberculosis the stage of pulmonary fearlessness

is needed. No other malady so completely shuts out fear and exalts hope. Fear-awakening heart disorders and the fears and frights of pregnancy are both unfavorable to the development of pulmonary tuberculosis. The instinct of the breathing apparatus is stifled by the tenets of polite pulmonary demeanor. This is one of the contributing causes in the centers of civilization to imperfect development of the respiratory mechanism. [H.M.]

5 and 6.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 545.

7.—See AMERICAN MEDICINE, Vol. II, No. 19, p. 725.

8.—**Brain Tumor.**—In the case reported there was paretic weakness of the left leg and arm, and later of the left side of the face. The partial anesthesia and reactions of degeneration in the leg pointed to peripheral neuritis attributed to toxemia from gastrointestinal disease. The absence of these in the arm showed something more than a peripheral lesion. The super-vention of paretic weakness in the face proved the existence of a progressive lesion of the right motor area of the brain. To aid in identifying motor centers, when the bulging cortex was exposed, with no neoplasm in sight, a pair of pointed wire electrodes were applied to the surface. The arm center was soon found. From this as a starting-point, the area of the leg center was thoroughly faradized without the slightest response. The tumor was for the most part beneath this center. This suggests the possibility of this test being used in exploratory operations to indicate the site of subcortical lesions. A phenomenon of interest after operation was the extensive movement of the paralyzed arm when the other arm was moved in yawning, etc., although voluntary movements were impossible. The glioma was the size of a pullet's egg, and was removed piecemeal. The Gigli saw is superior to any other instrument in removing large sections of the skull. [H.M.]

9.—**Harelip and Cleft Palate.**—Preparatory to operation on the soft parts Brown advises approximation of the sides of the bony cleft, as without this there will be a less perfectly shaped mouth from tension and flatness from absence of bone, also a flatness of the alae of the nose with deflection of the cartilage. On one side the bones of the palate protrude, while on the other there is recession. To overcome this a heavy wire suture is passed from the buccal surface on one side directly through both portions of the jaw to the buccal surface of the other, drawn closely and fastened at each side with silver plates. The direction is governed so that when twisted from day to day the tension will bring forward one side and draw back the other, bringing the sides nearer together. When the deciduous teeth have appeared metal bands may be cemented to them, holding a nut and bar, and the parts brought into place by turning the nut daily on the thread. In a few days the sides can be freshened with a bur and screwed tightly together, with result of complete bones union from the first deciduous molars forward. In adults and children with permanent teeth the width of a molar tooth can be taken from the cleft without interfering with mastication. In operation after the speech habit is formed there is often not the improvement that is expected. This is due to faulty development of the speech centers and demands mental training. [H.M.]

10.—See AMERICAN MEDICINE, Vol. I, No. 8, p. 335.

Boston Medical and Surgical Journal.

January 23, 1902. [Vol. CXLVI, No. 4.]

1. Notes on the Life and Writings of Geronimo Cardano. CHARLES GREENE CUMSTON.
2. Lymphatic and Portal Infections Following Appendicitis. JOHN C. MUNRO.
3. Notes on the Management of the Anesthetic in Operations on the Respiratory Tract. HARRIS PEYTON MOSHER.
4. Notes on X-Ray; Radioactive Substances in Therapeutics. WILLIAM ROLLINS.

2.—**Lymphatic and Portal Infections Following Appendicitis.**—Munro affirms that one or both of these lesions follow appendicitis more frequently than is commonly supposed. The author has previously reported 14 of these cases, 11 being confirmed at autopsy. In the present article he reports six additional ones, and concludes that the degree of lymphatic infection is not dependent on the extent of the appendiceal

inflammation, a mild chronic appendicitis at times giving rise to a severe lymphangitis; that the lymphatic disturbance may date its origin from an appendicitis occurring many months beforehand; that persistent fever without other evident cause should suggest one or both of these infections; that spasm, tenderness and fulness (spasm of the quadratus lumborum) indicate a retroperitoneal infection possibly due to appendicitis; that chills and hepatic tenderness, associated at times with jaundice, may be of appendiceal origin, and that this origin, especially in obscure cases, should be sought for most carefully in physical examination, in the personal history, and, if necessary, in abdominal exploration; that prompt and thorough drainage of the liver, together with the removal of the inflamed appendix, offer the best means for recovery; that abdominal section, with definite free exploration of all abscesses within reach, is far more satisfactory, not more difficult, and less dangerous than aspiration. A persistent temperature, during or following appendicitis, inconsistent with other lesions, and associated with lumbar spasm, should suggest a lymphangitis. More or less, perhaps fleeting, jaundice, irregular chills, hepatic tenderness and progressive emaciation should suggest a portal pyophlebitis following appendicitis, present or remote. [A.B.C.]

3.—**The Management of the Anesthetic in Operations Upon the Respiratory Tract.**—Mosher describes an apparatus perfected by Fillebrown and Rogers which obviates the numerous inconveniences and disadvantages of most methods of administering the anesthetic in operations on the respiratory tract. The principle consists in forcing ether vapor through a tube by means of a bellows. The vapor plays over the mouth and nose of the patient, but the tube is held sufficiently far away to permit the operator to work unhampered by the administration. A bath keeps the ether from freezing in the bottle in which it is vaporized, and the ether vapor is forced through the tube by means of a foot bellows. A shielded alcohol lamp keeps the bath warm. The apparatus is described in detail, and illustrations accompany the article. The author uses the sitting posture for the patient in all cases. [A.B.C.]

Medical Record.

January 25, 1902. [Vol. 61, No. 4.]

1. The Food Factor as a Cause of Health and Disease During Childhood, or the Adaptation of Food to the Necessities of the Growing Organism. JOSEPH E. WINTERS.
2. The Nature of Cutaneous Epithelioma, with Remarks on Treatment by the X-Rays. CHARLES WARRENNE ALLEN.
3. Report of the Committee on Sanatoriums for Tuberculous Patients. JOHN H. FRYOR.
4. Two Cases of Gastroenterostomy with Enteroenterostomy Done with the Aid of the Elastic Ligature (McGraw's Method). WILLY MEYER.
5. Report of a Case of Penetrating Wound of the Abdomen with Protrusion of Viscera and Injury to the Stomach—Operation—With a Later Development of Renal Symptoms—Recovery. WILLIAM V. PASCUAL.

1.—**Food During Childhood.**—Too prolonged use of milk, which contains little iron, causes anemia. From the seventh to the tenth month the farinaceous ferments are present in sufficient quantity to indicate an addition to the milk. Oatmeal is rich in all food essentials, including iron, and its indigestible cellulose can be strained out, a teaspoonful of jelly being added to alternate feedings and gradually increased. Part of a soft egg may be given twice weekly at the beginning of the second year and later a whole egg. A hard crust twice daily is highly digestible and develops the jaw and areas supplied by the maxillary arteries. Cereals should be given without sugar, which extracts water from the capillaries, thus interfering with secretion of the gastric juice. Fruit may be given an hour before meals. Carbohydrates are more necessary than in adults to meet the demand for heat and energy, and shield the proteids and fats from oxidation that these may be stored for the demands of growth. Proteids and mineral salts are needed in large quantity. Nerve tissue and bone marrow requires large amounts of fat. A child of 5 needs half as much as a man doing moderate work. Of the nitrogenous matter in meat 15% consists of extractions which overstimulate the nervous system and metabolism. Vegetable proteid is equally nutritious and cellulose may be eliminated

by soaking over night and straining. The chemic processes of the organism are dependent on alkaline tissue fluids and in the combustion of meat sulfuric acid is formed. [H.M.]

2.—Cutaneous Epithelioma and Treatment by the X-rays.—Allen asserts that cutaneous epithelioma is of three varieties: (1) That which is ordinarily and wrongly termed "rodent ulcer"; (2) epithelioma proper, or cancer of the rete malpighii, typified in cancer of the lips; (3) that form springing from the glandular structure of the skin. In discussing the etiology of cancer, the author leans strongly to the parasitic theory, and gives his reasons for so believing. He considers the treatment of cutaneous epithelioma by means of the x-rays as still in the experimental stage, though taking his own as well as the experience of others into consideration, he deems the outlook most encouraging. With increased experience in using the x-ray apparatus, burns are becoming less frequent, and the author is of opinion that almost all such burns are due to carelessness. [A.B.C.]

3.—Sanatoriums for Tuberculous.—While the percentage death rate from tuberculosis has lessened, it has simply shared in a general decrease due to improved sanitation, especially in tenement houses. Each physician in New York State is requested to report the number of cases under his care, in an attempt to make a census. There are more than 14,000 deaths annually, which is greater than the mortality from all other infectious diseases combined. The only scientific and economic method of meeting the problem is in the establishment of numerous institutions for advanced and incipient cases. It is the only disease for which the poor cannot obtain proper medical care, and yet assistance which costs as much is given when too late. Germany has accomplished a reform which remains almost untouched in America. [H.M.]

4.—Gastroenterostomy and Enteroenterostomy by Means of Elastic Ligature.—Meyer strongly indorses this method of producing anastomosis, introduced by McGraw, of Detroit. It is suitable in all those cases wherein time is not an urgent consideration. The author reports two operations by this method, performing in each case not only a gastroenterostomy but an enteroenterostomy as well. Both patients had carcinoma of the stomach, and while the operation was only palliative there was complete recovery from the operation and from the urgent symptoms for which it was performed. [A.B.C.]

5.—Penetrating Wound of Abdomen, Operation, Uremic Convulsions, Recovery.—Pascual reports the case of a boy of 12 who, while bathing, plunged against a piece of iron, which caused a penetrating wound 6 inches long in the right umbilical region. Almost the entire stomach, the transverse colon, all of the greater omentum, and about 3 feet of the small intestine protruded through the opening. The viscera were cleansed and returned, copious irrigation was done and the entire wound closed without drainage. The patient did well until the thirteenth day after the operation complete suppression of urine occurred, and despite diuretics, hot packs, etc., continued for 5 days. In the meantime there were a number of uremic convulsions. After the 5 days of suppression the urine again began to flow and in very increased quantities. All uremic symptoms disappeared and the boy made a good recovery. [A.B.C.]

New York Medical Journal.

January 18, 1902. [Vol. LXXV, No. 3.]

1. Implantation of a Gold Ball for the Better Support of an Artificial Eye. L. WEBSTER FOX.
2. The Influence of Electric Ozonation upon Disease. G. LENOX CURTIS. (Continued.)
3. Clinical Notes on Gleet. A. RAVOGLI. (Concluded.)
4. The Conservative Treatment of Appendicitis and the Fallacy of the Starvation Cure. J. H. CARSTENS.
5. Concerning Hepatic Syphilis. SIMON FLEXNER.
6. Electricity in Renal Disease. A. D. ROCKWELL.

1.—Gold Ball for Support of Artificial Eye.—Fox has discarded glass and silver balls and uses only gold balls of 11, 12, 13, and 14 mm. in diameter. The gold ball is held in place by a shell made of metal, gold-plated, which he has modelled after an artificial eye and which he calls a "conformer." The technic of operation and illustrative cuts are given. [C.A.O.]

3.—Gleet.—Ravogli discusses the symptomatology, pathology,

prognosis and treatment of gleet. Copaiba, cubeb, turpentine oil, and santal oil, either alone or in conjunction with others, in emulsions or in capsules, are used in association with local application. The salicylates, which render the urine antiseptic and less irritating, are of good service. Bromids and opiates are of great service in relieving sexual excitability, insomnia and neurasthenic conditions. The local treatment is most important. The author believes that for a recent acute anterior urethritis, the lavages by the method of Janet are very beneficial, but for a chronic posterior urethritis irrigation with a 1 to 5,000 potassium permanganate solution through a recurrent catheter is much more desirable. He also prefers instillations of silver protein (2% or 3%) to those of silver nitrate. The mechanic treatment is also important. Sounds are introduced once a week, their caliber being gradually increased, and they are left in for five minutes. Dilators are to be applied in cases of deep lesions, the dilation being accomplished gradually and gently and repeated at intervals of one or two weeks. During the treatment two or three electrolytic applications are made and in many cases satisfactory results follow. [C.A.O.]

4.—Conservative Treatment of Appendicitis.—Carstens reports three cases and quotes statistics to show the fallacy of the starvation cure for appendicitis. He objects most emphatically to the idea that by absolutely starving the patient and preventing peristalsis an attack of appendicitis will be checked and be made to subside, and that the patient will recover and can be operated upon when the danger is very little. He believes that the only true conservative treatment of appendicitis is immediate operation and removal of the offending organ. [C.A.O.]

5.—Hepatic Syphilis.—Flexner reviews the subject and gives a statistical compilation of the cases of hepatic syphilis contained in the autopsy protocols of the Philadelphia Hospital. The number of autopsy records examined was 5,088, and among these the records of 88 cases of hepatic syphilis were encountered. The types of disease were the interstitial hepatic, gummatous, perihepatic, and amyloid. The first made up about half of the cases, next to which in frequency came the gummatous form (23 cases); perihepatitis was observed 16 times; amyloid disease 7 times. The so-called syphilitic scars were encountered 38 times. They were located superficially generally upon the superior and anterior surface of the organ, were commonly multiple, and at times penetrated to some depth. In some instances gummas were found in the same organ. The favorable prognosis of gummatous hepatitis depends largely upon the tendency to undergo healing. A case is reported which indicates that even severe ascites, the effect of the pressure exerted by gummas, may gradually lessen and disappear. The case is not less instructive because of the associated syphilitic ulcer of the stomach, perforation of which into the peritoneal cavity was the immediate cause of death. The outlook for syphilitic interstitial hepatitis is less favorable than the preceding, although if the condition is not advanced, it is more favorable than nonsyphilitic cirrhosis. When the cirrhosis is advanced, the liver considerably diminished in size, and intestinal and stomach complications are marked, the prognosis is grave. The existence of amyloid disease is also considered of serious import. [C.A.O.]

6.—Electricity in Renal Disease.—Rockwell reports five cases of renal disease treated successfully with electricity and follows by a general description of the special method and forms of current used. He believes that by arresting inflammatory action and congestive pressure through heightened circulatory drainage and increased filtration, by removing the inflammatory products which block up the uriniferous tubules, much can be done toward the prevention of more serious and chronic complications and to hasten the recovery of those cases which have not yet crossed the border line of incurable organic changes. Two methods of administration are used: The high-tension faradaic current, and the static wave current. Flexible electrodes, of blocked tin, three inches in diameter and covered either with sponge or with layers of absorbent cotton, are placed over the region of each kidney and firmly bound. The sances are increased according to the susceptibility of the patient, from 10 minutes to 45 minutes. A strong current

should be used. The static wave current was used in connection and alteration with the high-tension faradaic current. It has the advantage over the last named of exceeding it greatly in frequency and tension; of enabling one to administer a current, not of greater magnitude, but of far greater force and rapidity of oscillation, with the minimum of sensory and motor disturbance. [C.A.O.]

Medical News.

January 25, 1902. [Vol. LXXX, No. 4.]

1. The Causation of Multiple Neuritis. M. ALLEN STARR.
2. Criminal Abortion. E. STUVER.
3. On the Use of the Opiates, Especially Morphin. OSCAR C. YOUNG.
4. Gonorrhea in Women. J. P. KILLEBREW.
5. A Case of Spontaneous Rupture of the Eyeball. W. WHITEHEAD GILFILLAN.

1.—Causation of Multiple Neuritis.—Starr classifies all the causes into toxic, toxemic, dyscrasic and idiopathic and calls attention to some that are unusual. Arsenic neuritis from wall-paper, furniture covering, artificial flowers, toilet powders, beer, working in glucose, sulfuric acid and copper, is considered at length. The sources of lead, copper, phosphorus, mercury and silver neuritis are pointed out. Alcohol neuritis has been traced to wines and malt liquors as well as to distilled; also to the alcohol in patent medicines and to inhalation of the fumes in manufacturing establishments. Coal gas, natural gas, carbon sulfid used in rubber manufacture; the coal-tar products have also produced it. The neuritis following infectious diseases generally develops late, and may be due to a toxin left in the blood, or the lateness may be accounted for by the greater resisting power of the nerves. Antitoxin has reduced the number of cases after diphtheria. Those after typhoid may be alcoholic. Beri-beri has been attributed to a rice diet, but is probably infectious. Tuberculosis, rheumatism and gout are notably predisposing, also senility with atheroma. Idiopathic cases may be due to autointoxication from gastrointestinal fermentation. Sometimes causation is double. Alcoholics are more liable to arsenic and lead poisoning than others. [H.M.]

2.—Criminal Abortion.—Stuver believes that the distinction between the terms abortion and miscarriage should be made on moral and ethical grounds rather than be determined by the length of time pregnancy has continued, as has heretofore been done. He would, therefore, define abortion as the deliberate and intentional interruption of pregnancy before viability of the fetus has been attained. The principal causes of criminal abortion are as follows: (1) Hereditary vestiges of preexisting savage or barbarous instincts and practices. (2) Ignorance of the biologic fact that from the moment of conception the developing embryo contains all the potential powers of the fully developed individual. (3) Apathy, or a spirit of laissez faire, on the part of a great majority of the people. (4) Incompetence on the part of legislators to comprehend the true significance of the subject, and the consequent futility of the laws enacted by them to prevent the crime of abortion by adequate punishment thereof. (5) Inability or disinclination of judges to appreciate the rights of the embryo as an individual entity during the early stages of its development. (6) The ignorance or disregard of the subject on the part of teachers, ministers, druggists, and physicians, and the frequent complicity of the two latter classes in the perpetration of the crime. (7) Ignorance of the physical dangers and the moral degradation inevitably attendant on this offense. To prevent or at least mitigate this evil, in the first place, every true physician should be aroused to a keen appreciation of the moral and professional importance of this subject, and he, in turn, should strongly impress upon every one who applies to him for such service that, from a biological standpoint, the operation, unless absolutely necessary to save the mother's life, is plain, simple murder, and cannot be extenuated in any manner whatsoever. Every physician should be given to understand that he dare not produce abortions upon prostitutes, or upon those who, for convenience or social indulgences, would violate Nature's laws, and at the same time retain his position as an honorable professional man or woman. Finally, laws, with severe penalties for their contravention, should be enacted, prohibiting newspapers from advertising and druggists from selling abortifacient

remedies, except on prescription of properly licensed physicians. [W.K.]

3.—Morphin.—Young advocates freer use of opium for the relief of pain. Undesirable effects may be warded off by giving with it nitroglycerin gr. $\frac{2}{100}$ or potassium bromid gr. 20, and by using preparations free from narcotics. It is not contraindicated in pneumonia. As morphin is chiefly eliminated by the stomach, the latter should be frequently washed in poisoning to prevent resorption. Crude opium is more effective in diabetes than either morphin or codein. Opium is useful in prolonged physical and nervous strain especially in old age, also to induce quiet sleep in mitral disease or when insomnia is due to pain. [H.M.]

4.—Gonorrhea in Women.—Killebrew thinks that it is a cause for regret that the onset of this disease in woman is insidious and the symptoms mild. Were they of sufficient severity to compel her to seek medical aid at the first onset, in most cases it could be easily and thoroughly cured. In gonorrheal infection the discharge is usually very profuse and irritating. The gonococcus has a predilection for certain structures especially for the urethra, and nearly every case of purulent urethritis is of gonorrheal origin. As to prevention, so long as the customs of society permit men to have promiscuous and illicit intercourse with women without putting the brand of disgrace upon them, it will be impossible to eradicate the disease from among us. Men should be taught the danger and insidiousness of this affection, and the widespread evil resulting therefrom. The importance of subjecting themselves to treatment early in the disease and of continuing treatment until every sign of infection has disappeared cannot be too strongly insisted upon. Many men have a stricture as a result of an attack of gonorrhea, and no man with a stricture should marry before he has been thoroughly cured. The curative treatment of gonorrhea in women consists of rest, thorough cleansing by douches containing some antiseptic solution, and local applications. If the vagina or vulva is affected it should be douched every three or four hours with 1:5,000 bichlorid solution or a $\frac{1}{4}$ % lysol solution. Local applications of 1% of silver nitrate or 2% protargol should be made to the urethra once every 24 hours. The solution applied to the vulva, vagina and cervix should be stronger. For this purpose he employs tincture of iodine, or 5% silver nitrate. These applications should be made once a day for two or three days, and then every second day until all evidences of inflammation have disappeared. If the cervix is enlarged and congested, it should be depleted by local blood-letting once a day for two or three days. [W.K.]

5.—Spontaneous Rupture of the Eyeball.—Gilfillan reports the case of a woman of 87 who had a slight catarrhal conjunctivitis, senile cataract in each eye and corneal opacities. There was no staphyloma. She complained of sudden sharp pain on the left side of the head. In a short time there was a large hemorrhage from the globe of the left eye, the crystalline lens escaped onto the cheek, much vitreous escaped, and a portion of the iris was prolapsed. There was no trauma or other known cause to account for the rupture. The escaping vitreous, lens, and prolapsed iris were removed and the patient recovered. [A.B.C.]

Philadelphia Medical Journal.

January 25, 1902. [Vol. 9, No. 4.]

1. On the So-called Idiopathic Dilatation of the Esophagus (Saccular Dilatation of the Esophagus Without Anatomical Stenosis). H. STRAUSS.
2. Gastroptosis and Gastric Motor Insufficiency. J. DUTTON STEELE.
3. A Clinical Lecture on Scalp Wounds, and Cranial and Brain Injuries. THOMAS H. MANLEY.
4. Remarks on Vaccination in Relation to Skin Diseases and Eruptions Following Vaccination. ARTHUR VAN HARLINGEN.
5. A Case of Pneumococcal Arthritis. Accompanying Acute Croupous Pneumonia. D. J. MILTON MILLER.

[The fact that the abstract of Dr. Croftan's admirable paper was inadvertently sent in last week in an incomplete form, made us convey an erroneous impression as to the author's conclusions. We insert in this issue the remaining portion of the abstract, which unfortunately was not published entire in the issue of January 25.]

- 1.—See AMERICAN MEDICINE, Vol. I, No. 7, p. 290.
- 2.—See AMERICAN MEDICINE, Vol. II, No. 14, p. 521.

3.—Scalp Wounds and Cranial and Brain Injuries.—Manley discusses these accidents from their various standpoints. In scalp wounds he strongly advocates freshly powdered mustard for a dusting powder over the line of cleavage and to fill in the needle holes. It acts as an unobjectionable styptic, antiseptic and cement, as no other substance will. The mallet, the rongeur and the osteotome are preferable substitutes for the trephine, which has been designated as an "antiquated" instrument. [F.C.H.]

4.—Relation of Vaccination to Skin Diseases and Eruptions Following Vaccination.—Van Harlingen details the various skin affections occasionally seen in connection with the inoculation of vaccine virus. During the present epidemic of smallpox in Philadelphia, he had vaccinated nearly all the patients suffering with skin diseases under his care at the Children's Hospital, Philadelphia, and in his private practice, but the results are about the same as those observed 30 years ago. In a few, some aggravation of the symptoms followed; in others an improvement occurred; but in the great majority of cases vaccination did not appear to exercise any influence whatever on the course of the more common diseases of the skin. [F.C.H.]

5.—Pneumococcic Arthritis Accompanying Acute Croupous Pneumonia.—Miller details the history of a case of this rare complication of pneumonia. The treatment consisted in fixation upon a splint and the application of lead water and laudanum; later massage and similar measures to restore the function of the joints. [F.C.H.]

Some Experiments on the Formation of Bile Pigment and Bile Acids.—Croftan gives the following three arguments adduced in favor of the formation of bile acids and bile pigment in the liver alone: (1) The blood entering the liver contains no bile pigment and no bile acids; if these substances, therefore, are not known to enter the liver and are still excreted by the organ, they must necessarily be formed by the liver alone. (2) Ligation of the ducts of the liver is followed by the appearance of the bile acids and bile pigments in the tissues, the blood and the urine. (3) After extirpation of the liver in frogs, bile pigment and bile acids are not found in the blood, the tissues nor the urine. As a result of his experimental research, which is detailed, the author states that he has demonstrated: (1) That the bile pigments and the bile acids are not formed by the liver cells. (2) That the bile pigments and the bile acids can be formed in various parts of the organism other than the liver, and (3) that the bile pigments and the bile acids can be formed from hemoglobin outside of the organism, by a purely chemic, fermentative process and without the intervention of the liver cells. He proved that the conversion of hemoglobin into bile pigment and bile acids occurred without any vital action on the part of the liver cells; the process was a chemic one; and the active agent was a substance that was soluble in water and was therefore unorganized. The unorganized substance causing the conversion of blood pigment into bile pigment and bile acids in the liver is apparently none other than trypsin. There are two possible ways in which trypsin may reach the liver from the pancreas. Either by way of the pancreatic duct and then be absorbed from the intestine; or, it can leave the pancreas (possibly in the form of its "zymogen") by way of the pancreatic veins or lymphatics; in the former instance reaching the liver by the portal vein, and in the latter, either via the pancreatic veins, in the portal vein, or via the lymphatics, the thoracic duct, the jugular and the heart, in the hepatic artery. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Inoculations Against Malaria.—Of the many recent additions to our knowledge of malaria, not the least interesting is an account of certain inoculations against malaria, reported by Philalethus Kuhn, in the *Archiv für Schiffs- und Tropen-Hygiene*, November, 1901 (*British Medical Journal*, January 4, 1902). Kuhn relates that since 1899 he has maintained that malaria and horse

sickness are but narrowly separated from each other, and that for purposes of his experiments he considered them identical diseases. He points that neither disease is immediately infectious, that both appear with the rains and cease with the onset of cold weather, that mosquitos probably play a like part in both, and that in some respects the two diseases resemble each other clinically. To the objection that horse sickness is not prevalent in certain countries severely malarious, he replies by suggesting that minute investigations would perhaps elicit the fact that horse sickness either prevails everywhere in tropical malarious countries, or has yielded to the gradual "salting process." Preparing, then, a serum curative of horse sickness, he employed it in treating malaria, with happy results. By means of a Pravaz syringe, 1 cc. or more of the serum was injected into the forearms of malarious subjects—both white men and the natives of German Southwest Africa. At the site of the inoculations a slight and somewhat painful swelling sometimes arose, but it disappeared entirely in several days; in some cases urticaria developed. Although the patients suffered with unmistakable malaria, and took no quinin, all forms of the disease yielded to the injections. In all cases the cold sensations of the first stage were diminished in intensity, a strong chill being represented by a mere feeling of coldness. The effects depended somewhat upon whether the patients previously had or had not had much malaria. In the case of the natives and old residents the inoculations in many instances stopped the attacks at once; in newly-arrived immigrants who previously had not had malaria, and in children, after the inoculations there occurred, on an average, four or five attacks, the last always being the weakest. Between these extremes were the cases in the white settlers, in whom usually one to three attacks followed the inoculations. Relapses were found to be less frequent in the cases of quotidian or tropical malarial fever than in the cases of tertian or quartan fever, and the inoculations were found to be more efficacious when given during an attack than when given during the intermissions. Kuhn claims that his inoculation treatment serves as a substitute for quinin; that inasmuch as quinin is believed to induce blackwater fever in some cases, this will be avoided by the use of the inoculations; that the inoculations tend to prevent the occurrence of relapses, and that they prevent fresh infections. Not at present to point out some of the breaks in Kuhn's chain of evidence, it suffices to mention the suggestiveness of his reasoning and experiments, and to hope for confirmation of his results. In particular it would appear incumbent upon those enjoying the opportunity to ascertain accurately the nature of horse sickness.

Typhoid Fever in the Inoculated.—Birt¹ gives some statistics of typhoid fever—946 cases among inoculated persons, with 135 deaths (14.25%), and 263 cases among persons inoculated within from 6 to 18 months previously, with 18 deaths (6.8%). The average duration of pyrexia in the uninoculated was 28 days, in the inoculated 15 days; the average maximum temperature in the uninoculated was 103.7°, in the inoculated 102.9°; in the uninoculated relapses occurred in 24% of the cases, in the inoculated in 6%; constipation occurred in 10% of the uninoculated, and in 33% of the inoculated; in cases in which diarrhea occurred, the average maximum number of evacuations a day was 4.4 in the uninoculated, and 2.6 in the inoculated. [A.O.J.K.]

On the Etiology of Pneumothorax in Childhood.—Zuppinger² reports the case of a female child, two and a half years old, previously healthy, who awoke suddenly in the night with a cry, complained of severe abdominal pains, moaned piteously, breathed with difficulty, and was not to be calmed. The lips were blue, cheeks pale, and cold sweat came out upon the forehead. It was at once brought to the hospital,

¹ British Medical Journal, January 11, 1902.

² Wiener klinische Wochenschrift, January 2, 1902.

where total right-sided pneumothorax was diagnosed. Death in 36 hours. About half a liter of a turbid, semipurulent fluid was found in the right pleura, the right lung was collapsed and its base covered with a purulent pseudomembrane, and the sharp point of a foreign body was felt protruding therefrom, which was found to be an awn from an ear of wheat, of about four cm. in length. Further investigation showed that this had probably been aspirated during the night, as the child slept on a worn-out straw sack. Foreign bodies, as a piece of bone, have also been known to pass from the esophagus into the pleura. Likewise have intestinal worms bored their way through walls weakened by disease, and penetrated into the pleura. The most frequent causes, however, are tuberculosis, measles, diphtheria, gangrene of the lung, and emphysema, following whooping-cough. [J.C.S.]

The Parasitic Nature of Carcinoma.—Ribbert,¹ while not denying the agency of protozoan parasites in the causation of carcinoma, attributes to them the minor role of giving rise to the connective tissue inflammation whereby the epithelial elements involved are separated from organic connection and set free to exist on the body fluids, undergoing at the same time retrogressive metamorphosis and consequently increased rapidity of growth. [H.H.C.]

The Clinical Forms and Diagnosis of Bright's Disease.—Williamson² discusses the following forms of Bright's disease: (1) Acute nephritis or acute Bright's disease (subvariety, the nephritis of pregnancy); (2) chronic parenchymatous nephritis (subvariety, chronic parenchymatous hemorrhagic nephritis); and (3) chronic interstitial nephritis: (a) contracted white kidney (secondary cirrhotic kidney); (b) primary cirrhotic kidney (small red or granular kidney); (c) arteriosclerotic kidney. The clinical features and the diagnosis and differential diagnosis of the different forms of the disease are given in detail, especial attention being directed to the diagnosis of Bright's disease from other forms of albuminuria, such as that of diabetes, that due to the mixture of albuminous fluids with the urine (blood, pus, leukorrheal discharges, gleet, semen, etc.) It is suggested that many cases regarded as instances of functional albuminuria are probably due to leukorrhea, gleet, or the mixture of semen, and possibly prostatic fluid with the urine; others are due to latent organic disease of the kidney. [A.O.J.K.]

Asylums.—O. Woods³ gives a review of what has been done for the insane in the last century. In Ireland, at present there are 23 asylums and over 17,000 patients. In 1859 it was the sanest portion of the United Kingdom; at the present time it has the largest proportion of lunatics, having increased from one in 600 in 1859 to one in 213 in 1900. There is marked difference in the type of disease. A large number are acutely maniacal, but there is much less general paralysis and epilepsy than elsewhere, and syphilis is rare. Attention is called to the benefit which might accrue from government aid and from medical and legal steps to arrest transmission and, to prevent, under certain circumstances, the marriages of discharged patients. The necessity of early treatment and the establishment of more outdoor departments at the asylums as well as greater provision for the separation and treatment of curable patients is dwelt upon. [H.M.]

Hemiatonia Apoplectica.—(Bechterew).—In the case originally described by Bechterew the disease set in before the tenth year with an apoplectiform attack, immediately after which the affected half of the body became the seat of tonic muscular spasms without athetosis. In Pfeiffer's⁴ case, that of a woman of 31, the disease came on in the seventeenth year. The patient was out walking when she suddenly experienced a stiffness and tingling in the right half of the body; and, without any loss of consciousness, hemiplegia promptly developed. Recovery followed within a week. Three years later, there was another attack of stiffness and weakness in the right half of the body, double vision, and right-sided hemianopsia. Recovery again ensued. Five years after this, 4 months after delivery, there was another recurrence of the symptoms; this time, without restoration to the normal. There was stiffness of the right

half of the body and hemianopsia; the hypertonicity of the muscles was very marked, especially in the right arm and shoulder girdle; but there was apparently no paralysis of the upper extremity. The movements of the fingers were greatly impeded by a tonic flexion. The thumb was spastically grasped by the index finger and the middle finger. Passive motion in the large joints of the arm could be executed, but there was considerable resistance. Motion, or any position maintained for some time, greatly increased the tension in the muscles. In sleep the tension was said to disappear, but the slightest motion sufficed to bring it back in the fingers. The reflexes and direct irritability of the muscles in the right arm were not increased. There was no athetosis or choreiform movements, and no changes in the electric reactions. The musculature of the arm was hypertrophic, as was also that of the right leg. The latter limb was not paretic and the spasticity was less marked than in the arm. The patellar reflexes were not increased, and there was no ankle clonus. Irritation of the sole produced a dorsal flexion of the entire foot, but occasionally, on the right side, merely a flexion of the great toe. There was no change in sensation anywhere. A typical, right-sided hemianopsia, without hemiopic pupillary reaction existed. Pfeiffer discusses the significance of the hemiopic pupillary phenomenon. The presence of this symptom in recent cases is in favor of the intactness of the pupillary fibers to the quadrigeminal bodies; its absence has no localizing value. Regarding the localization of the lesion in hemiatonia apoplectica, it is probably the same as that of other posthemiplegic motor disturbances. The connection of these with the thalamus seems to have been demonstrated. Treatment has remained unavailing in the patient. [D.R.]

X-rays in Incipient Tuberculosis.—E. y. Capo¹ considers radioscopy as valuable as percussion and auscultation in the diagnosis of incipient pulmonary tuberculosis. It is also important in revealing glandular tuberculosis, and in this disease is a powerful means of studying function, showing the arrhythmic tachycardia, the arrhythmic and unsymmetric excursions of the diaphragm which does not rise to the same height on the sick as on the healthy side. Radiography, on the other hand, reveals the small size of the heart in the tuberculous due to a true atrophy, and the reason for the difficulty of performing percussion which lies in the narrowness of the intercostal spaces and the conical form of the chest, the ribs overlapping like roof tiles. The enlargement at the inflection of the external extremity of the clavicle and the changed position of the scapula are also shown as well as the greater extension of the heart toward the lines of Traube and Friedreich on the right side, showing a compensatory insufficiency of the tricuspid valve, and for that reason, ventricular hypertrophy on the right; the tired heart of the tuberculous thus resembling that of the emphysematous. A flexible screen is advised to obtain equality of definition and intensity and the use of a strengthening screen in radioscopy. In radiography, however, a cleaner image and greater detail is obtained without the latter. The distance between the tube and the plate should be 50 cm. [H.M.]

Postscarlatinal Diphtheria, Rhinorrhea, and Otorrhea.—Williams² points out that children convalescing from scarlet fever are peculiarly susceptible to invasion from the diphtheria bacillus, and he reports a number of cases illustrating the significance of rhinorrhea and otorrhea in the developing of such postscarlatinal diphtheria. He believes that bacteriologic examination should be made of the discharges in all cases of rhinorrhea and otorrhea in scarlet fever, and that any bacillus detected that at all resembles the diphtheria bacillus should be regarded as a modified form of this organism; that systematic isolation of these rhinorrheas and otorrheas is not only justified but advisable; that such isolation may reasonably be expected to reduce the postscarlatinal diphtheria incidence; that it is an open question whether mild cases of postscarlatinal diphtheria require antitoxin—in several cases reported it seemed indicated and did good; and that discharges from the nose and throat, unassociated with sore throats and other symptoms, may be the cause of unaccountable outbreaks of diphtheria and the persistence of diphtheria among school children. [A.O.J.K.]

¹ Deutsche medizinische Wochenschrift, November 21, 1901.

² Practitioner, November, 1901.

³ Medical Press and Circular, August 21, 1901.

⁴ Neurologisches Centralblatt, May, 1901.

¹ Medical Press and Circular, August 14, 1901.

² British Medical Journal, December 21, 1901.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

Ligation of the Inferior Vena Cava.—Next to injury of the aorta, no complication of an abdominal operation has been considered of more grave importance than injury of the inferior vena cava. Lindner, in an article on "Renal Surgery" in the *Münchener medizinische Wochenschrift* of November 26, 1901, shows that this injury, though attended by great danger, is not always necessarily fatal. He has collected reports of eight cases. In one of his own cases, a right-sided nephrectomy for tuberculosis of the kidney, the hemorrhage from the vena cava was controlled by packing, the patient eventually recovering. The other seven cases terminated fatally, although, except in two instances, the results of the grave vascular lesion could not be regarded as the sole cause of the fatal results. In one of Lindner's cases an air embolus was the cause of death, and the other, a case of Israel's progressive thrombosis occurred. Lindner emphasizes the ease and rapidity with which the hemorrhage may be controlled, stating that in no case was the ensuing anemia of sufficient gravity to cause death. He also mentions prominently a case of Bottini's, in which the patient lived two years after resection of the vena cava in the lumbar region, and a case reported by von Zöge-Manteuffel (*Centralblatt für Chirurgie*, 1899, xxvi, p. 763), in which a carcinomatous nodule was resected from the vena cava and the vein sutured during an operation for extirpation of a renal carcinoma. The ultimate result is not given in the latter case. Purpura (*Riforma Medica*, 1899, No. 195) has shown by experiments on dogs that the collateral circulation is established with difficulty if the vein is resected above the entrance of the renal veins, but more readily lower down. In the former case the collateral circulation is mainly through the veins of the abdominal wall and the inferior mesenteric vein; in the latter mainly through the anterior spinal plexus.

Even though there are these cases in which accidental and intentional injury of the vena cava which have been treated with success, there are undoubtedly many more fatal results than Lindner has collected which have not been reported, and never will be reported. Very few are courageous enough and have reputations great enough that they can afford to report honestly their failures along with their successes. We cannot agree with Lindner that the time has come when surgeons need no longer dread accidental injury of the vena cava, or that resection or ligation should be undertaken in any considerable number of cases. Malignant disease extensive enough to require resection of the vena cava for its removal, as in von Zöge-Manteuffel's case, is very certain to recur, and other conditions indicating such treatment are extremely rare. Boldness is often essential, but underestimation of danger is not in the interest of progressive surgery.

The Subsequent Fate of Children Subjected to Tracheotomy and Intubation.—In studying the effect of tracheotomy and intubation upon the subsequent health of children, Trumpp¹ finds that of 351 thus operated upon for diphtheritic laryngeal stenosis during 1886 to 1896, 23 have since died, while 328 are still living. Of the latter, 64 children have suffered since the operation with diseases of the pharynx, larynx and lungs. He therefore concludes that Sandouzy's theory that such children seldom attain the adult stage is incorrect, and that tracheotomy apparently only rarely predisposes the individual to tuberculous infection. [H.H.C.]

Temporary Colostomy in Chronic Dysentery.—A case reported by Nehrkom² shows that surgical therapy, so seldom resorted to in this disease, deserves trial in obstinate cases. A cigarmaker of 19 was admitted to the University clinic at Hel-

delberg on June 5, 1901. In October of the previous year he began to suffer with obstinate constipation. Six months later the symptoms became dysenteric and he became rapidly weak and emaciated. After admission and under medicinal treatment he grew steadily worse. During a month his weight was reduced from 110 to 85 pounds, and the blood hemoglobin from 75% to 30%. The evening temperature was 39° C. and the pulse 110-120, the tongue dry and coated, the lips colorless, eyes sunken, and extremely painful tenesmus accompanied the stools, which were bloody, slimy and very foul smelling. On June 10 left colostomy was performed by Czerny. There was some clear ascitic fluid in the peritoneal cavity. The sigmoid flexure was edematous, hard and infiltrated, the serous coat sticky and covered with an easily rubbed off fibrinous substance. On the mucous surface were circumscribed hyperemic swellings or ridges and two concavities (from loss of tissue) of the size of a penny, which were easily provoked to bleed, could also be felt. After operation there was no more bleeding. The local treatment consisted in washing out the colon once or twice daily with a weak salicylic acid solution, 1.5 liter being used. This brought away some hardened and brittle fecal matter. On the third day castor oil was given, and this resulted in a free gruelly evacuation without blood. Appetite, sleep and subjective feeling of comfort returned, but the anemia continued for some time, so that 3 weeks after the operation the hemoglobin showed only 35%. Three weeks later, when the patient was discharged with artificial anus functioning, the hemoglobin had increased to 55%, while the body weight was 112 pounds (a gain of 27 pounds). After 7 weeks the patient returned to be freed of his artificial anus. His weight was now 125 pounds, the hemoglobin showed 75%, and everything was normal. Except a little blood in the stools, probably from the sutures, no unpleasant symptoms followed the closure of the artificial anus. [J.C.S.]

Subphrenic Abscess Following Appendicitis.—Elsberg¹ gives one of the most thorough papers on this subject which has yet appeared in literature. He has collected 73 cases which have thus far been reported including two which occurred in his own practice. He believes that the importance of this complication of appendicitis is not generally recognized for, out of 179 cases of subphrenic abscess collected by Mayal 23 were secondary to appendicitis. Several modes of onset are somewhat characteristic of this condition. After the acute symptoms of appendicitis have been relieved and the temperature has fallen, the patient may begin to complain of pain in the lower part of the right chest with elevation of temperature, increased liver dullness, friction sounds over the hepatic region and tenderness in one or two lower intercostal spaces. In other cases before the acute symptoms of appendicitis have subsided the temperature becomes remittent and the patients begin to lose flesh and strength rapidly. These patients look ill from the beginning but do not complain of much pain although they may have tenderness in the lumbar region. The most marked symptom is the rapid loss of flesh and strength. In a third class of cases, after recovery from acute appendicitis good health is not regained. Without elevation of temperature or change in respiration or pulse the patients begin to complain of continuous slight pain in the right chest which persists often for weeks or months. Aspiration results negatively. The patients do not appear very ill but after a varying length of time the presence of fluid under the diaphragm is detected by physical examination of the aspirating needle. The diagnosis of this condition is not always easy. The symptom of first importance is pain in the right hypochondrium, generally localized between the eighth and eleventh ribs, between the mammary and posterior axillary lines. There may be severe pain in the right scapular region. On physical examination fine friction sounds may be detected, with dullness or flatness on percussion over the area of relative liver dullness. The dullness extends gradually, soon spreading beyond the area of normal liver dullness. In the intraperitoneal form the liver is pushed downward and can be felt one or two inches below the costal border. There is little change in the condition of the respiratory organs. Subphrenic abscess is most frequently mistaken

¹ *Münchener medizinische Wochenschrift*, October 22, 1901.² *Deutsche medizinische Wochenschrift*, January 2, 1902.¹ *Annals of Surgery*, December, 1901, Vol. xxxiv, No. 6.

for an effusion into the right chest but the symptoms of intrathoracic disturbance are wanting. There is neither cough, expectoration or rapid respiration. Sometimes it is difficult to distinguish from abscess of the liver. Abscess of the liver is much more rare after appendicitis however. In subphrenic abscess pain under the right shoulder blade is rare but frequent in abscess of the liver. Chills and profuse sweating are also more frequent in the latter condition. The final and positive diagnosis must be made by puncture with the aspirating needle from the seventh to the tenth intercostal spaces in the axillary line. The total mortality up to the present time is 40%. Of 55 patients operated upon the mortality as been only 22%; in three out of four patients which recovered without operation the abscess perforated and pus was discharged through a bronchus. As soon as the general symptoms of physical signs warrant, an aspirating needle should be inserted and immediate operation resorted to when pus is obtained. An abscess below the free margin of the ribs or in the lumbar region should be freely incised at the most prominent part of the swelling. When deeply situated under the upper surface of the right lobe of the liver resection of one or two of the lower ribs with incision through the diaphragm below the reflexion of the pleura is recommended. About two inches of the ninth and tenth ribs are usually resected between the scapular and anterior axillary lines. If there is a suspicion that the pleural cavity contains pus, aspiration of the pleura should be done at once. An abscess near the median line or high up under the dome of the diaphragm can be reached only by the transpleural route. In one of his cases Elsberg opened the pleural sac, but stitched the diaphragmatic costal layers of the pleura together, thus avoiding pneumothorax. In Elsberg's first case, a patient of 24, suffering with acute appendicitis of four days' duration, was operated upon at once, a gangrenous appendix with abscess being found. Two days later jaundice, with tenderness in the hepatic region, developed. Six days later physical signs referable to the lower portion of the right chest were noticed. Sixteen days later pus was obtained by aspiration. The abscess was evacuated after resection of the ninth and tenth ribs. A large quantity of pus was evacuated, the cavity was drained and an uneventful recovery followed. In a second case, a patient of 23 had had symptoms of appendicitis three weeks previously, but no operation was performed. When he first came under observation liver dulness was considerably enlarged, but there was no evidence of pus beneath the diaphragm. One week later, and also five days after this, aspiration was practised with negative result. Two weeks after the patient first came under observation, the pus was located after the third aspiration. The abscess was opened after resecting the ninth and tenth ribs and sewing the costal and diaphragmatic pleura together. A large abscess cavity was drained and a good recovery followed. A pleural sinus was left, however; to close this it was necessary to perform an Estlander's operation some time later. [M.B.T.]

Treatment of Injuries to the Fingers.—Georgii,¹ discussing radical and conservative methods in the treatment of injuries of the fingers, especially in cases in which the patient's vocation is a prominent factor, recommends in general the radical methods as laid down by Ledderhose, believing that these give the best results as regards future ability to do manual labor. [H.H.C.]

Vaginal Ureteral Anastomosis.—Turner² reports the case of a woman of 36 upon whom he performed vaginal hysterectomy for complete prolapse of the uterus and bladder. The cervix was badly hypertrophied and eroded, and protruded outside the vulva. During the operation the left ureter was accidentally divided about two inches from the bladder. The ends were united after the method of Van Hook, with the exception that the lower end was implanted into the upper segment instead of the reverse, this being simply as a matter of convenience in this case. The patient made an uninterrupted recovery without any leak resulting. Turner believes that this is the first case in which ureteral anastomosis has been performed by the vaginal route. [M.B.T.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Neurasthenia in Women.—From puberty to the menopause the highly sensitive nervous organization of the woman is subjected to a series of tests which, unless that system has been successfully trained, will entail nervous breakdown. The function of menstruation, so often painful and abnormal; the sexual excesses or abuses she is sometimes compelled to bear from ignorant or inconsiderate consort; the burden of gestation and parturition, and the possibility of uterine displacement, of ovarian congestion, all tend to make her sexual life uncertain and to produce nervous tire and exhaustion. While it is a mistake to attribute all of the headaches, backaches and various nervous phenomena to uterine disorder, simply because this organ may be investigated, its position changed, its neck amputated, its canal dilated, or even the entire organ extirpated without fatal results; yet we cannot afford to ignore the fact that a certain well-defined proportion of cases of neurasthenia is due to organic disease of uterus and ovaries. Goodell considered that the mistaking of womb disease for nerve disease was the crying medical error of the day and warned us of the tendency to place too much stress on pelvic symptoms to the neglect of other conditions which bear a causal relation to disease. Although the organs of generation may not always be at fault in case of hysteria, neurasthenia or insanity, yet so frequently are they involved that a systemic investigation becomes imperative whenever such neuroses are present. Charcot originally took the view that the ovary is the *point de départ* in certain attacks of hysteria and hystero-epilepsy, and inflammation or displacement of that sensitive organ is often an important causative factor in other nervous affections. Of 300 cases of operation for the relief of neuroses and psychoses collected by Krämer, in 100 the result was doubtful or unfavorable, yet both the neurologist and gynecologist must recognize the fact that in a certain proportion of cases attention to the local lesion will absolutely relieve the general condition. Every woman suffering from mental or nervous disease is entitled to a careful pelvic examination and skilful treatment of any existing lesion. The work of specialists is complimentary and reciprocal and the patient is best aided when the alienist and gynecic surgeon work hand in hand.

Oophorectomy for Cancer of the Breast.—Butlin¹ says there are three objects in view in operating for cancer of the breast: First, the hope which may be held out to a goodly number of women nowadays that operation may be quite successful. Secondly, that if the disease kills the patient, it may do so by occurring in some distant organ and with much less pain and suffering. Thirdly, that if it recurs *in situ* in the form of nodules, the patients generally suffer far less than if no operation had been performed. These objects are usually attained by the method of removing the breast, and Butlin opposes abandoning this procedure for oophorectomy: First, because he does not know of a single case in which a claim can be substantiated that a patient has been cured by oophorectomy. Secondly, when the disease comes back again, as it generally does in six months or a year, if not more quickly, it does so exactly in the same form and with all the same troubles as were present at the time of operation, and the patient grows slowly worse and dies. The manner of her death and the distress of it are not in the least changed by the oophorectomy. Lastly, it must be admitted that a very large number of women on whom oophorectomy has been performed, and who have been soaked in thyroid extract, have not received the smallest benefit in the world. He admits that the advocates of oophorectomy may fairly say that it has been for the most part employed only in very bad cases, and he would not blame a surgeon who would perform oophorectomy upon a series of 20 or 25 women who have

¹ Münchener medicinische Wochenschrift, October 8, 1901.² Annals of Surgery, December, 1901, Vol. xxxiv, No. 6.¹ British Medical Journal, January 4, 1902.

cancer of the breast to a limited extent and are willing to take the risk, but personally he has not the courage or faith to do it himself. [W.K.]

Obstetric and Gynecologic Practice.—Harrison¹ believes nature's methods more potent to heal than those of the general run of practitioners. A curet in the hands of one not an expert is a dangerous instrument, but in certain cases marked by high temperature and offensive lochia, or in which portions of placenta adhere to the uterine wall after abortion, the use of a dull curet, followed by an intrauterine douche of sterile water or salt solution, is clearly indicated, but frequently the curet only causes a trauma, which serves as an excellent inlet for septic germs into the system and interferes with natural protective processes. Only a little less harmful are the strong antiseptics indiscriminately used in place of the natural and far more scientific aseptic technic for the normal secretions of the uterus and vagina and the blood are strongly germicidal in themselves. For example, the treatment of a uterus after curetment with equal parts of carbolic acid and iodine as a so-called disinfecting agent in reality is more apt to furnish a fresh field of necrosis material in which the septic germs contained in the uterine lymphatics may flourish. The aftertreatment usually adopted, of intrauterine douches of bichlorid solution, not only increases this condition, but is theoretically superfluous if the carbolized iodine destroys the germs, as is claimed. [H.H.C.]

The Preservation of the Ovaries and Functionating Uterine Tissue in the Operation of Hysteromyectomy.

—In a case of interstitial and subperitoneal myomas of the uterine fundus H. D. Beyea² left the tubes and ovaries *in situ*. At the same time he amputated the uterus nearly 2 cm. above the internal os. He thus retained probably $\frac{1}{2}$ of the normal endometrium. His patient has had regular and normal menstruation ever since the operation. He reviews the literature of all cases bearing upon the plan pursued, and discusses the questions which may naturally be asked about such a procedure and concludes that the value of ovulation and menstruation per se demand the retention of the endometrium when possible; that the probability of subsequent ovarian change is very small; that ovarian atrophy will in no case nullify the value of the retained endometrium; that such ovaries will not produce painful symptoms and require subsequent removal, and that there is no technical contraindication to the method advocated. [J.W.H.]

Dysmenorrhea.—Menge,³ of Leipzig, groups all kinds of menstrual pain in three classes: (1) Nervous dysmenorrhea, which occurs when the genital organs are completely healthy, resulting from the supersensitiveness of those organs due to general neurasthenia, and demands treatment for the general condition. (2) Mechanic dysmenorrhea in which malposition, or narrowing or closing of the cervical canal causes painful muscular contractions in the effort to expel the menstrual fluid. This is most frequent in young and nulliparous women and may require surgical treatment. (3) Inflammatory dysmenorrhea in which the inflammation induced by various forms of disease produces such sensibility of the generative and neighboring organs that the menstrual uterine contractions cause pain of more or less intensity and which can be favorably influenced only through treatment of the inflamed and diseased condition. Any two or all three of these forms may be combined and require corresponding treatment. All dysmenorrheic pain is analogous in character to labor pains and its intensity is proportioned to the resistance to be overcome and the condition of the central nervous system. Menge concludes that nervous dysmenorrhea is by far the most common form of menstrual pain, corresponding to the great increase in hysteria and neurasthenia among women. The system needs dietetic measures, massage, hydrotherapy, gymnastics and a rational change between physical and mental activity and rest. [W.K.]

Fibroid Tumors of the Uterus and Their Treatment.—The former teaching, that these tumors seldom result gravely to the patient, is denied by C. P. Noble.² He reports 218 cases of operation for this condition, in 121 of which there were

complicating pathologic lesions. Of these complications 66 would probably have caused death and 25 endangered life, while 30 would have caused, at least partial, invalidism. The various complications are discussed in detail. The most important were ovarian cyst and necroses of the tumor. He has never seen a fibroid tumor disappear after the menopause. The youngest patient was 17 years, the oldest 67. The largest number occur between 30 and 40, but 12% were in women over 50. Phlebitis and embolism are discussed as complicating factors. He finds the mortality from fibroids, with their complications, to be fully one-third of all cases; while the operative mortality is less than 10%. He concludes therefore that early operative removal is the proper mode of treatment. [J.W.H.]

A Case of Facial Paresis After Spontaneous Delivery

(Face Presentation).—Groné¹ calls attention to these cases as interesting, both because of their infrequency and the obscurity of their etiology. In searching through the literature he has not found mention of a case of facial paresis following face presentation. His case was also of interest, as the existence of an exostosis in the pelvis of the mother, situated on the posterior surface of the symphysis, seemed to explain the occurrence of the paresis. After birth, the second stage of labor lasting 2 hours and 40 minutes, there was noticed in the lower part of the infant's face a tumor of considerable size, extending uniformly around the mouth, comprising both lips and reaching upward nearly to the eyes. The nose was swollen and flattened out, deviating to the left. The head was held hyperextended. On the following day a left-sided facial paresis was plainly noticeable when the child cried; lagophthalmus of left eye. Soft palate, uvula, tongue normal. Normal mobility of extremities. The child could nurse only with greatest difficulty. The tumor gradually subsided and the paresis had entirely disappeared after 10 days. [A.E.E.]

Premature Detachment of Normally Situated Placenta.

—Ruhl² considers premature detachment of a normally situated placenta as one of the most dangerous complications of pregnancy and labor, since in the cases known half the mothers and almost all the children have died. In the cases collected by Goodell, of the 107 children only 6 were saved, and of 106 mothers 54 died. The diagnosis of this condition is difficult because the hemorrhage is chiefly internal, death often occurring before the fatal hemorrhage has been detected; or, if the condition is recognized, it occurs at a time when it is most difficult to empty the uterus with rapidity. If that can be done the prognosis is more favorable. The history of a case is given in which the attempt to hasten labor by use of the colpeurynter was first tried, but quickly abandoned, because of the rapid sinking of the patient and a vaginal cesarean section was performed in six minutes. Immediately after the extraction of the child the placenta at once following with a large amount of blood-clots and fresh blood, the hemorrhage ceased by the spontaneous contraction of the uterus. The patient was revived by the usual methods and made a good recovery. For such cases Ruhl prefers the vaginal cesarean because it requires less elaborate preparation and less time than the classic operation. But the physician must have experience and skilled dexterity to be master of such a situation. [W.K.]

A Case of Congenital Malformation in the Uterus Simulating Tuberculous Peritonitis.

—In a patient of 27 who suffered from dysmenorrhea since puberty, and had not been relieved by any previous treatment, W. H. Metcalf³ opened the abdomen to do ovariectomy. He found the left fundus covered by granulations which he thought were tubercular and so removed the uterus and both appendages. Histologic examination revealed the presence of a nest of tubules in the uterine wall which apparently connected with the peritoneal cavity. The tubules resembled those of the Wolffian body. The fallopian tube was entirely occluded. [J.W.H.]

Anus Praeternaturalis Vestibularis.—Zander⁴ reports a case of this peculiar abnormality, which is one of the rarest malformations; as Winkel mentions only one in 12,000 cases in Dresden, and Collins 1 in 16,000 in Dublin. [W.K.]

¹ The Medical Age, June 25, 1901.

² American Journal of Obstetrics, September, 1901.

³ Centralblatt für Gynäkologie, December 14, 1901.

¹ Hygeia, November, 1901.

² Centralblatt für Gynäkologie, November 23, 1901.

³ American Journal of Obstetrics, September, 1901.

⁴ Centralbl. f. Gynäk., December 9, 1901.

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Surgical Deviation of the Blood of the Portal Vein.—

Sciassi (*La Semaine Médicale*, No. 19, 1901) reports three cases in which he created a vascular anastomosis between the peritoneum and the muscles of the abdominal wall to relieve the portal vein of some of the blood that would otherwise, normally, go through it. This was accomplished by spreading out and fixing the great omentum upon the parietal peritoneum, beneath a flap composed of the skin, superficial fascia, and the muscles of the abdominal wall. The operation comprises: (1) Incision of the abdominal parietes and opening of the abdominal cavity; (2) the placing and fixing of the great omentum between the abdominal muscles and the parietal peritoneum; (3) suturing of the musculocutaneous flap. The indications for the operation depend on the gravity of the case and the duration of the hepatportal lesion. When performed early, it is of great value in passive congestion of the liver. In cirrhosis involving the common vein, it is important to operate before marked connective-tissue changes have taken place in the liver. In biliary cirrhosis it is best to operate before enlargement, and then drain the gallbladder for a certain time. Marked success has followed this method of treatment in some cases. [L.F.A.]

Treatment of Chronic Gastric Catarrh.—As stated by Ewald (*International Medical Magazine*, Vol. x, No. 12, 1901) two conditions require treatment: (1) Diminution in the production of hydrochloric acid and pepsin, and (2) weakening of the motor function of the gastric musculature. For the first, dilute hydrochloric acid must be given in as large doses as the patient can bear—that is, without having too sour a taste in the mouth. Ewald gives it three times after each meal, at intervals of ten minutes in half a tumblerful of water. To bring the percentage of acid in the stomach up to the normal, 300 cc. of a 0.2% solution of hydrochloric acid must be introduced directly into the stomach twice a day after each of the two larger meals. In ordinary cases the internal method answers every purpose. No pepsin is prescribed, as the secretion of pepsin does not suffer in the same measure as that of hydrochloric acid. The pure gastric juice of dogs may also be administered. Among the carminatives an infusion of condurango bark is recommended; to it may be added the hydrochloric acid and tincture of nux vomica, which is the sovereign internal remedy to increase motility of the gastric musculature. This, the second therapeutic indication, calls for massage and electricity. The former, when skilfully performed—an indispensable condition—not only forces the contents of the stomach into the intestine in a purely mechanic manner, but at the same time stimulates intestinal peristalsis and relieves constipation. The intragastric method of applying electricity is the most effective. The faradic current is preferred when a stimulating effect is desired. The galvanic current has a quieting influence; in using this the anode is introduced into the stomach. A current strength of about five milliamperes is used the duration of each sitting being from three to five minutes. To remove fermenting masses the stomach is washed out by any one of the methods in common use with a 2% solution of boric or salicylic acid or a 1% solution of lysol. To restrict the fermentations actually in progress, an object partly accomplished by large internal antiseptics should be administered. The following powder is recommended:

Resorcin (resublimed)	5.0
Bismuth salicylate	10.0
Sodium bicarbonate	15.0
White sugar	15.0

A small teaspoonful every two hours.

In regard to diet, patients with catarrh of the stomach should never eat until completely satisfied, but cease at the first sensation of fulness. They should have sufficiently long and regular intervals between meals. Strong alcoholic and carbonated drinks should be prohibited. The directions in regard to the choice of foods follow the usual lines. Eggs even raw are more often badly tolerated than

is believed; greasy preparations of eggs and hard-boiled eggs are, of course, forbidden. Rich cheeses are also difficult to digest; of soups only clear bouillon from chicken or veal is allowed. The gelatinous soups and jellies from calf's feet, calf's head, oxtail, etc., are recommended. Peptone preparations, nuttose, somatose and those prepared from milk, as eulactol, santogen, etc., can be used with advantage. Products containing carbohydrates, whether pure starch preparations or containing also nitrogenous substances, vegetables, fruits and legumens, should be easily digested under the given conditions, because in catarrh the hydrochloric acid, which is the means of converting starch into dextrin, is lacking. Vegetables of the cabbage family are to be avoided because of their tendency to undergo fermentation and decomposition. For the same reason peas and beans, even in pure form, are not well tolerated. Milk, if relied on exclusively, would have to be given in the quantity of about 4,600 cc. (10 pints) a day, which is more than most persons can manage. By adding so-called milk-powder, which is milk evaporated and pulverized and of which 100 grams correspond to about one liter of milk, the nutritive value can be increased. Quite as important as the diet itself is the timely return to the usual diet. There are nervous people who by following out a restricted diet too long have been so weakened that their original gastritis has at last developed into a nervous dyspepsia or a state of universal debility that can be corrected only by a radical change of regimen. [R.M.G.]

Treatment of Psoas Abscess by Incision.—Lovett (*Boston Medical and Surgical Journal*, May 16, 1901) has studied 54 cases of psoas abscess to ascertain the value of treatment by incision, and concludes that fever is not necessarily an accompaniment of psoas abscess formation; that when it does occur the prognosis is not so good as when it is absent; that the best method of operating is by a lumbar or by an iliac incision, preferably the latter. It seems best to avoid recumbency for long periods, and this makes drainage by the iliac incision almost impossible. It is, therefore, best to put a plaster jacket on the patient almost immediately after the operation so that he will be enabled to sit up and the abscess be allowed to drain almost from the first. Lovett has obtained better results by this method than by any other. [L.F.A.]

Classification and Climatic Treatment of Cases of Pulmonary Tuberculosis.—From another viewpoint, cases may be studied in accordance with their temporal and spatial reactions; that is to say, according to the power of the organism to limit the morbid processes—primary, secondary and tertiary—in time or in space. Five principal divisions, with numerous subdivisions, may be made, of which the former only need be considered. These are; First, processes with little or no tendency to limitation in space or in time. Under this head would come acute miliary tuberculosis and florid tuberculosis, for neither of which, as a rule, can climatic treatment be advised; although in individual instances of galloping consumption when the patient is sufficiently wealthy, palliation may be afforded by suitable climatic measures. Second, cases exhibiting little tendency to limitation in space, but marked, though often intermittent, tendency to limitation in time. These cases may, in their inception, closely resemble cases of galloping consumption, and considerable loss of pulmonary tissue may occur within a comparatively short time. Suddenly, however, without recognizable cause, activity of morbid processes comes to an end. The patient gains in strength and flesh, and loses his cough, his fever and other general and local symptoms. The remission, or intermission, may persist for months or for years, when, without recognizable cause, or following some indiscretion or exposure, local and general symptoms of greater or less severity are again manifested. There is often, in such cases, excessive pyrexial reaction. The outlook may be profoundly discouraging, but recovery again takes place; and this alternation of active symptomatology and apparently complete abeyance may go on for many years, eventuating in some cases in the ultimate triumph of the morbid tendency, in others in final recovery. The third group of cases exhibits little tendency to limitation in time, but marked tendency to limitation in space. In such cases there may have been at first extensive or limited lesions, rapid or slow progress, but recovery takes

place locally and generally, except that the persistence or frequent recurrence of active processes—as manifested upon percussion by boardlike tympany, perhaps surrounded by a larger area of dullness, and upon auscultation, by moist rales—can be demonstrated in a limited area—usually just below one apex, anteriorly; or near the angle of the scapula, posteriorly. With this often goes intermittent pyrexial reaction. In both the second and the third group of cases the choice of climate will depend largely upon the patient's general constitution and temperament, and upon the condition of the heart and bloodvessels. As a rule, patients of the second group need protection at first, when convalescing from the original attack, or from one of the recurring exacerbations; and if delicate, or with small hearts, or of erethistic temperament, with tendency to irritable overaction of the heart or incomplete control of the vessels, should remain in a mild and equable climate for years, or permanently. If of robust type, without erethistic tendencies, and with good hearts and vessels, and not too far advanced in years, they may soon be sent to moderate altitudes in comparatively cold regions, and, as recovery progresses, to high altitudes like those of the Alpine winter resorts or the Rocky Mountains. Under favorable conditions as to vessel, accommodation and food, sea voyages in warm waters are useful for the delicate and long voyages, as to South Africa or Australia, for the more robust. The same general advice applies to the third class of patients, modified, of course, by individual circumstances, and with greater necessity for resort to the ocean in the endeavor to bring to an end the persistent tertiary process; that is to say, the limited, local softening; more especially if this be accompanied with fever. Should the voyage be successful, it is usually well at first thereafter to seek a sheltered inland resort of moderate elevation, such, for example, as Meran or the San Gabriel Valley of California, or in the case of more robust patients, higher elevations or colder latitudes, as Goerbersdorf or Idyllwild or in the Adirondacks, and, later, the full effects of high altitude, as at Davos or Colorado Springs. In the fourth class of patients there is no tendency to limitation in time, but fairly marked tendency to limitation in space. The local morbid process, however, does not, as in the previous group, remain active in the tertiary phase in one place, but spreads slowly and sluggishly over successively limited areas, remaining for the most part in the secondary stage. This form of disease is usually called fibroid tuberculosis. Patients live on, but without recovering, in almost any climate, under almost any conditions; and for them, therefore, climatic advice must be purely individual. Some do well in winter at resorts of the type of Lakewood or Hammon, or the pine regions of the Carolinas. Others at moderate elevations, as in the Pocono region of Pennsylvania, and the Blue Ridge and Shawangunk regions of New Jersey and New York. In the fifth group, neither the spatial nor the temporal limitation is markedly good or markedly bad. These are the ordinary cases of chronic pulmonary tuberculosis, with its innumerable individual variations; and, as they are robust or delicate, sluggish or erethistic have good or poor circulatory systems, and according to the stage or progress of their lesions, toxemia and complications, as sufficiently set forth in preceding pages, must the patients be protected, or an invigorating environment be sought for them in the endeavor to develop decided temporal or spatial limitation or both.—Solomon Solis Cohen in Vol. iv of "Physiologic Therapeutics."

Indications for Operation in Gastric Ulcer.—Cabot (*Boston Medical and Surgical Journal*, August 29, 1901) gives the following indications for the surgical treatment of gastric ulcer: (1) Acute hemorrhages should rarely be treated by operation; the results of interference have not been good, while the results of medical treatment have been satisfactory. However, a frequently-repeated hemorrhage, even if severe, will demand operative treatment so soon as its recurrent character is manifest; (2) slight frequent hemorrhages which threaten anemia are a clear indication for operation; (3) perforation of the stomach, either acute with general peritonitis, or chronic with surrounding adhesions and perigastritis, demands instant operation; (4) when an ulcer runs a chronic course with a strong tendency to recurrence, and gradually diminishes the patient's capacity for work and enjoyment, operation is indi-

cated, especially when the patient is dependent upon his daily work for support and he is unable to regulate his diet strictly. [L.F.A.]

Treatment of Cardiac Pain.—Latham (*Clinical Journal*, October 9, 1901) states that pain dependent on dyspepsia may be relieved by a suitable dietary and the administration of bismuth and hydrocyanic acid and other stomachic sedatives, together with an occasional mercurial purge. A definite attack of pain may be relieved by the following:

Compound spirits of ether.	} of each . . . 1 dram
Compound spirits of camphor,	
Peppermint water	1 ounce

Pain due to dilation of the ventricle must be treated by placing the patient at rest and applying a belladonna plaster, or better still fly-blister, constantly repeated, at the location of the pain. Potassium iodid and arsenic are the only drugs administered internally which have any effect upon the pain due to cardiovascular conditions other than dilation. In dilation, digitalis and other cardiac stimulants are of value. In aortic regurgitation and atheroma, potassium iodid, in 10 to 15-grain doses, produces the best results. [L.F.A.]

Treatment of Skin Diseases by Cold.—Saalfeld (*Therapeutische Monatshefte*, Vol. xv., No. 7, 1901) reports a number of successful therapeutic experiments with liquid air and metethyl, a mixture of chlorethyl and chlormethyl (15%). From three to ten applications of liquid air at intervals of ten to 15 seconds were made. The application was immediately followed by burning and swelling; after a few minutes a hard, white ridge appeared, surrounded by an area of swollen and erythematous tissue. The burning and itching lasted from 15 to 30 minutes. After an hour or two the wheal was converted into a bleb which spontaneously, or after puncture, discharged a large amount of serum. The crusts persisted from one to three weeks. The following conditions were successfully treated with liquid air: Lichen planus, eczema lichenoides, angiodomas, callosities, warts, and chancre. The excessive cost of liquefied air led Saalfeld to experiment with metethyl, which he used in conditions of chronic infiltration to bring about absorption by setting up an acute inflammatory process. The results were very satisfactory in lichen planus, eczema, lichenoides, and herpes tonsurae. In a case of leukoplakia buccalis, the tongue was sprayed with metethyl and the frozen tissue removed with a knife; the spraying, as well as the cutting were quite painless. The remedy was applied daily, the spraying being continued for one-half to 1½ minutes after the first appearance of the ice crust. The advantages of metethyl are its convenience of application, prompt results, and the absence of unpleasant accompanying symptoms, the sole one being a temporary burning, lasting a few minutes. [R.M.G.]

Injections of Serum from the Renal Vein in Uremia.—Guelinel (*Bulletin Général de Thérapeutique*, October 23, 1901), believes that the kidney possesses an internal secretion which enters the organism by the blood of the renal vein. Its antitoxic role is proved by results obtained in animals which had both kidneys removed. Those receiving injections of serum from this vein survive much longer than those which do not; moreover, the uremic symptoms which they present after operation are relieved after each injection. Guelinel considers this treatment of value in patients suffering with nephritis complicated by uremia, as it replaces the internal secretion of the kidney when deficient. The subcutaneous injection of 5 drams of blood-serum from the renal vein of a goat has produced the desired result, although the source of the serum is not limited to this animal. The effects of this treatment are apparent several hours after injection: headache and vomiting cease; the nervous phenomena are lessened; the anasarca, congestion and edema of the lungs disappear in a few days, and the urine becomes more nearly normal in its composition, the albumin decreases after each injection, and sometimes disappears entirely. [L.F.A.]

Severe Case of Obturator Ileus Relieved by Olive Oil and Atropin.—Adam (*Münchener med. Woch.*, April 23, 1901) gives the history of a man, aged 67, who presented himself with a severe case of obturator ileus, characterized by the usual symptoms. He was given hypodermic injections of atropin and frequently-repeated enemata of olive oil. No change oc-

curred in his condition until the seventh day, when the obstruction disappeared, and with it all of the patient's symptoms. Complete recovery followed. [L.F.A.]

Creasote in Pneumonia.—Van Zandt (*The Southern Practitioner*, December, 1901) considers creasote curative in pneumonia. He believes that the pneumococcal infection is the most amenable to the treatment, and thus explains the unequal results obtained. A large percentage of cases are cut short or aborted, almost all the rest are mitigated, and the remainder, a very small proportion, are not at all affected by the remedy. The drug must not be withdrawn so soon as active symptoms have subsided, but should be continued in smaller doses or at longer intervals for at least three days. The dose recommended for an adult is $7\frac{1}{2}$ to ten minims of creasote carbonate or creasotal every three hours; in urgent cases, more frequently for a few doses. It may be given in emulsion or stirred in hot sweetened water, to be swallowed during agitation, as it does not dissolve. It should not be mixed with alcohol or acids, as these develop the taste and odor of creasote. [R.M.G.]

New Creasote and Gualacol Preparations.—(*Therapeutische Monatshefte*, Vol. xv, No. 7, 1901). *Pneumin* is obtained by the action of formaldehyd on creasote; it is a yellowish, odorless, and tasteless powder, readily soluble in alcohol and ether; insoluble in water. The preparation is without local irritating effect, and is well borne, even when administered for a long time, in the dose of 0.5 gram ($7\frac{1}{2}$ grains) *pro die*. In tuberculous patients the appetite was improved, the body-weight increased, and a favorable influence was exerted on cough and night-sweats. *Pulmoform* is obtained by the action of formaldehyd on gualacol and is also a yellowish powder without taste, closely resembling pneumin in its physical and therapeutic properties. *Euguforn* is closely allied to pulmoform, being obtained by acetylation of the product resulting from the action of formaldehyd on gualacol. It is a grayish-white, almost odorless, finely divided, amorphous, and insoluble powder. Recommended as a dusting powder or in ointments (2½% to 10%) for the treatment of skin diseases; it relieves pain and itching. [R.M.G.]

Goldbeaters'-skin Court-plaster as a Dressing for Operative Wounds.—Day (*Gynecological and Obstetrical Journal*, August, 1901) has used goldbeaters'-skin court-plaster as a dressing for operative wounds with very satisfactory results. After the wound is sutured the surrounding skin is moistened with an antiseptic solution; a dry strip of plaster about 3 inches wide is then fitted over the wound. The outside of the plaster is then thoroughly saturated with the solution. Bubbles of imprisoned air are pressed out to the edge of the plaster at the same time. In a few minutes the plaster is dry. In dressing laparotomy wounds Day applies a strip of adhesive plaster transversely across the wound and abdomen to prevent undue tension on the stitches during the vomiting period, and a layer of absorbent cotton is placed over this to absorb whatever drainage may occur. Should there be any discharge from the wound the isinglass of the most dependent part of the plaster is softened and the discharge is carried by gravity and capillary attraction to the edge of the plaster and absorbed by the cotton. As soon as the discharge ceases the plaster dries and the wound is sealed hermetically. After 3 days, when vomiting has ceased and union has begun, the adhesive plaster may be removed and the wound washed with an antiseptic solution. The wound is then dressed with fresh plaster as before. Day states that this dressing is aseptic, antiseptic, and impervious to germs; that it is thin, pliable, transparent, fibrous and adherent; that it forms a light, comfortable dressing; and that it can be readily removed by applying moisture. [L.F.A.]

Treatment of an Irreducible Dislocation of the Inferior Maxilla.—Kramer (*Centralblatt für Chirurgie*, No. 14, 1901) publishes the case of a girl who presented herself for treatment 5 weeks after the accident. The dislocation being irreducible, operative interference was decided upon. A horizontal incision was made on the under rim somewhat forward from the middle of the zygomatic arch, then upward, the last incision being only through the skin, partly loosening the masseter muscle from its attachment. The overstretched fibers of the outer lateral

ligament and the external pterygoid muscle were then completely separated. The capsule of the joint was uninjured. The dislocation was reduced and the wound closed without drainage. An uninterrupted recovery followed, with full use of the joint. [L.F.A.]

Esophagotomy in a Child of 16 Months.—Wm. J. Taylor (*Pediatrics*, xiii, 1) removed a metal clasp known as a "drawers' holder" from the esophagus of a child of 16 months. An incision was made in the left side of the neck and the fingers introduced into the wound until the sharp points of the clasp were felt through the walls of the esophagus. The esophagus was then opened without passing any sound or metal probe through the mouth. In the attempt to withdraw the clasp one of the hooks probably caught on the bifurcation of the bronchus and almost caused instant death. The foreign body was finally removed, and, despairing of primary union, the surgeon drew the edges of the wound in the esophagus together as closely as possible with a few catgut sutures, then closed the upper portion of the external wound with two sutures, and packed the lower portion down to the esophagus with iodoform gauze. The baby was allowed to nurse, but each time the milk ran out of the hole in the neck. This was obviated by packing the wound with cotton and making pressure with the finger while the child nursed, and in this way some of the milk was forced into the stomach. At each nursing the dressing was removed and the pad of cotton pushed into the wound and held there by firm pressure. Closure took place by granulation. Twenty days after the operation fluid ceased to pass out of the wound; and two weeks later it was entirely closed. Three months later no stricture of the esophagus had developed. [R.M.G.]

Naphtol in Typhoid Fever.—Legroux (*Bulletin Général de Thérapeutique*, December 15, 1901) recommends the following in typhoid fever in children: (1) A purgative dose of calomel so soon as the diagnosis is confirmed; (2) then the administration of naphtol alone or with bismuth or magnesium salicylate. If there is moderately profuse diarrhea the following is given:

Naphtol 30 grains
For 10 powders. One every hour.

In cases of profuse diarrhea:

Naphtol } of each 30 grains
Bismuth salicylate }
For 10 powders, to be taken in 24 hours. [L.F.A.]

Cerebrospinal Injections.—Jaboulay (*Lyon Médical*, August 4, 1901) has employed subarachnoid injections of quinin in doses varying from $\frac{1}{2}$ to 1.5 grains for the production of local anesthesia. Anesthesia of the sacrococcygeal integument, the perineum, scrotum, ureter, vulva, vagina, uterus, bladder, rectum and the vesical and rectal muscles is produced, and lasts 15 days. In one case anesthesia of the external part of the thigh, and in another paralysis of the gastrocnemius muscle of the right calf, was produced. With a larger dose anesthesia of the foot and the lower part of the leg was obtained. Injections should always be made in the subarachnoid space at a level with the loins. Jaboulay employed this treatment in carcinoma of the rectum involving the anus and perineum, in purulent cystitis which is particularly painful, in sciatica which is rebellious to cocaineization of the spinal cord, and in a case of neuritis of the left leg with disturbances of circulation, in one vaginal hysterectomy in uterine cancer, and in painful conditions of the pelvis and hipjoints. [L.F.A.]

Physical Culture in Childhood.—Taylor (*Pediatrics*, Vol. xii, No. 7, 1901) lays great stress on the importance of attitude and gait. The former should be easy and natural, allowing full play to the muscles of the shoulder girdle. The conventional teaching to throw the shoulders back and the chest out, the head up and the chin in, should be modified to read, "let the shoulders alone but keep the chest as far up as possible and keep the abdomen held in." The pelvis should be nearly level, not tilted forward. In this position the action of the thigh is so easy that the slight leaning forward of the body, as in stepping out, allows the leg to swing forward with almost no effort. It is during the plastic period that the nervous system must be developed, and if brain cells are allowed to pass this period without the benefit of rightly directed training, they

will never fully develop. The necessity of medical guidance to correct the empiricism of physical trainers is emphasized. The value of spontaneous exercise, the "product of the play impulse," as a factor in the child's development, and the importance of interrupting the strain of school hours by an adequate recess spent in play and noise should be duly considered in making up a school curriculum. [R.M.G.]

Guaiacampchol in Tuberculosis to Control Night-sweats.—(*Therapeutische Monatshefte*, Vol. xv, No 7, 1901) asserts that a single dose of 0.2 gram (three grains) of guaiacampchol often suffices to cause total disappearance of night-sweats. In some cases the dose may have to be increased to 0.4 gram (six grains) or 1.0 gram (15 grains). It may be used repeatedly, as it is without unpleasant secondary effects. [R.M.G.]

Hedonal.—Müller (*Therapeutische Monatshefte*, Vol. xv, No. 7, 1901) concludes that in doses of two to three grams (30 to 45 grains) hedonal is a harmless hypnotic, useful in mild cases of agrypnia when the patient has a subjective craving for rest but is prevented from falling asleep by some psychic disturbance. Its action is uncertain even in the larger doses necessitated by the tolerance which the patient very soon develops. In severe forms of insomnia it is quite unreliable. It is not without troublesome secondary effects which, however, appear to be harmless and subside at once on withdrawal of the drug. [R.M.G.]

Treatment of Intestinal Obstructions with Belladonna Preparations.—Gathgens (*Münchener med. Woch.*, April 23, 1901) reports the case of a woman of 64, who presented the characteristic symptoms of intestinal obstruction. She was given a hypodermic injection of $\frac{1}{20}$ of a grain of atropin sulfate; 6 hours later she was given a second injection of $\frac{1}{32}$ of a grain of atropin. Three hours after the second injection the patient had a movement accompanied by the discharge of considerable flatus. The day following she complained of pain in the left iliac region, with some stiffness of the rectus muscle on this side. She was given $\frac{1}{2}$ of a grain of the extract of belladonna every 4 hours. After 6 doses the rectus muscle entirely relaxed and the patient had a large stool. On the following day she spontaneously passed feces and flatus and was soon discharged cured. [L.F.A.]

The Best Way to Prescribe Calomel as a Purgative.—Floersheim (*New York Medical Journal*, July 27, 1901) recommends $\frac{1}{2}$ of a grain of calomel every hour for 6 hours, then every 2 hours, for children under 1 year suffering from constipation. Should this fail to act, half a wineglass of magnesium citrate and an enema of soapsuds should be given. In diarrhea $\frac{1}{2}$ of a grain of calomel, with $\frac{1}{2}$ of a grain of extract of krameria and $\frac{1}{2}$ of a grain of Dover's powder should be given every 2 or 3 hours. Children from 1 to 6 years having ordinary constipation should receive $\frac{1}{2}$ of a grain of calomel every hour for 5 hours, then every 2 hours. If no movement follows the eighth dose, a wineglass of magnesium citrate should be administered; an enema may be given also if necessary. In obstinate constipation, $\frac{1}{2}$ grain of calomel combined with $\frac{1}{2}$ of a grain of extract of belladonna is given every hour until three doses have been taken, then every 2 hours, followed by 2 wineglasses of magnesium citrate after the fifth dose. If no movement is obtained in 3 hours, a high enema containing warm soapsuds, olive oil, oil of turpentine and castor oil is given. In diarrhea $\frac{1}{2}$ of a grain of calomel, with from $\frac{1}{2}$ to 2 grains of extract of krameria and $\frac{1}{2}$ of a grain of Dover's powder should be given every 1 to 3 hours. Constipation in children from 6 to 14 years should be treated by the administration of $\frac{1}{2}$ of a grain of calomel combined with $\frac{1}{2}$ of a grain of belladonna every 1 to 2 hours; in obstinate constipation $\frac{1}{2}$ to 1½ grains of cascarn or $\frac{1}{2}$ of a grain of resin of podophyllum may be added. An enema may be given also if necessary. If the constipation is of long standing a better result is obtained if the enema is given first. In diarrhea $\frac{1}{2}$ of a grain of calomel with small doses of bismuth subnitrate, 3 grains of extract of krameria, and 1 grain of Dover's powder is given every 2 or 3 hours. Constipation in youths and adults is treated by the administration of $\frac{1}{2}$ of a grain of calomel with aloin, strychnin sulfate and the extract of belladonna every 3 hours. If hemorrhoids are present, cascarn should replace the aloin in the combination. In obstinate con-

stipation the calomel may be increased to 2 or 3 grains and the resin of podophyllum may be added. When a rapid and large movement is desired, a single dose of calomel gives the best results. [L.F.A.]

Treatment of the Pain of Dental Caries.—Redier (*Journal des Praticiens*, March 9, 1901), recommends the following for relief of the pain of dental caries:

Tincture of benzoin	1½ drams
Tincture of opium	of each ½ dram
Chloroform	

Or,

Tincture of benzoin	1 dram
Tincture of opium	of each ½ dram
Chloroform	
Creasote (pure)	

The second formula is applicable in rebellious cases, when sensibility is excessive. A small pledget of absorbent cotton is dipped into one of these solutions and inserted into the cavity. A second tampon saturated with a resinous substance is then inserted over the first. Contact with saliva causes precipitation of the resin in the meshes of the cotton and thus forms a more or less impermeable dressing. The following formulas may be used for this purpose:

(1)

Benzoin	} equal parts
Alcohol 80%	

Dissolve, let stand and then decant.

(2)

Camphor	30 grains
Mastic	75 grains
Balsam of Peru	30 grains
Sandarac	1 ounce
Ether 65%	} of each 1½ ounces
Alcohol 90%	

The first formula is commonly employed, the second gives a hard dressing suitable for broad, shallow cavities. Further treatment should be carried out by a dentist. [L.F.A.]

Luminous Heat Baths and Mediterranean Fever.—The *Journal of Physical Therapeutics*, Vol. II, No. 4, 1901, reports that an extensive trial with satisfactory results was made on board H. M. hospital ship "Maine," now in the Mediterranean station, with a view of testing the usefulness of luminous heat baths, Dowsing system, in the treatment of neuritis and other troublesome sequels of Mediterranean fever. [R.M.G.]

Restoration of Voluntary Movements by Nerve Crossing.—Kennedy (*Journal of Physical Therapeutics*, Vol. II, No. 4, 1901) states that experiments on animals have shown that when the nerves supplying the flexor muscles of the limb are divided and cross-united to the nerves supplying the extensor muscles, the animal regains the function of the limb. This principle of nerve-crossing has been applied to paralysis of a muscle, or group of muscles, supplied by a particular nerve. A portion of the nerve below the lesion may be grafted on the neighboring normal nerve, with a probability of restoration of the functions of the affected muscles. [R.M.G.]

Menthol Inhalations for the Relief of Cough.—Saenger (*Therapeutische Monatshefte*, Vol. xv, No. 7, 1901) offers a number of suggestions for the administration of menthol in vapor form to take the place of opiates in the treatment of cough. A few crystals may be placed in a teaspoon and warmed over a candle flame for 10 to 20 seconds until menthol fumes are given off; this may be repeated as often as desired. As an alcoholic solution of menthol (40 to 50%) evaporates without heating, it may be rubbed between the palms, and the hands carried to the nose; or the solution may be dropped on a chloroform mask. A more radical measure consists in intralaryngeal injections of olive oil containing menthol in solution; this may, according to Saenger, be carried out by lay attendants. No rule can be given for the number and duration of the inhalations; they must be regulated by the needs of the individual case. The treatment is advised in tuberculosis, chronic bronchitis and whooping-cough. It should not be employed in acute inflammatory diseases of the lungs and pleuras, especially if hemoptysis has recently occurred; nor should it be used to allay the cough following an endolaryngeal surgical operation. [R.M.G.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended January 25, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles.....Jan. 4-11.....	11	
	San Francisco.....Dec. 29-Jan. 12.....	10	
	Belleville.....Jan. 11-16.....	8	
	Chicago.....Jan. 4-18.....	14	1
Illinois:	Freeport.....Jan. 4-11.....	2	
	Galesburg.....Jan. 11-18.....	2	
	Evansville.....Jan. 4-18.....	6	
	Clinton.....Jan. 11-18.....	3	
Indiana:	Ottumwa.....Nov. 30-Dec. 28.....	79	
	Wichita.....Jan. 11-18.....	1	
	Lexington.....Jan. 4-11.....	3	
	New Orleans.....Jan. 4-18.....	5	3
Iowa:	Portland.....Jan. 11-18.....	2	
	Boston.....Jan. 4-18.....	76	9
	Brookton.....Jan. 11-18.....	1	
	Brookline.....Jan. 11-18.....	1	
Kansas:	Cambridge.....Jan. 4-11.....	3	1
	Clinton.....Jan. 4-11.....	3	
	Holyoke.....Jan. 11-18.....	1	
	Lowell.....Jan. 11-18.....	1	
Kentucky:	Marlboro.....Jan. 4-11.....	1	
	Medford.....Jan. 4-11.....	1	
	Quincy.....Jan. 4-11.....	1	1
	Somerville.....Jan. 4-11.....	2	
Louisiana:	Weymouth.....Jan. 4-11.....	1	
	Ann Arbor.....Dec. 28-Jan. 4.....	2	
	Detroit.....Jan. 4-18.....	4	1
	Grand Rapids.....Jan. 11-18.....	2	
Maine:	Winona.....Dec. 28-Jan. 4.....	1	
	Omaha.....Jan. 4-11.....	41	
	South Omaha.....Dec. 1-Jan. 18.....	216	
	Nashua.....Jan. 4-18.....	2	
Massachusetts:	Camden.....Jan. 4-18.....	31	6
	Jersey City.....Dec. 29-Jan. 19.....	43	
	Newark.....Jan. 4-18.....	63	12
	Passaic.....Jan. 4-11.....	2	1
Michigan:	Plainfield.....Jan. 11-18.....	4	
	Binghamton.....Jan. 4-18.....	1	1
	Mount Vernon.....Jan. 11-18.....	1	1
	New York.....Jan. 4-18.....	48	8
Minnesota:	Cincinnati.....Jan. 4-17.....	27	
	Cleveland.....Jan. 4-18.....	4	
	Dayton.....Jan. 11-18.....	1	
	Hamilton.....Jan. 11-18.....	1	
Nebraska:	Toledo.....Jan. 4-18.....	4	
	Youngstown.....Dec. 28-Jan. 18.....	30	4
	Allegheny.....Jan. 4-11.....	1	
	Altoona.....Dec. 28-Jan. 4.....	4	
New Hampshire:	Lebanon.....Jan. 4-11.....	1	1
	Norristown.....Jan. 4-11.....	10	1
	Philadelphia.....Jan. 4-11.....	213	31
	Pittsburg.....Jan. 11-19.....	4	
New Jersey:	Providence.....Jan. 12-18.....	1	
	Greenville.....Jan. 4-11.....	1	
	Memphis.....Jan. 4-18.....	11	
	Salt Lake City.....Jan. 11-18.....	1	
New York:	Burlington.....Jan. 4-11.....	38	
	Tacoma.....Dec. 29-Jan. 12.....	12	
	Green Bay.....Jan. 4-18.....	25	
	Milwaukee.....Jan. 4-18.....	3	
Ohio:			
Pennsylvania:			
Rhode Island:			
South Carolina:			
Tennessee:			
Utah:			
Vermont:			
Washington:			
Wisconsin:			

SMALLPOX—FOREIGN.

Africa:	Monrovia.....Dec. 7-14.....	1	
	Prague.....Dec. 14-28.....	12	
	Rio de Janeiro.....Dec. 7-22.....	77	
	Halifax.....Jan. 4-11.....	12	
Australia:	Quebec.....Jan. 4-18.....	110	1
	St. John.....Dec. 28-Jan. 18.....	48	3
	Panama.....Dec. 23-Jan. 13.....	1	
	Lyons.....Dec. 21-28.....	1	
Brazil:	Paris.....Dec. 21-Jan. 4.....	7	
	Glasgow.....Dec. 27-Jan. 10.....	31	
	Liverpool.....Dec. 21-Jan. 4.....	5	
	London.....Dec. 21-Jan. 4.....	1419	68
Canada:	Newcastle-on-Tyne.....Dec. 21-28.....	1	
	Sheffield.....Dec. 21-28.....	1	
	Karachi.....Dec. 8-15.....	6	2
	Naples.....Dec. 21-28.....	32	2
Colombia:	Moscow.....Dec. 7-21.....	34	12
	Odessa.....Dec. 14-28.....	11	2
	St. Petersburg.....Dec. 14-28.....	11	4
	Warsaw.....Dec. 14-21.....	5	
France:	Barcelona.....Dec. 24-31.....	3	
	Coruna.....Dec. 21-Jan. 4.....	2	
	Vigo.....Dec. 1-31.....	1	
Great Britain:			
India:			
Italy:			
Russia:			
Spain:			

YELLOW FEVER.

Brazil:	Rio de Janeiro.....Dec. 18-22.....	2	
Mexico:	Vera Cruz.....Dec. 28-Jan. 18.....	8	5

CHOLERA.

India:	Bombay.....Dec. 10-17.....	2	
	Calcutta.....Dec. 7-14.....	36	
	Madras.....Dec. 7-13.....	5	
	Batavia.....Nov. 30-Dec. 7.....	10	4

PLAGUE.

Brazil:	Rio de Janeiro.....Dec. 7-22.....	13	
China:	Hongkong.....Dec. 7-14.....	1	1

India:	Bombay.....Dec. 14-17.....	144	
	Calcutta.....Dec. 7-14.....	24	
	Karachi.....Dec. 8-15.....	81	56
	Smyrna.....Dec. 28.....	1	

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended January 23, 1902:

BROOKS, S. D., surgeon, to proceed to Bath, Maine, for special temporary duty—January 20, 1902.
MAGRUDER, G. M., surgeon, granted 30 days' leave of absence on account of sickness, from January 22—January 20, 1902.
THOMAS, A. R., passed assistant surgeon, to proceed to Liverpool, England, for special temporary duty—January 23, 1902.
ANDERSON, J. F., assistant surgeon, upon expiration of leave of absence to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty—January 23, 1902.
GARCIA, FELIX, acting assistant surgeon, granted leave of absence for 30 days from January 25, January 22, 1902.
ALLEN, G. C., hospital steward, granted leave of absence for two days from January 27—January 23, 1902.

Changes in the Medical Corps of the U. S. Army for the week ended January 25, 1902:

LINN, ROBERT S., contract surgeon, will proceed to his home, Detroit, Mich., for annulment of contract.
WICKLINE, WILLIAM A., contract surgeon, will proceed to his home, Warm Springs, Mont., for annulment of contract.
HARRIS, HERBERT I., contract surgeon, now on duty at the artillery defenses of Havana, will proceed to Columbia Barracks, Cuba, for temporary duty.
HALSELL, JOHN T., contract surgeon, granted leave for 14 days.
KIERSTED, First Lieutenant HENRY S., assistant surgeon, leave granted December 16, is extended 10 days.
MCCAW, Major WALTER D., surgeon, leave granted for one month.
MCCAW, Major WALTER D., surgeon, will upon the expiration of leave, proceed to Fort Wadsworth for duty.
WYETH, Major MARLBOROUGH C., surgeon, is relieved from duty in charge of the medical supply depot at Havana, Cuba, and will proceed to Fort Trumbull for duty, to relieve Captain Irving W. Rand, assistant surgeon. Captain Rand will proceed to Fort Hamilton for duty.
CHURCH, First Lieutenant JAMES R., assistant surgeon, upon the expiration of his present sick leave will report at U. S. general hospital, Washington Barracks, for duty.
COX, First Lieutenant WALTER, assistant surgeon, is relieved from duty in the division of the Philippines, and will proceed to San Francisco, Cal., and report by telegraph on arrival to the surgeon-general of the Army for instructions.
WEBB, First Lieutenant WALTER D., assistant surgeon, is relieved from further duty in the division of the Philippines, and will proceed to Fort Totten for duty, to relieve First Lieutenant Edwin W. Rich, assistant surgeon. Lieutenant Rich will proceed to San Francisco, Cal., for transportation to the Philippine Islands, where he will report for assignment to duty.
STONE, GUY, contract surgeon, is relieved from temporary duty at the general hospital, Presidio, and will proceed to his home, Nashville, Tenn., for annulment of contract.
VAN KIRK, HARRY H., contract surgeon, now at Sunbury, Ohio, in compliance with orders heretofore issued, is relieved from further duty in the division of the Philippines, and will proceed to Fort Leavenworth for duty.
SMITH, First Lieutenant HERBERT M., assistant surgeon, is relieved from duty at Fort Leavenworth, to take effect upon arrival at that post of Contract Surgeon Harry H. Van Kirk, and will then proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where upon arrival he will report for assignment to duty.
PINKHAM, First Lieutenant EDWARD W., assistant surgeon, granted leave for three months, to take effect when his services can be spared by the commanding general, department of the East, with permission to go beyond sea.
CRAMPTON, Major LOUIS W., surgeon, leave granted for two months.
CRAMPTON, Major LOUIS W., surgeon, will upon the expiration of the leave granted him January 22, proceed to Fort Adams for duty.
SANFORD, JOSEPH L., contract surgeon, will proceed from Clifton, Va., to San Francisco, Cal., and report to the commanding general, department of California, for transportation to the Philippine Islands, where upon arrival he will report for assignment to duty.
THOMPSON, LOUIS A., contract surgeon, extension of leave on account of sickness granted October 15, is further extended two months on account of sickness.
MCALISTER, JOHN A., contract dental surgeon, now at San Francisco, Cal., will report to the commanding general, department of California, for transportation to the Philippine Islands, where he will report for assignment to duty.
GORGAS, Major WILLIAM C., surgeon, in addition to his present duties is assigned to duty as disbursing officer of the medical department at Havana, Cuba, to take effect upon the relief of Major Marlborough C. Wyeth, surgeon, in charge of the medical supply depot in that city.

Changes in the Medical Corps of the U. S. Navy for the week ended January 25, 1902:

LEWIS, D. O., surgeon, ordered to Pensacola—January 17.
PAGE, J. E., passed assistant surgeon, detached from Pensacola, and to hold himself in readiness for sea duty—January 18.
VAN RYEPEN, Rear Admiral W. K., chief of the Bureau of Medicine and Surgery, retired from active service January 25, 1902, upon his own application, after 40 years' service; with the rank and three-fourths the sea pay of the next higher grade—January 20.
MCCLURG, W. A., medical inspector, ordered to the Olympia—January 20.
HUNTINGTON, E. O., passed assistant surgeon, commissioned passed assistant surgeon from May 25, 1901—January 22.
DENNIS, J. B., passed assistant surgeon, commissioned passed assistant surgeon from May 25, 1901.
PARKER, E. G., assistant surgeon, ordered to the Pensacola—January 23.
WEBB, U. R., assistant surgeon, detached from the Pensacola, and ordered to the Asiatic Station, sailing from San Francisco February 7.

American Medicine

FOUNDED, OWNED, AND CONTROLLED BY THE MEDICAL PROFESSION OF AMERICA

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Compulsory Vaccination.—From December 28, 1901, to January 31, 1902, there were reported to the Surgeon-General of the Marine-Hospital Service 11,015 cases of smallpox in the United States with 253 deaths. In the same period one year previous there were but 4,359 cases with 55 deaths. Thus we find that the disease is rapidly increasing in our country both in the number of cases and in virulence. There is no doubt whatever that to antivaccination bigotry is wholly due this vast amount of suffering and loss of life. How is it, for comparison, with one nation we are accustomed to scorn as at best far below us in civilization? Just after the Japanese-Chinese War smallpox prevailed in epidemic form in nearly all the islands of the Japanese Empire. Vaccination was made compulsory. In December, 1901, according to *Public Health Reports* there was but one case of smallpox reported. Shall we longer stand idly by and watch the numbers of the stricken increase because of the ignorant prejudice which Germany and Japan have had the courage to crush. Let us have compulsory vaccination!

An American school of tropical medicine would be the natural outcome of our acquirement or influence in tropical countries. The enlargement of our commercial and political relations with these widely scattered peoples makes it more than ever inevitable that their diseases must be presented to American physicians at home or abroad, and the magnificent strides which at present are being made by American medical science unite to demand special courses of study in them by our patriotic and progressive countrymen. The success that has attended the efforts of the English profession in establishing schools of tropical medicine should also inspire our own men to effort in the same direction. This suggestion corresponds also to the decided trend which is now everywhere observable toward individual attention to special types of disease. If one group of men devote their attention to cancer, another to tuberculosis, and another to tropical diseases, it is certain that there will be a more speedy resolution of the problems of each than if all gave divided attention to the three diseases. Divide and conquer! The example of the English schools shows us that the American School of Tropical Medicine need not necessarily be established in the tropics, for instance in Cuba or in

Manila, but may be in the United States. The profession has before it a great opportunity which should be seized.

An Important Work in Preventive Medicine to be Done by Life-Insurance Companies.—A writer in the *Journal of the American Medical Association* for July 21, 1900, has enthusiastically urged the great value of periodic examinations by physiologists and pathologists of patients and even of the apparently well in order to detect the beginnings of disease and to prevent them from going on to illness and premature death. Taking up this thought in a practical way, Dr. Stewart W. Tufts, of Pittsburg, in *Insurance World*, counsels insurance companies to institute medical examinations in their patrons every one, two, or three years. He believes that by this plan the lives of the insured would be prolonged and that the additional premiums thus paid in, and the interest upon the face of the policies, would not only pay for the extra cost of the reexaminations, but would add largely to the profits of the company. We have frequently expressed astonishment that the possibilities of money-making are not recognized by insurance companies on strictly business methods by caring for the lives of those they insure, instead of allowing them to drift into disease and death through sheer ignorance and indifference. Dr. Tufts has no difficulty in showing how these periodic reexaminations would greatly lessen the mortality from tuberculosis, nephritis, diabetes, cardiac disease, etc., by discovering chronic and insidious diseases earlier and by giving the physician the opportunity of instructing patients in the art of preserving health. Preventive medicine itself would thus receive a great stimulus, and the interest developed would soon show its influence on the general deathrate. But the appeal, it should be noted, is primarily to the self-interest and profit of the insurance companies themselves. It is more than strange how these, and indeed all governments as well, fail to recognize the money-value of human life.

The unification of the New York medical profession is a work which has plainly been resolved by all the best physicians of the state; nowhere have we seen a more sincere spirit shown to this end than in the inaugural address by Dr. Elsner delivered at the ninety-

sixth annual meeting of the Medical Society of the State of New York. We wish we had space to publish this address in full, but we can only allude to the appointment of a committee of five to confer with an equal number representing the State Association for the purpose of formulating a plan which shall have for its object the reorganization of the regular profession of the state, which body shall be in affiliation with the American Medical Association. The committee shall report the result of its labors at the next meeting of the Medical Society of the State of New York. In the event of the failure of the New York State Medical Association to appoint such a committee, or if the committees should fail to agree upon a plan of reorganization, the committee appointed by the Medical Society of the State of New York shall have full power, if it deems it expedient, to represent the Society before the American Medical Association, and the secretary of the Society shall, if the majority of the committee desires, provide the individual members with credentials of delegates to the American Medical Association. Dr. Elsner was made the chairman of this committee on conference. Every true American physician will agree that both committees and the membership of both societies should cancel their differences and multiply their agreements in order that the great work of unification and representation in the National Association may be speedily brought about.

The "Asylum-prison" for the Professional Criminal.—The significance of the recent Pittsburg tragedy for the penologist and social reformer differs from that deduced by the ordinary newspaper reader. Here were men who never earned an honest dollar, who with exceptional ability scorned to do it, and deliberately chose the career of the professional criminal. They avoided crimes that would bring a life-sentence to prison, or capital punishment, and the law seconded their desire of repeated crime with repeated short-term imprisonments. There was never any attempt to put an end to this criminal folly of our legal rules, or to this foolish crime of the Biddle brothers. In the United States this criminally foolish tragedy is constantly perpetrated in the lives of thousands of law-breakers. Every American citizen should read the remarkable article in the December number of *The Nineteenth Century and After* by one who has made a life-study of criminals at first hand. Mr. Anderson writes most convincingly. He says that if 70 (not, as has been stated, 70,000) known English criminals were put out of the way, the whole organization of crime against property in England would be dislocated, and there would be an immediate immunity from crimes of this sort. Discrimination between the weak and the wicked is what is needed, and the life-detention of the wicked, those who deliberately and systematically resort to crime as a life occupation, in an asylum-prison. This is the striking lesson of the Pittsburg horror, but we greatly fear the old stupid way of encouraging and perpetuating crime, which seems ingrained in our Anglosaxon legal habits, will still long continue. In the name of law it lawlessly turns back upon an injured society its proved enemies for future depredations; it confirms in their ways the hardened criminals,

and it continually breeds new ones. What egregious stupidity!

"The Medical Publisher Idea" is characteristically held up to scorn by a contemporary in a recent editorial, and upon all who think the profession should own its own journals is poured an abundance of factitious and harmless wrath. We are called a variety of charming names—"would-be leaders," "self-constituted mouthpieces," "foolish," "men with evident ends of their own," and our contention is charitably classed as "silly and disingenuous twaddle," etc. All of these things are examples of urbanity and editorial courtesy, which conclusively show that in medical journalism there may be the most acute need of editorial freedom of publishers' control. The whole article indeed is so self-contradictory and self-destructive that an answer is not needed to bring before intelligent readers its prompting motives and expressed fallacies. However, a few errors should be corrected for the sake of those who may be too trustful:

1. The financial failure of the *Gynecological and Obstetrical Journal* was not due to the fault of the professional publisher-editor.

2. We know of no one who has said that "a medical journal owned by a layman must necessarily be run wholly in the interests of the publisher and against those of the readers." Many are distinctly "run" in the interests of the profession, but many are not so "run." We have known the frank confession to be made by a lay-owned journal that "it is not a school for ethics, nor the guardian of the profession," and that "a gain for ethics may be a loss to business pure and simple." The two objects, medical science and medical ethics, said the owner, "demand different organs for their agitation."

3. "The medical-publisher idea" is pronounced "impracticable." Are *The British Medical Journal*, *The Journal of the American Medical Association*, *American Medicine* and others to be charged with "impracticability"?

4. "The interests of editor, readers and publisher are one and cannot be divorced without injury to all." The editorial writer must have been in a sadly humorless state of mind when he wrote this nonsense.

5. "Four of the seven larger weekly journals in this country are owned by laymen." Name them!

6. "Any attempt to combine or confuse the two distinct functions, business and professional, is folly, quite certain to result sooner or later in disaster." Neither the past nor the present can show any proof of this misstatement, and as to the future, the wish too plainly fathers this thought to permit us to believe in such a pessimistic prophecy. Professional control of professional literature is plainly much too successful to satisfy our cynical contemporary, and the good cause is far from being injured by abusing it and by calling it "silly and disingenuous twaddle." As in the case of President McKinley's medical staff such vitriolic criticism helps on professional progress, and pleases those it is designed to punish.

The Study of Medical History.—There are hundreds, even thousands of organs, operations, methods,

tests, etc., called by the names of the men who discovered or devised them. The medical student is compelled to learn these names but he usually knows nothing of the men themselves, their history or that of the times in which they lived. It is a truism of science that its history alone can explain the present fact, and yet in the science of medicine we habitually ignore it. That a better state of affairs in this regard is preparing in the minds of physicians is proved by the new interest in historic study everywhere, and especially in Baltimore and the Johns Hopkins Hospital. At the meeting of the *Book and Journal Club of the Medical and Chirurgical Faculty of Maryland* on January 22, Dr. David Hunt, of Boston, gave an address on the value of the study of medical history, urging that it should be dealt with from the standpoint of evolution as an integral part of general progress. He criticised sharply the too conventional aspect of the subject taken in modern days, and made a strong plea for its introduction into the medical schools as a part of the curriculum.

At the same meeting Dr. E. F. Cordell showed, on behalf of the Library Committee, a set of about 120 volumes from the library of Dr. Upton Scott, the first president of the Medical and Chirurgical Faculty, which had been presented to the Library of the Faculty by one of his collateral descendants, Dr. Clotworthy Birnie, of Taneytown, Md. Dr. Scott was a graduate of Glasgow University, and practised for many years most successfully at Annapolis. At the outbreak of the Revolutionary War he took the Tory side and went to London. He subsequently returned to Annapolis, and again became one of the most trusted and beloved physicians in the state. The library consists of standard works of the eighteenth century, many of them of value, and a number of them were not on the shelves of the Library of the Faculty.

At the *Johns Hopkins Club* on the evening of January 18, Dr. Osler showed an interesting collection of the works of Boerhaave which he had secured during the past summer in Holland. A majority of them had come from the library of one of the descendants of the only daughter of Boerhaave. Besides a set of original editions of the orations, the work of most value was the second edition of the *Index Plantarum*, with numerous annotations by Boerhaave himself, and many slips of corrections, and in the second part, which was interleaved, copious notes for a subsequent edition. There was also a very remarkable old-fashioned quadrant, with which tables of latitude and longitude had been constructed for Boerhaave's country-house, Oud-Poelgeest, in the neighborhood of Leyden.

The regulation of dispensaries by the state is required both in the interest of the public and the profession. The abuses that inevitably grow without regulation in time become so scandalous that the support of worthy institutions will be stopped from lack of funds. On the other hand, if free medical attendance becomes the rule for everybody, then the medical profession and science will come to a practical ending. The public is easily educated in the art of getting something for nothing, but to its ultimate cost and injury. It is a

double pity and wrong if the profession aids in the evil it should prevent. In New York the State Board of Charities has ordered that the following notice shall be maintained in a conspicuous place in the reception rooms of dispensaries:

This dispensary has been licensed under the laws of the state of New York by the State Board of Charities, to furnish medical or surgical relief, advice, or treatment, medicine or apparatus to the sick poor who are unable to pay for the same. The law provides as follows:

"Any person who obtains medical or surgical treatment on false representation from any dispensary licensed under the provisions of this act, shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars and not more than two hundred and fifty dollars."

Other methods of bringing the provision of the law to the attention of applicants are provided. In the entire state, 112 dispensaries reported according to the rules of the board, 81 of which complied with the rule as to the posting of public notices, and 31 did not comply. The average daily attendance of all was 7,993, and of each, 72. The secretary of the board writes that since the issuance of the report, there has been a marked improvement in compliance with the law. As a result medical companies or associations are springing up guaranteeing medical protection on the industrial insurance plan for a small weekly sum, the fees averaging 10 or 15 cents. These companies claim to be self-supporting business corporations, and so beyond the control of the law.

The sweat-shop system is a well recognized blotch on our civilization and a source of danger both from an economic and hygienic standpoint. Up to this time there has been comparatively little organized effort to do away with this, and the system being such that it is difficult to root it out. All who are interested in progress in such matters will be glad to learn about the work of the Consumers' League of Massachusetts, which held its annual public meeting at Tremont Temple, Boston, Saturday, January 18, 1902, with Dr. Francis G. Peabody, Professor of Christian Morals in Harvard University, as chairman. The aim of the league is to band together buyers of clothing against the purchase of articles made in sweat-shops by unpaid, ill-nurtured and practically prisoned serfs by exploiters. This evil seems to be specially great in New York, but it is to be found in nearly every large city. The league has provided a label which is fixed to garments sold by honorable, humane manufacturers, and it is hoped that this label will become universally accepted. An address was made before the league, illustrated by stereopticon views, on Sweat Shops and of Model Clothing Manufactories, and there has been an exhibition held consisting of goods made by 31 manufacturers who are now using the label of the Consumers' League. The sweat-shop system not only has been the curse of workers who have lived and labored under the most unhygienic conditions imaginable, but connected with it are many possible grave dangers; among others, the transmission of infectious diseases through the garments which are made by diseased workmen in most filthy surroundings. Tubercu-

losis has been found to be especially common among workers in sweat-shops, and they are no doubt among the worst centers for the spread of this disease. The efforts of the Consumers' League deserve to be widely known and supported by all public-spirited citizens. Physicians, who understand better than others the dangers of the system from a public health standpoint, should be specially active in support of this movement.

Disinfection of Sleeping Cars.—According to experiments by Robert G. Wilson¹ with formaldehyd gas the routine disinfection recommended by the railroad company—which company is not stated—was wholly inefficient. The procedure was as follows: The car was prepared for disinfection by having the ventilator holes in the closets closed and the bedding and curtains of the car so distributed as to be exposed to the action of the disinfectant. On sheets suspended from the bell-cord in the center of the car 23 ounces of 40% formalin were sprayed. Doors and windows being closed, the contents of the car were left exposed to the disinfectant for four hours, during which the car was switched around the yard. To test the efficacy of disinfection colon bacilli, dried on paper and threads, were disposed about the car, some freely and some under blankets, some near the roof of the car and others on the floor. Even the freely exposed organisms were not destroyed by this method. The writer points out that the air space of the car was 5,557 cubic feet and that the lamp ventilators were not closed. In the second experiment, with all ventilators closed, 84 ounces of 48% formalin were used, and the organisms were left exposed to its action for seven hours, the car not being moved. There was superficial disinfection but no penetration, and the odor of formalin was too strong at the end of twenty-four hours to allow the car being put in service. With 168 ounces of formalin and five hours' exposure there was penetration through one layer of blankets, but the odor of formalin was strong in the car at the end of one week. Thorough disinfection by this method is therefore impractical for economic reasons, as the car cannot be put in service for some days. With formaldehyd gas generated directly from methyl-alcohol by passing it over red hot platinum, two liters being used, and the time of exposure five hours, there was no disinfection, and the only odor in the car an hour afterward was that of methyl-alcohol. When six liters of methyl-alcohol were used there was superficial disinfection without penetration after five hours' exposure, and there was a strong odor of methyl-alcohol in the car for a few hours afterward, but not enough to keep it out of service. Fulton regards formaldehyd gas generated from 40% formalin or paraform undesirable for car disinfection because of the persistence of formalin odor, while the rapid dissipation of the odor after the use of methyl-alcohol particularly recommends it for surface disinfection. As penetration cannot be counted on, all portable articles should be disinfected in a chamber where complete penetration can be assured. In view of the danger of infection—especially tuberculosis infection, to which travelers are exposed, frequent (every day) and

efficient disinfection not only of sleeping cars but of all railroad cars and their contents should be compulsory, and to government supervision of this it might be well to add public vigilance and the boycotting of lines where there is negligence of such important sanitary precautions. The same applies to steamship lines.

The New York State Charities Bill, urged by Governor Odell, has aroused the opposition of every good physician and citizen of the state. The politicians who support the bill cynically ask why the local boards of management, who serve without pay, are so anxious not to be deprived of their "job." So absolutely has the average politician become a selfseeker that he cannot imagine man doing anything out of pure philanthropy for the sake of the poor and suffering. All competent observers are agreed that the local boards of managers should not be deprived of their power to withstand abuses and to further reforms, and that the bill renders political corruption and degradation almost certain. It will prove expensive economy in the long run. The opponents of the measure organized a strong deputation of nearly 100 representative men to protest against the bill at a public hearing in Albany last week. Their arguments seem conclusive to dispassionate minds, but as we go to press it seems certain that the bill will be passed. The profession should at once organize for its repeal and for a reinstitution of the *status quo ante*.

The cleansing effect upon the atmosphere of snowfall is illustrated by a report of the Chicago Board of Health. On January 18, shallow glass dishes containing the usual preparation favorable to the growth of atmospheric germs were exposed to the air for three minutes in ten different localities within the half mile bounded by South Water, State, and Adams Streets, and Fifth Avenue. After seventy-two hours' incubation these showed an average of 630 colonies of growing germs, the greatest number, 1,050, being found at the northeast corner of Dearborn and Washington Streets, a few feet above the street level; the least, 330, in the south court between the City Hall and the County Building; and the next fewest, 335, on the roof of the City Hall, about 130 feet above street level. On the 21st snow fell to the equivalent of 0.28 of an inch of rain, and the experiment was repeated on the 22d. The average colonies from these latter exposures numbered sixty-six, ranging from nineteen at the southeast corner of La Salle and South Water Streets, to 180 at the southeast corner of Washington and Fifth Avenue. The atmosphere was nearly 90% purer on the 22d after the snowfall than it was before.

Consolidation of Medical Journals.—An event significant of the tendencies of the time has just occurred in Cleveland. Plans for the amalgamation of the *Cleveland Journal of Medicine* and the *Cleveland Medical Gazette* have been brought to a successful issue. On January 20, 1902, was held the organization meeting of the *Cleveland Medical Journal Company*, which is composed of those physicians now interested in the two old journals together with a good proportion of the representative

¹The New York Bulletin of the Medical Sciences, October, 1901.

physicians of Cleveland, numbering in all 45 stockholders. At a considerable sacrifice on all hands the two old journals have been transferred in their entirety to the new company that will publish the *Cleveland Medical Journal*, which is to be an independent and free professional institution conducted for the good of the medical community with no idea upon the part of the stockholders that they shall ever look for dividends. At this meeting a temporary organization was formed consisting of Dr. Marcus Rosenwasser, president; Dr. William E. Bruner, secretary; Dr. Joseph F. Hobson, treasurer. Dr. P. Maxwell Foshay was elected editor and Dr. Edward S. Lauder associate editor.

The Danger from the Use of Human Excreta as Manure.—In an interesting report by Surgeon J. J. Kinyoun to Surgeon-General Wyman, he ascribes the prevalence of typhoid fever and dysentery in the rice-growing districts of Japan to the custom of the Japanese of using the excrement gathered from the houses in the cities for fertilizing the rice paddies and vegetable gardens. There is in Yokohama, for instance, only surface drainage. Sewers are not required because the matter is gathered each night from the houses. The water supply is good though inadequate, but as it is passed through filtration beds it is not the medium of transmission of the germs of typhoid and diarrheal diseases. The shallow surface wells, the rice fields and the vegetable gardens are to blame. "The struggle for nitrogen" is therefore indirectly the cause of the prevalence of the diseases mentioned in Japan, and one wonders if it may be so wherever human feces are used as manure. Such use of them is a growing custom.

The Life-Insurance of Quack Medicine Drunkards.—A writer in *The Insurance Advocate* for January, 1902, says that one life insurance company requires that the medical examiner shall ask the applicant, "What patent medicines have you used in the last five years?" In commending the action of the insurance company the writer deplores the national expense and physiologic injury done by the advertising nostrum-vendor. "A man who will swallow a patent medicine for his blood will swallow a yellow journal editorial for his mental ballast, and he who will bolt department-store pills for his liver, is not a fit subject for life insurance." The action of this insurance company is significant of the new methods in life-insurance, whereby there is a sharper scrutiny into the habits and character of applicants as to things which were formerly disregarded. If powerless to do harm medicines are equally powerless to do good, and the patent medicine drunkard is hardly a good insurance risk either morally or physically.

Plague Infection by Ship-borne Rats.—A synopsis in Public Health Reports of an article by Professor Kossel of the Imperial Health Office at Berlin, and Dr. Nocht, of Hamburg, makes it clear that the chief method of transmission of plague germs is by ship-borne rats. From Asia to the coast and thence slowly from port to port westward on the lines of the great sea traffic, the disease has been borne, and almost always

without the existence on ships of plague-stricken human beings. Bacteriologists have proved that rats may and in all probability have been the agents of the transmission. Recently two ships have arrived in Europe from Smyrna in which no plague existed among the people on board, but in which it was demonstrated that the rats had the disease. Such facts show that the disease may at any time be introduced among us by this method and that stringent measures of protection are demanded.

Reciprocity by federal compulsion has been urged by those who feel the injustice or hardship resulting from the limitation of license to practice to individual states. But if it were possible it would be inadvisable. By the principles of our constitution the regulation of such matters must be left to the individual states. The remedy for the present troubles must come somewhat slowly, and if the slow progress at times bears hardly upon some individual practitioners living near state border lines or moving from one state to another, it will result in a greater good both to profession and public. Progress of the best kind will come through reciprocity between states having equally high standards of their examining boards. This will encourage the laggard states to raise their demands and thus prepare for the time when reciprocity will be so general that little complaint will exist.

Education.—Osteopathy Denied Legalization in New York.—It is strange that any member of the New York Legislature could be found to introduce a bill for the legalization of the practice of osteopathy, and yet more so that the Medical Society of the State of New York should have found it necessary to send a representative to argue against the passage of the bill. Dr. A. Jacobi made a dignified and convincing statement of the manifest reasons why such a foolish measure should not be passed. Dr. E. E. Harris, Dr. Arthur G. Root, and Dr. Albert Vander Veer, who also spoke, showed that the tendency to revert to commercialism in medical practice manifest in osteopathy is one that must be discouraged in the interest of the public and of the public health. The bill was quashed in committee. The osteopath treats disease or his contention is nonsense. The treatment of disease requires at least that minimum of knowledge of medicine required by the state law.

Vaccinate!—Smallpox counts sufficient victims each week to permit of not the slightest relaxation in our efforts to struggle against it by the only effective method that we possess, viz., vaccination. We do not know what the action generally of great employers of labor may be, but we believe that such institutions as traction companies, Post Office Departments, ship yards, locomotive works, railroad companies, etc., would be entirely justified in exacting a certificate of successful vaccination within five years as a prerequisite for entering or continuing in employment. Every conductor, every motorman, and every mail-carrier—all of these coming into more or less intimate contact with the public—should be vaccinated.

Excluding tuberculous immigrants by the United States Government has aroused so much opposition that

the whole question deserves and will probably soon receive a thorough reconsideration at the hands of the authorities. The decision hinges upon the interpretation of the term contagious, as applied to tuberculosis, and the doubt exists not only as to the degree of contagiousness of the disease itself, but in each individual case, dependent upon the fact of whether it is in the incipient or advanced stage. Our own opinion is that at no stage is the disease so contagious as to justify the immigrants' exclusion on this ground alone. If the patient is likely to be a public charge, that does not directly concern medicine.

Abolish the coroner's office, has long been the demand of enlightened public sentiment. Where it has been done there has been nothing but gratification at the result; where it has not been done scandal and shame are constant. It is said that a saving of \$100,000 a year to the county of New York could be made by doing away with the office. The work now performed by it could be readily done by the officials of the District Attorney's office and of the Board of Health. Tradition and politics have too long united to maintain the existence of this anachronism, of service perhaps in a medieval state of society, but entirely out of place in the life of a modern city.

Another gift for medicine was announced by President Eliot of Harvard College, on February 1. John D. Rockefeller offered \$1,000,000 to the Medical School on condition that other friends of the institution should raise \$500,000. The money is to be used for the construction of new buildings, and for general running expenses. With the \$1,000,000 given by Mr. Morgan last year, these endowments will be of far-reaching benefit to medicine and to the American people. Their significance, however, is still greater as a proof that the benevolent are coming to see that in no way can money be put to as good use as in the adequate endowment of institutions for medical education and research.

An artificial larynx, "a marvel of surgery," is described by foreign journals and the accounts are translated by American papers, lay and medical, as if a new and wonderful discovery had been made at Lyons, France. Many years ago Dr. Roswell Park devised and inserted a successful artificial larynx after a laryngectomy.

EDITORIAL ECHOES

Children and Matches.—While exact statistics are not at hand, it must be obvious that in the course of a single year scores of children in this land are burned to death or wretchedly maimed for life by this one sort of criminal neglect on the part of the mothers and nurses. A statute making adequate punishment possible in the event of accident from this cause would seem to be required, and probably the mere placing of it on the books would call attention as nothing else could to this monstrous but wretchedly frequent effects of maternal thoughtlessness.—[*Medical News.*]

AMERICAN NEWS AND NOTES.

GENERAL.

The extermination of rats is prosecuted with great vigor in the Philippines. Explicit directions are given as to how this work is to be accomplished by means of poison. In Manila 1.7% of rats captured were found to be infected with plague.

Food Commissioner.—The food bureau established in the Department of Agriculture will have a commissioner appointed by the President. His duties will be to prevent the adulteration and misbranding of foods in the District of Columbia and the territories.

Home for Lepers.—A bill has been introduced into Congress by Senator Platt providing for the establishment of a home for lepers in the United States. A location will be selected in a dry, warm climate and its establishment will be placed in the hands of a commissioner who must be a physician.

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 28, 1901, to January 31, 1902, shows a marked increase in the total number of cases which amount to 11,015 with 253 deaths as compared with the showing for the same period in 1901, when there was 4,359 cases with 55 deaths.

Schools for nurses are to be established in Cuba. These schools will be state institutions and will be under the control of the department of charities. Diplomas will be issued to graduates attesting their fitness to practise. It is hoped to establish and maintain a universal standard for instruction and to provide hospitals and institutions in the island with skilled service in the nursing department and a proper number of graded assistants.

Study of Tetanus.—Health Commissioner Bosley, of Baltimore, made a map recently showing the number of deaths from tetanus in that city in 1901 and the locality of their occurrence. There were 32 deaths, 26 of which were infants under 21 days old and in no case did a case occur after vaccination. The deaths were most numerous in the Second ward, where there were 12. Two occurred in West Baltimore and one in South Baltimore, all of the rest being in the eastern and northeastern sections.

Decrease in Deathrate.—An examination of the census statistics of the United States shows that the proportion of deaths to population has decreased 10% in the past ten years. The decrease is confined almost entirely to cities where the improved methods of sanitation which prevail are almost entirely ignored in the rural districts. The decrease in deaths from pulmonary tuberculosis may be cited as a good illustration of improvement in the general health of the country. In 1899 there were 245 deaths per 10,000 persons having the disease, but in 1900 there were but 190. A great reduction of deaths from cholera, typhoid fever and diphtheria is shown, but on the contrary a marked increase in deaths from pneumonia, cancer, kidney troubles and heart diseases.

EASTERN STATES.

Lead-poisoning.—An epidemic of lead-poisoning in Milton, Mass., after investigation by the State Board of Health, is attributed to an excess of carbonic acid in the water, which, in passing through the lead service pipes through which water from the street mains is supplied to and distributed about the houses, acts upon the lead of the pipe and produces the poisonous carbonate of lead, which slowly accumulates in the human body, with very serious results.

Antivaccination.—The Committee on Public Health in Boston gave a hearing recently on the bill accompanying the petition of Reuben F. Brown and others taken from last year's files, for the abolition of compulsory vaccination. Professor Councilman, Dr. Azel Ames, of Porto Rico, and President Eliot, of Harvard, strongly supported the retention of compulsory vaccination, and Dr. Packard and Dr. Sherman, of the homeopathic school, also strongly opposed the petition for its abolishment.

Muscle-bed.—Under this name a device has been invented by Dr. William Anderson of the Yale gymnasium for testing in the horizontal human body the distribution of the blood-supply under the effect of thought and exercise, and of ascertaining the center of gravity. This apparatus rests on very accurately made knife edges, and is sensitive to the slightest pressure and is furnished with levels, graduated scales, and indicator for recording. A body perfectly balanced on the sensitive knife edges of the muscle-bed will be affected by additional weight on either side of the point of equilibrium, causing the head to settle if the flow of blood is in that direction or the feet to lower if the flow is toward them. In the case of a subject balanced on the muscle-bed who was told to answer some question requiring thought although not a muscle was moved the rush of blood to the head caused by the mental effort caused a change of the center of gravity.

NEW YORK.

The osteopaths' bill regulating the practice of osteopathy in New York is said to be practically killed, as it will not be reported by the Senate Judiciary Committee.

Smallpox.—Official reports give the total number of cases in the state from December 28, 1901, to January 31, 1902, as 295, with 25 deaths, as against 82 cases with 11 deaths for the same period in 1901.

Pure Food.—A bill has been introduced by Senator Slater providing that formaldehyd, salicylic acid, or any other harmful substance shall not be added to any dairy product intended for human food, neither shall any product containing such substances be offered for sale with impunity.

Beardless Milkmen.—The Milk Commission of New York has ordered that hereafter smoothfaced men only shall be employed for milking cows and delivering milk to the various depots throughout the state. They claim that the dust from the stable is liable to infect the beard, which will collect and hold microbes that may readily impregnate the milk.

Maternity Hospital.—A site for the new Manhattan Maternity Hospital and Dispensary at 327 to 332 East Sixtieth Street, New York City, has been purchased for the sum of \$33,000. Building operations will be started within a few weeks. The proposed hospital will not be a large structure, as most of the work will consist in attending the sick poor at their homes. A training school for nurses will occupy part of the lot.

State Hospital for the Tuberculous.—It is reported that the plans for building the hospital on the site selected at Raybrook have met a sudden setback in the development of the fact that according to the constitution of New York, trees cannot be felled on land bought by the state in Adirondack Park. This prevents the clearing of the site. The Board of Trustees having the matter in charge met recently at Albany and elected Howard Townsend president, and John H. Pryor, of Buffalo secretary.

Richmond County Medical Society.—At the annual meeting of this society held at New Brighton, Staten Island, Borough of Richmond, New York City, January 8, 1902, the following officers were elected for the ensuing year: President, D. C. Wilmot Townsend, of New Brighton; Vice-President, Dr. William Bryan, of Livingston; Secretary and Treasurer, Dr. Horace W. Patterson, of New Brighton; Censors, Dr. Jefferson Scales and Dr. H. C. Johnston, of New Brighton, Dr. George P. Jessup. Delegates to the New York State Medical Society for three years: Dr. Jefferson Scales, Dr. William Bryan, Dr. John T. Sprague, Dr. William T. Vanderberger. The next meeting will be held at New Brighton the second Thursday in February.

The Health of New York State in 1899.—From the twentieth annual report of the State Board of Health of New York for the year ended December 31, 1899, which is just out, we learn that the total number of deaths reported were 123,000, giving a deathrate of 17.3% against an estimated average for the past 10 years of 17.2%, that of 1898 being 18%. Of these 35,386, or less than 29%, occurred under the age of 5, the average for the decade being 40,065, or 33.6% of the total deaths. Twelve per cent of the deaths were from zymotic diseases against an annual average of 17% for 10 years. There were 1,604 deaths from typhoid fever, against an annual average of 1,650 for the decade. Diphtheria caused 2,786 deaths, a slight increase above the number in 1898, but only a little more than one-half the average number of deaths from this disease during the 10 years. There was also a large decrease in the mortality from scarlet fever, measles and whoopingcough, but an increase in deaths from cerebrospinal meningitis from an annual average of 377 to 702, the number for 1899. The deaths from malaria, 248, were less than half the average. Diarrheal diseases caused 6,480, which is 2,200 below the average. There were 21 deaths from smallpox against an annual average of 78. The deaths from tuberculosis were 13,412, or about 1 in 9 of the total, the variation from year to year being slight in spite of improved prophylactic measures and increased vigilance on the part of sanitary officers and a better knowledge of hygiene on the part of the public. Cancer caused 4,533 deaths, the average for the decade being 3,408.

PHILADELPHIA, PENNSYLVANIA, ETC.

Polyclinic Hospital, Philadelphia.—Dr. John Scott, Jr., has been elected president, and Nathaniel B. Crenshaw, vice-president.

Phoenixville Hospital.—In memory of Dr. J. G. Shoemaker, who was one of this hospital's most enthusiastic supporters, it will be provided with a laboratory.

Warrants Against Druggists.—The State Pharmaceutical Board is reported to have nearly 60 warrants sworn out for as many local druggists charged with preparing medicines, though holding no certificates authorizing them to do so. Four of them have been arraigned.

Scheme to Fumigate City.—The Camden Health Board will petition the City Council for an appropriation of \$15,000 to be devoted to the establishment of a plant for fumigating the entire city against smallpox and the incidental expenses entailed in the project.

Drug Store Combination.—Druggists and capitalists of Philadelphia have combined in the incorporation of a stock company, capitalized at \$500,000, to own and manage retail drug stores. They expect to begin business in two months with 25 stores, but ultimately to control 200 stores in the city and state.

Smallpox.—Official statistics give the total number of cases reported from December 28, 1901, to January 31, 1902, in Pennsylvania as 581, with 81 deaths, and contrast it with the total for the same period in 1901, which was 20 cases and one death. In New Jersey 327 cases, with 47 deaths, is shown against seven cases and no deaths in the same period in 1901.

Typhoid Fever.—There has been a large increase in the number of cases in Philadelphia during the past two weeks. All parts of the city are represented in the report of new cases, but West Philadelphia continues to have the greatest number. The polluted Schuylkill water, which is pumped directly into the city mains and used for drinking without being boiled, is cited as the cause of the present outbreak.

Smallpox Hospital.—In order to relieve the crowded conditions at the Municipal Hospital the Red Cross Society of Philadelphia will erect a temporary smallpox hospital. So soon as a location is selected the buildings will be raised. The Society will also cooperate with the directors of the proposed permanent McKinley Hospital for the treatment of private patients having contagious diseases to the extent of providing a smallpox pavilion, an administration building and a disinfecting plant.

Vaccination Enforced.—The Department of Public Safety, of Philadelphia, has decided to enforce vaccination on all inmates of cheap lodging houses. This is done with a view of reaching the vagrants and transients who are suspected of being a means of disseminating smallpox. To carry out this order effectually the Board of Health sent its corps of physicians at night, under police protection, to the various cheap lodging houses along the Delaware River front. About 100 sailors and laborers were vaccinated; many of these raised strenuous objections, but were restrained from forcible resistance by the proximity of the police. This attempt proved so successful that the crusade will be continued along the same lines. It is reported that the special corps of vaccine physicians who are making a house-to-house canvass have vaccinated about 200,000 persons. A circular advising vaccination and disinfection will be sent to every house within a radius of one square of any house that contains a case of smallpox. Circulars have been sent to all banks, business houses, etc., requesting that all moneys be thoroughly disinfected.

SOUTHERN STATES.

Leprosy.—The Louisiana state institution for lepers contains 36 inmates, 19 males and 17 females. They are nursed by 5 Sisters of Charity.

Antispitting Regulation.—The health authorities of the District of Columbia are holding in abeyance the promulgation of a police regulation prohibiting spitting on the sidewalks.

Honor Conferred.—Dr. T. Edward Hayes, surgeon-major of the Siamese navy for the past 13 years and formerly of Baltimore, has had the royal Order of the White Elephant bestowed upon him by the king of Siam in person. This is the highest of the Siamese orders, and is rarely conferred upon a foreigner.

Medical Director.—The position of medical director of the St. Louis World's Fair has been filled by the appointment of Dr. Leonidas H. Laidley, a graduate of Jefferson Medical College, Philadelphia, and Professor of Gynecology and Pelvic Surgery in the Marion-Sims-Beaumont College of Medicine, St. Louis; surgeon to the Protestant Hospital, and consulting surgeon to the Female Hospital in that city.

Hospital for the Tuberculous.—A bill for the establishment of a State Commission on the subject of a hospital for tuberculous patients has been introduced in the Maryland Senate. The bill provides for an appropriation of \$6,000 to defray the expenses of the committee in collecting necessary information and statistics. The commission will consist of three physicians and two laymen, who are to serve without pay.

Eye, Ear and Throat Hospital of Baltimore.—The report for 1901 shows the number of new patients treated during the year was 5,055, and 17,745 visits were made to the hospital dispensary. This record exceeds that of any year's work since the organization of the institution 20 years ago. During its existence the hospital has rendered medical aid to 53,729 patients. The aggregate of dispensary attendance is said to be 180,969, and the whole number of surgical operations performed is 5,906.

WESTERN STATES.

The Ohio State Medical Society will hold its next meeting May 28, 29 and 30, at Toledo.

Illegal Practice.—J. L. Bohannon, of San Francisco, who professed to cure cancer, has been fined \$100 for practising medicine without a license.

The women students on whom the doors of the Northwestern University's Medical School closed recently are to be admitted to full privileges in Rush Medical College.

Gift to Two Hospitals.—Mrs. Mary H. Castle, of Cleveland, Ohio, has given unconditionally \$10,000 to the Huron Street and Lakeside Hospitals of that city respectively.

Gift to Hospital.—The Lakeside Hospital, of Cleveland, Ohio, has received a gift of nearly \$40,000 from Samuel Mather, who has on previous occasions donated large sums to the hospital.

Wholesale Vaccination.—Vaccine physicians of the Health Department of Minneapolis, Minn., recently entered the Chamber of Commerce and vaccinated all occupants of the building. Great excitement was manifested when it was discovered that all must submit to the operation, exit from the building being barred by policeman. In all there were about 300 vaccinated.

Smallpox.—The number of cases officially reported from Minnesota from December 28, 1901, to January 31, 1902, was 1,740, with 11 deaths, as contrasted with 425 cases and 3 deaths for the same period in 1901. In Illinois the total was 176 cases, with 1 death, against 94 cases, with 2 deaths, in the same period in 1901. In Wisconsin the total was 4,357, with 23 deaths, against 299 cases and 1 death for the same period in 1901.

Suicide Clause in Insurance Policy Illegal.—The Supreme Court of Ohio has decided that the clause in life insurance policies is illegal. The suit was that of Dora Stoll against the National Union. Her husband took out a policy containing a specific stipulation that the policy should become void in case he committed suicide in two years. He did commit suicide, and the Supreme Court decided that the amount of the policy must be paid.

Dissemination of Disease by Public Telephones.—The public telephone having been pronounced an active and potent means of disseminating disease germs, the San Francisco Board of Health, in order to find means for the elimination of this danger, has ordered that all inventors or manufacturers of telephone appliances that could disseminate disease germs shall forward working models of them for examination to the office of the board within a period of 60 days.

Medicine Man Sacrificed.—It is reported that an epidemic of smallpox in the Indian reservation near Yuma, Ariz., has induced the tribe to make a sacrificial offering of their medicine man to the Great Spirit. This is done in accordance with their belief that the disease was sent for their sins, which could only be expiated by the sacrifice of one of their members. Sometime ago the victim discovered their intention and fled to the mountains, but hunger compelled him to return. In spite of his pleadings for mercy, he was promptly bound and taken into Mexico, where he was tied to a tree and tortured to death.

CANADA.

Manitoba Health Board.—The annual report states that a qualified physician has been appointed as health officer in nearly every municipality. It claims that the present epidemic of smallpox is a light type of the disease, but is hard to control, owing to a general ignorance in regard to the value of quarantine, isolation, disinfection, and vaccination. Tuberculosis, diphtheria and typhoid fever have maintained their usual average for the year. Scarlet fever, however, has not been so prevalent as in other years, probably because strict supervision has been kept in respect to quarantine, isolation and disinfection.

Labrador Medical Mission.—The mission which deals with over 2,000 cases every year has a finely equipped hospital steamer, has built two hospitals on the Labrador shore, and is now erecting a third hospital in northern Newfoundland. All the medical attention received by the people along these coasts is given by the physicians belonging to the mission. There are so few physicians, however, in comparison to the vast territory to be covered, that many requiring it, do not receive sufficient medical attention. Among the natives sanitation is totally disregarded and isolation for contagious diseases is practically unknown. In making a tour of the coast the physicians found cases of poisoned wounds, eye-diseases, dangerous digestive troubles, scurvy, cancer and tuberculosis that had never known medical treatment. Besides the medical work the mission has been instrumental in establishing cooperative stores, providing work, finding homes for orphans and relieving many cases of destitution.

FOREIGN NEWS AND NOTES

GENERAL.

Bubonic plague is said to be epidemic among the natives of the Fiji Islands. More than 100 deaths from this disease have been reported also at Shaukin, about 250 miles north of Canton.

Immunity of Boers to Enteric Fever.—In connection with the fact that the Boer forces have not suffered from the scourge of enteric fever to anything like the same extent as the British forces, a writer in the *British Medical Journal* quotes from an article in *Blackwood*, written by a district surgeon of British nationality, who serving under the late Transvaal Government, was with the Boer forces nearly all the time from October, 1899, until February, 1900, and engaged in the siege of Mafeking and describes the conditions existing at that time in the laager on the Lower Malopo, of which he had charge and in which no definite case of enteric fever occurred although the encampment remained in one place for two months and then moved only 20 or 30 yards further down for purposes of defence where it remained for three or four months longer. The several hundred oxen and the horses also were fastened at night in the middle of the circle of wagons, converting the whole space into a manure heap, which in the warm weather became a breeding-place for myriads of flies. To give some idea of their number the writer counted 15 flies on his lips one day while sipping a glass of claret. All the water used came from the Malopo, a muddy little ditch six to 10 feet wide in most places and which had already passed through another laager and also through Mafeking, receiving more or less sewage. To account for the absence of enteric fever among all this filth and the flies it has been suggested that the majority of the Boers have gained immunity from having suffered from the disease early in life, when as a rule it has a milder course than in adult life, and also the Boers are not given to drinking water. Coffee is their usual beverage, and the boiling of the water for coffee may account for the comparatively rare occurrence of enteric fever among them.

GREAT BRITAIN.

Smallpox.—A number of cases of smallpox in London have been traced to an outbreak on board of a steamer which recently arrived from Boston. The medical officers will hereafter thoroughly inspect all vessels arriving from ports where smallpox is reported.

Carcinoma.—Major Davidson, who remarked in his thesis for promotion forwarded to the War Office in 1898, the apparent incompatibility of malaria and carcinoma, writes from Lecund-erabad, India, to the *British Medical Journal* giving his conclusions after a further study of the subject: Cancer seems to be a disease of locality rather than of race, and is probably due to a microorganism. It does not appear to be prevalent in warm regions. A large malarial mortality is associated with a low cancer death-rate. There is no evidence to connect it with food nor with excessive consumption of meat. It is a disease of cold climates, and it would appear to be most fatal in damp, cold countries associated with a clay soil, along the banks of rivers which are liable to overflow. I have just heard of a case of death from cancer of the stomach in a European who was stated to have suffered from frequent attacks of malarial fever. It would perhaps be advisable to collect data on the subject before inoculating cases with the protozoan of tertian fever.

CONTINENTAL EUROPE.

Leprosy.—Eminent medical men are said to be organizing a committee to test the conclusions of Professor Polotebnoff, of St. Petersburg, who denies that leprosy is contagious after a prolonged special research on the subject.

Efficacy of Vaccination.—The law in Germany makes it compulsory for each child to be vaccinated during the first year of its life, and before entering school it must be revaccinated. In 1900 there were only 28 deaths from smallpox in a population of 54,000,000. During the siege of Paris 23,000 persons died from smallpox inside the city. In the German army of 100,000 men there were only 100 deaths from it before and after the siege.

Against Tuberculosis.—Dr. Lauchand, representing the Hygiene Commission in the French Chamber of Deputies, has succeeded in getting legislation for the prevention of tuberculosis declared urgent. Preliminary to the establishment of sanatoriums for the treatment of tuberculous military men, the Minister of War will invite competition for a plan of a model sanatorium, the merits of which will be decided by a committee of nine, with the Minister of war as president.

Chemic Food.—The experiments made secretly upon four men and two women volunteers in Paris to test Berthelot's theories regarding the value of chemic foods are reported successful thus far. The subjects of experiment have eaten nothing for three weeks except various combinations of carbon,

hydrogen and nitrogen in the form of pellets without distress or impairment of health. Three have lost flesh, the weight of two has remained stationary and one is growing fleshy.

The Influence of Hypnotism on the Lower Animals.—Mlle. M. Stepanowski has found half-starved frogs susceptible to hypnotic influence, the cataleptic state produced often persisting for half an hour, while N. Vasschilde, of Paris, who is also experimenting on dogs, cats, guineapigs, rabbits, chickens, and snakes, has also succeeded in hypnotizing frogs, even when well-fed and free to move about on a table or in a tank, by simply looking them in the eye. The sleep, though not lasting long, was so profound that needles and hot irons brought no sign of sensation.

Tuberculosis Regulations.—In view of the satisfactory results attained in Germany in the treatment of tuberculosis in municipal institutions, Mr. F. H. Mason, consul-general of the United States, sends to the Surgeon-General of the U. S. Marine-Hospital Service a translation of the regulations for the administration of the municipal institutions in Berlin to the effect that patients may be admitted in whom the disease has reached a state when progress is not noticeable, when there is no fever, and when hope may be reasonably entertained that they may be restored sufficiently to earn a living. Persons afflicted with epilepsy, syphilis, and habitual drunkards are excluded. Applications for admission can be made orally or in writing, but must be accompanied by a medical certificate made out on a form obtained free at the office. Treatment must be paid for in advance at the principal cash office of the city, unless patients present a binding declaration that the expense is to be borne by a public authority, guild insurance, or friendly society, or similar institution, when collection will be made some time after admission. The time the patient remains in the institution is usually set in advance, and is generally for a period of two months. Each institution has a reception book in the office, in which is kept a running account of those admitted. The head nurse keeps a similar book and a report journal, in which is entered the daily condition of the patients. The diet provided for the patients is very simple and consists in the early morning of a mixture of milk and coffee, or cocoa, or milk, 1 or 2 rolls, and butter. Breakfast, 1 or 2 slices of bread with butter and cold meat, or cheese; or bread and butter with smoked fish, eggs, minced raw meat, sour or sweet milk, etc. At noon, soup with vegetables and meat, or roast meat with potatoes or dumplings. In the afternoon, milk and coffee, or tea, 1 or 2 rolls or slices of bread with butter, and 1 or 2 boiled eggs. In the evening, according to the season of the year, milk soup with meal, oatmeal, etc., 1 or 2 slices of bread and butter, or herring with potatoes and bread and butter; or sour milk and bread with butter; or tea and bread and butter; or bread and cold meat, 2 to 3 boiled eggs. If the patients desire, they can be furnished with hot tea instead of coffee or cocoa. As much milk is to be given to them as they can stand. Beer, wine, etc., are only given to the patients when so ordered by the physician.

OBITUARIES.

Charles H. Burnett, of Bryn Mawr, January 29, aged 61. He took the degrees of B. A. and M. A. at Yale, and M. D. at the University of Pennsylvania. After a special course in optics and diseases of the ear in Vienna, under Dr. Helmholtz, he was made aurist of the Presbyterian Hospital, of Philadelphia, in 1872; consulting aurist of the Pennsylvania Institution for Deaf and Dumb, in 1878; Professor of Otology at the Philadelphia Polyclinic, in 1883; and later, consulting aurist of the Bryn Mawr Hospital. He was a Fellow of the College of Physicians and author of a large work on otology.

Clayton Parkhill.—The medical and surgical staff of St. Luke's Hospital, Denver, recently adopted resolutions recording appreciation of Dr. Parkhill's long and valuable services to the institution, and of his very endearing and inspiring personal qualities.

Henry Rutgers Baldwin, of New Brunswick, N. J., President of the Health Board there, and one of the leading physicians, where he had practised for 40 years, February 3, aged 73.

Luther W. Allingham, a well-known physician of Randsburg, Cal., and a native of Ontario, Can., January 29, aged 39.

John T. Metcalfe, of New York, in Thomasville, Ga., January 30, aged 84.

Bowman H. Shivers, of Haddonfield, N. J., February 1, aged 67.

Armistead Peter, of Washington, D. C., January 28, aged 62.

Louis J. Archambeault, of Brooklyn, January 12, aged 54.

William Wixom, of Italy Hill, N. Y., January 15, aged 83.

H. J. Ziegler, of Lancaster, Pa., in Chicago, January 28.

W. A. Dudley, of Petersburg, Va., February 1, aged 70.

S. F. Walker, of Mansfield, La., January 28, aged 63.

William Leroy Brun, of Auburn, Ala., January 24.

Stephen Cavanaugh, of Olema, Cal., January 26.

J. Willard Liggett, of Philadelphia, January 26.

W. R. Tuck, of Newquay, England, January 4.

Clifton Sturt, of Bulli, New South Wales.

SOCIETY REPORTS

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

NINETY-SIXTH ANNUAL MEETING HELD AT ALBANY, JANUARY 28, 29, 30, 1902.

The annual meeting was the occasion of a large gathering of members and visitors from other states, and the interest in the proceedings was well sustained throughout. Many matters of public importance were touched on in the address of the president, Dr. Henry L. Elsner, Syracuse, published in *AMERICAN MEDICINE*, on February 1.

Frank van Fleet, New York, on behalf of the committee on legislation, said opposition to the Osteopath bill was called for in order to protect the standards of education, the object of the measure being simply to allow certain persons to practise medicine without undergoing the tests as to qualification required of regular practitioners.

Prize Essay.—If was announced by Dr. Jacobi that the committee to whom the prize essays had been referred had given their award to Dr. Lucien Howe, Buffalo, for a contribution entitled "A Study of the Connective Tissue of the Orbit by a New Method."

New Office-Bearers.—Officers for the ensuing year were elected as follows: President, Dr. Henry R. Hopkins, Buffalo; vice-president, Dr. William A. Moore, Binghamton; secretary, Dr. F. C. Curtis, Albany; treasurer, Dr. O. D. Ball, Albany.

What Shall be Done With the Professional Midwife? M. J. Lewi, New York, answered the question by advocating the passing of a law requiring the registration after examination of every woman who wished to follow this occupation. In the course of his remarks he said that out of 80,735 children born in New York last year 42,253 were reported by physicians, and 38,482 by midwives. This showed not only what a large number of midwives there was but also how hopeless it was to get rid of them altogether. Asylums for the blind, institutions which cared for the maimed and crippled, and all other kinds of hospitals were full of innocent little ones who were the victims of neglect or want of skill on the part of these women, and there was no doubt but that a large amount of infant mortality was due to the same cause. On these grounds he thought it was high time that the profession should step in and demand an abatement of the evil. After some remarks from Dr. A. Jacobi, New York, Dr. Lucien Howe, Buffalo, and others, a motion was passed referring the subject to the committee on legislation with a view to action on the lines laid down by the author of the paper.

The purely scientific papers were sixty in number, and included two symposiums—one on paresis and the other on diseases of the pancreas.

The Etiology of Paresis.—Arthur W. Hurd, of Buffalo, concluded that syphilis, both directly and indirectly, was the most common factor in the production of paresis, though he concurred with those who thought that mental strain and the excitement incident to modern life had also something to do with its development. It was difficult to say what part alcohol played in the matter. It was not now so common as it once was to regard it as among the serious causes of the disease, but it undoubtedly led to many symptoms that were somewhat similar, and it was so often associated with syphilis as to make it far from easy to determine the extent to which each was responsible. Traumatism was likewise a cause of paresis, and in this connection and the effects which were known to result from syphilis, it was interesting to consider the suggestion thrown out by Dr. McLane Hamilton, that there might be different kinds of toxin which acted on the brain in such a way as to produce the symptoms usually associated with the disease.

The Early Diagnosis of Paresis.—Francis X. Dercum, of Philadelphia, pointed out the differences that were invariably to be observed between neurasthenics and paretics. The neurasthenic as a rule came to a physician himself, and had a very lively and sometimes exaggerated impression of the ailments from which he suffered. The paretic, on the other hand, was apparently unconscious of his failing powers. He was almost always brought to the physician by his friends, to whom the change in the habit and manner of the patient was sufficiently noticeable, though not to himself. There were other marked differences—as, for example, that the neurasthenic suffered principally from a feeling of fatigue, and had none of those sudden, lightning-like pains which afflicted the paretic. Again, the neurasthenic generally felt worst in the morning, and grew better as the day advanced, until at night he might be tempted to think he was almost well, whereas the paretic became somnolent and indolent at night. The neurasthenic, moreover, was not prone as the paretic was to fits of excessive eating and drinking, nor did he lose affection for his relatives and friends, indulge in coarse language, or develop a tendency to take improper liberties with women, all of which were characteristics of a person suffering from paresis. The latter disease was also not infrequently confused with hypochondria and melancholia, though it was equally easy to differentiate it from these complaints.

Comparative Frequency of Paresis.—Charles G. Wagner, Binghamton, adduced statistics from which it appeared

that it accounted for over 80% of all cases of insanity, that it was about seven times as common among men as among women, that all classes of the community were apparently liable to it in equal proportions (the common impression that certain classes of mental workers were peculiarly subject to it, being, it would seem, erroneous), that the disease was increasing, and that it usually had a fatal termination within a few years.

The Treatment of Paresis.—Edward Cowles, Boston, referred hopefully to the prospects that existed of the discovery of a serum which would enable physicians to obtain results that were at present admittedly beyond their power. There was a general consensus of opinion that the disease was toxic in its origin, and considering the advance that had been made in other branches of medicine, he thought they were justified in looking with some faith for the dawning of a new light on this class of mental disorders. The experiments conducted by Bruce and Robertson, of Scotland, gave ground for hope that the discovery in question might be nearer than was supposed.

The pathology of paresis was to have been the subject of a contribution by Henry J. Berkeley, Baltimore, but he was prevented by unavoidable circumstances from being present. A vote of thanks was awarded the visitors for their interesting papers.

The symposium on diseases of the pancreas was conducted by R. H. Chittenden, New Haven, Conn.; George Blumer, Albany; W. S. Thayer, Baltimore, Md.; Roswell Park, Buffalo; and Joseph C. Bloodgood, Baltimore, Md. Prof. Chittenden dealt with the physiology and physiologic chemistry of the pancreas, and incidentally discussed the auto-intoxication theory of diabetes. Dr. Blumer, speaking on the pathology of diseases of the pancreas, said the study was one which was still in its infancy, but the subject was full of interest and gave promise of yielding important results in connection with diabetes and other diseases. The papers by Drs. Thayer, Roswell Park and Bloodgood will be published in *AMERICAN MEDICINE*.

How to Treat Smallpox?—Ernest Wende, former health commissioner of Buffalo, in referring to the obstacles that existed to the stamping out of the disease, spoke of the lamentable ignorance of the public as to the benefits conferred by vaccination, the mischievous opposition of antivaccinators, Christian scientists and others, the lack of uniformity in sanitary laws, the domination of political influences in the appointment of health officers, and the errors committed by medical men who did not attach sufficient importance to the operation. Arrangements, he contended, should be made for the proper education of health officers, and also for the more systematic study of sanitary science. Inadequate attention was given to this subject in all the medical schools, and no improvement in this respect was to be hoped for until chairs were established for the special purpose of conveying the requisite knowledge to the students. While the duty of the physician was to cure disease, that of the sanitarian was to prevent it. Every disease that was communicable was preventable, and health officers should find a stimulus in the hope that the time would come when epidemics would be matters of history.

Discussion.—C. L. STILES, Owego, believed that smallpox could be stamped out as thoroughly as a flame could be extinguished by a pitcher of water, and this being so he maintained that every man and woman who opposed vaccination should be ostracized. If everyone were revaccinated every five years, he ventured to say that there would be no more smallpox.

[To be concluded.]

Scheme to Establish Hospitals.—The lack of properly equipped hospitals throughout Iowa has prompted the physicians of Oskaloosa and Mahaska counties to outline a scheme whereby such institutions can be established and maintained. Their idea is to introduce a bill into legislature and secure the passage of a law permitting cities of 5,000 and over to levy a tax not to exceed one mill per year, for hospital purposes. After a hospital is once established, the aid received from private individuals in conjunction with the amount derived from such taxation will enable them to meet all expenses and also to provide facilities that at present are not found outside of large cities.

Disinfection for Mosquitos.—Dr. M. J. Rosenau, Director of the Hygienic Laboratory of the U. S. Marine-Hospital Service, after a series of careful experiments with formaldehyd and with sulfur dioxide, concludes that the latter is unexcelled in the disinfection for mosquitos. He has found that formaldehyd gas is a very weak insecticide, but that it may be rendered effective when a large volume is liberated in a short time. On the other hand, very dilute atmospheres of sulfur dioxide gas kill mosquitos quickly. Unlike formaldehyd gas, it has remarkable powers of penetrating all kinds of fabrics, even killing mosquitos that are hidden under four layers of toweling in one hour's time. As a result of his investigations Dr. Rosenau strongly recommends the use of sulfur dioxide gas for disinfection against yellow fever, malaria, filariasis and all other diseases carried by insects.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE RELATION OF MATERNAL IMPRESSIONS TO CONGENITAL DEFORMITIES.

BY

JOSEPH JEFFREY, M.D.,

of Chicago, Ill.

To the Editor of AMERICAN MEDICINE:—The vast majority of conspicuous people are either idolizers or idol-breakers; they are prone to either worship inherited idols or to try to smash them. We generally classify such people into conservatives and radicals. The conservative group seems to entertain a grudge against everything new; the radical group a contempt for every thing old. But the prudent keep in the middle path, believing and respecting whatever can stand the test of truth in their judgment, in spite of the prejudice against "innovations" and "commonplaces."

Among our conservatives and radicals are always to be found zealous extremists, verging on the fanatic. They not infrequently do excellent work, but as often fall victims to great fallacies, when it becomes the duty of the moderate to save science and society from the bane of a new superstition. In their hurry to destroy a certain commonplace, radical fanatics often place the object against which their fury is directed on a firmer basis than that on which it originally stood, by ridding it of accretions of dust and cobweb with which the age-begrimed heirloom is usually contaminated. And beholding such unexpected results, the spirit of revolutionary radicalism must often look askance at its votaries and complain in the language with which it is recorded that Balak reproached Balaam—"What hast thou done unto me? I took thee to curse mine enemies, and behold thou hast blest them altogether."

The causative relation of maternal impressions to congenital deformities is a case in point. *AMERICAN MEDICINE*, of July 17, 1901, has an article entitled "Maternal Impressions do Not Cause the Stigmas of Degeneration," by Dr. Chas. E. Woodruff, in which the author, an army surgeon of several campaigns, engages in an active crusade against the "old, widespread, and ineradicable theory" that maternal impressions are the cause of fetal malformations, in the expressed belief that "much practical good will come from every attack upon this absurd idea." Evidently with the intention of leaving no room for doubt in the minds of his readers as to his attitude toward prenatal impressions and the causation of congenital defects, in addition to the significantly negative title of the paper, and the explicitly stated purport in the exordium, Dr. Woodruff gives the reasons for his opinion as follows: "In nearly every case two facts stand prominently forth: First, that the deformity existed prior to the time of the alleged impression; and second, that the anomalies are invariably well marked stigmas of degeneration. The former proves that the impression could not possibly be the cause of the defects, and the latter, that the real causes are wholly unsuspected, and are to be sought in some ancestral condition." As he accepts the alleged time of the impression without question, and dares to use it as a means of "proof," he is liable to the charge of having made the unwarranted and unscientific assumption that such allegations are to be relied upon as scientific data, merely because the patient or some one else said so. Yet it is a generally recognized maxim among physicians of wide experience that "most sexual histories are notoriously false." Hence, since we cannot deny the probability that the impressions might have occurred at a stage of embryonic evolution at which the production of such deformities are possible through an arrest of development, owing to careless observation and wilful attempts at deception, surely men with any pretension to scientific training—the recent example of scientific audacity evinced by Professor Koch to the contrary notwithstanding—should hesitate to make deductions from such precarious premises as that from which Dr. Woodruff draws his conclusion that "the impression could not possibly be the cause of the defects," etc.

Then in a desperate effort to bolster up his position by the buoyancy of a "name" the author says—"Even in the last months it is difficult to understand how a nervous shock can have any effect upon the whole organism and not upon one little part. Weismann shows that the germ-cells always lead an independent existence, uninfluenced by any changes in the mother, excepting those affecting nutrition or by poisoning—theories most widely accepted by biologists, and they show the absurdity of maternal impressions at any stage." As Weismann's theory is not based on observations of the germ-cells of those females for whose temperament Professor James has coined the name of "bottled lightning," but rather on observations of the lower forms of animal life in whose nervous organization we find much less instability than in civilized man's, it is certainly more "difficult to understand" how Dr. Woodruff can claim any parity for two types of nervous organization differing so widely in their degrees of stability. But has he forgotten that strong emotions inhibit excretion and secretion, and are hence responsible for much toxemia?

After citing a number of cases of congenital anomalies said to be due to maternal impressions, in which there is a discrepancy between the alleged time of the impression and the stage of embryonic development necessary to justify the assumption of a causal relation between the shock and the production of the monstrosity, he states: "We are perfectly justified then in suspecting nervous instability as the underlying cause of all fetal deformities, omitting of course the few cases in which the determining cause is strong enough to affect a normal ovum, but even in many of these there is apt to be a latent instability. Whenever reported cases do throw any light upon the subject they usually show neurotic parentage." But who ever denied neurotic parentage the role of a predisposing cause in such phenomena? Why every old woman knows that it is only a certain type of woman that is prone to "mark" children. The popular belief, as most people understand it, is that some susceptible pregnant women *can* and *do* "mark" their offspring through the influence of maternal impressions. Of course Dr. Woodruff is careful to accept as "gospel" all the cases in which there is a reported discrepancy between the alleged time of the shock and the stage of embryonic life required to fulfil the conditions, but disposed of cases in which such required conditions were met by the reports, as mere coincidences.

While he explicitly conveys the idea in the paragraph last quoted from, that *nervous instability* is the "underlying" cause of the production of defective children, such an idea is none the less a flagrant contradiction of what he said in one of his earlier paragraphs, to wit: "As a rule, then, fetal anomalies, said to be due to maternal impressions, will be found to be due to neurotic conditions in the parents, and more often the mother." If "neurotic conditions in the mother" are to be substituted for the old idea of maternal impressions, how can we in the same breath consistently and logically assign to said neurotic conditions the role of an "underlying cause" also? But this is not the only instance of the doctor's contradictory tendencies. In one place he states that "unfortunately the unstable organism is easily changed into something different from all the ancestors, by a cause which would not have had appreciable effect upon the normal ovum. The stigmas of degeneration then are illustrations of Weismann's acquired modifications which are not transmissible." Yet in another place he says, in an attempt to get rid of the uncomfortable fact of the increase of defectives born after the Franco-Prussian war: "No doubt the war had a deleterious effect upon the soldiers themselves, and that their subsequent children also may have been defective for this reason." Now if acquired modifications are not transmissible, how can Dr. Woodruff account for the defective children of these soldiers on whom "the war no doubt had a deleterious effect," which is surely the equivalent of an acquired modification? Why does he not call this a mere coincidence?

On Dr. Woodruff's own showing then we see clearly that the causal relation of maternal impressions is a direct and positive one in some neurotics, who not only transmit a tendency to increased instability to the ovum, rendering it more susceptible to impressions, but who in themselves have a strong ten-

dency to exaggerate impressions to a degree inconceivable to less sensitive organizations. No wonder Dr. Woodruff with a subconscious prophetic insight, termed the theory of maternal impressions "ineradicable," for he has very effectively transposed it from the borderland of popular superstition to the domain of scientific reality. Does he not tell us how alcohol, the toxins of syphilis and tuberculosis, lithemia and defective nutrition, may all render the parents and the ovum unstable, and thus pave the way for the operation of maternal impressions? The laws of logic, which compel us to ascribe a causative role to bacteria or their toxins in the production of infections, although a preexisting *locus minor resistientia* in the form of a local solution of continuity or malnutrition, is a *sine qua non*, are the same laws which compel us to consider the "old, widespread and ineradicable theory" of maternal impressions as a direct cause of fetal deformities in some neurotic parents. Hence it is plainly the duty of the medical profession to see to it that the modern American woman, whose highly strung nervous temperament has lapsed into the proverbial, avoids mental shocks as much and as early as possible during uterine gestation.

In fact, the high pressure of advancing civilization has rendered the modern American nervous system a much less stable organization than that of its ancestors, and suggests the probability that the momentum of the *present* due to the enormous growth of individuality, may be quite adequate to neutralize the hereditary momentum of the barbaric *past* with its centuries of stability. The glowing intensity of concentrated psychic individualities may become as independent of the hereditary momentum of our cave dwelling quaternary progenitors, as we are of our eons of mesozoic and paleozoic hereditary momentum. The highest types of modern manhood and womanhood constitute a structural and mental type of the genus homo, as distinctly as does the Chinese, the Hindu, or the Scandinavian, and are doubtless as capable of transmitting the peculiarities of their kind to posterity under favorable conditions. Hence we need not fear the biologic law of inertia which chains the offspring within the pale of its ancestors, but on the contrary, we may rejoice in the thought that in virtue of the modern freedom of the individual and the magnitude and consequent momentum of the individual psychic life, we are gradually approximating a new variation or species of humanity, over which the hereditary momentum of ages of barbarism shall not preponderate. All unstable ova are not necessarily degenerate ova. The less the instability, the less the plasticity; and the less the plasticity, the less the progressiveness of the organism, cases of actual degeneration being excepted.

THE RÖNTGEN RAYS IN MEDICINE AND SURGERY.

BY

EUGENE R. CORSON, M.D.,
of Savannah, Ga.

My attention has recently been directed to the attractive work by Dr. Francis H. Williams on the above subject. As expressed on the title page and in the preface this work is designed for the use of practitioners and students, and is "rather a report of progress than a final presentation of this growing subject."

Since the discovery of the x-ray, Dr. Williams has been known as an enthusiastic investigator in this new science, and especially in its application to the diagnosis of diseases of the chest. His papers on this subject have received favorable notice from the profession, and very justly. Naturally, therefore, much the larger part of the present book is devoted to this field of x-ray investigation, and it gives ample evidence of painstaking work, and is a valuable addition to x-ray literature.

Without any carping spirit, or a desire to pick out small flaws which can be found in any work, however praiseworthy, I wish to call attention to a few points whose criticism may prove of advantage to the reader of this book. I am more inclined to do this from the fact that the work is intended to be an exposition of the present state of this new science, and

therefore to be periscopic. On page 120, writing of the diagnosis of early tuberculosis, insisting upon the greater value of the screen over the photograph, he writes: "When instantaneous photography can be carried out in the lungs, a better opportunity will be offered for obtaining evidence of beginning tuberculosis by the photograph than has hitherto been given." This statement is a surprise with the first instalment of the superb work of von Ziemssen and Rieder before us,¹ a work which has been out a year, and in which are reproduced the most beautiful skiagraphs of the chest, with an exposure of one second, and in which the outlines of the heart and the great blood-vessels have the sharpness of the ribs and the adjoining bones. A glance is sufficient to show that such photographs are superior to the screen for exact mapping out of heart, bloodvessels, the bronchial tubes at their beginning, or any alterations of the thoracic organs which will cast a shadow in the clear lung tissue. The technic carried out is the one described by Dr. Rosenthal so far back as 1899 in the *Münchener medizinische Wochenschrift*, No. 32, and which has enabled the German workers in this fascinating field to produce skiagraphs which put to shame all others, and which give an entirely new aspect to the value of the x-ray in internal medicine. These results have come from an early conviction that the induction coil was the only proper source of energy for the Crookes' tube; and we venture to assert that no static machine has yet been made or will be made to produce such results. The German workers do not undervalue the screen; they realize its importance and necessity when moving organs are to be examined, but having brought the skiagraph to such perfection they naturally and properly give it first place when it is a question of exact localization, of exact measurement, and of the detection of the first faint shadows of beginning tuberculosis, or of other morbid conditions which cast shadows, and whose early detection should be the aim of the x-ray worker. There are other departments of science in which good photographs tell vastly more than the unaided eye.

I have failed to find in Dr. Williams' book any mention of Donath's² work on the x-ray, the most important work yet published, looked at from every standpoint, in which the physics of the subject and the whole question of apparatus and method are discussed in a masterly way. I dwell upon the importance of this work because Donath was among the first to realize and to show the profession that the coil as now perfected was the only proper generator of energy for the tube; that is, if the x-ray worker wished to excel in the difficult as well as in the easy part of x-ray work. It was Donath who saw the possibilities of the Wehnalt interrupter; it was he who described minutely the technic which has finally resulted in the wonderful skiagraphs before us. In his book he has shown us how the intensifying screen is an immense aid in photographing the chest, or any difficult part of the body, for that matter, for he reproduces for us an adult hip done in 20 seconds. His skiagraph of the chest, one-half screened, tells the whole story. I fail to find in Dr. Williams' work any mention even of the intensifying screen, the Verstärkungsschirm of the Germans, without which these beautiful skiagraphs of the chest would have been impossible.

The first 58 pages of the book discuss x-ray equipment, and the succeeding 40 pages the methods of examination, and I must admit some disappointments in reading this portion. In a work of this character the proper apparatus and right methods for the best realization of what the x-ray can do for us, in its present state of perfection, is the most important consideration. The present perfection of bacteriology and microscopy is the perfection of apparatus and methods. Many will turn to Dr. Williams' book for advice as to the best apparatus to buy; they will want to know what is the general consensus of opinion as to which is the best. Is the static machine equal to the coil in the best work? Will not the coil do all the static machine can do and more, too? I

fail to find that Dr. Williams has been explicit enough in this matter. He has shown us the apparatus he uses and the way he uses it. He has with ample generosity acknowledged his debt to Dr. Rollins for his aid in the choice and in the making of his apparatus, but he has apparently failed to realize that there are other practical electricians in this field—men with more reputation, perhaps, than Dr. Rollins, and that there is a very great choice in this matter; that certainly with tubes and coils and their accessories there may be better models than those he has used. He has given much more space to the static machine than to the coil, and we get the impression that he regards the static machine as superior to the coil, at least for chest work. In this we are sure he runs counter to the general verdict of those best able to judge. The Germans do not even mention the static machine, and in our own country the coil is by far the most frequently used generator of electric energy. We venture to predict that even for therapeutic work the powerful coil will supersede the static machine. Dr. Rollins himself makes this prediction.

The photography of the x-ray is dismissed in a page and a half, a very scant treatment of an important part of x-ray work. In his description of tubes the Rollins model alone is considered; others are only mentioned incidentally. The great tube of Sayen, made by Queen & Co., receives but a meager mention. It is not even figured, and, with a short description, is described as a tube made in Philadelphia! As the beautiful work of Professor Goodspeed, of the University of Pennsylvania, and the fine work of Leonard, in the detection of renal and ureteral calculi, were done with this tube, and in the latter case would not have been possible without a tube so constructed, it deserved a detailed description and a cut, and a proper mention of the makers.

I feel, therefore, that the reader of this book will not find the proper information as to the choice of apparatus or as to the best that has been accomplished in the perfection of x-ray apparatus. The great work of Germany in this field, the inventions of Caldwell, Willyoung, and Sayen in this country, inventions which have increased vastly the efficiency of the induction coil, receive no notice. In a work which is general in its scope, such omissions are worthy of criticism. I feel that the author, having accomplished excellent results in his particular line with an apparatus in a large measure suitable to that line, he has failed to realize that, perhaps, there may be even better apparatus for his own work, and certainly better for that field in which the photograph gives more information than the screen.

ANGIONEUROTIC EDEMA.

BY

J. P. CROZER GRIFFITH, M.D.,
of Philadelphia.

To the Editor of AMERICAN MEDICINE:—I have read with interest Dr. Kohn's paper on "Angioneurotic Edema," which appeared in your issue of December 21, and Dr. Bullard's comment upon it later. Dr. Bullard is, I think, entirely correct in excluding the remarkable cases reported by Milroy from the category of angioneurotic edema. Milroy himself did not believe them to be such. There are, however, numerous other typical instances which Dr. Kohn has failed to mention in his "Review of the Literature." In 1897 Dr. Newcomet and myself read a paper upon "Types of Edema in Infancy and Childhood" before the Association of American Physicians, and among other forms of edema described two cases of the angioneurotic type. From a review of the literature of the subject, which is cursory only, we collected the reports of 14 observers, each detailing one or more instances of the disease developing during infancy or childhood. I notice that our own cases, as well as those of one-half of the writers mentioned in our article, have been overlooked in Dr. Kohn's report.

In Memoriam.—The Baroness Edmond Rothschild, of Paris, is reported to have given \$250,000 for the establishment of a Hebrew home for the treatment of pulmonary diseases. This is in memory of her father.

¹Die Röntgographie in der Inneren Medizin. Herausgegeben von Professor H. v. Ziemssen und Professor H. Rieder in München. I. Lieferung, enthaltend 10 Tafeln mit Text. Wiesbaden, Verlag von J. F. Bergmann, 1901.

²Die Einrichtungen zur Erzeugung der Röntgenstrahlen und ihr Gebrauch. Gemeinverständlich dargestellt insbesondere auch für Ärzte und Kliniker, von Dr. B. Donath, Berlin. Verlag von Reuther & Reichard, 1899.

ORIGINAL ARTICLES

NATURE OF TYPHOID FEVER.*

BY

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of Buffalo, N. Y.

Surgeon Marine-Hospital Service.

Typhoid fever is now widely prevalent and is attracting universal attention, since not only is the deathrate a matter of importance, but also the loss to the state in the time of each individual stricken. It has been said very aptly that diagnosis of this and other diseases, becomes more difficult the more we learn of their natural peculiarities.

From the earliest knowledge of typhoid, it has been considered to be enteric in its nature, and from the discovery of the bacillus of Eberth, in the intestinal contents, this view has been strengthened, until today this opinion is most generally accepted. However, the mass of facts, clinical and experimental, scarcely bear out this popular idea. After an experience of years of clinical association with it, Osler¹ says, "Typhoid fever is no more primarily an intestinal disease than smallpox is primarily a disease of the skin." He does not say that it is not a disease of the intestine, nor does he assert more than that it is a general infection, *via* the intestinal canal. It is difficult to gain any fair conception of the disease from textbooks, so fully do they adhere to the theory of intestinal invasion. I would here refer to papers of my own² in which I state that observation had led me to the conclusion that in one naturally infected by any of the acute infectious diseases, the power to enter the blood was inherent in the organism giving rise to the disease, and that this property appeared to bear a certain relation to that of intoxication with local expression of reaction, the more accentuated this expression the less pronounced the invasion of the blood, and *vice versa*. Although this rule is not a hard and fast one, still in diseases of especially marked local reaction, we do not as a rule have blood invasion with terminal expressions. Baumgarten has offered the theory of the production of multiple toxins to explain the varying expressions in these diseases, one toxic element producing one set of symptoms and other toxins being responsible for other expressions. By the advancement of this theory he commits himself to the inference that such multiple toxin production may be due to the environment of the bacterial cell. Prior to this expression I advanced the argument³ that in all of these acute infections the infecting organism is possessed of certain specific potentials, the development of which is directly dependent upon the germ environment; that, while in some cases this development is accompanied by certain clinical conditions, in others these may be absent. The type of the disease clinically would depend upon the varying development of the germ potentials, the intense toxic development producing the accentuated toxic cases, and the septic development giving rise to the septic types of the disease. This division is thoroughly recognized clinically in the acute bacillary infections, and upon this basis we are enabled to classify the varying types of cases encountered, as the ephemerai, the *siderante*, and the septic. In the disease under consideration it has been customary to diagnose as typhoid only those cases presenting certain classic features, as the *septic* and the *ephemeral* cases; the *siderante* cases being known as "hemorrhagic" or "purpuric typhoid." It is probable that *Bacillus typhosus* bears a most important relation to purpura hemorrhagica of febrile type.

I will speak especially of the classic type of the disease. At the Atlantic City meeting of the American

Medical Association I stated that it was probable that the majority of cases of typhoid were primarily pneumonic, the primary colony of the organism being located at some point along the respiratory tract. There is always prominent development of the septic quality of the organism, which invades the circulation from this colony. This seemed rather startling to many present, but I intended then, as now, only to call attention to the fact that the disease can no longer be considered primarily one of the intestinal tract. Therefore, it has been to the clinical side of typhoid that I have directed my attention. Realizing that the presence in the tissues of the Eberth bacillus gives rise to no positive chemotaxis, and that its symbiosis with other organisms increases its power of entering the blood current, its septicity, I began to examine carefully the entire chest of each typhoid patient entering my service, in order to detect any expression of the presence in the lungs of a primary colony. The result was that in every case of typhoid fever I have been able to locate readily and upon the first examination an area of the lung corresponding to such colonization. Usually this expression is that of subacute bronchitis, with diminished breathing in the affected area, which may extend throughout an entire lobe, lobes, or lung. Inspection may show only slight change. On percussion the resonance is diminished, the note being higher; auscultation will always give evidence of impaired vesicular breathing, a paresis. With these symptoms there is bronchial breathing, mucus and sibilant rales, and cough. Expectoration is limited, and may be blood-tinted from the early stage. This condition is usually unilateral, the lower lobes being the most frequent site of the colonization. Should the expression become highly accentuated the area involved yields to the paretic congestion, and an interstitial and alveolar edema results: a condition attributed by many to a weakened heart-action, but which occurs too frequently in the presence of good heart-action to be dependent wholly upon heart tone. Many cases of typhoid present only the less accentuated symptoms during the entire illness, and many of them would be diagnosed as simple bronchitis unless especial attention is directed to the differential points of being located only upon one side and in one (small) area of the lung, and of presenting indubitable evidence of lung paresis, even before there is any evidence of transudation into alveoli or tubes. A picture of the extreme expression of this condition of alveolar paresis would include, as I have seen twice within the year, an entire lung, with dependent portions of the other, so paretic that every muscle of expiration was brought into use to expel the air from an otherwise good breathing space, these efforts being audible throughout the ward. Expectoration is not free, owing to this paresis; there is lack of expulsive power in the deeper tubes; at times it is freer, and of a frothy, blood-stained character, the sputum of edema. Appropriate staining methods usually give a few cocci, with innumerable short rounded rods, showing bipolar pigment, and evidently derived from a colony of the germs. At times a few pneumococci are found with these pole-stained rods, and when they are abundant in the sputum the lung area is then more clearly a consolidation of lobar pneumonia. On autopsy this paretic edema shows a typical hemorrhagic edema, both interstitial and alveolar, identical with that found in influenza and described by myself before the Medical Association of the State of Pennsylvania, in 1896,⁴ and that described by Calmette⁵ and Barker⁶ in bubonic plague.

This condition, termed "pneumotyphoid" by the French, has been described recently by Hoff⁷ under three heads: (1) The positively pneumonic cases, the symptoms of lung invasion being present from the commencement of the case; (2) those in which the pneumonic symptoms develop during the typhoid state; (3) the predominance of either of these conditions. He

* Read before the Section on Bacteriology of the American Public Health Association.

gives the history of a typical lung invasion in which the symptoms were present and progressive from the first, and in which he ascribes the condition to a reinfection from the intestinal canal. Other writers have recognized it as abenteric typhoid, with no bowel lesions; as a pleurotyphoid, as a splenotyphoid, or as an arthrotypoid, a multiplicity of terms distinctive enough of the site of the local expression, but which throw no light upon the original seat of infection.

Of the abenteric cases with absence of bowel lesions, Flexner⁸ has recently collated 20, and in discussing this condition in cases of their own, Opie and Bassett⁹ express doubt as to the possible passage of the organism of Eberth through the uninjured bowel wall. Crittenden,¹⁰ has recently found bronchitis in everyone of 50 cases of typhoid fever. In these cases there were a few pneumonias, and hypostatic congestions were frequent (my paretic edema). Hobart A. Hare¹¹ thinks that bronchitis is a rare symptom of typhoid fever, and quotes Edson as having found it in only 54% of his cases, and of having found "dry rales" in numerous cases. Austin Flint¹² states that bronchitis is a constant symptom in typhoid. And many authors agree with him. P. Horton-Smith,¹³ in his Gulstonian lectures upon typhoid fever, opposes the pneumotyphoid of the French authors, and practically assumes that it does not originate in the lungs, characterizing it as a modified septicemia, and attributes, with Hare, the later conditions of paretic edema of the lungs to a weakened heart action alone, a mere hypostatic congestion. All of these quoted facts point unerringly to the conclusion that typhoid fever is not intestinal primarily, and also that it is primarily pneumonic.

In natural infections of typhoid, the Eberth bacillus must colonize at some point in the economy, this colonial development being its period of incubation, and since the presence of the germ is not detected in the blood during this period of colonial development, the germ must pass into the circulation from this colony later than the developmental stage. This invasion may take place earlier in one case than in another, owing to the difference of germ development under different environment. This period of incubation in typhoid fever is placed at from 12 to 14 days, but it is entirely arbitrary; if we should take the period in white mice as an index of that in man, it would indicate the latter as from four to six days. However this may differ in various animals and in man. Shortly after the appearance of symptoms of the disease, the expression of toxic development, the *Bacillus typhosus* can be found in the blood current, and it is this passage into the circulation that gives to typhoid fever many of its natural peculiarities.

Horton-Smith has termed the disease a "modified septicemia," but how it is thus modified does not appear in his lectures, the term thus indicating septicemia as the primary factor in the disease, which it is not, it being secondary and modifying the primary condition. Sanarelli¹⁴ advanced the theory that the bacillus entered the blood in some obscure way, and selecting the spleen as its breeding ground, later invaded the general blood current. The same idea was published by the *Institut Pasteur*, which in accounting for the cases of pest,¹⁵ stated that the *Bacillus pestis* enters the circulation and selects the lymph glands as the breeding ground, and thence invades the circulation (again), and by way of the lymphatics enters the lungs, giving rise to late pest pneumonia. In natural infections in pest, these buboes are "terminal infections" (Flexner) secondary to the primary condition. However produced, the sepsis *per se* does not seem to greatly influence these diseases, outside of the probability of terminal infections (terminal expressions would be better); it is the primary colony which still endangers the patient. From the best observations as to the absorption of organisms from a localized colony other than in the lungs, as from a colony in the peritoneal cavity and their carriage into the general circula-

tion with the production of other colonies in the terminal capillaries, it has been demonstrated that such terminal infection or expression does not take place in the lungs except rarely, seemingly because of the attenuating influence of the blood serum. Indeed the expression of terminal or secondary colonization in typhoid fever is usually in the form of pathologic change in some one of the lining membranes (serous or endothelial) upon which the germ may rest and colonize.

Typhoid sepsis is found early in the disease, and practically in all cases. Cole¹⁶ found the organism in 75% of his cases in the blood by planting venous blood well diluted. Morse has isolated the *Bacillus typhosus* from 80% of his cases, and finds them in the blood before the occurrence of bacterio-agglutination, and by the extirpation and planting of the entire rose spot the presence of the bacillus can be shown in almost every case, and invariably before the (some six days) diazo reaction, which may occur early or late in the disease. Widal¹⁷ has not been able to find the "substance sensibilisatrice" or the immunizing body, in some ten cases of the disease, until after the ninth day, a pretty fair indication that bacteriolysis does not commence until after that date in the disease, since the phenomenon of agglutination has generally been observed to precede or accompany that of hemolysis or bacteriolysis. The organism of Eberth has been isolated from the urine, at times in the disease, in about 33% of cases. In the stools of typhoid the organism is very constantly found by appropriate measures. M. Rémy¹⁸ has isolated it from each one of 23 cases, using an appropriate medium; once on the third day (the earliest) when he records but five colonies to the plates; again on the fifth day, and so late as the forty-fifth day with 12 colonies to the plates. It is evident from his tables that the *Bacillus typhosus* is most abundant in the intestinal contents from the eleventh to the thirteenth day, with 100 colonies to the plates; and that before this time they are in less numbers, while after this time they decrease. He also observed that the organisms isolated during the second week were very virulent, and that from this time their virulence rapidly decreased, almost to complete attenuation. From his observations M. Rémy concludes that the bacillus, from its constant presence in the intestine, is the cause of typhoid fever, thereby giving his adherence to the theory of the enteric origin of the disease. Besson¹⁹ has isolated the *Bacillus typhosus* from the tonsillar secretion in 60% of cases, and calls attention to the importance of carefully examining the sputum of typhoid cases which may become contaminated from the tonsils, apparently oblivious of the converse that the tonsils and pharynx may the more reasonably become contaminated by the excretion from the tubes of the lungs bearing the organisms from the primary colony. Chantemesse has isolated the bacillus from the stools only at the seventh day of the disease. Hiss,²⁰ from a series of 118 undoubted cases of typhoid fever, using an acid flesh-peptone glucose agar gelatin, was able to isolate the bacillus from the stools in 45 only, 73 giving no bacilli, a net of 42%, and attributes one-half of the negative results to the fact of the feces being taken early in the disease. In another series he recovered the organism from 17 of 19 cases, and of these the earliest isolation was from a stool passed on the sixth day of illness. He found the organisms appearing most regularly from the tenth to the twelfth day. In a footnote to his paper Hiss remarks that the presence of the bacillus so generally distributed throughout the body would warrant the conclusion that the bacilli, "after ingestion," invade the system and increase there, not reappearing in the canal until after the breaking down of the intestinal lesions: A theory not unlike that of Sanarelli's and Calmette's.

Hiss says: "From all that is known now of the nature of typhoid, there is a growing tendency to interpret the intestinal or other lesions rather as manifestations of the action of diffusible toxins and other products produced by the metabolism of the bacilli within the

DIAGRAM OF CASES.

No.	Name.	Age.	Admitted 1901.	Day of Disease.	Duration of Disease to Normal.	Result.	Complications.	Lung Symptoms.	Abdominal symptoms.	Widal.	Diazo.	Benzyl-acetyl Peroxide Spray.	Benzyl-acetyl Peroxide Water.
1	Mc E.	24	May 24.	6th*	30 Days.	Good.	Bowel hemorrhage.	R. lower and mid. lobe.	Late.	+	—	None.	None.
2	O'C.	22	April 25.	8th	51	Good.	Malaria.	Do.	Slight.	—	+	None.	None.
3	C. W.	20	May 21.	8th	52	Died.	Inf. Gallbladder.	Lower left lobe.	(Relapse)	(Relapse)	(Relapse)	None.	None.
4	C. C.	21	Aug. 8.	6th	15	Good.	None.	Lower and mid. right.	Marked	+	+	Yes.	Yes.
5	A. W.	25	July 30.	7th	12	Good.	None.	Mid. lobe R.	Slight.	—	+	Yes.	Yes.
6	A. W.	25	Aug. 18.	2nd	10	Good.	None.	Right lower lobe post.	Do.	—	+	Yes.	Yes.
7	H. D.	17	July 13.	4th	17	Good.	None.	R. mid. lobe, R. and L. lower.	Nil	+	+	Yes.	Yes.
8	J. B.	17	July 8.	5th	14	Good.	None.	R. and L. lower.	Nil.	—	+	Yes.	Yes.
9	McA.	19	Aug. 11.	5th	16	Good.	None.	R middle lobe.	Slight.	+	—	Yes.	Yes.
10	J. M.	35	Aug. 18.	4th	18	Good.	None.	Lower L. Mid. R.	Slight.	—	—	Yes.	Yes.
11	T. M.	17	Aug. 24.	6th	16	Good.	None.	Present.	—	+	+	—	+
12	J. M.	8	Aug. 22.	7th	14	Good.	None.	Present.	Slight.	+	+	—	+
13	J. C.	21	Aug. 21.	10th	16	Good.	None.	Present.	Nil.	+	+	—	+
14	W. R.	10	Aug. 2.	4th	30	Good.	None.	Present.	Nil.	+	+	—	+
15	F. R.	15	July 27.	7th	16	Good.	Phlebitis.	Present.	Nil.	—	+	—	+
16	B. C.	10	Aug. 29.	7th	14	Good.	None.	Present.	Nil.	—	+	—	+
17	?	12	Aug. 11.	4th	18	Good.	None.	Present.	Nil.	+	+	—	+
18	M. H.	?	?	?	?	Good.	None.	Present.	Nil.	—	+	—	+
19	Q. M.	18	Aug. 13.	9th	14	Good.	Slight relapse.	Present.	Nil.	—	+	—	+
20	E. S.	16	Aug. 5.	4th	21	Good.	Double parotitis.	Present.	Nil.	+	+	—	+
21	A. W.	16	Aug. 28.	4th	14	Good.	None.	Present.	Nil.	—	+	—	+
22	M. W.	14	Aug. 15.	10th	16	Good.	Delirium.	Present.	Nil.	+	+	—	+
23	C. R.	26	Aug. 10.	7th	22	Good.	Collapse on 14th day disease.	Present.	Slight.	+	+	—	+
24	E. C.	30	Aug. 22.	4th	14	Good.	None.	Present.	Nil.	+	+	—	+
25	A. Mc.	21	July 16.	16th	42	Good.	Cat. pneumonia, edema both lungs. Urticaria.	Present.	Slight.	+	+	—	+
26	N. M.	32	Aug. 27.	5th	16	Good.	None.	Present.	Slight.	+	+	—	+
27	R. C.	8	Aug. 28.	9th	14	Good.	None.	Present.	Nil.	—	+	—	+

*Day of disease is reckoned from the closest statement of the day the patient became sick enough to be incapacitated for work or play, or on which it was necessary to go to bed, and not from going to bed in hospital.

body of the patient, and not of necessity absorbed from the lumen of the intestinal tract, and that the presence of bacilli in the intestine seems to depend upon the presence of lesions in the intestine, rather than that the lesions depend upon the presence of the bacilli therein." And again, "Whether a proliferation of the organisms in the intestinal contents in ordinary cases, takes place previous to the true invasion of the system has never been determined; it would, however, seem to be otherwise, since a fairly consistent result of investigations is the failure to isolate the organism from the feces during the first week of the fever." From his work he concludes that the bacillus was present in the stools from the sixth to the tenth day in 10.7%; from the eleventh to the twenty-first day in 58%; from the twenty-first day to convalescence in 81.2%, the earliest isolation being on the sixth day of disease, a record closely resembling that of M. Rémy, save that the latter clings more fervently to intestinal primary infection, while Hiss openly expresses his doubts of that theory. I would, therefore, draw into apposition the clinical facts in this disease; first, to show that from the constant presence of the bacillus in the blood before its presence in the intestinal contents, its presence in the stools only at the end of the first week in small numbers, their rapid increase to their maximum by the end of the second week and the presence of the "diazo reaction" at this time most frequently, there must be a colonial development of the organism other than in the intestinal canal; and second, that, from the non-presence of the organism in the blood current until after the advent of toxic symptoms, together with the constant presence of more or less marked signs of such colonial development in the lungs, and the expectoration of members of such colony, this disease is essentially one of the respiratory tract primarily, the wellknown symptoms of the second and third weeks being mainly secondary. If these observations are correct, the treatment of the disease, now limited to the effort to eliminate the toxic products by baths, etc., should be directed more energetically toward the destruction, or the attenuation of the germ in its primary colony, nor do I lose sight of the great importance of the destruction of the secondary

intestinal colony, nor of the terminal colonies. For some time past it has been my desire to do this, and I only awaited the advent of a germicide not injurious to the patient, to put my theory into practice. Fortunately this has been recently introduced to notice by Dr. Frederick Novy, to whom I at once wrote upon learning of his observations, and from whom I obtained the chemical in question. It will suffice to say that it is the benzyl-acetyl peroxid which is germicidal in aqueous solution 1-33,000, in the equivalent of the 1-1,000 bichlorid solution. Dr. Novy has found it innocuous to animals even in large doses, and in my own service its active use in this solution by mouth, hypodermoclysis, in the abdominal cavity after laparotomy, and in powders of 3 decigrams t. d., for an indefinite time, has been followed by no ill effects, as it is rapidly eliminated as hippuric acid by the kidneys. More than this he will state in a forthcoming publication.

Its application to typhoid fever has been followed by very happy results; its use has been directed to the destruction of the germ in its primary lung colony and also in its secondary intestinal colony, and has been used by hypodermoclysis to combat terminal expressions, with the result that in 24 cases²¹ the disease has been limited almost entirely to the expression of intoxication from the primary focus, the intestinal symptoms remaining entirely in abeyance, and the disease has been shorn of many of its most disagreeable features. The mortality in typhoid fever, it may be said, depends upon lung and intestinal fatalities, the siderante cases, those quickly fatal from an excess of intoxication, and the fatal terminal expressions, being relatively rare. Therefore, if the influences brought to bear upon the organism producing these fatalities, by destroying its localized colonies, succeed, as we have so ample promise, in reducing the mortality, and in diminishing the time lost from the attack the state will profit largely, and it is from this point of view, that of state medicine, that I hope to justify my presentation of a paper of so general scope. I need not call attention to the importance of disinfecting in each and every case of typhoid fever, the stools, the urine, and sputum. As to the hygiene of communities,

the prevalence of dust can not be avoided, save by oil sprinkling, but one thing can be avoided—the sprinkling of the streets with water known to be contaminated, a process calculated to increase danger from this disease. As I have before suggested, it would be better to filter the street sprinkling supply, and allow the drinking of hydrant water.

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TUBERCULOSIS OF THE EYE.¹

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Tuberculous infection, and particularly primary infection of the eye, is no longer a question; and not uncommon, as was supposed even ten years ago. As early as 1808, Autenrieth described anatomically tuberculosis of the choroid, and McKenzie, of Glasgow, nearly three-quarters of a century ago described tuberculous disease of the eyeball, and forecast that in the near future the profession would recognize a subsequent general infection; but this prophetic assertion was passed unnoticed by all pathologists; even the great Rokitsansky, in his list of 14,000 postmortem examinations did not mention a single case of ocular tuberculosis. In 1855 Edward Jäger discovered the presence of tuberculosis in the choroid by means of the ophthalmoscope. In 1858 Manz made ophthalmoscopic examinations and found tubercles in the choroid, and later Cohnheim demonstrated the importance of their appearance in acute military tuberculosis, especially in tuberculous meningitis. In 1865 Virchow, in his "Krankhaften Geschwülste," first defined tuberculous pathology as a neoplasm, which takes its origin from the connective tissue in the form of nodules, consisting of closely-packed cells of a finely granular structure. They develop by regular gradation from simple cells, and are thus shown to be of organic formation, which Virchow regarded as a special form of cell-formation.

In 1867 von Graefe and Leber gave exact ophthalmoscopic pictures. Generally both eyes were affected, the tuberculous deposits being found in region of the macula and papilla. In the same year Hjort first found tubercle in the chiasm. In 1869 Gradenigo published the first case on record of military tuberculosis of the iris. In 1873 Perles reported the first case of military tuberculosis in the retina. In 1874 Koester first published a local case of tuberculous conjunctiva without tuberculous disease in any other part of the body. Hirschverg brought forward the only case of tuberculous disease of the conjunctiva of the globe, reported at the International Congress, held in London in 1881; child, aged 4; globar

conjunctiva (of left eye) surrounding the cornea entirely converted into confluent caseous ulcer. After excision rapid and permanent recovery was made.

Before we attempt to describe the way in which tuberculosis manifests itself in the various coats of the eye and its appendages, we are compelled to first take into consideration the four different points laid down by Ludwig Bach:

1. Tuberculosis of the eye is by no means a rare affection.
2. All parts of the eye may be attacked by the disease.
3. It plays a particularly important role in diseases of the uveal tract.
4. The eye diseases may be the only and earliest manifestation of the tuberculous infection.

Ophthalmoscopic pictures of tuberculous deposits show them as round, whitish or yellowish-white spots of varying size. Anatomically, the single deposits are occasionally so small that they are not visible to the naked eye; sometimes they are $2\frac{1}{2}$ mm. in diameter. At first they advance toward the retina, and later encroach on the sclera; the development having its beginning in the choriocapillaris; the uniform blanching of the pigment epithelium produces the yellowish-white spots.

Ocular disease may be the only and the earliest manifestation of tuberculous affection, and may appear in various forms, isolated, diffuse. It may resemble an ulcer or trachoma, and is known to affect almost every part of the eye, even the orbit.

Haab has collected the histories of 11 cases of primary tuberculosis and is of the opinion that it attacks the tunics of the eye and its appendages in the following proportion: Palpebral conjunctiva (lid) 60%, iris, 30%, bulbar conjunctiva and choroid, 10%.

From the comparative study of recorded cases by Eyre, it is observed that the age limits are wide, from a ten months' infant to a man of 30 years. The disease is more general at, or soon after puberty, than at other periods. Females are more liable to this particular tuberculous lesion than males, in the proportion of 1.5 to 1. The disease is more frequent in the right eye, the predominance of which is probably caused by the infectious material more often conveyed by the right hand.

The iris is the most frequent starting-point of tuberculosis, from this the disease seems to spread to other tunics with much rapidity. Tuberculosis of the iris is most frequently met between the ages of 15 and 30; it has, however, been observed even beyond that limit. Just how it occurs, has been much discussed; some authors believe that a local inoculation takes place in a healthy subject, by way of an abrasion of the conjunctiva; others believe that the initial lesion is a tuberculous ulcer of the conjunctiva. Van Duyse, of Ghent, states that tuberculosis of the iris is secondary to a diseased focus elsewhere. Tuberculous iritis occasionally suggests nodules in its clinical outworking, although when nodules are present tuberculosis is always to be considered.

Leber agrees with Habnet and Haensell that the small, reddish nodules which develop on the iris, and which may disappear spontaneously, to be followed in many instances by the appearance of tubercles, are of a tuberculous nature. The clinical appearances of tuberculosis of the iris, however, are not always the same, and there are cases in which diagnosis is difficult, particularly when experimental inoculation has failed. Some authors claim that tuberculosis of the iris is a rare disease. For instance, Machek found but two cases of tuberculosis of the iris in 15,000 patients; both of the patients died later of tuberculous meningitis. Machek differentiates anatomically three forms of tuberculosis of the iris: (1) Tuberculous infiltration; (2) disseminated tubercles; (3) conglomerated tubercles.

Vignes, of Paris, gives the following conclusions in

¹ Read before the British Congress on Tuberculosis, London, July 26, 1901.

regard to tuberculous iritis: (1) It is important from a clinical point of view, to differentiate a tuberculous variety of iritis; (2) this form of inflammation is premonitory of the tuberculous nodular eruption, which it may precede by several weeks; (3) it is characterized by its subacute mode of invasion; its evolution is slow and torpid, being marked by faint reactional signs, although in addition there may be dense synechias more or less completely obstructing the pupil; (4) the absence of pathognomonic symptoms renders the diagnosis difficult; (5) the tendency to spontaneous cure of miliary tuberculosis depends upon the individual resistance, and especially upon the resistance of the iris.

Tubercles in the choroid in primary affection generally occupy the region of the choriocapillaris and the vascular layer. They are also frequently observed in cases of acute miliary tuberculosis, but they may be present in all forms and stages of tuberculous disease.

After a thorough study of eight cases of tuberculosis of the choroid, George Carpenter concludes that tubercles of the choroid are protein in their characteristics, and we must be prepared to find them under various guises. In respect to the microscopic character of these growths, he says that "although in some cases the bloodvessels are far less blocked with bloodclot, yet in others proliferation of the endothelium is seen in various stages," and he "would offer as a suggestion that the giant cell is formed from the cohesion of these proliferated elements into a single cell-mass." He further says that "the giant cell in the choroidal tubercle is not, as has been seen, oval or circular in outline, to the exclusion of other forms, but more often than not it is distinctly elongated, and corresponds in outline to the various shapes assumed by the healthy choroidal vessels as seen under the microscope." He believes that "in many instances it is found lying in the bloodvessel or in a space in which a vascular wall remnant can be traced. If, then, it is admitted that the giant cell can be formed from the proliferation of vascular endothelium in a vessel of a certain caliber, there is no reason why the process should not go on equally well in vessels smaller still in connection with the main vessel, and so give rise to the processes of the giant cell and the epithelial elements surrounding it." He, moreover, believes that the small cell infiltration is "in part formed by white corpuscles, and in part by proliferation of the connective tissue cells of the choroid."

Brailey describes a tuberculous mass, apparently primary, which sprang from the optic nerve and immediately surrounding choroid, simulating in some of its clinical features a glioma.

Wagenmann says that tuberculosis of the choroid can be distinguished from glioma of the retina by the early appearance of inflammatory symptoms, including iritis—phenomena which are not present in this stage of glioma.

Tuberculosis of the conjunctiva generally attacks one eye, though we have seen it manifested in both eyes, and must agree with Fuchs "that the disease occurs, almost without exception, in young people."

The age at which primary tuberculosis invades the eye is uncertain, the earliest instance recorded is that of conjunctival tuberculosis in a child of eight months, attending Del Monte's clinic at Naples.

Sattler, in 1891, first classified conjunctival tuberculosis. His system consisted of grouping the various forms of this disease as it is visible in broad clinical characters to the naked eye. He divided them into five different groups, viz.:

(1) Characterized by the presence of small miliary ulcers, which later on may coalesce, generally attacking the palpebral, but sometimes affecting the bulbar conjunctiva.

(2) Characterized by the presence of greyish or yellowish subconjunctival nodules, varying in size, but

rarely larger than a hempseed, not unlike the sago granules of trachoma.

(3) Characterized by the presence of florid hypertrophied papillas and rounded outgrowths or granulation tissue, springing from the palpebral conjunctiva or situated in the fornices, and which soon recur after removal (resembling in many respects the velvety granulations present in a tuberculous arthritis). These granulations are accompanied by edema and thickening of the lids.

(4) "Lupus" of the conjunctiva, characterized by numerous pedunculated, cockscomb-like excrescences in the fornices, of a jelly-like consistency, often showing more or less extensive ulceration.

(5) To the above four groups one more should be added, in order to embrace those cases which are characterized by the existence of distinctly pedunculated tumors, having the macroscopic appearances of ordinary papillomas, and also such as those designated by Mitvalsky, as "true polypus of the conjunctiva,"—cases in which there is no involvement of the subconjunctival tissue, nor the production of any subjective symptom other than slight inconvenience due to purely mechanic causes.

According to M. Vicasse, of Toulouse, tuberculosis of the conjunctiva may present itself in the form of an ulcer, an infiltration or a polypus. A clinical diagnosis of the first two forms is easy, especially when there is lupus of the face.

Hirschberg estimated tuberculosis of the conjunctiva at 1 in 6,000; Mules, 1 to 30,000; Eyre, 1 to 3,000.

Fiek believes that the rarity of tuberculosis of the conjunctiva and lacrimal sac, is attributable to the chemic action of the tears and to the mechanic washing away of the bacilli. When the passage to the nose is obstructed there is likelihood of a mycotic disease of the sac, the so-called dacrocystoblenorrhoea. He, moreover, believes that the *Bacillus tuberculosis* does not thrive among staphylococci.

Blenorrhoea of the lacrimal sac may be produced either by tuberculous ulceration of the canaliculi or by tuberculous disease of the bony walls of the canal, with secondary disease of the mucous membrane.

Bock described a tuberculous tumor of the lacrimal sac which appears to be of infectious origin. The patient had tuberculosis of the right elbowjoint, with suppuration, and I believe that infectious material was carried on the fingers of the left hand to the eye.

Salzer, of Heidelberg, reports a case of tuberculosis of the lacrimal glands, in a 15-year-old girl. The tumor had been diagnosed as adenoma, and had been extirpated as such, but the microscope revealed the true nature of the growth. The tubercles had involved the glandular epithelium.

M. Gourfein, of Geneva, in one series of experiments, introduced a solid tuberculous culture into the lacrimal sac of rabbits; in another, the lacrimal gland was removed two or three weeks previous to inoculation. In all cases, infection was effected, proving that the lacrimal sac can be inoculated and that the lacrimal fluid does not diminish the virulence of the tubercle bacillus. Gourfein observed three forms of tuberculosis of the lacrimal sac: (1) Chronic abscess in the anterior wall, leading to a fistula, the pus escaping into the nasal duct; (2) formation of fungosities with escape from the puncta of thin yellowish pus, containing bacilli; (3) granulations of the sac, to which attention is called by epiphora, the liquid not ordinarily containing bacilli, but being very irritating to the palpebral and bulbar conjunctiva and producing smart conjunctivitis.

Tuberculous infiltration of the cornea is more difficult of recognition than of other parts of the eye, although primary tuberculous infiltration of Descemet's membrane is common.

Weese reported a case of tuberculous neoplasm of the ciliary body which was diagnosed as syphilis, and the

real nature of the disease was not discovered until after enucleation.

Lobouski found, upon anatomic examination, extensive tuberculosis of the ciliary body, and of the lower half of the retina. This contradicts the observation of Wagenmann that in diseases of the ciliary body the bulb is usually soft. From this condition there arose fulminating glaucoma, the retina and choroid remaining relatively intact.

In the retina the process is usually found in the inner layer. Tuberculous affection limited to the retina is indeed quite rare. Story and O'Sullivan described a case in a girl, aged 21, who stated that in one night she had lost the sight of the right eye. Ophthalmoscopically, this eye exhibited intense optic neuritis, but the disc was very much swollen and of brilliant whiteness. There were also a few white spots in the retina near the macula. After removal, on the posterior part of the retina and around the optic nerve was found a tumor one-third of an inch in diameter, and one-fifth of an inch deep. For some distance around, the retina was detached and a firm homogeneous coagulum lay between it and the choroid.

Microscopic examination revealed a tumor of typical tuberculous tissue, which passed without a break into the inner layers of the retina. Through the vessels numerous small nodules were scattered, which were tuberculous in nature.

Tuberculosis of the optic nerve is very rare and may occur as part of a tuberculous meningitis in both acute and chronic form.

I have collected 308 published cases of tuberculosis of the eye and 4 cases of my own, thus making a total of 312 cases. Of this number 121 were in the iris, 96 in the choroid, 57 in the conjunctiva, 13 in the ciliary body, 11 in the cornea, 8 in the lacrimal gland, 4 in the retina, and 2 in the optic nerve.

The countries in which they occurred are:

Germany,	53
France,	66
England, Scotland and Ireland,	48
Russia,	29
Italy,	11
Belgium and the Netherlands,	9
Austria,	24
United States,	28
Australia,	5
Switzerland,	15
Spain and Portugal,	9
Mexico,	4
South American countries,	11
Total,	312

In 118 cases in which one eye only was affectedd, in about 60%, the affection extended to the other; and about 40% had complete destruction of the vision. Ophthalmic tuberculosis without prehistoric cause, 86; general tuberculosis in 60% of all cases. Total cases I find reported in primary tuberculosis of the eye, when it could not be found in any other part of the body, 58. Among these cases 37 are reported due to injury, 21 have no known cause, 26 were affected in one eye only (17 in the right, 9 in the left), among those, in 7 the affection extended to the other eye.

In 122 cases hereditary tuberculosis was reported. In 48 there were other local manifestations. One hundred and forty-two gave no particular history of cause, outside of the 37 of the 58 due to injury; and if all the cases of primary ophthalmic tuberculosis were sifted I feel sure it would show a percentage much higher than we expect from the cause of injury. This I can substantiate by Peters, who calls attention to the fact that in a hospital in Bonn, among 10,000 injured, at least 500 manifested tuberculosis at the site of the injury, and this was more frequently observed in cases of slight injuries when disturbances in function were comparatively trivial.

From this percentage I coincide with Peters, that

there is no organism which is so likely to take root, and grow at the site of an injury as the tubercle bacillus. He also believes that irritation of the ciliary nerves brings about favorable conditions to colonization and multiplication of the ubiquitous tubercle bacillus and asserts that many cases of chronic insidious iridochoroiditis with blindness and lowered tension following either injury or operation, may rest upon a tuberculous basis.

Another point to which I wish to call attention is the early age at which tuberculous diseases of the eye, are manifested; a case in a patient of eight months, is reported, from Del Monte's clinic, at Naples, and Eyre had a patient ten months old. Other reports from 1 year to 30 induce me to believe that many of these cases of tuberculous manifestations in the eye were due to a fall or a stroke received by children, unable to take care of themselves, unbeknown to parents or nurses and that in many cases it required several years to develop. In older persons the injury may have occurred at a more advanced age, perhaps from a blow or a fall, the history of which was not always obtained by the practitioner. In this opinion I am sustained by Jessop, who records a case of tuberculous ulceration of the ocular conjunctiva with enlargement of the preauricular gland, in a boy with no previous tuberculous history; after an injury to the globe by a fall, the eye became bloodshot, the preauricular gland became swollen and painful, and a small ulcer with hardened edges was noticed in the conjunctiva. This was treated as a specific lesion, with no good results. Inoculation of a guineapig from the ulcer, proved fatal from unmistakable tuberculosis.

Fuchs noted a conjunctival tuberculous abscess that was in all probability indirectly caused by a grain of dust that had settled and broken the membrane.

There are also many cases in which tuberculous manifestations in the eyes are present, yet are not recognized or passed on account of lack of discovery of bacilli, as in a case reported by Weinbaum, of Göttingen, who found primary tuberculosis of the iris in a child, whose mother was tuberculous. Enucleation was performed; no bacilli were found, but the eyes of a rabbit were inoculated with a small portion of the growth, and severe iridocyclitis was produced four weeks later, and the microscope revealed the presence of bacilli in the inoculated eyes. I also believe that the majority of cases of tuberculous meningitis are due to ocular tuberculosis, as in the case of Knaggs, of Leeds, who recorded tuberculosis of the iris and suspensory ligament, with tuberculous deposit in the retina, in a boy, aged nine; after enucleation, tuberculous meningitis occurred and death followed about seven weeks later.

Gordon Norrie, before the Copenhagen Medical Society, reported a case of primary tuberculosis of the conjunctiva, in one eye of a child four years old. No family history of tuberculosis, nor any other signs of the disease in the patient. Microscopically no bacilli were determined, although after introduction of small masses of the diseased material into the anterior chamber of the eye of a rabbit tuberculous nodules developed.

Stephen MacKenzie describes a case of tuberculous choroid in a girl, aged four, with no history of tuberculosis. The diagnosis was made of chronic tuberculosis of the choroid, and brain necropsy revealed acute tuberculous meningitis.

Machet also had two cases of tuberculous iritis that terminated in tuberculous meningitis, and of all the cases recorded in literature in which ophthalmic tuberculosis was the cause of death, especially when there was no hereditary history, I would estimate that not less than 50% died of either acute or chronic tuberculous meningitis. Many may differ with me, but I assert that before allowing the deadly disease to get a hold, if by timely action we would enucleate the infected organ, we could save many lives. For instance, in the case reported by Bronner, of a tuberculous tumor of the iris,

in a girl, aged 14, the growth was removed and found tuberculous. Later, the eyeball was removed, and there have been no signs of tuberculosis since, and at that time there was no evidence of it elsewhere.

Also, in a case reported by Swanzy, in a girl, aged two, who presented a small, white tumor on the surface of the iris; there were also two other minute tumors on the iris. The diagnosis of tuberculosis was made, and the eye removed; microscopic examination confirmed the diagnosis. Five months later the child was in good health. There was no tuberculous disease in the family history.

I also believe that of the 142 cases that gave no history, at least 75% were due to injury; and the balance of the cases recorded as primary tuberculosis without cause were also due to injury. A careful tracing in my own four cases, one in the iris, two in the choroid, and one in the conjunctiva, revealed the fact that the primary origin of the disease was injury.

CASE I.—A girl, aged 8, of healthy German parentage, with no trace of tuberculosis on either side of the family, was brought to me with the iris of the right eye intensely infiltrated with reddish nodules, which later, under the microscope, proved to be tuberculous, as the tubercle bacilli were found after enucleation. Upon careful questioning, the mother remembered that about two years previous a younger brother, while playing with a rattan whip, had struck the girl in the eye, causing conjunctival ecchymosis and swelling. The swelling and discoloration subsided after several weeks, and to all appearance the eye was well and sound. Two years later the patient was brought to me, and I found the eye as above stated. Six months later the entire eye was involved, with complete loss of vision, and upon the consent of the parents I enucleated the eye. It is now nearly two years since the operation, and the child is healthy, and there is no other manifestation of tuberculosis in any part of the body.

CASE II.—Girl, aged 4, who 14 months before I saw her, slipped from a low iron picket fence, striking the right eye, causing a contused wound of the outer canthus and upper lid. The eye was treated by the family physician, and to all appearance a perfect recovery was made. Fourteen months later I was called in consultation on account of lowered vision in the right eye. Upon examination I found several whitish tumors in the choroid, involving the macular region. Vision of the eye was reduced to counting fingers at two feet. Stratified blood clots were found in various parts of the fundus. I made a diagnosis of tuberculous choroiditis, and advised enucleation, which was performed. The wound healed kindly, but four months later the child was brought to me with iritis of the left eye, and before enucleation could be performed, the child was taken sick and died of what proved to be tuberculous meningitis.

CASE III.—A boy, aged 14, living in the country, was brought to me with the following history: About a year earlier, while quarreling with another boy, he was struck between the eyes with a stone, the septum being broken, and the eyes became bloodshot and inflamed. No particular attention was given as regards local treatment at the time. On examination I found the sight of the left eye reduced to one-tenth normal; there was intense optic neuritis, and surrounding the disc were eight or ten circular nodules, yellowish-white at the center, and passing gradually at the periphery into the color of the natural choroid. The surface of several of the choroidal tubercles could be traced by retinal vessels. Ten days later the eye was enucleated. Eight months have passed since the operation, and there is no manifestation of further infection from tuberculosis.

CASE IV.—Male child, aged 2 years, on Christmas Day, while playing with a tin horn, fell and struck the sharp edge of the mouth-piece into the upper right eyelid, cutting the conjunctiva at the upper part of the globe. No particular attention was given the child outside of stopping the bleeding. Eight months later the child was brought to me at the suggestion of the family physician. Upon examination I found flat-topped excrescences closely packed together, on the conjunctiva at the point of injury. The glands were also much swollen. These growths or excrescences were excised, and the microscope showed them to be tuberculous in structure. There has been no return of the trouble in the past eight months.

In conclusion, I would say: First, that I am reasonably satisfied from the cases that have been reported, and from my own observation, that at least 75% of all cases of tuberculosis of the eye are due to two primary causes, either to infection from other parts of the body, or from direct injury to the eye; and second, that in primary tuberculosis of the eye early diagnosis and operation robs death of many of its victims.

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MALARIAL IRITIS: REPORT OF A CASE.

BY

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From a careful perusal of a number of the most popular textbooks on diseases of the eye, and a somewhat critical search of the literature devoted to this special subject, I have been led to the conclusion that malarial iritis is among the rarest of eye affections. The report of a case of this kind, which I recently had the good fortune to see, may therefore be of interest to other general practitioners and possibly also to the specialist.

As regards other diseases of the eye, due to malaria, it may be said that not only does the literature on the subject present a large number of cases embracing a great variety of pathologic conditions of the eye and its appendages, but even the better known textbooks contain a good exposition of the subject.

Malaria as a cause of eye diseases has been described in its various phases by McNamara, Jacobi, Galezowski, Guineau de Mussy, MacKenzie, Dutzman, Tott, Kühlbrand, Testelin, Koenigstein, Heusinger, Leber, Richard, Kosloffski, Adamück, Poncet and many others.

An editorial in the *Journal of the American Medical Association*¹ gives an excellent review of the subject, and also quotes extensively from Yarr,² whose paper is now out of print, as follows: "Among the most common external signs of malarial eye diseases are probably seriginous ulcer of the cornea, phlyctenular keratitis and an herpetic eruption of the upper lid and supraorbital regions. Yarr thinks all malarial eye diseases have their starting point in disturbances of circulation, and classifies them under the following heads: Neuritis, Hemorrhage into the Retina, Retinochoroiditis, Effusion into the Vitreous. One sign is said to be pathognomonic—namely, a peculiar coloration of the papilla (*tinte rouge grisâtre*). This is due to the presence of malarial plasmodiums in the capillaries. It is stated that 80% of the cases terminate in a partial atrophy, indicated by a varying diminution of visual acuity, irregular contraction of the field and slight greyishness of the disc; many end in complete recovery; some rare cases go on to complete atrophy. Retinal hemorrhage may be punctate or severe; in the latter case it may cause complete blindness. Among occasional ocular troubles, due to malaria, may be mentioned periodic blue vision, central scotoma, sudden and persistent amaurosis which may end in atrophy. A note of warning is also sounded regarding the danger of inducing amaurosis by the use of quinin."

Yarr further says³: "There are grounds for believing in the existence of a special malarial iridocyclitis characterized by periodicity and a tendency to relapse."

Again, Yarr⁴ arranges malarial eye diseases under the following headings:

Conjunctivitis.—(a) Intermittent ophthalmia; (b) conjunctival injection due to neuralgia of the fifth nerve; (c) epidemic conjunctivitis; (d) epithelial xerosis, probably secondary to malnutrition brought about by malaria, this being the local expression of the general disease.

Keratitis.—(a) Dendritic; (b) keratitis profunda; (c) vesicular keratitis (herpes corneæ).

Iritis.—Recorded cases of malarial iritis are not numerous, and in very few is the evidence of malarial origin perfectly satisfactory.

In the same contribution Yarr describes a case of malarial iritis in a soldier who had just returned from service in Burmah, India. M. Pechin, in 1899, reported a case of double malarial iritis at the Congress of the Ophthalmological Society of France.

P. T. Vaughan⁵ quotes various authorities in support of the malarial origin of a number of ocular diseases, and, among others cites the following interesting contributions to the subject: Sulzer observed in malarial eye diseases that the papilla was swollen and dark red in color, and the adjoining retina opaque. Poncet attributes the discoloration of the papilla to dilated capillaries containing giant-cells filled with pigment. Gowers describes a peculiar type of paralysis of grave form due to obstruction of the cerebral vessels with pigmentary matter. Vaughan also mentions retrobulbar neuritis (Uthoff), optic nerve atrophy, and ptosis (Adelheim). Inflammatory conditions have also been shown to be due to malaria; namely, iritis and iridochoroiditis, keratitis parenchymatosa, and keratitis dendritica. The latter was first described by Kipp, of Newark, N. J., in 1880.

In regard to malarial iritis proper, its rarity was forcibly impressed upon me on consulting the following authorities: Fuchs, of Vienna; McNamara, Wells and Nettleship, of London, do not mention malaria as a cause of iritis, and the same may be said of the American edition of Nettleship's work, edited by Thomson. Swanzy, of Dublin; Wolfe, of Glasgow, and Fick, of Zurich, also fail to mention it. The American Textbook of diseases of the Eye, Ear, Nose and Throat (Randolph, of Baltimore) barely mentions malaria as a cause of iritis, devoting just six words to a discussion of the subject. Norris and Oliver, in their System of Diseases of the Eye, by American, British, Dutch, French, German and Spanish authors, give the following as the causes of iritis: "Lues, 60%; rheumatism, 30%, and the remaining 10% as due to various causes, of which injuries, gonorrhea, gout, diabetes, malarial and other fevers, are probably the most important." They further state that malarial iridocyclitis is almost unknown in this country except among those who have lived abroad in paludal districts.

Peunoff,⁶ in his observation of 72 patients suffering from intermittent fever in the eye division of the Military Hospital at Tiflis, noticed that their pupils did not react normally to atropin during the paroxysm, but reacted normally during apyrexia. Dr. Reich,⁷ observed in one case, during each exacerbation of fever, conjunctival hyperemia, pericorneal injection, lachrimation, photophobia and blepharospasm. Atropin, gr. j to dr. ij, had no effect as regards dilation of the pupil. This patient was cured by quinin. Kirkorow,⁸ in "A Case of Iridocyclitis Caused by Malaria," gives a description of this disease. The patient lived in Bessarabia and showed, beside the usual signs and symptoms of quotidian malaria, the clinical picture of iritis with deposits on the membrane of Descemet, cloudiness of the aqueous and vitreous humors, and tenderness to touch. The patient was cured in a few days by quinin, with atropin and moist heat applied locally. It would seem, therefore, that malarial iritis is of such rare occurrence as to be almost unknown, at any rate in New York.

CASE.—I was called September 8, 1901, to see Mrs. K., a Russian, aged 22. Her father died of pulmonary tuberculosis at the age of 35, otherwise her family history is unimportant. She had never been sick before. She came to the United States 12 years ago and has never been out of New York City until last August, when she spent that month in Greenport, L. I. The patient says that the weather was extremely warm and damp most of the time and that the mosquitos were very troublesome. In fact, on account of the mosquitos she lost much sleep at night. She was bitten very

severely. In the beginning of September she returned to New York. Her appearance at this time was rather anemic though she was apparently well-nourished. Her eyes were bloodshot; tongue coated; temperature, 101° F. Examination showed a mild iritis in both eyes. No other organic lesion apparent. She complained of headache, malaise, loss of appetite and pain in the eyes. She had chilly sensations the day previous, but no decided chill. Patient was ordered to bed. Saline laxative; phenacetin and salol, of each five grains, every four hours. Warm, moist applications over the eyes. Room to be kept dark. September 9, condition about the same; temperature, 100° F.; same treatment continued. September 10, temperature, 101° F.; right eye is somewhat better; left eye worse. All symptoms, especially the pain in the left eye and left side of the head, much worse. The patient had no sleep during the night. Phenacetin and salol each increased to 10 grains every four hours; otherwise treatment unaltered. September 11, temperature normal; patient feeling almost well; eyes almost well; same treatment continued. September 12, temperature normal, patient doing badly; left eye again inflamed. The constitutional disturbance and pain in the head seem to be out of all proportion to the extent of the local difficulty. It was decided to have expert opinion, to which end an eye specialist was called. He examined the eyes carefully and agreed as to the diagnosis, namely, iritis. In addition to the other signs he found that there were delicate bands of adhesions (posterior synechiæ) binding the iris in its lower fourth to the capsule of the lens. He advised atropin, in the strength of four grains to the ounce, dropped into the eye night and morning. Otherwise the previous treatment was continued. The patient improved somewhat, but the pupils responded poorly to the atropin. During the next three days the condition was far from satisfactory.

Inasmuch as lues and rheumatism as causes of the iritis could positively be excluded, and the underlying condition which kept up the inflammation of the eye remained undetermined, I decided to make a microscopic examination of the blood. After cleansing the little finger of the left hand with soap and water and subsequently with alcohol, a drop of blood was drawn with a sterile needle, and wiped away. From the second drop of blood, smears were made on three glass object slides which, after having been dried in the air, were immersed for two hours in equal parts of ether and alcohol. The slides were then stained with a 10% aqueous solution of eosin, by aid of the flame of a Bunsen burner held beneath the slide until the fluid began to boil. The slide was washed in cold water and then covered for one minute with Löffler's methylene blue solution, washed again in cold water, then dried and mounted in Canada balsam. I examined the specimens in oil with a $\frac{1}{2}$ oil immersion lens and found the malarial organism of the tertian type. This showed the eye trouble to be unquestionably of malarial origin and made a cure easy. Fifteen grains of quinin sulfate was administered every five hours and the patient made a perfect recovery in three days. She has remained well up to the present writing, about two months.

The case presents the following points of interest:

1. The fact that the patient never lived in a malarial district until her sojourn during the month of August in a mosquito-infested village on Long Island.
2. The incubation period, which can be fairly well measured in her case, namely, from the time she was bitten until the time she became ill, less than four weeks.
3. The difficulty of arriving at a correct diagnosis without a microscopic examination of the blood, as she manifested no enlargement of the liver or spleen, or other signs especially pointing to malaria.
4. The difficulty which was experienced in securing the effect of atropin on the pupil.
5. The rapidity of cure and the prompt relief from pain after the use of quinin, without an anodyne.

In conclusion, I desire to express my thanks to Professor Henry T. Brooks, of the New York Post-Graduate Medical School, for his kindness in examining the blood preparations and confirming my findings in this respect.

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New Petroleum Ether.—It is announced that Dr. Arsene d'Arsonval, a member of the Academy of Sciences in Paris, has discovered a method of extracting from ordinary petroleum a liquid which does not freeze at a temperature of 200° below zero.

PHLEGMON AND FISTULA OF THE LOWER JAW, CONSECUTIVE TO ERUPTION OF THE WISDOM TEETH. FRACTURE OF THE BONE OR FRACTURES OF THE TEETH AND INFECTION AFTER EXTRACTION.

BY

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Large abscesses, disfiguring scars, painful and discharging fistulas, are occasionally troublesome concomitants, or sequels of dental disease, trauma to the mandible or the upper jaw, or late dental eruption. They are uncommon in childhood or youth, and are most frequently seen after eruption of the permanent teeth.

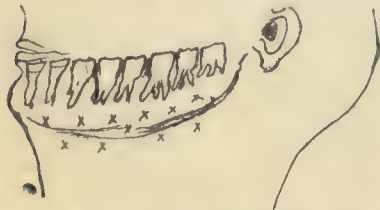


Fig. 1. Check marks indicate the site where perforation may occur above, below or under the border of the jaw.

Dental phlegmon, obstructive suppuration of the sinuses, or fistulous perforation through the base of the alveolus, appear with equal frequency in both sexes; but the disfiguring effects of cicatrices are greater in the female, because the facial integument is finer, and moreover, cannot be concealed by a growth of beard. Several cases of fistulous sinus with resulting scars, and having widely different etiology, have, come under my care, in hospital and private practice, but in every instance very satisfactory results followed treatment.



Fig. 2. Site of scars in fistulous perforation.

symphysis by a fibrous substance. In the adult the lower jaw is formed chiefly of compact osseous tissue. The ramus is a broad quadrangular plate of bone, into the surface of which are inserted nearly all the elevator muscles of the jaw, and it is pierced on the inner lower surface by the mental foramen. This segment of the jaw bone with the neck is deeply covered by a powerful muscular development. On either side of the dental arch there lies a very thick vascular investment of con-

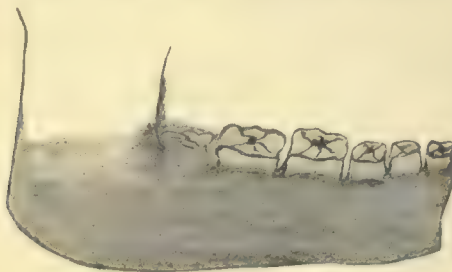


Fig. 3. Showing imperfect eruption of wisdom tooth imbedded in turgescient mucous membrane.

densed connective tissue—the gum. This structure snugly invests the neck of each tooth and is intimately incorporated with the peridental membrane above, and the periosteum on the outer side of the alveolus below. The mandible is, therefore, without a periosteal invest-

ment on its upper surface, and its inner surface is invested by mucous membrane.

During development, the mandible is an ossification in membrane. In the embryo, the teeth are an epithelial structure, and each dental follicle is a solid, cylindric prolongation of stratified epithelium of the surface into the depth of the mucous membrane. Along the upper border of the jaw, at this period, appears the primitive dental groove into which the cylindric solid prolongations of the surface epithelium take place. This constitutes the rudiment of the tooth papillas. The milk-tooth is buried in the mucous membrane of the gum at birth, and when it breaks through, its enamel carries before it a dense, tough membrane, "the cuticle of Nassmyth." This epithelial outgrowth is the germ of the enamel organ of the permanent tooth; but its growth remains stationary till the time arrives for the milk-tooth to be supplanted by its permanent successor. A new tooth is thus formed in the depth of the alveolar cavity of its predecessor when the growth of the former toward the surface gradually lifts the latter out of its socket.



Fig. 4. Lateral view of dental wall with fangs of first bicuspid well concealed under mucous membrane.

Complications of Late Dentition, and Pathologic Conditions of the Jaw and Soft Parts Dependent on Necrotic Crowns or Fractured and Embedded Fangs.—In the evolution and growth of the body, most physiologic processes are painless and devoid of danger to life or health; but there are exceptions, as we sometimes observe in menstruation, in reproduction, and in the process of dentition.

Thus, with but few exceptions the evolution of dentition in the suckling child is attended with marked constitutional disturbances and acute local pathologic conditions, such as gingivitis with intense engorgement, or phlegmonous changes in the peridental structures.

With the late eruption of a wisdom tooth very severe local changes are sometimes observed; not only peripheral lesions, but very deep-seated changes, having their origin in the walls or base of the fangs. In this relation Moty (*Accidents de la Dent de Sagesse—Revue de Chirurgie*, June, 1901), says that he believes the primary pathologic changes in deep phlegmon are caused by epithelial inclusion at the base of the alveolus, as well as by neoplasms or teratomas, the proliferating cysts of dental origin described by Mallaez, the follicular cysts of Magitot, or the embryo-plastic cysts of Broca. This epiblastic origin of the inflammatory changes may be in operation in some cases, but unless there are other coincident factors it is difficult to conceive how it can be responsible in all. However, in order to accord with the germ theory of suppuration, some such hypothesis is called for.

Trouble is seldom experienced with the late eruption of a wisdom tooth, until the crown has cleared the mucous membrane, when lancinating pains begin, the body of the mandible becomes hypertrophied and super-sensitive, movement of the jaw is limited, and the dental arches can be separated for only a narrow space.

Necrotic teeth, central suppuration of the pulp, fracture of the fangs, excessive violence in extraction with crushing of the alveolus, sometimes lead to suppurative perforation of the alveolar bed, submaxillary abscess, troublesome sinus, and a disfiguring cicatrix. When the



Fig. 5. Upper alveolar surface of lower jaw. 1. Necrotic spurs remaining; 2. Mucous membrane concealing fang of first bicuspid. 3. Mucous membrane concealing fang of latter incisor.

upper back teeth are involved, suppurative perforation of the alveolus into the antrum of Highmore, with consecutive perforation of the hard palate or nasal process, usually occurs. Cases are recorded in which the pent up pus made its way through the orbital plate into the sub-conjunctival tissues of the eyeball.

Submaxillary perforation with intermittent discharge of pus, is the type of lesion under consideration, which invokes the aid of surgery for its radical and permanent cure; but such patients apply to surgeons for the purpose of having the disfigurement removed rather than

for help in relieving the distress, as they suffer very little after a free vent has been provided for the discharge.

Treatment.—No class of surgical cases, in which the osseous structures are involved, responds to judicious intervention with more gratifying results

than the one under consideration; none in which a more hopeful prognosis can be given, even though the tubercular diathesis or the luetic state is present.

Dental prophylaxis, or intelligent preventive measures, will accomplish all that is desired when the teeth first appear.

When the eruption of the third molar is attended with evidence of inflammatory changes in the overlying mucous membrane, in the peridental membrane, or at the base of its fangs, a free, deep, crucial incision should be made over the crown; this failing, the tooth must be extracted. Being of questionable utility in mastication its extraction entails no special loss.

Sometimes nature effects relief by a circumscribed pus formation with loosening and dislodgment of the stump, which has now become a foreign body. A lower grade of inflammatory action follows, and the plastic exudate thrown out by the peridental membrane becomes ossified, and firmly welds the fractured root to the alveolar surface, so confining the debris of inflammatory

changes that the only escape is by extension into the osseous structures of the jaw below, and a phlegmon of the soft parts results.

Dead or broken stumps befall the mouth and impart a most offensive odor to

the breath. They should be regarded as foreign bodies, and extracted.

Incomplete extraction is a fertile source of serious lesions of the alveolar arches and consecutive infection of the underlying osseous parts. Dental surgery has attained a high position, and with the improved technic a capable dentist can quickly and completely dislodge most teeth; but sometimes they are excessively brittle and fracture easily, or are so lodged that nothing less than immense force will displace them. In every instance, especially in adults, when the crown shatters under the forceps, or the fangs fracture below the gingival border, the operator should continue, with a special forceps or an elevator, until the last vestige has been cleared out.

Building crowns on imbedded roots, or sheathing teeth of questionable vitality with a gold plate—a fad of the times—may be a most commendable prosthetic procedure; but it certainly does not conduce to dental

health, or to the integrity of the osseous parts in which the teeth are imbedded.

The radical treatment in submaxillary fistula embraces: First, the osseodental structures; and second, the external or cutaneous parts. When the superior alveolar arch is the seat of perforation, surgical intervention involves only the dental structure and parts contiguous with the antrum.

The necrotic tooth or the embedded fang must be lifted out, as a preliminary measure; then the mouth well washed out with boracic acid solution and the alveolar cavity packed with an aseptic tampon to check bleeding and prevent infection. This is the first and most essential step, and would be sufficient were our aim only to arrest the suppurative processes; but as our object is to remove the disfiguring surface scar, we now proceed to curet the fistulous sinus, dissect away the scar tissue and close in the remaining breach with healthy integument.

A probe will readily direct us to the perforation in the jaw, leading up to the open alveolus. Now, by first dissecting away the scar, greater facility is permitted for dealing with the fistula. The external aperture in the jaw may occupy various situations, sometimes more than an inch anterior or posterior to the opening in the integument. It may be on the internal, inferior or external aspect of the horizontal ramus, the canal pursuing, at times, a tortuous course. The perforation in the bone is occasionally no larger than a pinhole. It has been my practice, in every case, to greatly widen this and completely curet away all the necrosed matter in the alveolar cavity. This leaves a free through-and-through opening after the tampon is removed. At this stage the gap in the soft parts should be closed and the cavity allowed to drain through the mouth.

I append a few cases illustrating the serious effects consequent to imperfect extraction:

CASE I.—Female, aged 27, cigarmaker, of spare build but in good health. Four years before had second left bicuspid and first molar extracted. Five months later pain began under the middle of the lower jaw, followed by swelling, and later, the rupture of an abscess. After free discharge the swelling subsided and the opening closed. But from this time there was recurrent pus formation and discharge, each time a fresh opening being formed; so that a long, broad scar was the result.

On examination, it was evident that there was some hypertrophy of the jaw in consequence of the repeated periosteal inflammation. The cavities left by the teeth were well filled in and covered with mucous membrane. The remaining teeth on this side (the left) were sound. On passing a sound through the fistulous opening the tip came in immediate contact with bone. The process was rather under the body of the jaw, forward, immediately under the lateral incisor, but the canal extended posteriorly more than an inch. The operation was performed under ether. Beginning from the external surface the scar tissue was displaced and the osseous surface denuded. A small opening was discovered, extending upward and inward about 2 centimeters. Upon widening this with a grooved osteotome a short necrotic fang came into view. This belonged to the imperfectly-extracted first molar. For a narrow area about the imbedded root there was softened, decayed bone substance. Now the gum was freely divided with a strong scalpel and the root extracted, leaving an open portal, continuous with the outside. By flap-sliding, the breach left by the dissected scar was completely closed in. The alveolus was daily packed with sterilized cotton, and repair was rapid and in every way successful.

When it is deemed expedient to permit the fang to remain, the patient should be advised to consult the dental surgeon upon the first evidence of painful irritation.

CASE II.—*Perforative Fistula of the Lower Jaw, Consecutive to Phlegmon of the Gum, in a Case of Infection Through the Tooth Pulp, by Complete Necrotic Ulceration of the Second Molar.*—A carpenter, aged 32, about a year before he consulted me suffered from a gum-boil on the right side. This healed and shortly after a large swelling was noticed under the jaw. This went on to suppuration and discharged. The abscess recurred at intervals, leaving a fistulous opening with a broad scar extending from the angle of the jaw downwards. On examining the buccal cavity, the thin, black-margined shell of the second molar was seen. The inner side had been obliterated and the mucous membrane overlapped the greater part of the remainder of the tooth.



Fig. 6. Showing slope of incision and detached scar.



Fig. 7. Showing opening drilled to dental base preparatory to closing incision.

This case was treated on the same general lines as Case I, but the operative steps were more difficult, as the opening through the bone on the internal surface involved a breach through the mylohyoid muscle and a division of the facial artery. Repair was complete in a fortnight.

The further back these dental fistulas are encountered the more complicated they are because of the close proximity of the lymph ganglions, the parotid gland, and important vascular and nerve structures.

CASE III.—Internal Phlegmon, Severe Constitutional Disturbance, Large Submaxillary Abscess and Fistula, Attending and Following the Late Eruption of a Wisdom Tooth.—Patient, 23 years old, locomotive engineer, always had good health until a year before he came under my care, when he became conscious of the budding through of a wisdom tooth on the right side; the whole jaw and adjacent tissues were enormously swollen. For a week he could hardly separate the teeth to admit fluids into the mouth, and chewing was impossible. His suffering became so great that he had to stop work and seek professional aid. A large abscess opened on the inner side of the imperfectly erupted molar and later another phlegmon appeared under the jaw and was freely opened. This never completely closed, and a troublesome sinus with the usual disfiguring scar resulted. In addition the gum over the two back molars was tumefied, and mastication at times painful. Although the primary seat of the trouble was near the angle of the jaw the sinus advanced well forward in the body of the bone, pursuing a long, tortuous course. It was evident that the alveolar bases of the second and the third molars were involved and that the infective lesion had caused marked hypertrophy of the entire mandible. In this instance both the second and third molars were extracted and a long, sinuous, suppurating canal curetted away, the soft parts being treated in the usual way. The patient stayed in bed but two days and satisfactory repair ensued after three weeks treatment.



Fig. 8. After repair.

In this case, as with the preceding ones, early extraction would have obviated the infective lesion and the necessity of recourse to radical surgical measures for a definite cure.

Infection and Submaxillary Abscess After Fracture.—The anatomic construction of the mandible renders it seldom liable to fracture, for a bone so exposed. Compact bone-substance predominates in its composition, the meniscus under each articular

surface serving as a buffer; the bone is laterally very movable; moreover, this lying anterior to and partly under a cavern (the buccal cavity), tends to modify jars and concussions.

Fractures of this bone are, with rare exceptions, through the horizontal ramus or the body, rather anteriorly, where the deeper fangs are set, and where there is but little muscular protection. The injury is always produced by direct violence, as by blows or falls, or from gunshot wounds.

These fractures are frequently complicated, *i. e.*, they open through the gum and mucous membrane, the teeth become loosened, and there is free hemorrhage into the mouth. Theoretically, they would seem to constitute a very serious class of traumatisms, as they involve parts concerned in phonation, respiration, and deglutition, and are, of course, always contaminated by the multitudinous bacteria of the buccal cavity. Perfect approximation is generally impossible where the fragments are oblique and override. But in fact, the results of treatment are generally very satisfactory. No bone in the body unites more quickly or is capable of a larger degree of regenerative activity or complete repair when the fracture is multiple, or where there has been shattering. I was convinced of this in a forcible manner some years ago.

A young mulatto girl received a heavy charge of duck-shot, the impact being at right angles with the face. The charge entered through one masseter muscle, tearing the tongue wide open; striking the opposite jaw at the center of the insertion of the mylohyoid muscle it produced four fractures of the body, one through the symphysis with shattering. She was intoxicated at the time of the shooting, and her lower face was a gruesome sight. After a tedious, trying effort, the fragments were wired together, and the hemorrhage controlled.

This procedure was largely experimental on my part, as it was thought that widespread sloughing and necrosis would carry all the mangled parts away; but on the contrary, there was no sloughing, and every fragment took on rapid repair.

There are, however, exceptional cases in which these fractures may give considerable trouble, as when the bone sunders in the vicinity of decayed teeth, when the patient is intoxicated at the time of injury, where there is impact of the hinder fragment into the soft parts, and when infection sets in and submaxillary phlegmon develops.

Submaxillary abscess, consecutive to fracture, implies neglected primary treatment; it involves necrosis, and renders full recover of function tedious. In dissipated or diabetic subjects, or in those who develop erysipelas, suppuration in such cases may be attended with widespread sloughing, and a large scar with distortion of the features may result. The case here recorded is illustrative of this class.



J. B., vendor, aged 32, came under my care at the Metropolitan Hospital, May 12, 1901. At this time he had a vast swelling under the right lower jaw, extending back into the region of the parotid gland and downward into the submaxillary; it had a brawny consistency and was of a dull red color. The jaw could not be depressed more than one inch. He said he had severe pain at times, but worked every day; injury of any kind was denied, and he stated that his chief trouble was the inability to eat with comfort; said he had no decayed teeth. Rigidity of the jaw prevented proper inspection of the mouth.

As there was no fluctuation in the swelling, and the etiology was very obscure, it was thought best to prescribe a soothing lotion, advise keeping the mouth well cleansed, and delay. A week later the mass pointed and freely discharged a foul-smelling, ichorous pus, such as is discharged from diseased bone. At this time the muscles had relaxed so that the mouth could be examined. No caries of the teeth over site of the phlegmon was seen, but it was plainly evident that there was a false point of motion and that there had been a fracture just posterior to the second bicuspid; there was no opening from it into the mouth, however. Upon passing a probe from the large breach in the integuments, dead bone was at once encountered, and a large detached fragment withdrawn. Under anesthesia the opening was enlarged and a considerable quantity of osseous detritus removed. It will be seen by the cut that there was loss of integument by sloughing; his stubborn refusal to permit an early evacuation resulting in this condition. After reducing the fragments and securing them together, the area of the opening was considerably diminished.

SUMMARY.

Perforative endostitis of the lower jaw is an infective lesion usually consecutive to (a) caries of the crown, (b) incomplete extraction, or (c) the late eruption of the third molar.

Infection first provokes an alveolar abscess, with widespread tumefaction and rigidity of the jaw. This may be followed by dislodgment of the imbedded fang or by alveolar necrosis.

Perforative osteitis from a dead fang occurs through the least vascular surface of the mandible, by way of the dental canal; this is followed by an abscess, ultimately degenerating into a chronic, unsightly fistula.



Fig. 10. Open fracture of lower jaw, after repair.

Surgical aid is resorted to, rather as a means of removing the blemish than because of severe pain.

Operative intervention embraces, *first*, the complete extraction of diseased fangs; *second*, dissection away of scar tissue; *third*, the thorough curetage of the sinus, and the closing of the breach in the soft parts in such a manner that little or no deformity will result after healing.

Drainage must be entirely from the base of the alveolus into the mouth, hence the importance of frequent cleansing of the gums with antiseptic lotions until repair is complete.

PERIPHERAL ANESTHESIA PARALYSIS: WITH A REPORT OF THREE CASES.

BY

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Paralysis of the muscles of the arm or arms following the administration of an anesthetic, although fortunately not of frequent occurrence does nevertheless sometimes occur, and therefore merits the careful consideration of the surgeon. The subject has received attention from some continental surgical authorities and from a few writers in the United States. The cases thus far reported vary much in the extent and number of muscles paralyzed, seemingly in the great majority of patients but one arm having been affected, while in some both arms have been implicated. But five cases have thus far been reported, so far as my knowledge goes, in which both arms have been involved. It is a noticeable fact that in nearly all the cases the operation during which the arm or arms became paralyzed was one that lasted for one to two hours, and that in nearly every instance the arm or arms implicated were very strongly abducted or drawn forcibly up over the head, and were there held in forced extension by being pinned together or fastened to some portion of the table.

To the five cases of paralysis of both arms following the administration of an anesthetic already reported, the writer is able to add a sixth.

CASE I.—Mr. S., aged 37, on March 21, 1900, had the pylorus with one-half of the stomach resected for a carcinomatous growth. The operation lasted 1½ hours, and during the time the anesthetist drew both arms forcibly up over the patient's head and pinned them together. They were held in this position during the continuance of the operation. The patient was greatly shocked, but rallied; on the following day it was noticed that both arms were paralyzed. In the left forearm there was almost complete paralysis of the flexors, extensors, and supinators. In the arm, the biceps, brachialis anticus, deltoid and triceps were paralyzed, and about the shoulder the pectorales muscles, the trapezius, spinati, the rhomboides, levator anguli scapulae, and the subscapularis. In fact, the patient was absolutely unable to move either the shoulder, arm or forearm, but was able to very feebly move the fingers. The entire extremity lay apparently lifeless by his side. In the right arm the paralysis was not so complete, it being confined to the deltoid, biceps, brachialis anticus, triceps, supinators, and the flexors supplied by the median nerve. The patient was treated by subcutaneous injections of strychnin and by massage. Muscular wasting was noticed at the end of the first week. At the end of ten days following the operation there was some improvement noticed, which progressed, and in six weeks the functions of the right arm were almost completely restored, while the muscles about the left shoulder had to some extent regained their function, and those of the arm and forearm were showing decided improvement. The left arm, however, was very weak at the time the patient left the hospital. May 4, 44 days after the operation, the patient's physician reported that the right arm had completely regained its function, and the only paralysis remaining in the left, so far as he was able to determine, was in those muscles supplied by the median nerve, which are still to some considerable extent paretic.

CASE II.—Paralysis of the muscles of the right arm occurred

in a patient operated upon in my clinic during the school session of 1899-1900. The patient, Mr. G., a mechanic, aged 54, came to the hospital with a large tumor in the abdomen, which proved to be a carcinomatous growth of the cecum. Resection was practised. The time consumed in the operation was 1½ hours. During the operation the right arm was drawn up over the patient's head by the anesthetist, and maintained in that position. When the patient recovered from the anesthetic, it was noticed that the biceps, brachialis anticus, deltoid, triceps, supinators, and to some slight extent the muscles supplied by the median nerve were paralyzed. The paralysis showed only slight improvement upon the patient's death 12 days after the operation.

CASE III.—Mr. S., aged 39, a painter by occupation, was operated upon for inguinal hernia July 22, 1901. During the operation the anesthetist drew the left arm up over the patient's head and maintained it in that position for the purpose of acquainting himself with the condition of the patient's pulse. The day following the operation the patient complained that he could not use his left arm. Upon careful examination it was seen that the deltoid, biceps, brachialis anticus, triceps and supinators were completely paralyzed, and that the muscles supplied by the median nerve were decidedly paretic. At the end of the first week the patient called the attention of the house doctor to the fact that the muscles of the arm were wasting, and they had at this time diminished very considerably in size. At the end of 10 days the patient could close his hand. There was also at this time some improvement in the biceps, brachialis anticus, triceps and deltoid, but the supinators remained completely paralyzed. Eighteen days after the operation a slow but progressive improvement was noticed in the condition of the affected muscles.

Paralyses following operative procedure have been divided by Mally into four groups: (1) Central or apoplectic; (2) peripheral; (3) hysteric; (4) reflex. Casse and Varhoogen claimed that these paralyses were due to the specific action of chloroform. Others think they are reflex in character, or are due to a cortical or central disturbance within the brain. Bernhardt, Braun, Krumm, Hoedemaker and Nonne believe that the paralysis, following strong extension of the arm, is caused by pressure on the brachial plexus between the clavicle and transverse processes of the sixth and seventh cervical vertebrae. Budinger, Kron and Krumon found that severe pressure could be exerted between the clavicle and the first rib. Duval and Guillani believe that the paralysis is caused by a stretching of the nerves over the head of the humerus during strong abduction. There can be no question but what these cases are traumatic in origin.

In some dissections and experimental examinations which were made upon the cadaver, I was able to demonstrate that forcible extension of an arm upward over the head produced severe compression of the upper cord of the brachial plexus made up of the fifth, sixth and seventh cervical nerves between the upper edge of the clavicle and the sides of the corresponding vertebrae. The upper border of the clavicle by this extension is carried forcibly upward and inward and may produce severe pressure upon any structures which lie between it and the corresponding vertebrae. The eighth cervical and first dorsal nerves uniting to form the lower cord escape this pressure in consequence of being situated below the point where the clavicle impinges against the spinal column. The cord formed by the eighth cervical and first dorsal may in forced extension be severely pinched between the posterior border of the clavicle and the first rib. Upon opening the axilla we were able to demonstrate that the outer cord in forced abduction or extension rode above the head of the humerus, consequently its branches, the musculocutaneous and one-half of the median, could not be compressed or stretched in this situation by this position. The posterior cord, however, giving off the circumflex musculospiral and subscapular, as well as the lower cord, giving off the ulnar and a portion of the median, and also the nerve of Wristberg may be stretched to some extent by forced abduction or extension. The study of the cases reported will show that the muscles most frequently implicated are those supplied by the musculocutaneous, circumflex, musculospiral and the median nerves. But few of these nerves could be injured in the axilla by stretching.

They all, however, may be injured in the neck or between the first rib and clavicle by pressure. Why the trapezius should be paralyzed is much more difficult to state, being supplied as it is by the spinal accessory which takes origin from the lateral tract of the spinal cord near the sixth cervical nerve. This may be the result of reflex action. One point of unquestionable moment is that these cases of paralysis occur only during operations which are unavoidably prolonged.

Every surgeon is in the habit of abducting the arm in clearing out the axilla in carcinoma of the breast, and still, so far as known, no cases of paralysis have been reported as coming from this cause. Every surgeon practises more or less forcible respiratory movements in which the arms are repeatedly abducted and forcibly extended before being brought down upon the chest, and still in these cases paralysis does not occur. Paralysis seemingly only occurs when forcible abduction or extension has been prolonged.

The lesson to be learned from the cases reported and the experiments made would seem to be that during operative procedure the arms should never be forcibly abducted or extended and maintained in those positions for any considerable time. Forcible extension or abduction of the arms, for the purpose of practising artificial respiration or while clearing out the axilla in carcinoma, or for other operative measures about the shoulders for short periods of time, is not followed by paralysis.

BLACK VOMIT IN INFLAMMATION AND INJURY OF THE PERITONEUM.

BY

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of Cincinnati, O.

The subject selected for this paper is one that has been of interest to me for the past 10 years. During that period six cases—the histories of which are appended—have been seen and considerable time has been passed in a fruitless search for a description of this peculiar complication. Gilbert Bailing, in the Ingleby Lectures on Appendicitis, probably referred to it when he said "Coffee-colored vomit from the presence of altered blood, is an evil sign." It is hardly probable that it has not been fully described. Its presence in yellow fever is known to all, and constitutes one of the most striking symptoms accompanying that disease.

CASE I.—This occurred in a colored female patient in the Cincinnati Hospital who had received a penetrating stab wound of the abdomen with two perforations of the small intestine. An abdominal section was made less than three hours from the time of the receipt of the injury. Death resulted in about 14 hours. On necropsy, a knuckle of intestine was found caught in the stab wound, producing obstruction of the bowel. Large quantities of a perfectly black fluid were ejected before death, the vomiting of this material beginning before the patient came out from under the influence of the anesthetic, and continuing until life was extinct.

CASE II.—This was in a boy of 18 years. He was taken ill on Wednesday afternoon with the symptoms and physical signs that accompany an acute inflammation of the vermiform appendix. Thursday noon the pain suddenly increased in severity, and the symptoms of a rapidly-spreading peritonitis were present. During the afternoon large quantities of black vomit were ejected, the vomiting continuing until death ensued at 11 p. m. Friday. After death, in moving the body from the second to the first floor, a quart or more of this fluid flowed from the stomach. Necropsy revealed a perforated gangrenous appendix with acute peritonitis of the right side of the abdominal cavity.

CASE III.—A male patient aged 14, who was first seen by me on Monday evening. His pulse was 140, respiration 60, temperature 105°. His illness dated from the previous Thursday, and the history was one of abdominal pain and tenderness, and vomiting. Examination revealed an enormously distended abdomen with a tumor in the right iliac region. Dr. C. A. L. Reed was called in consultation, and an operation performed about 3 a. m., Tuesday morning. The gangrenous appendix was found floating in a large amount of pus walled off by adhesions from the peritoneal cavity. An immense quantity of black vomit was ejected, commencing just before the operation and continuing

up to the time of the boy's death, which occurred at noon Tuesday.

CASE IV.—This was in a maiden lady aged 78 years. She was taken ill suddenly with violent pain in the region of the vermiform appendix. The pain was almost immediately followed by several copious evacuations from the bowels. When first seen her pulse and temperature were normal, and the pulse remained below 80 and the temperature below 99° for the first 24 hours. At the end of 36 hours the symptoms and physical signs indicated appendicitis. Cathartics were vomited and high enemas failed to bring away any fecal matter. Black fluid material was vomited in enormous quantities and about 48 hours from the beginning of the illness the pulse suddenly increased greatly in rapidity, the temperature rose to 105° and death soon followed. On autopsy a perforated gangrenous appendix was found with a beginning peritonitis of the right side of the abdomen.

CASE V.—The patient was a male, aged about 60. The case was seen in consultation with Dr. Cassello. The history was one of peritonitis following the reduction of an inguinal hernia. The possibility of the hernia having been reduced *en bloc* was entertained, and Dr. Walker, after consultation, operated, at the City Hospital. Nothing was found to explain the general peritonitis which was present. This patient also ejected large quantities of a black fluid from the stomach, the ejections beginning before the operation and continuing until death took place during its performance.

CASE VI.—This occurred in a female, aged 45. Her illness was caused by pelvic abscesses, one of which burst into the peritoneal cavity. An operation was performed and pus found in the left tube and ovary, both of which were ruptured in their removal. Death followed eight hours later and was preceded a few moments by the evacuation from the stomach of a considerable quantity of the same black fluid noted in the preceding cases.

My object in reporting these cases is to call attention not only to the character of the vomit, but to the peculiar manner in which it is ejected. It is not preceded by nausea, and the diaphragm and abdominal muscles are not apparently brought into play during its expulsion, as they usually are in cases of vomiting. Patients seemingly are not aware that its expulsion is imminent, and I have seen them cut short in the middle of a sentence by a deluge of this black fluid which would shoot up out of their mouths and in its fall cover the face, head, and bed-clothes. It is a black, odorless fluid, of enormous quantity, and is ejected at frequent intervals. It would be of interest to determine the exact character and source of this fluid, its value in determining whether or not in its presence, surgical procedures are indicated, or the proper treatment if it appear after an operation has been done. To me it is the most ominous prognostic sign to be met in the treatment of the class of cases reported. Of the six cases, three were of appendicitis; one of general peritonitis in which it was impossible at the time of the operation to determine the exciting cause, and in which no autopsy was made; one of pelvic abscess, tubal and ovarian; and one of perforation of the small intestine. There was nothing in the appearance of the vomited matter in the cases reported to indicate that it differed in character from that complicating cases of yellow fever. It is evident that there are a variety of causes which may produce it. Some form of profound septic poisoning is undoubtedly the most frequent factor, especially when the local process leading up to it is an inflammation of the peritoneum. That the symptoms may be due to traumatic injury to the peritoneum, uncomplicated by sepsis, is shown in the first case reported, in which black vomit appeared within a few hours of the receipt of the injury, and before sufficient time had elapsed for sepsis to develop. In this case it is possible that shock alone produced it, the patient having been stabbed, operated upon, and unfortunately left with a knuckle of intestine in the stab wound, which produced obstruction. It is questionable if any treatment will be of value after this symptom has developed. The treatment should, therefore, be prophylactic rather than curative.

The results reported by Dr. A. B. Isham in a paper read before the Cincinnati Academy of Medicine entitled "Veratrum Viride; Its Value in Some Conditions of Toxemia," would suggest this remedy as a valuable prophylactic in cases of appendicitis. That Dr. Isham's

experience in the use of this remedy in appendicitis is not unique is proven by the fact that precisely similar results have been obtained by others. During the past six or eight months Dr. W. D. Porter has used *veratrum viride* in six cases of appendicitis, in all of which the patients recovered rapidly. Pain entirely disappeared in a few hours' time and convalescence was established within 24 hours. If further experience in the use of this drug confirms the correctness of the observations of these gentlemen, appendicitis will, to a great extent, lose its terrors, and black vomit as a complication will disappear. It is not to be supposed that operations for the removal of this organ will cease, but their performance can be delayed until the acute symptoms have subsided and a comparatively safe period in the course of the disease has been reached.

In the fulminant form of the disease in which, according to Curtis, "it is absolutely impossible to do anything, and operation only hastens death," it is just possible that an occasional life might be saved by combined surgical and medical means. Someone has suggested that drainage from both sides (the opening being made under local anesthesia) should be resorted to in certain cases of peritonitis which by reason of the profound collapse accompanying them are rendered inoperable by ordinary methods. In these desperate cases in which up to date the prognosis is fatal, any procedure that offers hope is justifiable. The rapidly fatal results are due to the absorption of a large amount of poison from the peritoneum; a quantity sufficient to quickly overwhelm the patient if the supply is not cut off and that which is absorbed eliminated. In this class of cases drainage, or continuous irrigation with a sterilized hot salt solution, would reduce the absorption to a minimum.

To encourage elimination of poisons already absorbed, Norwood's tincture of *veratrum viride* would appear to be the most valuable agent known. Anyone who has used it in considerable doses will testify to its value as a diuretic and diaphoretic. Just how it acts no one seems to know, but that it places the body in a condition to eliminate or destroy retained poisons there can be no doubt. Vomiting would contraindicate its administration by the mouth, and its action is much more quickly secured by hypodermic injection. Dr. Isham's directions for giving it are 10-drop doses every two to four hours until free perspiration and nausea occur with lowering of the pulse-rate. After that, four-drop doses every two to four hours.

Sick-rooms.—An agitation is reported in Berlin among the hygienists to compel builders to provide in every house or flat a room not papered, but painted, and remote from the living rooms and with an entrance other than through the commonly used door, which in case of sickness can be transformed instantly into a model sick chamber with walls, floors and ceilings made in a manner to facilitate cleanliness.

Alcoholic Heredity and Crime.—Dr. Paul Garnier points out that juvenile criminality is increasing in France, and attributes the fact to alcoholic heredity. Vicious instincts of the child of drunken parents, he claims, do not show themselves till the age of puberty, and he therefore advocates that all such children be taken in charge by the state and educated at an asylum, where this tendency toward crime could be counteracted. While heredity no doubt is an important factor in the etiology of juvenile criminality, we must not lose sight of the influence of environment and training.

Physicians in Germany.—From statistics issued recently by the *Aertztlicher-Central-Anzeiger*, it is shown that in Germany there is one physician to every 1,850 persons. The population has grown at the rate of 11½%, but the doctors have multiplied at the rate of 33%. For every 500 physicians who die yearly, there are 1,350 yearly graduated. Half of the physicians and surgeons of the German Empire earn a yearly income of less than 3,000 marks (\$714). According to Hirschwald's Medical Directory there are 27,039 medical men in Germany, which shows an increase of 10.7% since 1897, whereas the increase of the population during the same period was 6.1%. To every 10,000 of the population there are on an average 4.8 medical men, this varying from 12.22 in Berlin and 7.55 in Hamburg to 2.63 in Reuss.

SPECIAL ARTICLE

THE ASPECT OF DISEASE AS SEEN IN ARCTIC ALASKA.¹

BY

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The aspect of disease in Alaska presents characteristics decidedly interesting when seen from the standpoint of a medical observer. The anomalous types demand an ability to recognize their differences as separate from those of civilization. Sometimes the original disease is so obscured by the changed conditions of life, habit, climate, etc., that it is difficult and oft-times impossible to accurately diagnose the particular ailment present. Before entering the subject matter of this paper, it may perhaps be not unwise on my part to give some idea of the kind of life we lived in that country. My stay in Alaska as surgeon to the great fur-trading and transportation concern known as the Alaska Commercial Company, covered a period of two summers and one winter, at St. Michael Island and Andraefsky, respectively. St. Michael Island is situated 80 miles north-northwest of the mouth of the Yukon River; Andraefsky 145 miles up from its mouth. Both of these places are simply trading-stations of this company, containing the officials of the company, the omnipresent Indian village, and a troop of United States soldiers. We had, however, at Andraefsky, about 120 employes of our own, and a large surrounding mining population, traveling backward and forward for hundreds of miles along the Yukon River, following up one gold excitement after another, furnishing what are particularly known as stampedes. Upon the news of gold being discovered, hundreds of men, in an insane rush for wealth, race madly toward the new Eldorado and furnish fruitful opportunities for medical men to record observations among them.

Alaska, physically speaking, is either an iceberg or a swamp. The country experiences a three-months' summer and a nine-months' winter, and so isolated and ice-locked is it in the winter that communication with the outside world is well-nigh impossible, and travel is long, tedious and dangerous.

As one would naturally suppose, life on the frontier, especially Alaskan, is essentially different from that of civilization. There the necessities of life are often limited, and luxuries extremely scarce; many are not procurable at all. Moreover, the climate is extremely inclement, even in the summer time. The words of W. C. Henderson, a well-known Alaskan traveler, fitly describe the torments of the insect plague which helps to occupy one's time to a considerable extent. "The hapless resident in this inhospitable section is afforded no relief, after his long winter's fight for the unity of soul and body, by the advent of this otherwise agreeable season, for, with the first tempered breeze, come countless legions of mosquitos, black flies, and various stinging insects, whose agonizing assiduity and ghoulish appetite preclude the enjoyment of the briefest moment. Whence comes the abnormal instinct that marks man at first sight as their prey, considering the fact that their ancestry back to protoplasm had no knowledge of his being, I leave entomologists to determine."

In Alaska winter comes with a vengeance, since by September 30 everything is frozen over, and one month later the temperature has fallen very low. Observations have shown that temperatures of 80° below zero, and even greater, are by no means unusual, 91° below having been recorded on the Stewart River during the winter of 1891-92.

Let us now review, clinically, the diseases peculiar to this region. The medical man's duties necessarily compel him to be a general practitioner in every sense of the word, especially if he attempts to deal with disease in so far northern a climate. Primarily, he is compelled of necessity to deal with illness in a very cold region under very bad hygienic conditions, lack of proper food stimulation, including the dangers of the loss of

¹ Read before the Philadelphia County Medical Society, October 9, 1901.

material due to freezing, or an insufficient supply of food stuffs. A doctor in Alaska must also act in the capacity of medical man, in conjunction with that of nurse, apothecary, delivery man, and very often anesthetizer.

The diseases peculiar to the country are naturally what one would expect would be associated with life under such circumstances. Let me mention cerebrospinal meningitis, scurvy, typhoid fever, the disorders peculiar to an imperfect digestion, neuralgia, nervous diseases, and, naturally, the results following exposure to extreme cold.

Cerebrospinal meningitis, as the result of this extreme exposure to which men are subjected in such an inhospitable country where they are very often deprived of the necessities of life, develops characteristics of its own of a very severe type. When a man is once attacked, his unit of vitality being necessarily lowered by the awful hardships he has undergone, his system is naturally very much lowered in tone, and he responds, if at all, very slowly to medical treatment. Delirium is almost always a constant factor, and often carries off the patient. The petechial rash that develops is usually purpuric in type, seemingly showing that certain manifestations of this disease in this country are allied with those of purpura and scurvy. It may be epidemic or sporadic in type, and it is often difficult to differentiate it from the cerebral form of typhoid fever. The mortality is high, owing to the facts above noted, and a medical man, under the exigencies of life there, is terribly hampered in the treatment of such cases. When high fever develops, associated with constant delirium and the presence of obstinate vomiting, it seems impossible in many cases to control the situation.

The drugs furnished in that country are often of inferior quality, presumably due to a desire on the part of the transportation companies to make hay while the sun shines. Nurses are inadequate in number, or of so poor a caliber that those who are trained are a godsend, commanding wages of \$15 per day and upward.

The percentage of deaths from cerebrospinal meningitis during the great gold boom of 1898 was very high, for the reasons given above. The immense rush of traffic in that year from Skagway and Dyea, entry-ports in southeastern Alaska, into what is now known as the Klondike (by way of the Chilkoot Pass), the limited hospital facilities, the lack of materials, and the awful concentration of people in so small a town as Skagway, can only be realized by those who have actually witnessed it.

The epidemic that broke out that year was extremely severe; the situation was indescribable—horses, pack-mules, dogs, sleds, men, and provisions were jumbled together in inextricable confusion. When one considers that among these would-be pioneers of the Yukon many were people unaccustomed to the rigors of an Arctic climate and better adapted to the counting-room of the warehouses of our larger cities, one can picture the result when disease attacked them. Two or three small shanties built of lumber, and containing a few blankets thrown upon the floor in lieu of beds, were the so-called hospitals of this mushroom town. A lack of doctors, nurses, drugs, and hospital supplies, formed a condition truly deplorable. Cerebrospinal meningitis naturally presented a terrible aspect under these circumstances.

The scourge of the white man in Alaska is *scurvy*, a disease seldom seen in our climate, except among poor or ill-nourished children limited for a long time to one kind of food. The type seen there is in nowise different from that variety of disease so well described by the elder Flint and earlier writers, and so often seen in the army and navy life of the forepart of the last century. Scurvy and cerebrospinal meningitis very rarely attack the natives; in fact, during my stay there I never saw a well-defined case. My first case of scurvy was so typical that I will use it to illustrate:

CASE.—The patient, a woodchopper on the Yukon River, was attacked early in December, 1898, and suffered some weeks from the gradual breakdown of vital strength, concomitant with the major symptoms usually seen. As all travel is by dog teams, considerable delay was entailed before I was notified. No time was lost after receiving the message in attempting to relieve him, and after two days' journey over the ice we arrived at the camp, and found three men ill with scurvy, one pro-

foundly affected. His breath was horribly offensive, teeth dropping out, and others so loose that I could draw them easily with thumb and forefinger. Ecchymotic spots were present on the abdomen, and large patches of congestion, nearly black, on the legs, some fever, and lack-luster eyes. Locomotion was impossible, due to infiltrations into the joints, which were very much inflamed; there were also anorexia and bloody diarrhea. The pain was so intense that if one pointed finger at him he screamed with apprehension. We had brought with us, what was priceless in that region—fresh potatoes and fresh onions, a full line of canned meats, together with some game we had shot, deer-meat, and the native grouse of the country. I had beside these, medicines and lime-juice. It was decided, however, to take the man to our station at Andraefsky where a little room was set apart as a hospital. After a very dangerous journey, being overtaken by an Alaskan blizzard, losing our way, etc., we reached camp more dead than alive, having been without food for more than 30 hours of our run. Here my patient was placed under treatment—iron, arsenic, mineral acids, lime-juice, raw potatoes, vegetables and the best the camp afforded. The old traders in the country recommend a spruce or birch tea, made by steeping in hot water the small boughs and twigs and leaves of these trees. His recovery was wonderfully rapid, supporting Flint's theory of scurvy, that it due to a lack of potassium salts in the blood.

In all, about 30 cases of scurvy came under my care that winter, and although some of the patients seemed almost "in extremis," they recovered so soon as proper treatment was given. On the other hand, the condition is even more unendurable when one considers that the only hope of the afflicted is a rescue by fellowmen, or alleviation by an early arrival of spring, giving the victim a chance to escape with the advent of warm weather and open water to civilization.

Typhoid fever, another disease almost as severe as those above mentioned, is like our old familiar enemy, often seen wherever bad drainage, lack of hygiene or poor sanitation exists. This disease develops peculiar characteristics, as I can testify from personal observation and experience—having myself been a victim. A tendency to an absence of rash, a not very high fever, and the association of scurvy and salivation, often confuse the physician. In the summer time, in the upper Yukon district, near the Canadian border, a type known as typhomalarial fever develops. Characteristically it is marked by traces of scorbutus, and a tendency to intermittency throughout the whole of the febrile stage. Quinin is especially valuable in these cases. In the Cape Nome district, 2,000 miles from the Klondike proper, this type of typhoid fever was especially prevalent during the summer of 1899 and the winter of 1900. The cerebral form is especially prevalent, and, as has been remarked before, it is often difficult to tell it from cerebrospinal meningitis. Scurvy and salivation are ugly complications. Salivation is due to carelessness on the part of miners in amalgamating their gold; for instance, sleeping in the same tent during the process of extracting the precious metal from its surroundings.

When the cerebral form of typhoid fever develops with the above complications, together with the intemperance proverbial among miners, the result is generally fatal. Peculiarly, its combination with pneumonia is very rare, its course atypical, and the temperature chart rarely shows high figures even in delirium. Hemorrhage, often followed by perforation, is common because of the almost invariable presence of a weakened bowel lining, probably due to preexisting catarrhal processes. Treatment is directed to preserving the remaining vital strength, but being hampered by the poor and inadequate drug and food supply, it is very difficult to bring about good results. Condensed milk, and possibly, among a few of the better-class miners, beef tea, are about the only articles of diet obtainable. In my time, eggs, fruit, predigested foods, etc., were luxuries unheard of, although alcohol could almost always be obtained.

Rheumatism.—A disease showing a somewhat different type from that existent in Philadelphia. Several medical men have agreed with me that it is neuralgic in type, or, at least, it presents some of the symptoms of true neuralgias. The inflammatory type is never seen except in summer time, when swampy conditions prevail and the patient exposes himself to involuntary baths in icecold water fording rivers. The neuralgic form may probably be influenced by the intense cold prevalent during the winter season; it is very rarely marked by much increase of temperature, often none at all, but is frequently associated with a neuritis. The heart is rarely, if ever, attacked, no

matter how severe the trouble. This affection responds to the usual form of treatment very readily, but frequently recurs. Phosphoric acid is undoubtedly a great help in chronic cases. Insufficient oxidation of the blood, intestinal indigestion, and not enough fluids being drunk, are some of the causes of this condition. During an attack, urates and phosphates show themselves in very large amounts in any urinalysis. The necessity of making the kidneys do extra work, by reason of the diet, affords a probable explanation for the large uratic and phosphatic excretion.

Pneumonia.—Only one case came under my observation. It is practically not present during the cold weather, exploding many of our pet theories of its supposed presence where men are exposed to a cold climate. This is in accord with the statement of the late Dr. Pepper, and also Dr. Kane, the Arctic explorer, that pneumonia is more prevalent on the shores of the Mediterranean than on the other side of the Arctic Circle. As to whether it is trophic in origin or the result of congestion due to exposure, I leave to specialists in pulmonary troubles to decide. The course of the disease is more or less afebrile, occurring mostly among intemperates, and only in the spring or summer, when the ice is gone and damper and warmer weather prevails. Extreme exposure to damp and wet weather cause typhomalarial fever, rather than pneumonia, to develop.

The *nervous diseases* of Alaska resolve themselves into two classes—first, those structural in type, due to physical conditions external to the patient, as mode of life, habit, environment; second, those psychic in character, a species of insanity due to the life in those climates. Let us consider the first of these. Necessarily, the treatment of neuralgias form a prominent part of the work of any physician practising in that country, and are often very difficult to treat.

When men are exposed to temperatures so extreme as those in Alaska, and under the environment there, naturally one would expect inflammatory nerve changes to develop such diseases as neuritis, spastic paraplegias of various sorts, and dermal changes due to perverted nerve supply. Locomotor ataxia and disorders of sensation, with changes very often in special sense organs, are frequently seen. Most of these are probably trophic in character. Extreme cold frequently induces neuritis difficult to relieve, even by persistent treatment in warmer climes. Spastic paraplegia seems often to be the result of men working up to their waists in icecold water during the change of season, not having an opportunity to change their clothes, together with bad hygiene. Dermal changes are in many cases due to freezing of various portions, nerve degenerations usually following this exposure. Locomotor ataxia seems to be a result of extreme hardship often followed by the intemperance characteristic of the miner. Many of them declare that they felt as though they were walking on cushions of air, evidently peripheral nerve degeneration.

The *disorders of sense organs* are few, limited mainly to snow-blindness, and the results of the various dermal changes. Snow-blindness seems to be due to an irritable retina or irritation of the optic neurons. Primarily the inflammation following (as conjunctivitis or iritis) is the result rather than a cause of snow-blindness. The treatment directed on this theory achieves better results than when treated separately as local inflammation. Treatment in all of the above conditions is obviously more or less unsatisfactory.

As to why men will become morphia degenerates or habitués to alcohol, seems not so unexplainable when one remembers the awful isolation, the horrible sense of loneliness, the lack of occupation or means of exercise existing there. Unless one possesses a strong will-power, relief is sought from this state of affairs by morphia, alcohol, or one of its substitutes, no matter what it costs. Many men feel that they must have them, be the result what it may. Paradoxical as it may seem, these drugs do not produce in the same proportion the disastrous results so often seen in civilization. Anything containing alcohol, as, for instance, lemon extract, Jamaica ginger, Perry Davis' pain-killer, and wood spirit, I have seen ingested in large quantities without producing serious results. Worcestershire and tabasco sauce and red ink are some of the things used when all else fails. Perhaps the intense cold causes these

dangerous substitutes to be assimilated without serious visible effect upon the human economy.

Insanity is often seen in Alaska, three distinct cases having occurred in our camp during my stay there. This condition seems to develop only in the winter-time, and is generally the result of exceeding nostalgia, the non-receipt of letters, the lack of occupation and of exercise, the frequent forced detention indoors, due to weather conditions, and the terrible isolation of Alaskan life. It exhibits itself generally as acute melancholia, almost invariably followed by acute mania. Delusions of persecutions are frequent, being the first sign of mental aberration. Paranoiac tendencies often develop, the usual physical signs of mental unrest, dilated pupils, tremor, gastric and intestinal disturbances, exaggerated reflexes, being generally noted. Suicidal tendencies sometimes prevail, and the fear of a maniacal outbreak is always to be dreaded. Treatment is difficult, because of the constant necessity of guarding the patient, and the fear of his wandering away over the ice and snow and becoming hopelessly lost in the maze of an Alaskan wilderness. I recall several deaths having occurred in this way.

An attempt is generally made, when such a disease develops, to transport the patient, constantly guarded, over the ice and snow to the borders of civilization, where, under appropriate treatment and care, recovery sometimes follows.

A class of disorders not previously mentioned deserves some consideration, I refer to *gastrointestinal complaints*. The unfortunate resident of this country suffers terribly in many instances from gastritis, constipation, intestinal indigestion, and diarrhea or kindred complaints. One would naturally expect such troubles to be generally prevalent, for the food consumed in Alaska is insufficient and poor in quality. Beans and bacon, canned goods (and occasionally as luxuries, dried fruits) are the staple articles of diet. A too prolonged diet on a single article, such as beans and bacon, produces scurvy. There is little nutriment in canned foods, and the constant use of a parboiled or preserved food is such a tax to the digestive apparatus of even an Alaskan miner, that it frequently revolts, and disease results. Bismuth and salol, in large doses, are valuable aids in the treatment. A number of curious types of these conditions could be described would space allow.

A word as to the diseases peculiar to the natives. As has been remarked, cerebrospinal meningitis and scurvy are never found. Perhaps their almost exclusive fish diet, their manner of living much in the open air, inuring them to hardships, and yet, compelling and necessitating constant exercise and hard work, are probably preventive factors. Their diseases are mainly chronic bronchitis, pulmonary tuberculosis, pneumonia (in the rainy season), smallpox, scrofulosis, syphilis, measles, la grippe, and even mumps. All these take on extremely severe forms when attacking an Alaskan Indian.

The first mentioned diseases decimate them frightfully, and will ere long exterminate them. An odd fact is that pneumonia attacks the Alaskan Indian much quicker than the white man. One can easily see how many of the above affections are acquired. A particular habit they have of sitting around in the mossy ooze of springtime, covered with furs and clothes that have by use and wear been converted into a clammy pulp (never dry) is especially responsible for most of their rheumatic, neuralgic, and pulmonary complaints.

Let me in conclusion say that surgery in Alaska differs in nowise from surgery practised elsewhere, but it is attended with exceptional difficulties, the operator being often compelled to act in a general capacity, including that of anesthetizer, and situations quite unique are frequently developed.

Women in German Universities.—A recent report indicates that there is a growing tendency in some of the German universities against extending or even continuing the privileges granted to women in late years. For instance, in Königsberg women have been excluded from the lectures in anatomy, chemistry and physics, thus rendering it practically impossible for them to pursue the study of medicine in that university. They have also been debarred from the departments of theology and philosophy. Women, however, are allowed to matriculate in the universities of Heidelberg and Freiberg. In Berlin also an increasing number of women are enrolled at the university.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

February 1, 1902. [Vol. XXXVIII, No. 5.]

1. Indications for and Utility of Altitude Treatment in Pulmonary Tuberculosis. S. E. SOLLY.
2. Adaptability of Southern California and Similar Climates to the Needs of Consumptives. NORMAN BRIDGE.
3. Nineteen Years' Experience with Creosote in Tuberculosis. JAMES A. BURROUGHS.
4. Treatment of Acromegaly with Pituitary Bodies. SYDNEY KUH.
5. The Teaching of Practical Dietetics in Medical Schools. R. O. BEARD.
6. Three Cases of Paralysis of the Serratus Magnus and the Trapezius—Alar Scapula. AUGUSTUS A. ESHNER.
7. Dementia Preceding and Following Intebriety. T. D. CROTHERS.
8. Dyspeptic Asthma. MAX EINHORN.
9. The Immediate Diagnosis of Blastomycetic Dermatitis. A. W. BRAYTON.
10. Sudden and Temporary Mental Aberration—Unconscious Automatism—Temporary Irresponsible States. SAMUEL AYRES.
11. Rapid Sugar Testing with Haines' and Purdy's Solutions. WILLIAM H. GERMAN.
12. Traumatic Arteriovenous Aneurysms of the Subclavian Tissues, with an Analytic Study of Fifteen Reported Cases, Including One Operated Upon. RUDOLPH MATAS.

1, 2 and 3.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 495.

4.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 540.

5.—**Dietetics in Medical Schools.**—In no subject has medical need been more insufficiently met by educational supply than in that of practical dietetics. But two medical schools offer instruction, and textbooks are few and inferior. At the University of Minnesota the course is elective in the senior year. It is essentially practical, acquainting the student with the contents of common foods, their economic value, digestive, nutritive, metabolic and esthetic qualities, and with the principles and practice of food preparation. At the close of the 16 weeks of study the members of the class are competent to select, prepare and serve physiologically and artistically any desirable form of food. They can intelligently criticize or direct the cooking of a meal or any special diet. [H.M.]

6.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 541.

7.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 542.

8.—**Dyspeptic Asthma.**—The reported cases, which are not so very rare, are reviewed, and acute and chronic forms are described. The term should be limited to cases free from involvement of the chest organs. In the acute form attacks occur at intervals without apparent cause or following dietary excess or excitement. In the chronic form the asthma may appear (a) soon after the meals either with or without provocation, or (b) two or three hours after meals. The symptoms in class (a) may resemble angina pectoris. Tabulation of cases shows that a considerable number of patients suffered from achylia gastrica or hyperchloridia, both conditions causing undue irritation of the mucosa. Floating liver was noted in five cases. As a rule cases are amenable to treatment directed to the digestive apparatus. [H.M.]

9.—**Blastomycetic Dermatitis.**—From a review of the reported cases it seems proved that the disease is a pathologic entity. Its differentiation from tuberculosis and epithelioma is discussed. The fungus seems to have a local distribution. For microscopic demonstration tissue was secured from advancing margins, placed on a slide, washed two to five minutes in ether, macerated in potash solution five to ten minutes, and examined with a one-sixth to one-twelfth objective. This method can be used at the time of operation to determine the amount of tissue which should be removed. Beerwort gelatin is the best culture medium. Colonies are large, white and fluffy, with clean cut margins. [H.M.]

11.—**Rapid Sugar Testing.**—A graduated test-tube, pipet, and Bunsen burner or spirit lamp are the only requisites. When sugar has been demonstrated by the Haines' test, the tube should be filled to the 12 cc. mark with Purdy's solution and the pipet to the zero mark with the urine. Heat the solution to boiling, add the urine, boiling a few seconds after each drop until the blue color has disappeared, trying to decolorize with the smallest possible quantity. If less than 0.2 cc. is required, the sugar is above 4%. By diluting, retesting, and

multiplying the percentage may be obtained. A table of ratios is given. The time required is only five minutes. [H.M.]

12.—See AMERICAN MEDICINE, Vol. I, Nos. 12 and 13, pp. 546, 589.

Boston Medical and Surgical Journal.

January 30, 1902. [Vol. CXLVI, No. 5.]

1. On the Value to the Physician of Modern Methods of Diagnosis. HENRY L. ELSNER.
2. Suggestion in Medicine. GEORGE C. SMITH.
3. A Case of Raynaud's Disease. GEORGE S. C. BADGER.
4. Vaccination and Smallpox. S. H. DURGIN.

1.—See AMERICAN MEDICINE, Vol. III, No. 5, p. 181.

2.—**Suggestion in Medicine.**—Smith discusses the need of thorough physiologic preparation for the medical school and the danger of had suggestive therapeutics as illustrated in hysteria, neurasthenia, the traumatic neuroses, etc. To secure the most good from suggestive therapeutics it should not be said this remedy may, but that it will, relieve. Only one suggestion should be made at one sitting, as the mind is best influenced by keeping one thought dominating all others. Suggestions should be founded on facts some of which can be demonstrated to the patient. Most patients give the cue for suggestion in detailing their symptoms. [H.M.]

4.—**Vaccination and Smallpox.**—All susceptibility to smallpox should be exhausted by revaccination until it will no longer take effect. In Mexico humanized lymph alone has been used for 97 years. They never revaccinate neither do they have smallpox among the vaccinated. Cases among the vaccinated here may be due to our carelessness in vaccination or to deterioration in bovine lymph. England in consequence of its neglect of vaccination is in serious contrast with Germany which enforces vaccination and has no smallpox. [H.M.]

Medical Record.

February 1, 1902. [Vol. 61, No. 5.]

1. Carbonate of Creosote in Pneumonia. W. H. THOMSON.
2. Ringworm: A Note on its Treatment. GEORGE THOMAS JACKSON.
3. Progress in Veterinary Medicine in its Relation to Public Health. DR. WILLIAM HERBERT LOWE.
4. Case of Acute Articular Rheumatism with Pyæmic Temperature, Treated by Antistreptococcal Serum. R. J. CHIPMAN.
5. Early Mechanic Effects of Altitude of the Rocky Mountain Plateau in Pulmonary Tuberculosis. J. E. COURTNEY.

1.—**Carbonate of Creosote in Pneumonia.**—Thomson reports 18 cases in which it was administered. In 12 of these the disease terminated by lysis. In a number the temperature fell from 1 to 3 degrees within 24 hours, but the next day rose again and continued with an irregular course for several days before reaching normal. Tympanites was favorably affected. It is better tolerated by the stomach than creosote or the guaiacol carbonate. Fifteen grains every 2 hours, or 180 grains daily, is given. The usual formula is creosote carbonate iv , glycerine 3j , mint water to a half-pint. Give a tablespoonful in water. [H.M.]

2.—**Treatment of Ringworm.**—When this is located in the scalp Jackson recommends adding a dram or more of iodine crystals to 1 ounce of goose grease (genuine) and applying twice daily till a little swelling occurs, then once a day. Applications are more painful on the bearded areas. If there is much reaction suspend the remedy temporarily and apply a 3% salicylated oil. [H.M.]

3.—**Veterinary Medicine and Public Health.**—Lowe notes some of the important obligations of human medicine to veterinary science and recommends that veterinarians be appointed to inspect food animals, dairies and abattoirs. They as well as physicians should be represented on health boards, for no small part of preventive medicine belongs essentially to the veterinary profession. [H.M.]

4.—**Antistreptococcal Serum in Articular Rheumatism.**—The history of the case with the pyæmic temperature is given in detail. The patient seemed to be rapidly progressing toward a lethal ending, all her symptoms being intensified when the serum treatment was begun. Improvement was marked from the first injection, and her condition was practically normal from the third. [H.M.]

5.—Mechanic Effects of Altitude in Pulmonary Tuberculosis.—The bronchus and bronchioles leading to a diseased area are quickly dilated by the rarefied air and the deeper respirations necessary to get sufficient oxygen. The expectoration is increased at first, sometimes alarmingly, but the beneficial effects are plain; quantities of bacilli and the accumulated mucus are cleaned out. Even a small cavity may be emptied by this mechanism. The stagnant and toxin-laden air is evacuated and oxygen admitted. [H.M.]

New York Medical Journal.

January 25, 1902. [Vol. LXXV, No. 4.]

1. Curettage of the Puerperal Septic Uterus: An Inexcusable Procedure. W. R. PRYOR.
2. Notes on Cow's Milk and Infant Tuberculosis. A. JACOBI.
3. The Need of a Municipal Sanatorium for the Treatment of Tuberculosis. GEORGE L. PEABODY.
4. Paratyphoid. S. J. MELTZER.
5. Nephroureterectomy: A Report of Two Cases. J. WESLEY BOYER.
6. Farm Colonies and Tent Life for the Tuberculous. W. FREUDENTHAL.
7. The Personal Liberty Plea: The Most Common Argument Raised Against Medical Legislation. FLOYD M. CRANDALL.
8. Transitional Displacement of Purulent Fluid of an Empyema by Normal Saline Solution at the Time of Operation (Rib Resection), Obviating Danger of Hemorrhage by too Sudden Relief of Pressure (Mechanical), with Report of a Case and Method of Procedure. ARTHUR IRVING BOYER.

1.—Puerperal Sepsis.—Pryor states that an analysis of every case of puerperal fever reported in the literature of the world for the five years preceding 1898, shows that but 5% of women with puerperal sepsis die if the uterus is let alone, and that 22% die after curettage. The analysis was made by a commission of the American Gynecological Society. He maintains that physicians who attend such cases should be able to determine, either from clinical symptoms, or, better still, from bacteriologic examination, what cases are septic and what cases are not septic. Pryor also shows the very great indifference of many practitioners to this important subject. [C.A.O.]

2.—Cow's Milk and Infant Tuberculosis.—Jacobi reviews the literature on this subject, and gives the conclusions of other authorities. He believes that absorption of tubercle bacilli might take place, though the intestinal lining be normal, not to speak of the greater facility of absorption during the frequent occurrence of local lesions like those of catarrh, inflammation and ulceration, and that the young intestine is particularly predisposed. From the fact that peritoneal tuberculosis is almost always isolated and localized and generally precedes, but rarely follows, pleural or pulmonary tuberculosis when there is an occasional dissemination of the tuberculous infection, he concludes that tuberculosis often enters the free abdominal cavity, and may spread from there through the intestine, no matter whether the latter is in a healthy, or fairly healthy condition or not. He states that primary tuberculous ulcerations are rare; that when they are found they are mostly connected with pulmonary tuberculosis, mostly of the mixed type; that not less rare is primary tuberculosis of the mesenteric glands, and that peritoneal tuberculosis is very, very frequent. Either through the blood; in that case there would be most likely, or surely, disseminated processes; or through the intestine, no matter whether healthy or diseased. He believes that the intestinal danger is underestimated. [C.A.O.]

3.—The need of a municipal sanatorium for the treatment of tuberculosis is discussed by Peabody, who shows that Europe is far in advance of us in this field, and that as yet there is only a promise of an awakening of the public conscience to the necessities of the situation in the large cities of this country. From the standpoint of economy, as well as from all humanitarian considerations, he urges the establishment of sanatoriums for the care of these unfortunates at an earlier period of their disease, when it is still incipient and curable. [C.A.O.]

4.—Paratyphoid.—Meltzer has reviewed the literature of about 12 cases resembling true typhoid in which the Widal reaction remains persistently negative. The serums of these patients agglutinate promptly specific bacilli, which were isolated either from the blood or the feces of these patients. Although the observations were made in parts remote from one

another and by observers who had no knowledge of one another's work, the bacilli found in these cases are apparently identical. They belong to the colon-typhoid group, are motile, have flagella, do not liquefy gelatin, etc.; morphologically and in many cultural peculiarities they resemble more the typhoid bacilli than the colon. Physiologically they differ from the latter by not coagulating milk, not fermenting lactose and failing to form indol. They differ from *Bacillus typhosus* by their ability to produce gas, to ferment glucose and to produce alkali in their nutrient media. The author believes with Schottmüller that the designation "paratyphoid bacilli" is the most suitable term for these organisms. He also suggests naming paratyphoid, the disease which is caused by these germs. Even cases of typhoid with a positive Widal reaction in 1 to 20 may in reality be paratyphoid followed by a secondary invasion of a small number of typhoid bacilli. The solution of this problem can be brought about in two ways: (1) by searching the blood, feces and urine for organisms which will give a strong reaction with the blood of the patient; (2) by testing the blood of such patients with paratyphoid bacilli obtained from established cases of paratyphoid. [C.A.O.]

5.—See AMERICAN MEDICINE, Vol. II, No. 23, p. 891.

6.—Farm Colonies for the Tuberculous.—Freudenthal favors the establishment of farming colonies for the tuberculous. While a large, handsome hospital building, with all modern improvements looks imposing, it is entirely too expensive for the masses, and he advocates the erection of tents, as in this way all the hygienic demands can be fulfilled. He is not in favor of an indiscriminate rest-cure. Rest for about two months will do good in the case of a man who has been subjected to prolonged overwork and overstrain. More is harmful. Let the patient work and feel happy; that is the first step toward improvement. [C.A.O.]

8.—Transitional Displacement of Purulent Fluid.—Boyer describes a method of removing the purulent fluid of an empyema which he claims obviates the danger from hemorrhage from the two sudden withdrawal of the effusion. Simultaneously with the cutting away of the rib with the bone forceps, prior to slitting the pleura, he introduced the glass nozzle of a fountain syringe, containing normal saline solution at 100° F. The moment the cavity was opened the solution was turned on, with good pressure. By an adjustment of compresses the too rapid expulsion was prevented, the saline solution gradually displaced the purulent effusion, and he was enabled to flush it out entirely without stopping, at the same time obviating the danger from hemorrhage, thus insuring a clean cavity from the start. A simple gauze dressing was applied and the saline solution, by the aid of a gauze wick, was gradually absorbed by capillary attraction. After the pus had been removed, the existing adhesions were broken down and the lung expanded perfectly. A complete recovery took place in 25 days. [C.A.O.]

Medical News.

February 1, 1902. [Vol. LXXX, No. 5.]

1. On the Value to the Physician of Modern Methods of Diagnosis. HENRY L. ELSNER.
2. Note on the Glycosuria Following Experimental Injections of Adrenalin. C. A. HERTER and A. H. RICHARDS.
3. Sanitary Aspects of Nicaragua vs. Those of Panama. J. EDWARD STUBBETT.
4. A Word on Specialization in Medicine and Surgery. WM. M. POLK.

1.—See AMERICAN MEDICINE, Vol. III, No. 5, p. 181.

2.—Glycosuria following Adrenalin Injections.—The observations made by Herter and Richards are opposed to the idea that suprarenal glycosuria is connected with a diastatic ferment contained in this organ. The action of adrenalin in this respect has not heretofore been noted. Eleven experiments are reported showing that when given intraperitoneally it induces marked glycosuria even after lean meat diet, and also after boiling which would destroy any ferment. If added to a solution of glycogen and kept in an incubator 24 hours no sugar is formed. Intraperitoneal injections are much more efficient than subcutaneous ones. In one case highly destructive changes occurred in the intestine and pancreas and it is suggested that the glycosuria is of pancreatic origin. After a fatal

dose granular degeneration was found in the cells composing the islands of Langerhans and the nuclei showed extensive loss of chromatin. [H.M.]

3.—Nicaragua vs. Panama.—In criticism of Soper's paper of January 4, Stubbert contends that the natural conditions of the Nicaragua route are far more conducive to health than those of the Panama route and the endemic diseases of the latter are far more fatal. While there would necessarily be an increase of sickness during actual construction this would be remarkably below that on the Panama route and after completion Nicaragua would be capable of development by the Anglo-Saxon while he could not safely live along the Panama line. [H.M.]

Philadelphia Medical Journal.

February 1, 1902. [Vol. ix, No. 5.]

1. Result of X-Ray Diagnosis and of Operation in Injuries from Foreign Bodies in the Eye. WILLIAM M. SWEET.
2. A New Localizer for Determining the Position of Foreign Bodies in the Eye by the Röntgen Rays. L. WEBSTER FOX.
3. Precancerous Keratosis, Probably Due to X-rays. JAMES C. JOHNSTON.
4. Treatment of Epithelial Skin-Cancers and Sycosis Nonparasitica with the X-Ray. J. F. RINEHART.
5. The Accuracy of the Negative Röntgen Diagnosis in Cases of Suspected Calculous Nephritis and Urethritis. CHARLES LESTER LEONARD.

1.—Result of X-Ray Diagnosis and of Operation in Injuries for Foreign Bodies in the Eye.—Sweet examined 102 eyes with the x-ray to determine the presence or absence of foreign bodies, of which 65 showed a foreign body in the eyeball or surrounding tissues. From a study of these cases which are detailed he concludes as follows: The Röntgen rays offer the most certain methods of detecting and locating foreign bodies in the eye; the position of the foreign body should always be determined before magnet extraction is attempted, because frequent insertion of the small magnet into the vitreous in the hope of finding the metal injures the eye, and renders later attempts at extraction difficult, while the employment of the large magnet is not without danger when the position of the body is unknown; early extraction offers the best chance of saving the eye. When the track of the body is through the cornea and lens, its position in the vitreous will indicate whether less damage will be done by removing the metal through the entrance wound or through a new opening in the sclera close to the indicated location of the body; an extended future employment of the larger magnet in cases of steel in the vitreous chamber to draw the metal to an opening in the sclera, after its position has been accurately determined, will probably achieve better visual results than have been obtained in the past with the small magnet introduced in the vitreous; iron or steel which has remained in the eyeball until a fibrocellular covering envelops it cannot be dislodged with the magnet; extraction with forceps, and the employment of normal salt solution to replace any vitreous lost has resulted in several instances in eyeballs of good cosmetic appearance, and is an operation worthy of trial; forceps extraction must also be employed when the body is of copper or glass, and extraction is a safe operation and under proper precautions is free from dangers panophthalmitis or meningitis. [F.C.H.]

2.—A New Localizer for Determining the Position of Foreign Bodies in the Eye by the Röntgen Rays.—Fox describes a localizer (which he has devised) which comes directly in contact with the anterior half of the eye, and its geometric shadow thrown on the photographic plate, aids in locating a foreign body in the orbit or eyeball. The localizing device consists of an oval band of gold or silver, about 0.75 mm. in width, so shaped and curved as to conform with the outline of the eye, and provided with two gold strands crossing in front at right angles, thus dividing the instrument into quadrants. By numerous experiments he proved that an excellent skiagraph can be taken on the living patient, temporal side, in 5 to 10 seconds, and by the occipitofrontal axis in 2½ minutes, and in the freshly enucleated eyeball in one-half, one-fifth, or two-fifths of a second; there is no risk of starting up a secondary inflammation of the eyelids, conjunctiva or tunics of the eyeball. [F.C.H.]

3.—Precancerous Keratosis Probably Due to X-rays.—Johnston reports two cases, the first a male of 38, who had used an x-ray apparatus for about three or four years; and the second a surgeon, past 40, who had been using an x-ray apparatus for four to five years. The first case dropped from observation; the second was operated upon, and the malignancy of the keratosis was proved by microscopic examination. [F.C.H.]

4.—Treatment of Epithelial Skin Cancers and Sycosis Nonparasitica with the X-Ray.—Rinehart strongly recommends the use of the x-ray in the treatment of skin cancers. There is no pain, a slight cicatrix remains, and there is a greater possibility of a more thorough eradication of the disease. Several cases are detailed. [F.C.H.]

5.—The Accuracy of the Negative Röntgen Diagnosis in Cases of Suspected Calculous Nephritis and Urethritis.—Leonard emphasizes his claim as originally published four years ago, as follows: The absolute conditions essential to the detection of calculi in the kidney have been determined and proved repeatedly by clinical evidence, so that it is certain that under these known conditions a renal calculus must be detected, and that the absence of the shadow of a calculus in a negativeshowing certain definite details is conclusive evidence of the nonexistence of all calculi in that region. This is the positive evidence of the nonexistence of calculi that has heretofore been wanting. The results obtained during the past four years have entirely justified the accuracy of the negative diagnosis by the Röntgen method in cases of suspected calculus. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Trypanosoma in a New Role.—Further details of Dutton's recently reported discovery of Trypanosoma in man will be awaited with interest, for this is only the second instance in which parasites of this genus have been recorded for man. The first case was published in 1898, by Dr. G. Nepveu, but his description of the organism is incomplete, and doubts arise as to the correct determination.

Trypanosoma is a genus of flagellated protozoa very closely related to Trichomonas, but while the latter are more or less harmless parasites, the pathogenicity of the former is well established. Nearly all species of Trypanosoma thus far described are parasites in the blood, while the few species reported for the intestine probably are not correctly classified in this genus. Trypanosoma lewisi, a species which infests rats, is the best known form, and is not especially pathogenic; it is transmitted from rat to rat by fleas and lice. It is Tr. evansi which infests horses, causing a pernicious anemia known as "surra." This disease, which is carried by gad flies (Tabanus), is invariably fatal to horses, mules and camels in India, and has recently been reported as causing great losses among our cavalry horses in the Philippines, a fact which led the Secretary of Agriculture to prohibit the landing of any animals from the Philippines at any port of the United States. Tsetse fly disease of Africa, which Livingston and other travelers describe as so fatal to horses, cattle and other stock, is caused by Tr. brucei and is transmitted by the noted tsetse fly (Glossina morsitans). Mal de caderas is an invariably fatal disease among horses in South America, and is caused by Tr. equinum; its mode of transmission is unknown. Tr. equiperdum (Tr. rougeti) is looked upon as the cause of dourine (gonorrhea) in horses in France, Spain and Algiers, a disease which is transmissible by coitus. Other species of Trypanosoma (Tr. avium and Tr. eberthi) are reported for birds, the former in the blood, the latter in the intestine. Tr. rotatorium is the type of the genus and occurs in frogs; still other species (Tr. cobitis, Tr. carassii, Tr. remaki, Tr. soleae) are described for fish; Trypanosoma danilewskyi (Trypanoplasma danilewskyi) was described for the intestine of leeches

in France, but is probably a parasite of some vertebrate upon which the leech had fed. *Tr. balbianii* of oysters is probably not a true *Trypanosoma*.

These organisms are minute mononuclear, unicellular structures, several times as large as a red blood corpuscle, elongate, more or less fusiform, and provided with a lateral, longitudinal, undulating membrane somewhat similar to the membrane of *Trichomonas vaginalis* of the human vagina. The free margin of this membrane is formed by a thickened structure which in reality represents a flagellum; this begins near the posterior end at the so-called "centrosome" and extends along the margin of the membrane to the anterior end of the body, where it becomes a free flagellum. The reproduction is nonsexual by longitudinal division, and no sexual stage is known for it corresponding to the sexual stage of *Plasmodium malariae* in the mosquito. The parasites live in the serum, attacking and shaking the red blood corpuscle much as a dog shakes a rat. This naturally results in a great decrease of the red cells, so that an anemic condition results.

Trypanosomatic diseases are wet weather maladies and are somewhat similar to malaria. There is a general, though not absolute, periodicity, the temperature rising with the increase of the parasites, then falling more or less suddenly to normal or subnormal, the hematozoa at the same time disappearing more or less completely from the circulation. Aside from the anemia and progressive emaciation the most marked symptoms are uncertain gait (sometimes amounting to a paralysis), ravenous appetite, extreme thirst, highly colored urine, offensive feces, urticaria, edema, petechiae on mucous membranes, jaundice and violent heart action. On post-mortem, the spleen is found to be enlarged, and there are ulcers in the stomach; other changes are also noticed, but there is no specific trypanosomatic lesion.

Treatment has been very unsatisfactory, but some good results are reported from the use of arsenic.

From military and economic standpoints, trypanosomatic diseases are exceedingly important, and as some species of *Trypanosoma*, for instance *Tr. equinum*, are transmissible to monkeys, further since several of the species are infectious for widely distinct zoologic genera, there is nothing *a priori* improbable in the report that this genus also attacks man.

Epidemic Catarrhal Jaundice.—Curwen¹ gives the summary of his observations of 44 cases of epidemic catarrhal jaundice seen in Pekin and Tientsin. Most of the patients complained of weakness, dyspnea, anorexia, abdominal distention, nausea and constipation. In four cases definite abdominal pain occurred, in three there was vomiting, and diarrhea occurred occasionally. In two-thirds of the cases there was pain (generally severe) in the temples; it was often accompanied by drowsiness, and in two cases by vertigo. There was usually some fever, which was succeeded by the jaundice, which varied somewhat in degree. There was pruritus in four cases, enlarged and tender liver in two, and no albumin in any. The pulse was rapid in all cases. The duration of the disease varied up to 14 days. [A.O.J.K.]

On Glycolysis.—Bickel² points out that before fully accepting Lépme's theory that the normal oxidation of sugar is an enzymotic process brought about through the action of a glycolytic ferment secreted by the pancreas, and that any interference with this process results in diabetes, we must exclude (1) possible errors in determining the amount of sugar, (2) destruction by bacteria, (3) destruction by purely chemic processes. Thus in a 0.2-0.5% pure aqueous solution of soda which represents normal blood alkalinity, considerable quantity of grape sugar will be destroyed at blood temperature. In a 0.28% solution, 70 mgr. of dextrose will, after 36 hours, have been reduced to 64 mgr. In a 0.18% solution the loss will, after 240 hours, be 20 mgr., and in a 1.67% solution, after 96 hours, from 23 to 33 mgr. The polarimetric method of determining the

amount of sugar showed still greater loss. This depends on the stereochemic intramolecular rearrangement of grape sugar in the presence of an alkali, and is not an indication of actual loss of sugar. [J.C.S.]

On Antibodies Against the Bacteriolytic Immune Bodies of Cholera.—Pfeiffer and Friedberger¹ detail the results of some experiments performed with cholera goat-serum preserved since 1895. On two occasions, with an interval of three weeks, 10 cc. of this serum was injected subcutaneously into two rabbits, and eight days later the blood serum of the rabbits was tested with reference to its power to arrest the bacteriolytic action of the cholera goat-serum on cholera vibrios in the peritoneal cavity of guineapigs. Mixtures of the serum of the inoculated rabbits, the cholera goat-serum, physiologic salt solution, and highly virulent cholera bacilli were injected into the peritoneal cavities of guineapigs. There was complete absence of bacteriolytic action of the cholera goat-serum, all of the inoculated animals dying with the usual manifestations of cholera infection. Control tests made with the serum from the rabbits before inoculation with the goat-serum, as well as with the serum of other animals showed no alteration in the bacteriolytic action of the goat-serum. Subsequently a number of experiments were made with varying doses of "antiserum" and cholera goat-serum, with a view to ascertain the potency of the "antiserum." It is concluded that by injecting rabbits with cholera goat-serum, anti-immune bodies are formed, and that the cholera immune bodies of the goat, and those of the rabbit are specifically different. It is believed also that the amboceptors of normal goat-serum are identical with the amboceptors of specifically immunized goats. They suggest that the short duration of passive immunity by injecting heteroimmune serum may be explained by the rapid disappearance of injected immune bodies through the formation of "antiserum" bodies, and that the fact that passive immunity induced by isoimmune bodies is of much longer duration may be explained by supposing that the formation of isoantibodies occurs with greater difficulty. [A.O.J.K.]

Flies as Infective Agents.—H. Kelly's² paper is a good example of the historic method, making evident what is true in so many departments of human effort, viz., that what we see clearly today was seen dimly from afar by our predecessors, and that scientific understanding rests upon experience rather than on revelation. [C.S.D.]

Treatment of Loss of Hair.—From a clinical study of 300 cases Dr. George Thomas Jackson,³ of New York, concludes that heredity, an intellectual indoor life, especially when coupled with nerve strain and worry, and all diseases of lowered nutrition are predisposing and at times determining causes of loss of hair, while the exciting cause is in the great majority of cases dandruff, or some other actual disease of the scalp. As regards treatment he relies chiefly on massage of the scalp and the application of precipitated sulphur in good cold cream (10%) with or without either salicylic acid (3 to 5%), or extract of *Jaborandi* (3j to 3j). He has also found ammoniated mercury gr. xx and calomel gr. xl in an ounce of vaselin to do good service in some cases; in others resorcin in solution and in increasing strength has proved helpful. The medicated ointments and lotions are useful in overcoming the dandruff, while for stimulating the growth of hair massage is the only remedy worthy of the name, but it must not be used until the dandruff is checked. A skilled professional masseur should be employed when possible, but much may be done by the patient pinching up the scalp between the ends of the extended fingers of both hands for five minutes night and morning. Hair brushes are likely to become infected and thus be harmful. [J.C.S.]

Oleandrin Intoxication.—Wateff⁴ reports the case of a girl of 18, who, acting on the advice of a friend, drank a quantity of oleander leaf infusion as a specific for gastric pain. The chief resulting toxic symptoms were vomiting, nausea, headache, and decrease in the pulse-rate, the latter lasting for three weeks or more. [H.H.C.]

¹ Berliner klinische Wochenschrift, January 6, 1902.

² Bulletin of the Johns Hopkins Hospital, August, 1901.

³ Transactions American Dermatological Association, 1900.

⁴ Deutsche medizinische Wochenschrift, November 14, 1901.

¹ British Medical Journal, January 11, 1902.

² Deutsche medizinische Wochenschrift, January 2, 1902.

Chronic Lymphatic Leukemia in an Infant.—Scott¹ reports a case of chronic lymphatic leukemia in an infant, and makes some observations on the blood condition in other cases of splenic tumor. The child was nine months old at the time of first observation, and died about one year later. He suffered from pallor, diarrhea, enlargement of the spleen, neuroretinitis, but no enlargement of the superficial lymphatic glands. The leukocytes at first were 105,000; under treatment they decreased to 18,600, but shortly before death they increased again to 80,733. The lymphocytes varied from 43% to 83%. In addition there were nucleated erythrocytes of all sizes and ages, degenerative changes in both the erythrocytes and leukocytes, and a few myelocytes. The differential diagnosis of conditions associated with enlargement of the spleen—malaria, typhoid fever, congenital syphilis, rickets, von Jaksch's disease, splenic anemia, leukemia, and acute and chronic infections—is detailed. [A.O.J.K.]

Outdoor Treatment of Sick People.—George H. Carveth² advises keeping the patient in the open air day and night, rain or shine, winter and summer, properly protected against changes with a trained nurse to regulate the clothing. The bed may be placed under the trees, on the veranda or in a tent. Experience for 16 months has shown that patients recover in two-thirds of the time required under the old plan and operation cases have less sickness after anesthesia. [H.M.]

Typhoid Bacilli in the Blood.—Notwithstanding the dictum of Scholz and Krause that cultures from the blood of typhoid patients are of no value for diagnosis, and with a knowledge of the work of Eberth, Fränkel, Simmonds, Wissokowitsch, Kühnau, Stern and others, R. I. Cole³ considering the frequency of the bacilli in rose-spots, in the urine, and in lesions of the various organs and bones, concluded that they must be present in some stage of the disease, not only in the blood of the rose-spots, but in the general circulation as well. Cultures were made from 15 cases, in 11 of which the typhoid bacillus was cultivated, from which it is apparent that typhoid bacilli occur in the blood with much greater frequency and during a much longer time through the course of the disease than was formerly supposed. That cultures from the blood of typhoid fever have a very definite clinical importance, especially where the Widal reaction is delayed, as is so often the case, is evident. [C.S.D.]

Anthrax Infection From a Hitherto Undescribed Source.—Wilson⁴ reports a case of anthrax of the left cheek in which infection was contracted in making "pickers" from hides. [A.O.J.K.]

Pretuberculosis and Tuberculosis.—W. H. Pearce⁵ presents a table of his cases to illustrate his theory that the greater basis of tuberculosis is in the constitution. Similarities in function and structure show that prior to the bacillary stage cases of pretuberculosis and tuberculosis are indistinguishable and that the roots are far back in heredity. Among the functional disturbances in pretuberculosis, due to defect in molecular modes and atavism, are extreme weakness, coldness, amenorrhea, prevailing poorness of appetite, especially in repulsion to fat, excepting butter, passion for special foods, as onions and pickles. Among the anatomic deviations noted are unduly large and long hands and clavicles and thorax not fully developed, and more frequently unduly large terminal cartilages of the nose, which are nonsymmetrical and tend to point laterally. Among skin characteristics are nails cupped, transversely ridged, fine and friable; heavy eyebrows, which tend to meet; coarse and abundant hair; ears standing out at an angle; translucent dental enamel, small or absent upper lateral incisors. Final bacillary invasion is but a minor part of the full form of tuberculosis. With inherited tendency the potential energy of the lung apices lasts on variously to adult age; then expiring, the bacillary bioplasmic attractions overpower those of the lungs. Treatment consists in a tonic regimen, air and sunshine, and a happy mental state. [H.M.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

Courvoisier's Law.—Diseases of the biliary passages are of such frequent occurrence, and their recognition and treatment a subject of so much interest to both physicians and surgeons, that a thorough study of any phase of the subject should be of general interest. Courvoisier, in 1890, in an extensive statistical study (*Beiträge z. Path. und Chir. d. Gallenwegen*), called attention to facts concerning common duct obstruction which seem to deserve more general recognition than they have thus far received. Cabot (*Medical News*, November 30, 1901) has recently studied 86 cases of common duct obstruction, and discusses this subject in a paper of much interest. What has been termed Courvoisier's law, he states briefly as follows: When the common gallduct is obstructed by a stone, dilation of the gallbladder is rare; when the common gallduct is obstructed by other causes, dilation of the gallbladder is common. Probably the average surgeon, even with considerable experience in surgery of the biliary passages, will consider almost paradoxical the statement that impacted gallstones do not as a rule cause distention of the gallbladder. Yet it appears that Courvoisier based his conclusions upon a thorough study of the subject. In 187 cases of obstruction to the common duct, 87 were due to impacted stones, and the remaining 100 to other causes. Of the 87 cases of obstruction from impacted stones, but 17 (less than 20%) showed dilation of the gallbladder, whereas 70 (more than 80%) did not show this condition. Courvoisier's observations attracted little attention for some time, and it is doubtful whether Mayo Robson, at the time of publication of his recent book, was familiar with them. Mr. Robson reports 38 cases of obstruction to the common duct—23 from impacted gallstones, and the remaining 15 from other causes. Of the 23 cases of gallstone obstruction, only two showed dilation of the gallbladder, whereas of the 15 cases of obstruction due to other causes, all except one showed dilation of that viscus. Elkin (quoted by Osler) states that of 172 cases of stone in the common duct, only 28 (16%) showed dilation of the galley. Kehr, with experience of over 490 gallstone operations, agrees explicitly with the law laid down by Courvoisier. Cabot made investigation in 86 cases of obstruction to the common duct—57 being due to impacted gallstones, and 29 being due to other causes, almost invariably to cancer of the head of the pancreas. Of the 57 gallstone cases, 47 showed atrophy of the gallbladder, in eight cases was that viscus normal in size, and in the remaining two cases it was dilated; on the other hand, of the 29 cases due to obstruction from other causes, all except one showed dilation of the gallbladder. It appears, therefore, that the law as enunciated by Courvoisier has been verified by a sufficient number of trustworthy observers to deserve recognition, and not a few medical and surgical writers and teachers may have to modify their views.

American writers have been slow to arrive at this general truth, for Cabot mentions the following textbooks which either make no reference to the matter or teach absolutely the contrary with reference to the impaction of gallstones: American Textbook of Surgery; Park's Surgery; Dennis' Surgery, edition, 1896; International Textbook of Surgery; Osler, in edition of 1895, (but corrected to agree with Courvoisier in edition of 1898); Tyson's Practice, 1896; Wood & Fitz's Practice of Medicine; and Pepper's American Textbook, 1894.

Failure of the gallbladder to dilate in cases of gallstone impaction in the common duct is explained by Courvoisier on the theory that one or more stones must exist in the gallbladder long before impaction can occur. Their presence inevitably leads to chronic inflammation and consequent thickening of the walls of the viscus. The wall being thus thickened and strengthened the bile will regurgitate into the biliary radicles and hence into

¹ American Journal Medical Sciences, January, 1902.

² Canadian Journal of Medicine and Surgery, September, 1901.

³ Bulletin of the Johns Hopkins Hospital, July, 1901.

⁴ British Medical Journal, December 21, 1901.

⁵ Medical Press and Circular, September 4, 1901.

the blood circulation before gallbladder dilation will occur. Fenger (*American Journal of the Medical Sciences* February and March, 1890) has suggested that in case of gallstones impacted in the common duct, the impaction may not be continuous but the stone may act like a ball-valve, thus allowing gall to escape and prevent distention of the gallbladder.

As regards the application of Courvoisier's law, we cannot agree with Cabot. He believes that it is so usually possible to distinguish between malignant and non-malignant cases that we can in this way separate operable from inoperable cases. In two out of 57 of Cabot's own series, however, dilation of the gallbladder was present with stone in the common duct contrary to Courvoisier's law. In the series of cases reported by other writers which he quotes, the percentage was greater. Even in this small number of cases should operative relief be denied patients because it seems probable that their disease is inoperable? At the worst, if carcinoma of the pancreas is present, there is still a possibility of operative relief, for Franke, of Braunschweig, has shown that successful removal of a large part of a carcinomatous pancreas is possible (see *AMERICAN MEDICINE*, Vol. I, p. 287), and if so radical an operation is deemed inadvisable the patient can at least be relieved of his symptoms by cholecystenterostomy. Courvoisier and the others who have confirmed his observations, have no doubt made an important addition to our knowledge of common duct obstruction, but so long as absolute certainty in diagnosis of obstruction from stones and from other causes is impossible, so long as there is a good chance of relief with a slight possibility of cure in obstruction from malignant disease, so long as exploratory celiotomy is an operation attended with such slight danger, we believe few cases of common duct obstruction can be considered inoperable.

Septic Poisoning and Amputation.—Wolff¹ takes exception to the statements made by Dörfler regarding the inadvisability of amputation in cases of septic poisoning, and lays down the following rules for guidance in such cases: Amputation is indicated (1) when, in spite of free incision of the infected region, the acute progress of the phlegmon endangers the patient's life; (2) when, although the phlegmonous condition itself may be arrested by means of free incision and drainage, the resulting general symptoms indicate danger through the absorption of bacteria, toxins, or putrid material, or when long continued suppuration, in spite of free drainage, etc., results in fresh exacerbations, thus gradually weakening the patient's powers of resistance; and finally (3) when the function of the extremity is so damaged by the severe primary trauma and its following destructive processes that further use of the limb is an impossibility. [H.H.C.]

Intestinal Anastomosis by Mechanic Suture Methods.—Frank² believes that the leading surgeons and surgical teachers are gradually coming to adopt mechanic methods of intestinal anastomosis in preference to suture. He states that four years ago v. Bergmann, Gussenbauer, and Wölfler all condemned the Murphy's button, but one year ago he found that they were all unanimously in favor of the button, and using it regularly in their practice. Czerny, of Heidelberg, has used the button since 1896, with very satisfactory results. Frank considers the Murphy button the nearest approach to the ideal method of intestinal anastomosis that has yet been advised. It should be commended because of its simplicity, the saving of time, the uniform coaptation of peritoneal surfaces over the entire circumference of approximated ends, the fact that hemorrhage is arrested at the point of approximation and that the cicatrix resulting does not contract to a deleterious degree. As this method does not require extensive handling of the intestines adhesions are much less likely to occur. None of the suture methods can show such a low mortality, and Chlumski, who has tested both methods by the hydraulic pressure test, demonstrated the inferiority of the suture methods. [M.B.T.]

Tuberculous Appendicitis and Hernial Tuberculosis.

—Andrews¹ reports two cases of hernial tuberculosis. A girl of 23 had had a left femoral hernia for two years. The tumor was globular, tense, irreducible, dull on percussion, and absolute diagnosis was difficult. Operation showed a thick sac with fibrous nodules and filled with yellowish serum. The opening into the peritoneal cavity was probably not patulous. The sac was removed and the subsequent microscopic diagnosis showed round-cell infiltration and giant cells. There was no tuberculous history either before or following operation. In a second case, a man of 47 had large right, partly irreducible scrotal hernia. Operation showed a thick sac wall studded with nodules containing rolled up masses of omentum adherent to the sac. The fluid contained was clear and white. All loops of intestine and the greater omentum were studded with small tuberculous nodules, those on the omentum being hard and fibrous and as large as hazel nuts. Andrews has also treated four cases of tuberculous appendicitis. He has studied the literature of this subject and finds that extirpation, partial resection, enteroanastomosis, complete exclusion and simple laparotomy have been performed by various operators in these cases. There have been an encouraging percentage of cures resulting from all these various methods. In one of his cases he did a lateral anastomosis with Senn's plates, but leakage occurred and death from peritonitis resulted. In a second case the intestines were too much matted together to permit of resection. Iodoform-gauze drainage was inserted. The patient's condition did not change very decidedly, and death resulted after six weeks. In a third case a lateral anastomosis was established, but the patient gradually sank and died of marasmus after the operation. In a fourth case the appendix was excised and iodoform gauze drainage was inserted. Recovery followed, and the tuberculous tumor was much reduced in size after the operation. [M.B.T.]

Aseptic Hypodermic Syringe.—Wolff² describes a new hypodermic syringe, in which the needle may be reversed, thrust into the cylinder (which is kept filled with an antiseptic fluid when not in use) and screwed firmly in this position. Into the hollow piston an extra needle is also fastened, and the whole outfit is enclosed in a metal tube, the cap of which is weighted with metal in such a manner as to stand upright when detached, and serve as a reservoir for the antiseptic fluid while the instrument is being used. [H.H.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

The Passing of the Pessary.—Another pessary has been invented, and by one of the indefatigable strenuous German gynecologists to whom we owe so much. It would be very hard to enumerate the number of pessaries, modified pessaries and uterine supports that have been devised, employed, and many of them abandoned, since the time of Hippocrates, who used pieces of sponge or balls of wool soaked in medicated substances and applied in the form of a ball or tent. Although it has become customary to treat every greater prolapse of uterus and vagina by operation, yet there are cases in which for different reasons, as great age, heart failure, lung disease, operation is contraindicated. In severe prolapse in old women in whom the genitals are atrophied and the perineum is destitute of muscular efficiency, the distended vagina will not keep in position even the largest of the customary rings, and it becomes necessary to employ a bandage with the pessary. Recognizing the many serious objections to this, Rosenfeld,³ of Vienna, has devised a pessary of a peculiar form which he describes and claims will be retained in position without a bandage even under the conditions mentioned. But even aside from the cases in which operation is contraindicated the pessary is not an obsolete instrument;

¹ *Annals of Surgery*, December, 1901, Vol. xxxiv, No. 8.

² *Münchener medizinische Wochenschrift*, October 22, 1901.

³ *Centralblatt für Gynäkologie*, December 7, 1901.

¹ *Münchener medizinische Wochenschrift*, November 26, 1901.

² *Annals of Surgery*, January, 1902.

it has a place in the armamentarium of the physician, a definite field of usefulness if properly employed; but in these days of surgical interference, of ventral suspensions, vaginal fixations and ligament shortenings, we are apt to forget that a certain proportion of cases may be very satisfactorily relieved by the introduction of a pessary, relieved if careful attention is paid to the fitting of the instrument. Certain conditions are necessary to success; the pelvic floor must not be so entirely relaxed that the instrument drops out as soon as the patient strains or assumes the erect position, and the uterus must be mobile so that it can be replaced readily before the introduction of the pessary. It is surprising how often the gynecologist, when examining patients, finds that pessaries have been inserted with the uterus still in malposition. The physician should no more think of applying a pessary with the uterus fixed in a malposition than he would of applying a truss upon an irreducible hernia or a splint upon an unset bone. In order that relief may be given by these instruments, the uterus and appendages must be in their normal situation, the pessary must be adapted to the individual and she must experience more relief from its presence in the vagina than she does from its absence. Patients wearing prosthetic appliances should be kept under observation at regular and frequent intervals so that the ring may not be permitted to produce irritation or ulceration, or become displaced. Mineral astringent douches should be avoided, although antiseptic injections of lysol or creolin may be employed; and if the foreign body causes discomfort it should be removed and an effort made to adapt a better fitting and more effective instrument.

Partial Hysterectomy (?) for Puerperal Sepsis.—H. N. Vineberg¹ reports a patient aged 22 who had been attended by a midwife during an abortion, from whom he removed 3 weeks later a suppurating mass as large as an English walnut which was found in the left dorsal cornu of the uterus. Abdominal drainage was used and good recovery followed. A subsequent pregnancy proceeded to term and was ended normally. He cites this case to show that it is not always necessary to sacrifice the entire uterus in cases of puerperal sepsis. [J.W.H.]

Early Extrauterine Pregnancy.—Carwardine² urges the importance of a correct diagnosis of early tubal pregnancy and immediate operative treatment. Early tubal pregnancy may be said to comprise cases up to the fourth month, before which time rupture naturally takes place. The earlier cases—those during the first six weeks—are characterized by suddenness of onset, often an absence of palpable signs, and gravity of the issue. But there are, as a rule, three prominent facts: A history—that of an unusual delay in menstruation in a married woman, followed by an irregular bleeding of some sort a week or two later; a symptom—that of sudden acute abdominal pain, with sickness and collapse; a sign—that of internal hemorrhage. The last condition is recognizable by the shock common to it, by the aspect and pulse, which are the true clues to progressive anemia. The pallor of the perfectly conscious patient strikes you at once. The lips, gums and conjunctivas are almost as white as the surrounding skin, and the finger-nails appear white throughout. The tension of the pulse is low and decreasing in strength. The patient is bleeding to death, and there is but one thing to do—tie at the bleeding point. The symptoms demand immediate operation. In cases, of from six weeks to three or four weeks duration, there is the additional symptom of a tumor beside or back of the uterus. This may clinch the diagnosis. Having diagnosed the case since, surgery can now save over 95% of cases, there can be but one possible procedure. Adding the statistics of several large groups of operations, he finds that of 279 patients operated upon, 269 recovered and 10 died, a mortality of 3.6%. Clearly, operation for tubal pregnancy is as safe as delay is dangerous, and to diagnose tubal pregnancy is a just demand for that

treatment which gives the patient the best possible chance—early operation. [W.K.]

Slow Pulse in Puerperium.—The term physiologic slowing of the pulse in childbed can only be justified by two conditions—that the pulse of the puerperal woman is slower than in the previous pregnancy, and that this slowing of the pulse is found in a majority of women. I. O. Aichel,¹ in his investigations, made a comparative table of the pulse of 130 women during pregnancy and the puerperium, and found that in the great majority the pulse remained the same. In conclusion he says that in the last days of the pregnancy in primipara there is sometimes an increase of the pulse due to the long-deferred labor activity, and that in such cases the delivery should have occurred within the 24 hours before the patient felt the labor pains. [W.K.]

Experimental Ureterocystostomy.—After an exhaustive review of the surgery of the ureter, A. Smith² details the results of experiments upon 10 ureters in dogs. The final results in each case are exhaustively worked out and the following general conclusions reached: (1) It is practical to anastomose the ureter to the bladder under tension if the two are securely held in apposition till firm adhesions form. (2) This relation can best be attained by the oblique implantation method pursued in these experiments. (3) An additional length of one-half to one inch can be obtained safely by traction on the ureter. (4) The presence of ligatures in the lumen of the ureter is not injurious, because nature conceals them behind new epithelium. [J.W.H.]

Carcinoma Statistics.—E. Waldstein³ gives a series of statistics showing the results of treatment in various forms of uterine cancer. The proportion of those in which there was a recurrence of the disease, always large, varied from 52% to 92%, being least in localized carcinoma of the cervix. These percentages were deduced from 106 cases operated upon by the vaginal route in Schauta's clinic at Vienna. Out of six cases of carcinoma of the body of the uterus, there was only one recurrence after the expiration of five years. Waldstein states that of the women who came to the clinic suffering from cancer but 14.7% were operable cases, and he estimates that of every hundred who came only four were cured. [W.K.]

Primary Genital Tuberculosis.—A case of primary tuberculosis of uterus and adnexa is reported by Dr. Hauschka,⁴ occurring in a married woman of 29. Total extirpation of uterus and adnexa was performed with an afebrile recovery, the patient leaving the hospital in three weeks. It was evidently primary tuberculosis, since there was not the slightest symptom of any affection of lungs, intestines or any other organ. Examination of the specimen indicated that the disease began in the tubes and thence extended to the uterus. There are two symptoms which usually differentiate primary from secondary genital tuberculosis. First, the secondary is marked by a ringformed swelling of the portio vaginalis, while in the primary tuberculosis there are knotlike tumors which take the papillary form, sometimes mistaken for carcinoma, and which result from the long duration of the disease. The second symptom is the frequent and striking periodic return of amenorrhea. In the present case the patient had suffered amenorrhea since puberty. [W.K.]

True Interstitial Pregnancy.—In the instance reported by Guerard,⁵ after the removal of a mass of blood and a 2½-3 months old fetus, a ruptured protuberance was seen near the median line of the uterus, in the cavity of which protuberance hung the placenta attached, not at the point of rupture, but in the bottom of the cavity. The first impulse was to remove the uterus, but as both adnexa were normal it was decided simply to excise the bed of the affected part in a keelformed piece. Guerard considers that this typical case of the development of the ovum in the uterine muscle, resulting in the recovery of the patient with a retention of the uterus, is an occurrence of the greatest rarity. [W.K.]

¹ American Journal of Obstetrics, September, 1901.

² British Medical Journal, January 11, 1902.

¹ Centralbl. f. Gynäk., October 19, 1901.

² American Journal of Obstetrics, September, 1901.

³ Centralblatt für Gynäkologie, December 14, 1901.

⁴ Wiener klinische Wochenschrift, December 19, 1901.

⁵ Centralbl. f. Gynäk., December 9, 1901.

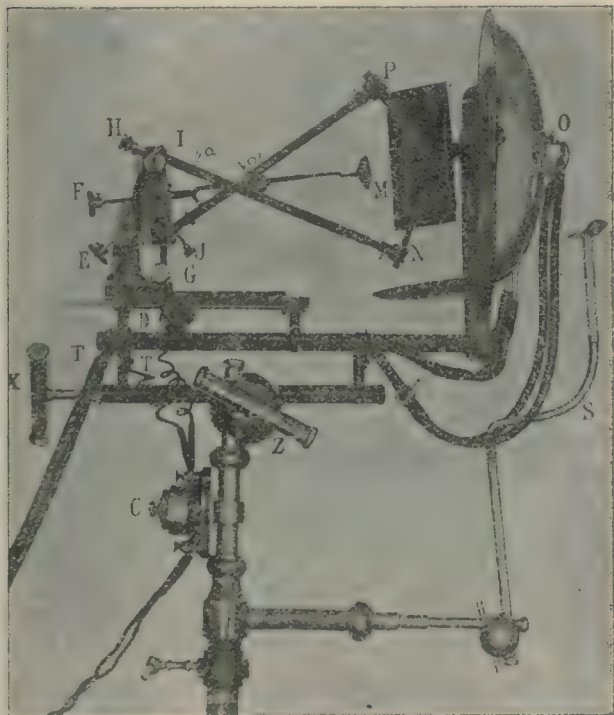
TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Lortet-Genoud Lupus Lamp.—The editor of *The Journal of Physical Therapeutics*, Vol. II, No. 4, 1901, describes this new apparatus for the application of the Finsen method of phototherapy. Hitherto the length of time necessary to carry out the treatment and the very large amount of current (70 to 80 ampères) required were two important disadvantages which, it is claimed, are obviated by the use of Lortet and Genoud's apparatus. The chief feature is that the use of a condenser is dispensed with. In doing this two objects must be attained: First, to make use of the chemic rays as near as possible to their origin before dispersion, since the degree of concentration increases directly with the proximity to the luminous source; and second, to protect the patient from the action of the heat rays. These indications are met by the apparatus in question



in the following way: Between the light and the patient there is interposed a screen consisting of a metallic vessel in which a constant circulation of water is kept up to obviate heating. This vessel has a central orifice which allows the light to pass through, the orifice being in its turn closed by a hollow obturator, the two faces of which consist of quartz lenses. One of the faces of the obturator is in close contact with the skin and exercises compression, hence it is also known as the compressor. As it also has a constant circulation of cold water, the tissues with which it is in contact are submitted to constant refrigeration. The luminous rays from the electric arc fall upon the surface to be treated only about 3 or 4 cm. from their source, having undergone no concentration. Thus the available luminous zone is of considerable extent, instead of being about the size of a shilling, as in the ordinary method. The lamp is a continuous-current arc, taking a current of 12 to 15 ampères and from 55 to 65 volts. The article is illustrated by a drawing of the apparatus with a full description and directions in regard to the technic. The latter is simple, and it will be found that both the photochemic and phototherapeutic effects secured are much superior to those obtained by the older method. The former is proved by the fact that a sensitized paper is reduced in 2 or 3 seconds, against 6 seconds by the apparatus devised by Finsen. The phototherapeutic effect is shown by the fact that an application of 3 minutes to the fore-

arm is sufficient to produce an intense erythema followed by desquamation, and 10 to 15 minutes suffice to produce the reaction necessary for cure. In certain subjects the action is very intense, therefore great care is necessary in limiting the extent of the sittings and separating them by sufficiently long intervals. [R.M.G.]

Painless Application of Corrosive Sublimate to Mucous Membrane.—On page 1,005, December 21, 1901, it was stated that when these solutions are combined in a proportion of 2 drams to 1,000 parts of sodium chlorid they do not cause the slightest pain when applied to mucous membranes. This should read—when these solutions are made in normal sodium chlorid solution, instead of water, they do not, etc. [L.F.A.]

Australia as a Health Resort for the Tuberculous.—According to F. Parkes Weber, the cases of pulmonary tuberculosis for which a longer or shorter residence in Australia can be recommended are limited. First, the prolonged sea voyage is, in many cases, a counterindication. Secondly, the accommodation and arrangements for securing continuous medical supervision of patients are lacking. Patients with acute or very advanced disease cannot be advised to go to Australia, nor cases with laryngeal, intestinal or renal complications. In fact, it is suitable only for those patients who are in the early stages, who have fairly good powers of resistance, and who are without fever or any grave complications. S. Solis Cohen, however, would add to this list some of those classes of patients for whom he advises sea voyages of moderate or considerable length: especially young persons fairly robust, and able, when well, to cope with circumstances, but who have become infected by chance and exhibit, on land, persistent limited softening or persistently recurring pyrexia. The climates of the coast towns are not suited to consumptives, and patients who desire to earn their own living in towns would find Denver and the high altitude resorts of the Rocky Mountains, in the United States of America, or the towns of the plateau of Mexico, more appropriate; whereas those who wish to live an open-air country life have, at least, the alternative of the South African climates. However, the inland districts of Australia undoubtedly have advantages in some early cases of tuberculosis, and may be recommended to fairly vigorous young men, who are not too fastidious as to food, and the like, and who, as Dr. C. T. Williams points out, should have 'pastoral' tastes and should be prepared to spend years in the recovery of their health.—"Climatotherapy," Book II.

Treatment of Vomiting in Pulmonary Tuberculosis.—Pegurier (*Journal des Praticiens*, April 27, 1901) recommends (1) calming the excitability of the gastric mucous membrane by means of small pieces of ice swallowed after meals, or by the administration of certain anesthetic substances. The following formulas may be used:

Chloroform water } of each 8 ounces
Orange flower water }
One or two dessertspoonfuls after meals.

Or

Menthol 3 grains
Julep 5 ounces.
Two to four dessertspoonfuls after meals.

(2) The treatment of any local cause of the gastric irritability such as complications involving the pharynx or epiglottis. The application of the following solutions is followed by temporary relief:

Potassium bromid 45 grains
Glycerin 1 ounce.
Apply to the pharynx before each meal.

Or

Cocain hydrochlorate 30 grains
Water 3 ounces.
Apply to the pharynx before the time of vomiting.

Or

Dilodoform 120 grains
Cocain hydrochlorate 1½ grains
Morphin hydrochlorate 3 grain.
For insufflation.

In rebellious cases lavage of the stomach is indicated. [L.F.A.]

Cratægus.—W. E. Reiley (*Medical Arena*) advises the administration of cratægus (hawthorn) for the relief of heart disease. The dose is five drops of a preparation, probably the nature of a strong tincture, every four hours. The symptoms calling for cratægus are, among others, extreme dyspnea on the least exertion, dry cough with expectoration of glairy mucus, pain in the region of the heart, disturbances of the pulse-rate, nervous dyspepsia. [R.M.G.]

Therapeutic Action of Ovo-lecithin.—Lanceraux (*Bulletin Générale de Thérapeutique*, July 15, 1901) in a study of the therapeutic action of ovo-lecithin finds that it acts to a marked degree on the nervous phenomena governing the general nutrition. In two cases of advanced pancreatic diabetes the administration of ovo-lecithin, in doses of $7\frac{1}{2}$ grs. daily, produced great improvement in the general condition with a rapid increase in weight. The author gave it to a child of 10 years with beginning tuberculosis, to a young man of 18 years attacked with osseous tuberculosis with amyloid degeneration of the kidneys and abundant albuminuria, and to a child of 8 years suffering from bronchopneumonia with considerable general debility. In all these cases and in diseases associated with malnutrition ovo-lecithin produced marked increase of weight with improvement of the general nutrition. [L.F.A.]

Apocynum.—An editorial in the *Chicago Medical Times*, Vol. xxxiii, No 9, states that apocynum possesses a hydragog effect both upon the kidneys and bowels. In large doses it irritates the stomach, producing violent, prostrating emesis. It is recommended for dropsy caused by defective kidney action or by feeble heart action with impaired blood pressure, and has been used in cases of hydrocephalus. It is also claimed to exert a favorable effect upon sciatica, though no reasons for its action in this disease are suggested. A teaspoonful to a tablespoonful of an infusion of the fresh root, one ounce to a pint of water, may be given several times a day. [R.M.G.]

LARYNGOLOGY, RHINOLOGY, and OTOTOLOGY

D. BRADEN KYLE.

Treatment of Enlarged Thyroid by Boric Acid.
—There is probably no subject of greater interest to practitioners of medicine than that of enlargement of the thyroid gland, ordinarily referred to as goiter, and in this preliminary note I wish to call attention to a certain variety of enlargement of the thyroid gland in which therapeutic measures seem to be of great value. The variety to which I refer is that in which the cellular elements of the thyroid structure are increased, the enlargement not being due to distended vessels, a cystic condition of the gland, or new growth. So far I have been able to select eleven cases from my private and hospital practice. My attention was first called by accident to the therapeutic value of boric acid in these cases, having used the drug for the relief of another condition in a private patient, he remarked to me, after having taken the drug for ten days, that he believed that not only his general condition was improved, but that it had decreased the size of the goiter. Having made a careful study of his urine and finding that certain materials which had been present had disappeared under the administration of the boric acid, I then endeavored to construct some theory which would explain the diminution in size of the thyroid gland.

This was in the fall of 1895; since that time I have been able to study 10 other cases, making 11 in all, of this variety of enlargement. In each case in which the treatment has been followed out, the result has been practically the same, either the entire diminution of the enlargement of the thyroid, or so markedly diminished as to cause the patient no inconvenience. I reasoned the matter out as follows: It is a well-known physiologic and therapeutic fact that certain drugs have a selective action on certain tissues or organs of the body, e. g., belladonna with its selective action on the pharyngeal

surface, sodium phosphate with its selective action on the liver, etc. It is also a physiologic fact that the normal chemistry of the body controls the normal secretion from the various secretory organs, that any perversion from the normal necessarily alters the character and chemistry of the secretion, and that the products of such alteration act as irritants to certain parts of the body, the difference between this and drugs administered is that one is introduced *into* the body and one is manufactured *within* the body. I, therefore, reasoned that under certain conditions there was precipitated—due to perverted chemie reaction—a certain material, which, circulating through the blood, had a selective action on the thyroid gland, acting as an irritant to that gland and stimulating its blood-supply. And, that the boric acid either corrected the faulty secretion or served to neutralize the material precipitated or formed by the faulty chemistry of the secretion. In each case the urine showed a peculiar form of oxaluria, and contained an excessive amount of indican with considerable amount of cholesterin. At some future time I hope to give a detailed account of the cases and to add further notes; while 11 cases are scarcely a sufficient number from which to draw definite deductions, yet it seems scarcely possible that the result of the treatment in these cases should be a mere coincidence. With the exception of one or two cases outside of correcting any deficiency in the organs of elimination, especially the stimulation of the liver and intestinal tract, the treatment consisted in the administration of from 10 to 15 grains of boric acid given in capsule form and taken with a full glass of water every three hours. The reduction in the size of the gland is easily explained by the theory of a simple atrophy, that of liquefaction necrosis with absorption of the cells receiving the least nutrition—a survival of the fittest. [D.B.K.]

LARYNX

Paralysis of Recurrent Laryngeal Nerve.—William E. Sauer¹ reports a case of left recurrent paralysis due to the presence of an aortic aneurysm. The cause was probably specific, but as the patient's general condition improved by the administration of iodids, there was no visible improvement in the laryngeal condition. L. H. Hemplemann, of St. Louis, in the same journal, also reports a case of recurrent paralysis in a patient with a dissipated personal history. (Unfortunately the diagnosis was unverified by laryngeal inspection.)

The Early Appearance of Laryngeal Tuberculosis.—H. Holbrook Curtis,² writing on the early appearance of laryngeal tuberculosis discusses first the manner of infection, and states that the bacilli can reach the larynx either by the lymphatic and blood-channels, or by direct invasion of the epithelial cells. He does not believe that tubercle of the larynx exists as a primary condition. As regards the immunity of the larynx in late pulmonary tuberculosis he suggests that the toxins may render the larynx less prone to infection. [This seems hardly plausible, since the toxins must be most concentrated immediately around the tuberculous areas in the lungs, at which points the disease shows its greatest tendency to spread.] He then mentions the fact that lymphoid tissue is a favorite abiding place for tubercle bacilli, and that the pharyngeal lymphatic ring is sometimes the point of entrance of the bacilli into the system. Often the laryngeal condition antedates the presence of bacilli in the system, and in several of the author's cases the only suspicious conditions present were a sluggishness of movement of the vocal cords, and a morning temperature subnormal to the extent of 1° to 2° . Other early signs of the disease are a slight swelling of one cord, with persistent congestion and marked vascularity of its covering mucosa, a feeling of languor and debility out of proportion to the lung involvement, crenation of the interarytenoid space, and submucous yellowish-gray spots in this space and in the arytenoepiglottic folds. It is in these early stages that submucous injections of guaiacol, etc., are of such great value. He

¹St. Louis Courier of Medicine, December, 1901.

²The Laryngoscope, December, 1901.

relates a case in which there was a sessile submucous papillomatous neoplasm starting from the arytenoid and covering half the cord longitudinally. The growth was treated by lactic acid and curetment. The sputum of this patient afterward developed bacilli and death from tuberculosis was the final outcome.

Idiopathic Dilation of the Esophagus.—St. Clair Thomson¹ discusses the diagnosis and etiology of idiopathic dilation of the esophagus. The etiology of such conditions is obscure, but injury seems to be the cause in some instances. The methods of diagnosis mentioned are those of Rumpel, Einhorn's "coffee experiment," the Röntgen rays, gastrodiaphany and esophagoscopy. A case is related in which the stomach tube was used and after washing out the stomach the tube was withdrawn about eight inches and undigested food could then be washed out of the esophagus. Two cases of stricture of the esophagus requiring gastrostomy are related. One was a woman of 32 with a two years' history of dysphagia, who presented on examination a firm esophageal stricture opposite the second tracheal ring, associated with abductor paralysis of the left vocal band. Examination of the neck and thorax was negative. With the possibility of syphilis in mind iodids were given. [The writer does not state whether the improvement was due to the iodids or the use of the bougie]. Improvement followed the use of the bougie and the patient ceased attending. On her return a year later swallowing was almost impossible and the esophagus would not permit the passage of a bougie. Frank's method of gastrostomy was performed and great improvement in health and weight resulted; 16 months after operation her health remained good although swallowing was impossible. Laryngoscopic examination at this time revealed bilateral abductor paralysis. The voice was unaffected but slight exertion caused great dyspnea. [The laryngeal condition of the case is exceedingly interesting. There is evidently a fibrosis of some kind, probably specific, taking place in the esophagus at a point where the relation of the recurrent laryngeal nerves and esophagus is most intimate. The process in its incipency was probably unilateral and reached the right side later on by extension. The fact that abductor alone instead of general recurrent paralysis was found may be explained by an anomalous innervation of the larynx, the abductors not receiving their nerve supply from the recurrent laryngeal]. The second case was a rapidly progressing epithelioma of the esophagus necessitating gastrostomy, which was done by Witzel's method. The larynx was at first unaffected, but later edema and fixation of one cord supervened. Thomson points out the fact that malignant esophageal stricture is almost unknown in men under 40, while in women it is often found not only in the fourth but even in the third decade. Early gastrostomy in malignant esophageal disease is recommended.

PHARYNX

Nondiphtheric Membranous Inflammation of.—St. Clair Thomson¹ first describes "Vincent's Angina," due to spindle-shaped bacillus found in hospital dirt, measuring 4 μ by 1 μ . Vincent found this bacillus in a series of 14 cases of membranous tonsillitis, which he called "diphtheroid angina," on account of the white membrane on the tonsil. There were present also many spirilla. The surface in this affection is covered with a whitish or grayish membrane, beneath which the surface is eroded, bleeds easily, and sometimes ulcerates. It tends to spread in depth rather than on the surface, and seldom becomes bilateral. The adjoining lymph glands enlarge. Cases are described by other authors who find in it resemblance to chancre of the tonsil and to the "ulcerating lacunar tonsillitis" of Moure. From the former it is differentiated by the absence of a slough, and from the latter by the absence of crypts, the presence of the characteristic germs and the absence in the tonsillitis of Moure of any bacilli except those ordinarily found in the mouth. The condition tends to heal slowly, especially in cities, and may last for many weeks. The general health is but slightly affected. Other forms of membranous sore throat mentioned are those due to the presence of the pneumococcus, of Friedländer's bacillus, and to tonsillotomy. [The discussion of the form due to the

pneumococcus, is clouded by the fact that this germ is normally found in the mouth.] Nicholle has reported five cases caused by Friedländer's bacillus. The membrane was on the tonsil, was adherent and of a pearly-white color. Nicholle's conclusions are that (1) angina caused by Friedländer's bacillus may occur in a subacute or chronic form; (2) it causes no particular disturbances, except perhaps at the time of the formation of the membrane; (3) it may occur in a membranous form, and recur from time to time; (4) in the chronic form treatment does not do much good; the condition gets well spontaneously in time; (5) it probably occurs much more frequently than the few recorded cases indicate. [Many such cases are found in dispensary practice.]

Pulsating Arteries of.—St. Clair Thomson,¹ of London, reviews some of the recent literature on diseases of the upper air passages. He takes up first the subject of large pulsating vessels on the posterior wall of the pharynx. These may be the ascending pharyngeal, an abnormal vertebral, or a tortuous internal carotid. A case in which the carotid was the cause of the condition is described. The artery after passing up for a short distance from the point of bifurcation, turns sharply forward and inward, then outward and upward to enter the carotid canal. An associated anomaly is the deriving of their nerve supply of all the infrahyoid muscles, especially the thyrohyoid, directly from the trunk of the vagus. Two theories are advanced to account for this condition, (a) arteritis from chronic nephritis, and (b) persistence of abnormal portions of the embryonic arches. [In view of the latter it is unfortunate that the condition of the recurrent laryngeal nerves and of the arch of the aorta and its branches is not given, as these would shed much light on the persistence of fetal structures. It has been our good fortune to see four cases of pulsating pharyngeal vessels. In two the arteries were small, coursing just alongside the posterior pillars. In another case the vessel was as large as the internal carotid and looped out on the pharynx just opposite the tonsil, resembling the case reported by Thomson. The fourth case was exhibited at the meeting of the Section of Laryngology, Rhinology and Otology at the College of Physicians of Philadelphia, December, 1901, by Drs. Freeman and Wood. In this case the artery was small, but extended almost to the median line of the pharynx.]

TONSILS

The Possibility of Wounding the Carotid in Tonsillotomy.—St. Clair Thomson¹ discusses the possibility of wounding the carotid in tonsillotomy and states that hemorrhage following this operation in adults has never been shown to have been due to injury of the internal carotid. To avoid hemorrhage he makes the following recommendation: The avoidance of the guillotine in adults, the use of the smallest sized guillotine possible in order to avoid cutting the faucial pillars, rest for 10 to 15 minutes after removing the gag. Bathing the face and neck with cold water, and if bleeding then persists clamping any bleeding point with forceps, or failing in this the use of pressure, preferably with the finger.

Membrane Following Tonsillotomy.—St. Clair Thomson¹ says in the membrane following tonsillotomy L. Harmer found in 31 out of 300 cases it is usually about 2 mm. thick, is confined to the cut surface and appears a few hours after the operation. Examination showed absence of Bacillus diphtheriae and presence of Streptococcus pyogenes, either alone or associated with Staphylococcus albus and S. aureus. Histologically it showed leukocytes, fibrin and necrotic areas. Caution is advised as to performing tonsillotomy during an epidemic of diphtheria.

EAR

Infective Otitis Media.—Hiram Woods, Jr.,² ascribes the increased attention that ear troubles are now receiving from the profession in general to two causes, one of which is the increased attention given such matters by schools and medical journals, and the other is the number of cases following influenza, which seems to emphasize the importance of care of the auditory apparatus. He speaks of certain cases in which the usual subjective symptoms were either absent or so slight

¹ The Practitioner, January, 1902.

² The Practitioner, January, 1902.

³ Maryland Medical Journal, January, 1902.

that the aural involvement could ordinarily escape observation. He relates two cases in which mastoid symptoms were slight and late in appearing, but in both of which operation showed extensive necrosis with symptoms of general infection out of proportion to the apparent local involvement. He reports also a case of infectious endocarditis with a history of transient earache and defective hearing occurring two weeks previously. Incision of Shrapnell's membrane gave vent from the attic of pus containing streptococci, and the writer is inclined to the belief that the endocarditis might have been secondary to the ear trouble. Another case was that of a child, with a history of transient earache, who two or three weeks later was supposed to have typhoid fever. Blood examination showed increased leukocytosis; examination of the ear showed attic inflammation, and incision gave the same result as in the previous case. Recovery was immediate. Still another case was that of a child with the usual history incidental to acute otitis media, in whom examination showed a profuse discharge, containing streptococci, from a perforation in the posterior inferior quadrant of the tympanic membrane. Blood count showed 13,000 leukocytes. [The slight increase above normal could scarcely be called leukocytosis.] In four days convalescence seemed to be established, but a week later the temperature rose to 104.4°, with violent earache. The general condition fluctuated for about a week, when the membrane of the other side was seen to be congested, was incised and pus containing streptococci was evacuated. Recovery was prompt. The writer's conclusions are that: 1, the ear should be included in routine search for the nidus of infection causing general symptoms; 2, a blood count may be of service in doubtful cases of ear disease; 3, when aural infection has been demonstrated, free drainage should be afforded.

Deafness.—Snow¹ reports two cases of deafness following suppurative otitis media occurring in the course of scarlet fever, and describes the treatment of such conditions. The usual antiphlogistic and antiseptic methods are given, as well as the minor operative procedures. He advocates the use, when possible, of the rubber artificial eardrum, and recommends that a thread be attached instead of a wire, thereby lessening the friction sound and chances of irritation. [No mention is made of the importance of prophylaxis as regards nasal cavities during the course of scarlet fever.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended February 1, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Arkansas:	Little Rock.....Jan. 20.....	17	1
California:	Los Angeles.....Jan. 11-18.....	8	
	San Francisco.....Jan. 12-19.....	4	
Dist. of Columbia:	Washington.....Jan. 11-18.....	2	
Illinois:	Belleville.....Jan. 18-25.....	1	
	Chicago.....Jan. 18-25.....	8	
	Danville.....Jan. 18-25.....	1	
	Freeport.....Jan. 18-25.....	3	
	Galesburg.....Jan. 18-25.....	2	
Indiana:	Evansville.....Jan. 18-25.....	4	
Iowa:	Clinton.....Jan. 18-25.....	5	
Kentucky:	Lexington.....Jan. 18-25.....	3	
Maine:	Portland.....Jan. 18-25.....		1
Massachusetts:	Boston.....Jan. 18-25.....	44	6
	Cambridge.....Jan. 18-25.....	3	1
	Lowell.....Jan. 18-25.....	1	
	New Bedford.....Jan. 18-25.....	6	
	Somerville.....Jan. 18-25.....	1	
	Weymouth.....Jan. 11-18.....	1	1
	Woburn.....Jan. 18-25.....	1	
Michigan:	Detroit.....Jan. 18-25.....	6	
Minnesota:	Minneapolis.....Dec. 28-Jan. 18.....	57	
Missouri:	Hannibal.....Jan. 11-8.....	1	
Nebraska:	Omaha.....Jan. 8-25.....	54	
New Hampshire:	Nashua.....Jan. 18-25.....	3	
New Jersey:	Camden.....Jan. 18-25.....	19	1
	Jersey City.....Jan. 18-25.....	13	1
	Newark.....Jan. 18-25.....	35	8
New York:	Binghamton.....Jan. 18-25.....	1	
	New York.....Jan. 18-25.....	54	11
Ohio:	Cincinnati.....Jan. 17-24.....	17	
	Middletown.....Jan. 18-25.....	1	
	Toledo.....Jan. 18-25.....	1	
	Youngstown.....Jan. 18-25.....	4	4

Pennsylvania:	Altoona.....Jan. 8-25.....	1	
	Norristown.....Jan. 18-25.....	1	
	Philadelphia.....Jan. 18-25.....	90	19
	Pittsburg.....Jan. 18-25.....	2	
	Reading.....Jan. 20-27.....	1	
	Scranton.....Jan. 15-22.....	1	
Rhode Island:	Providence.....Jan. 18-25.....	2	
Tennessee:	Memphis.....Jan. 25-25.....	16	
Vermont:	Burlington.....Jan. 18-25.....	31	
Washington:	Aberdeen.....Jan. 18.....	Prevalent	
	Coppeville.....Jan. 14.....	2	
	Hoquiam.....Jan. 18.....	Prevalent	
	Tacoma.....Jan. 12-19.....	3	
Wisconsin:	Green Bay.....Jan. 19-26.....	13	
	Fond du Lac.....Jan. 18-25.....	1	
	Milwaukee.....Jan. 18-25.....	3	

SMALLPOX—FOREIGN.

Austria:	Prague.....Dec. 28-Jan. 4.....	13	
Canada:	Halifax.....Jan. 18-25.....	1	
	Winnipeg.....Jan. 11-27.....	6	
Colombia:	Cartagena.....Jan. 1-12.....		7
France:	Marseilles.....Dec. 1-31.....		1
	Nantes.....Dec. 1-31.....	3	
	Paris.....Jan. 4-11.....	6	
	St. Etienne.....Dec. 15-31.....	1	
Great Britain:	Glasgow.....Jan. 10-17.....	4	
	Liverpool.....Jan. 4-11.....	3	
	London.....Jan. 4-11.....	872	56
	Newcastle-on-Tyne.....Jan. 4-11.....	5	
Greece:	Athens.....Jan. 4-11.....	1	
India:	Bombay.....Dec. 17-24.....		1
	Karachi.....Dec. 15-22.....	14	3
Italy:	Naples.....Jan. 4-11.....	12	4
	Palermo.....Dec. 28-Jan. 4.....	4	1
Russia:	Odesa.....Dec. 28-Jan. 4.....	4	2
	St. Petersburg.....Dec. 28-Jan. 4.....	8	1

YELLOW FEVER.

Mexico:	Vera Cruz.....Jan. 11-18.....	3	2
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CHOLERA.

Straits Settlements:	Singapore.....Nov. 30-Dec. 7.....		2
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PLAGUE.

India:	Bombay.....Dec. 17-24.....	175	
	Karachi.....Dec. 15-22.....	55	43

Changes in the Medical Corps of the U. S. Army for the week ended February 1, 1902:

DENIEDEMAN, Major WILLIAM F., surgeon, is granted leave for two months, on surgeon's certificate, with permission to visit the United States.

BROOKS, JOHN D., contract surgeon, will proceed to his home, Washington, D. C., for annulment of contract.

SAUNDERS, HERBERT F., contract surgeon, will proceed to his home, Greenville, Ala., for annulment of contract.

SHEPARD, JOHN L., contract surgeon, is granted leave for 20 days, from about January 29.

MEARNS, Major EDGAR A., surgeon, is relieved from duty at Fort Adams, to take effect on the arrival and assignment to duty at that post of Major Louis W. Crampton, surgeon, and will then proceed to Fort Yellowstone for duty, to relieve Contract Surgeon James B. Ferguson, who will proceed to his home, Olivia, Minn., for annulment of contract.

WICKLINE, WILLIAM A., contract surgeon, will proceed from Butte, Montana, to Fort Lawton for duty, to relieve First Lieutenant Henry S. Kierstedt, assistant surgeon. Lieutenant Kierstedt, now at San Francisco, Cal., will, upon the expiration of his present leave, report for duty at the U. S. general hospital, Presidio.

RUTHERFORD, First Lieutenant HENRY H., assistant surgeon, is relieved from further duty in the division of the Philippines, and upon his arrival at San Francisco, Cal., will report at the U. S. general hospital, Presidio.

AGOSTINI, I. P., contract surgeon, leave granted December 17, is extended one month.

THORP, CHARLES W., contract surgeon, is relieved from duty in the division of the Philippines and at the general hospital, Presidio, and will report to the commanding officer, Fourth Infantry, at San Francisco, Cal., for duty, to accompany that regiment to Fort Sam Houston, and upon arrival at that post and the completion of his duty with the regiment named, will proceed to Fort Clark for duty.

OHLINGER, LORIN B., contract surgeon, is granted leave for one month, to take effect when his services can be spared.

PORTER, ELIAS H., contract surgeon, is relieved from further duty in the department of the East, and upon the expiration of his present leave will proceed from Louisa, Ky., to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

WATERHOUSE, M. MANLEY, contract surgeon, is relieved from duty at Fort Wadsworth, to take effect upon the arrival at that post of Major Walter D. McCaw, surgeon, and will then proceed to Fort Hancock for duty.

Changes in the Medical Corps of the U. S. Navy for the week ended February 1, 1902:

VAN REYEN, W. K., rear admiral, detached from duty as chief of the Bureau of Medicine and Surgery, Navy Department, and ordered home to await orders—January 24.

OMAN, C. M., assistant surgeon, commissioned assistant surgeon from December 18, 1901—January 29.

MAYERS, G. M., assistant surgeon, detached from the Naval Hospital, Cavite, P. I., and ordered to the Isla de Cuba—January 30.

¹ Buffalo Medical Journal, November, 1901.

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A Study of the Social Evil.—It is a noteworthy fact that the term "The Social Evil" is at once understood by all. And yet each would readily admit that there are other social evils than prostitution, and that these other evils are highly pernicious. But, so frightful, prevalent, and persistent is this one that it appears to monopolize the name. There has this week appeared a book upon the subject, prepared under the direction of the New York City Committee of Fifteen, which we judge will long be quoted as a remarkable study. The subject is treated in a judicial and in many respects most commendable manner. Every physician who is interested should read it carefully. It purports to be an examination particularly of the conditions in New York, but this contention is hardly warranted by the space devoted to the local question. The fundamental fault of the book is that despite the obvious determination to avoid dilettanteism it is essentially amateurish or dilettante in spirit, method of research, and in conclusions. It is impressionism, not art. It is literature rather than science. This comes from several fatal mistakes made in its preparation. The worst error is that neither its real father nor one of its fifteen godfathers is a physician or a student at first hand of the subject treated. This is a time when expert knowledge is demanded and a grappling directly, not at second hand, with the subject matter taken up. Upon a question say of cattle-breeding, an investigation committee might include one lawyer, one minister, one banker, and one professor of chemistry; but if there was not one farmer or stock-breeder in the committee the investigation would scarcely satisfy either business or scientific demands. Everyone, together with the authors of this book, knows that the question of highly contagious diseases underlies and conditions the whole subject, and yet the name of no bacteriologist, no genitourinary surgeon, and no clinician, is in the committee's list.

The Sanitary and the Moral Regulation of Prostitution.—The excellent book upon the Social Evil to which we have referred is plainly a plea against the European "reglementation" of prostitution by license, registration, and inspection, and in favor of the regulation by a special body of "morals police." It is plain that the authors of the volume, each and all approaching the subject from the ethical side alone, have gone at

their work with the common prejudice against license and sanitary control, and however fair they are determined to be toward the facts and logic of those of the other side they have been utterly incapable of adequate appreciation of the sanitarian's position. We have no desire to blink the appalling difficulties that beset the path of the reformer by either method, and that are encountered by anyone attempting to reach a sensible conclusion from a study of both sides: We are not, indeed, wholly certain that either controversialist is to be trusted and followed. The coercion practised in Paris and Berlin surely has some atrocious consequences, and perhaps has as much evil in its train as the horrors of utter laissez-faireism. What we reprobate is any attempt to ignore or swish aside as unworthy of consideration the facts and figures adduced by those who contend that sanitary regulation has been of great service in lessening the horrors of venereal disease. The awfulness of the scourges of syphilis and gonorrhea are inadequately recognized by the nonmedical authors of the book under discussion. These all physicians know, and they know, too, where the responsibility rests. Dr. Prince A. Morrow is several times quoted by the authors, but not, for instance, as follows: "The regulation of prostitution and the control of syphilis are but controvertible terms." And doubtless gonorrhea produces more suffering than syphilis. If the sanitary regulation of prostitutes, as the committee contends, will not lessen the moral horror, neither will the morals police have any great effect in lessening the woe of venereal diseases.

Cures for the Social Evil.—The Committee of Fifteen recommend prevention of tenement overcrowding; more elevating forms of amusement; improvement of the material condition of the wage-earning class; a better system of moral education; increase of hospital accommodations for the peculiar class of patients; reformatory detention of debauched minors; the recognition of the law that prostitution is a sin instead of a crime; nonsegregation of houses of ill fame; police repression of obtrusive manifestations of prostitution. Good as all these things are or would be, they stimulate a pathetic if not a cynical smile in the judicious. Far from "Revolution," this at best is but "Reform by Rose-water." It is plain that neither by repression, by sanitary or moral regulation, nor by

laissez-faire, are we making any head against the ingravescence social and physical disease. In despair the world is theoretically coming to the old, old conclusion to give up the fight. And yet the let-alone policy is so certain to end social order and existence, that something must be done in the necessity of self-preservation. May we hazard one suggestion? Every country has laws against the wilful spreading of infectious disease by those infected. The community has every right to enact such laws as to diseases in which acquirement is without moral stigma. How much more so, then, of diseases the acquirement of which is usually attended with infraction of the most fundamental ethical and statutory laws? How much more so of diseases that cling to the sinful or criminal for life, and that are passed on to millions of innocent wives, children, and others? It is strange that the world is so stupidly and criminally indifferent to its greatest criminals. Why have the Committees of Fifteen, the repressionists, the regulationists, the moralists, and the laissez-faireists, never suggested the trial of legal punishment of the criminal who wilfully gives another a horrible, lethal, or worse than lethal, disease? It should be an all-sufficing ground for divorce, and no insurance company should be allowed to give a policy to any applicant who has, or who has ever had, venereal disease. Marriage of such patients should be interdicted. Forty-one percent of all pelvic inflammations in women are pronounced due to supposedly-cured male gonorrhea, and 50% of all sterility to the husband's gonorrhea. Why should syphilis and gonorrhea be omitted from the list of infectious diseases of which the law prescribes notification and punishment for wilful spreading? Surely they are highly contagious and ruinous? Why should the public spare its worst enemies, the breakers of the most primary laws of ethics and pathology?

Punish Those who Wilfully Spread Infectious Disease.—Such is the best method of educating the people in matters that affect the public health. In England recently a man traveled the length of the country while suffering from scarlet fever in order to escape from the control of the sanitary authorities. He was fined only \$10. In our country we do not know what states have explicit laws against the crime of wilfully scattering the germs of disease, but in Pennsylvania we have the following section of an act which is at present supposed to be in force:

Section 16.—No person suffering from any of the diseases named in Section 4 of this act shall wilfully expose himself or herself in any street, or public place, or public conveyance, nor shall any person in charge of one so suffering thus expose the sufferer.

Another section provides against such a person entering any hired vehicle or public conveyance. The fine for infraction of this law is not less than \$5 nor more than \$100, in default of payment of which imprisonment for not exceeding 60 days.

The diseases listed in the act as infectious are cholera, smallpox, yellow fever, typhus fever, scarlet fever, relapsing fever, diphtheria, diphtheric croup and leprosy. This wise law is, we believe, not practically

enforced—at least we have never heard of any instance. Another section of the same act makes it mandatory upon all physicians treating patients with the diseases mentioned that they shall at once report such cases to the health authorities. It is said that this clause is frequently evaded by physicians who take the risk of disobeying the law. There is a double reason why the law should be enforced. The first and most evident one is that disease may not be spread by the negligent, the obstinate, or the cranks among the innocent and unsuspecting. But as great a good perhaps will come from the rough method of popular education which such punishment will bring home to the people as regards disease, sanitation, and preventive medicine. In this work the newspaper would willynilly become a means of instructing the people in the nature and danger of disease.

A Study of English Poverty.—There has too long been an absurd fashion of writers and students of sociology to speak in glittering generalities of vaguely known things. At last even in social concerns there is a determination to know the facts before there can be any rational discussion of them. There has lately been published a book entitled "Poverty: A Study of Town Life," by B. S. Rowntree, which illustrates the new trend, and which supplies a startling exhibit of the extent and exact nature of the "Social Abyss." A thoroughly scientific and workmanlike study was made of poverty in one typical English town, York, as illustrative of the general condition in England. The "poverty-line" is held to be the minimum of physically healthful existence, with no allowance for a single item except the primitive animal demands of food, shelter, heat, light, clothing. As to food, Atwater's standard for men of moderate muscular work was accepted—3,500 calories of energy value, and 125 grains of proteids a day, women and children in proper proportions of $\frac{8}{10}$ for a grown woman and $\frac{3}{10}$ for a child under two years of age. Turning this into selected dietaries, without meat, a standard less generous than for government poor-house inmates, Mr. Rowntree found the price of such to be three shillings (75 cents) a week for adults. Adding rent and household sundries brings the requisite up to seven shillings (\$1.75) per week. This does not allow a penny for pleasure, for travel, for the doctor, etc. In York 15.46% of the wage-earning class and 9.9% of the whole population were "submerged" beneath this "primary" poverty-line. If the workingman's average expenditure on drink is added, we have 17.93% of the whole population, bringing the total up to 27.84% of persons in "primary" and "secondary" poverty. Calculate the proportions for the whole country and it is found that some 7,500,000 people of England are at present living below the poverty line, *i. e.*, "in a condition of starved and stunted existence."

The Effect of Poverty on Physical Efficiency.—In Mr. Rowntree's study he found that of 7,000 persons in York living in primary poverty, in 1,130 it was due to death of the chief wage earner; in 370 to his illness or old age; in 167 to being out of work; in 205 to irreg-

ularity of work; in 1,602 to largeness of family; in 3,756 to low wages. Dividing the workingmen's districts into three classes according to income, Mr. Rowntree finds that the deathrate of the lowest is more than twice as high as that of the highest. As to the school children, the average height of boys of 13 is less by $3\frac{1}{2}$ inches in the poorer section than in that of the highest elementary schools, and the difference in weight is more than eleven pounds, with the difference in general physical condition still more marked. The truth of all this is emphasized by the fact that the immense proportion of men offering themselves as army recruits do not come up even to the moderate military standards demanded. The demonstration seems complete—a steady physical degeneration due to the dwarfing and weakening influence of poverty. Now all of this, be it noted, is taking place in the richest nation of the world, and in times of unexampled prosperity. Such things are doubtless not quite so bad with us, and with still younger and newer countries the evil is less manifest. The older the country and civilization, apparently, the greater the number of those in "the abyss," or below the "poverty line." The fact cannot be blinked that the new countries are making great haste nowadays to become old, and to forget their evils illustrated in the old nations of the world. As in Mr. Rowntree's example, the end of the matter is medical. The physical deterioration and the deathrate is the measure and indicator of all other evils. "No civilization can be stable that has for its base this mass of stunted human life." "Stunted human life" is another name for disease, not only social disease, but disease of the individuals composing the social mass. As to the cure, the standards and ideals of the physician and physiologist are guiding and directive. Preventive medicine demands adequate nutrition as a prerequisite of freedom from disease and "physical efficiency." The most certain truth of all as to method is that charity (almsgiving, hospitals, etc.) will never avail either to cure or prevent the awful disease so clearly diagnosed by Mr. Rowntree.

Some interesting physiologic experiments have been made by Dr. Anderson of the Yale gymnasium with his "muscle-bed," a mechanism upon which the human body can be very delicately balanced, and which will show the slightest additional weight upon one or the other side of the point of equilibrium. The object of certain experiments was to determine the weight of blood sent in certain conditions toward either extremity of the body. In mental work the head soon sinks, and in temporary cerebral congestion from study, the center of gravity falls after exercise of the lower extremities. Mere thought, it is asserted, will send a supply of blood to parts of the body so that "mental leg gymnastics" without movement will cause the feet to sink. It has, of course, been long believed that the insistence of thought or attention had a profound effect upon physiologic and upon pathologic bodily conditions, but this mechanic demonstration of at least one of the methods of influence is very suggestive. A question at once arises as to the discrimination between conditions in which attention will, on the one hand, produce or increase disease in a

part, or will be of therapeutic use. It is doubtless true that the health or disease of a part depends more upon the transmission thither of nerve currents than of those of the blood. Indeed in the "mental gymnastics" the increased flow of blood must depend initially upon the influence of nerve-action. It thus becomes almost impossible to differentiate between the products of primary, neural, or mental functions, and those that are secondary. The experiments at least demonstrate the fact that pure thought or attention may change physical conditions that many had believed not under the control of consciousness. The cerebral function has been described in general terms as inhibitory, but in Dr. Anderson's experiments it does not seem to be so. Could he devise a method whereby attention would shut off the blood supply of a part? If so, the fact would give us some clearer therapeutic hints.

Manufacturers of Disinfection-Apparatus vs. Vaccination.—There lies before us a signed circular of a disinfection device, in which the advertiser is far from hinting at the existence of any antivaccination virus in his own person. A letter accompanies the circular in which it is said that "the best means for the prevention of smallpox should be adopted; that many people have been vaccinated and have suffered severely; that some of those vaccinated have also been victims of smallpox; and that a number have been vaccinated, but owing to the inert virus it has not taken. The only positive, safe means is thorough disinfection, etc." This letter, with its "insinuos," is only a part of the hypocritical plot. In the envelop is an unsigned circular, in which neither the proprietary disinfection device nor the advertiser's name is mentioned. It has the following scare-headlines:

HOW SMALLPOX WAS ROUTED BY VAPOR.

Cleveland, Ohio, Freed From the Disease When
Vaccination Failed.

TOM JOHNSON'S MAN DEFEATS SMALLPOX.

Made Health Officer by Accident, Dr. Friedrich Successfully Combats Epidemic—And
Not an Arm Bared.

In the yellow journal accounts quoted in this circular, the following sentences strike the eye:

"Quarantining and vaccination seemed to have no effect."

"No man had to bare his arm."

"Disinfection is the thing to prevent the spread of smallpox."

"Smallpox germs will not thrive where it (*sic*!) is properly disinfected."

And physicians are asked to buy and recommend this manufacturer's disinfection apparatus!

Syndicating the Drug Stores.—A movement is reported to have been instituted to put all of the drug stores of cities that will enter the organizations, into a trust or combination. There are said to be 100 contemplating joining in Philadelphia, and in Pittsburg, it is reported that forty have been united in this way. The advantages claimed are cheapness in purchasing goods, the establishment of a central pharmaceutical laboratory and manufactory, better working hours for clerks, and an 8%

annual dividend. So many of our modern city drug stores have become bricabrac shops, soda-water counters, and cut-rate purveyors of the products of the patent medicine syndicates, that the physician is little concerned with their business methods, less with their ethical standards, and perhaps still less with their pharmacy. The compounding of prescriptions in a scientific and professional manner depends so peculiarly upon the personal character and professional honor of the pharmacist that we must doubt the wisdom of his combining with others in a trust, for purely business purposes. We sincerely hope there will be a liberal portion of druggists who will not do so, and who will keep legitimate pharmacy as their chief concern. Their true calling is not surely to be nothing more than agents for "healing institutes," and for the sale of headache powders (with premiums), numberless cure-alls, and oceans of soda water.

Governmental supply and control of vaccine lymph in England is being urged. A resolution has been introduced in the Royal Medical and Chirurgical Society that the government should supply all practitioners with glycerinated calf-lymph, should examine all imported lymph and inspect all manufactories. The *British Medical Journal* supports all three propositions. The reasons for the step do not apply to the same extent to our American conditions, and indeed the interests of private manufacturers in England who have already established businesses would, of course be ruined by free supply of lymph by the government. In England the government has made vaccination obligatory, subject to the absurd conscience-clause, and this fact renders it logical that it should also supply the virus, especially since it is largely responsible for the substitution of the calf-lymph for the humanized virus. But our national government cannot command in these matters, and therefore can only at most carry out the functions of testing and inspection.

The punishment of the antivaccinationist has been gravely proposed, but if smallpox keeps up its ravages upon the unvaccinated, these poor victims may soon cry out that they have been sufficiently punished by the disease itself. In one city there have been reported examples of such natural punishment in the families of four antivaccinationist physicians. There is a peculiar fitness in this that reminds us of some La Rouchefoucauldian maxim. The newspapers chronicle almost daily the fact that some member of the antivaccination society is down with smallpox. The crime comes to notice with the added line that his wife and three children have also been seized. The duty of the state is imperative to protect minors. When the chief medical authorities of such cities as Philadelphia and Chicago can say that not a smallpox death has occurred in the properly vaccinated, the community is authorized to command compulsory vaccination, and to punish the obstreperous ignorance of those who wilfully scatter the disease.

"**Interviewitis**" is a word nearly as good and entirely as bad as many that have been recently coined,

and it is surely on a par with the thing it is designed to name. Almost every week one sees reports of interviews in the daily papers, all properly earmarked, none ever disavowed, in which it is plain that the doctor has been only too eager to be quoted. The interview is usually upon a matter about which the physician named has little knowledge and no special qualification for instructing the lay public whatever. His opinions are therefore without weight, and are almost always absurdly trite or erroneous. Concerning a recent outbreak of this kind, a correspondent, who is honored by the entire American medical profession, writes this in a private letter:

What does seem to me to be a matter of real importance is the rapidly growing tendency of not a few members of the profession to *talk* through the *newspapers*. There can be no good motive for this. It is due to a growing disregard for the proprieties of professional behavior. What would, twenty-five years ago, have led to the expulsion of a member from the best societies, is today tolerated with scarcely a comment. The inevitable result must be the lowering of the profession at large in the estimation of the public.

Suicide and Life Insurance Companies.—A recent decision by the Supreme Court of Ohio makes the suicide clause in policies of no avail. Most insurance companies have, we believe, practically given up the contention, so that we may now consider the American method settled that the policies of suicides must be paid the same as if death had come from natural causes. It is an indication of the growing tendency of our times to hold that suicide is not a crime. The laws that have been passed to punish attempted self-destruction are inoperative, and the habit of the world is to pity rather than to blame in such cases, and this is one cause of the increase of suicide in all civilized nations. If this increase should reach the degree that it did in Roman times the effect on the insurance companies would be disastrous, or all premiums would have to be greatly raised.

The Riverside Association of New York is organized "to help the poor to help themselves." It maintains a gymnasium, kindergarten, clubs for boys and girls, a penny provident saving fund, sewing and cooking schools and public baths. The Hydriatic Department is designed for the water treatment of indigent patients sent by physicians or dispensaries. Dr. Simon Baruch, so well known for his great work in hydrotherapeutics, is the medical director. During the past six years 1,848 male and 1,780 female patients have been received for water treatment from many physicians and hospitals. In 1900 as many as 12,945 treatments were administered. There are three other similar institutions in the world, connected with the university clinics at Heidelberg, Vienna, and Berlin. We are glad that one of the four institutions of this kind is in America. There should be one in every large city. A bath, like every other therapeutic agent, may be bad or good and of many degrees of goodness.

The assurance of the lives of women is a problem of the life insurance companies which they should solve in a better manner as regards the financial principles

involved and in accord with the demands of justice. The majority of companies charge women higher premiums, the differences in this respect being illogical, while not a small number make no extra charge whatsoever. The claim is made that the increased risk is actually justified by the function of maternity. Some companies therefore make no extra charge after the age of 50. It is pertinently asked why some companies find female risks profitable at ordinary rates. We suspect the explanation of the whole problem will be found to lie in prejudice and custom, and that great financial success will come to those companies which invite the ladies at ordinary rates. There is no reason in vital statistics for excluding or fining them.

The question of voluntary human vivisection is brought up by the offer of a Brooklyn physician to give his body to physicians for a period of one year for purposes of scientific experimentation. We have previously said that such "martyrs to science" are not wanted by the profession and that the results of human vivisection can be of little or no direct good, while the indirect harm to medicine is certain. It is reported that the District Attorney of Brooklyn states that he will interfere in his official capacity should the hospital designated accept the offer made to it by the would-be-martyr. We hope he will do so, and that an end may be made of such proposals of the over-zealous. There can be no surer method of injuring science and of bringing hospitals and the profession into disrepute than human vivisection.

Quarantine After Proper Disinfection is Unnecessary.—This is the conclusion reached by most sanitary authorities. The reserve of doubt consists in the uncertainty as to what is proper and thorough disinfection. Physicians, nurses, etc., in attendance upon smallpox patients do not convey the disease to others when adequate precautions have been taken. It is even contended that an exaggeration and extension of quarantine regulations after the patient has been removed, without thorough fumigation, tends to increase the number of cases, while with perfect disinfection of the house, etc., and with plenty of fresh air and sunshine, there is no danger whatever of the multiplication of cases.

The Relative Cost of Smallpox and Vaccination.—A Common Councilman of an Eastern city estimates that the present epidemic of smallpox will cost the city one-half of a million dollars. In one country township we know that one case of the disease cost the citizens several thousand dollars. It is hardly too much to say that at the present time the disease is costing the American people not less than twenty million dollars a year. Is this a paying investment? Is it good business? How much would it cost to vaccinate every citizen? Certainly a small part of that now wasted in curing, quarantining, and burying. Let us have compulsory vaccination!

Pulmonary tuberculosis not a dangerous contagious disease.—Such is the opinion of the New York Academy of Medicine. With but three dissenting votes

it has adopted a resolution opposing the action of the Treasury Department in its decision as to excluding consumptive immigrants. We hope the other medical societies of the country will also bring their influence to bear upon the Department and that there may soon follow a rescinding of the inhuman rule.

EDITORIAL ECHOES

Professional Unification.—The state recognizes all who have complied with the laws regulating the practice of medicine as legally qualified practitioners and does not discriminate in favor of or against any one school. We know no pathy; dogmas have long since faded from our memories. Let us continue to exert our influence in favor of the unification of the profession, not only of this state but of the entire country. The advantages of unification we need not now consider. Our doors are open to all who practise rational and natural medicine; all who are willing to discard dogma, and who have given the state proof of proficiency and are of good moral character. Let us remind the societies throughout the state that only by encouraging a liberal spirit, and by receiving into their ranks those whom the law has recognized as qualified to practise physic, can we gain the influence which we ought to wield.—[Inaugural address of Dr. Henry L. Elsner, Medical Society of the State of New York.]

Smallpox in London.—The records of the Metropolitan Asylums Board provide useful material for the purposes of comparison. Between the years 1884 and 1900 inclusive 17,900 cases of smallpox were received into their hospitals and 2,198 persons were employed therein. Of these 17 contracted smallpox, of whom 13 were not revaccinated until after they had joined the hospital ships, while four were workmen who escaped medical observation. During the past year not a single case of this disease has occurred among the staff of the hospitals. A concluding paragraph in the report of the Statistical Committee is an extract from a report published in 1872; this report states that out of upwards of 14,800 cases of smallpox received into the hospitals only four well-authenticated cases were treated in which revaccination had been properly performed. Without the aid of the public, sanitary authorities and medical practitioners can do but little, but with ready cooperation the prevalence of smallpox could be largely reduced.—[*The Lancet*.]

Eccentricity and Bravado.—When members of our own school participate in such inanities [as belief in the noncontagiousness of smallpox and the inefficiency of vaccination as a preventive] we feel that it is time to utter a few words of emphatic disapproval as voicing the sentiments of our branch of the profession. If the evil results of their delusions were visited upon themselves alone, no one could complain; but they become an important means of carrying the contagion far and wide! A practical illustration of those having eyes seeing not has just been called to our notice. Two physicians, both prominent antivaccinationists, both disbelievers in the germ theory, attended a case of smallpox. In each instance the disease has been carried home to their families. In the case of a third disbeliever in vaccination the effects fell upon himself, for he is now ill with smallpox. A fourth man attempted to show his contempt for the contagiousness of smallpox by removing a patient with that disease to his own home, whereupon his outraged fellow-citizens burned him in effigy. Such eccentric conduct on the part of members of a liberal profession is to be deplored.—[*The Hahnemannian Monthly*.]

AMERICAN NEWS AND NOTES.

GENERAL.

Triplets.—According to recent reports, there are living at present in the United States five sets of triplets who have attained an age of 45 or over. The oldest set, aged 55, live at St. Clair, Mich.

Population of the United States and Possessions.—The Census Bureau reports that the entire population of the United States, including all outlying possessions, in 1900 was 84,233,069. Of these 75,994,575 were in the United States proper, 6,961,339 in the Philippines, 953,243 in Porto Rico, 154,001 in Hawaii, 63,592 in Alaska, 9,000 in Guam and 6,100 in American Samoa, while 91,219 persons in the military and naval service were outside of territory of the United States.

Nostalgia in the Philippines.—The poor health of many Americans in the Philippines has been diagnosed as due to nostalgia. The Philippine Commission has been urged to make an appropriation for a daily cable news service from United States, in order to bring Americans in closer touch with their home life. A fund sufficient to cover the cable tolls for 70 words a day for three months has been obtained by subscription. It is probable that an amount to cover the tolls for 100 words will be received before the news service is inaugurated. The Government will send bulletins free to all points on military wires.

Need of Hospitals.—Surgeon-General George M. Sternberg in a recent address made the motion that Congress be petitioned for an added appropriation of \$50,000 for hospital purposes, stating that the regular appropriation of \$150,000 was entirely inadequate since brick buildings have superseded the frame structures formerly used. He also begs that an appropriation of \$5,000 be asked for hospital quarters, as the present quarters at many of the posts are insufficient to meet the demands of a constantly increasing garrison. He makes the statement that there are ample hospital facilities in the Philippines, as some hospitals left by the Spaniards and also private residences have been converted to hospital use.

EASTERN STATES.

An isolation hospital for the treatment of contagious diseases will be provided for Greenwich, Conn., by Robert M. Bruce, who has purchased for this purpose a plot of 15 acres where he will erect a number of one-story buildings. Each house will be kept for a separate disease and a high wall to prevent escape of patients will enclose each building.

The Newport (R. I.) Medical Society at a recent meeting elected the following officers to serve during the present term: President, Dr. C. F. Barker; vice-president, Dr. William S. Sherman; secretary, Dr. Mary E. Baldwin; treasurer, Dr. Douglas P. A. Jacoby; librarian, Dr. H. J. Knapp; curator, Dr. F. J. Davis, executive committee, bacteriologist C. W. Stewart, Drs. V. Mott Francis, Wm. S. Sherman and H. G. Mackaye.

The Proctor Fund.—Under the will of Miss Ellen O. Proctor, Harvard College has come into possession of \$50,000 to constitute the Proctor fund for the study of chronic diseases. The income of the fund will be devoted to the care in a hospital or hospitals of persons suffering with chronic diseases and to research into the nature and treatment of those diseases. The heads of the departments of Theory and Practice, Clinical Medicine and Pathology in the Harvard Medical School will control the special disposition of the income of the fund.

Vital Statistics.—The recent report of the registry department shows that the birthrate in Boston is 29.15 per 1,000 inhabitants, and exceeds that of any other large city in the country, but the increase is chiefly through foreign stock. Of the whole number of fathers who had children born to them in 1900 only 17% were Boston born and 34% American born (inclusive of Boston) while no less than 62% were foreign born. The whole number of mothers yields similar percentages. The percentage of Russian and Italian fathers about equals the fathers who are native in Boston, though many of the latter are of foreign parentage. In 1900 Ireland furnished a much larger percentage of the fathers than the Boston-born. In Ward 6, which holds the greatest number of foreigners, there was one birth for every 22 of population, while in Ward 11, which contains the greatest number of American-born parents, there was but one birth in every 81 of population. Further, the report shows that the excess of males was 93 among children of American parentage, and among those of foreign parentage the excess was 163. American mothers seem to have proportionately the largest number of stillborn children, and plurality births occur almost exclusively among those of foreign birth or extraction. In Ward 6 the deathrate was one in 41 of its population, while Ward 25 had one death to 81 of its population. In Ward 6 the mortality of children under one year is 8.74 of the whole number, against 1.56 in Ward 11.

NEW YORK.

Stony Wold Sanatorium.—The first annual meeting has been held recently of those interested in the establishment of this institution for the care of persons suffering from incipient tuberculosis and unable, for pecuniary reasons, to obtain proper climatic treatment. To carry on the work 10 auxiliary societies have been formed in New York City and its suburbs which have a membership of 500. Through these more than \$48,000 has been obtained, and the building will be erected in the near future on the Lake Kushaqua property in Franklin county bought last September. This has an elevation of 1,730 feet above sea-level, and comprises 1,200 acres.

Milk Inspection.—Dr. Ernest J. Lederle, President of the Health Board of New York City, has ordered each of his corps of veterinary surgeons to make a report of all the dairy farms in his district. This will furnish the health authorities with accurate information regarding what portion of the milk-supply of the greater city, they can control and will enable them to institute and maintain a system of strict sanitary inspection which will be done at once. Only those farmers who consent to live up to the sanitary standard set, will be licensed to sell milk. The Health Board has jurisdiction over the milk-supply as soon as it enters the city limits, and the right to inspect that produced in the greater city and in the boroughs of Richmond, Queens, the outlying districts of Brooklyn and the Bronx.

Lying-in Hospital.—The new eight-story building of steel, brick and stone, at Second Avenue and Seventeenth Street, built by the generosity of J. Pierpont Morgan, at a cost of \$1,250,000, is now open for patients, and is said to be fitted with appliances not duplicated elsewhere. The Society of the Lying-in Hospital, into whose hands this building is given, is 103 years old. About 12 years ago it united with a group of five physicians, who, for the purpose of giving private instruction to medical students in maternity cases, had established a midwifery dispensary. For practical demonstration cases were sought among the poor, and this scientific undertaking on the doctors' part became a blessing to the poor of the tenements, and appeals to them became so numerous they were glad to join the established society. Since this combination, from 1,000 to 3,000 poor mothers have been cared for annually. This building is for those who, without other shelter in such cases, seek it.

Tuberculous Immigrants.—Concerning the decision made recently by the Treasury Department of the United States upon recommendation of the surgeon-general of the Marine-Hospital Service to classify pulmonary tuberculosis with dangerous contagious diseases, the New York Academy of Medicine, at a meeting held February 6, adopted by a large majority the following resolutions:

Resolved, That the New York Academy of Medicine deeply deprecates this decision, which is not based either on clinical experience or on scientific experiments.

Resolved, That the Academy considers the exclusion of nonpauper tuberculous immigrants and consumptive aliens visiting our shores, unwise, inhuman, and contrary to the dictates of justice.

Be it further *Resolved*, That while the Academy is convinced of the communicability of tuberculosis and urges all possible precautions against the spread of the disease occasioned by sputum and tuberculous food, the Academy is opposed to all measures by which needless hardship is imposed upon the tuberculous individual, his family, and his physician.

PHILADELPHIA, PENNSYLVANIA, ETC.

The Publication Committee of the Christian Scientists in Pennsylvania denies that the family referred to in our editorial on page five of our issue for January 4, were Eddyites.

Bequests to Hospitals.—Under the will of the late William McClary, of Philadelphia, the Episcopal, Presbyterian, St. Joseph's, German, and Samaritan Hospitals each receive \$5,000 for the endowment of free beds in memory of the testator, his wife, son and sister-in-law.

Proprietary Medicine.—In a recent decision in Pennsylvania, a druggist was held not guilty of negligence in selling to customers proprietary medicines in the packages and under the label of the patentee or proprietor, without having made an analysis of the contents.

Municipal Hospital.—The crowded conditions in the smallpox wards have been relieved by the addition of three new wards, which have just been completed. Over 300 smallpox patients are reported to be under treatment at the hospital. Every precaution is being taken by both physicians and nurses to prevent contagion being carried to the other wards or outside the grounds.

Typhoid Fever.—During the four weeks ended February 8, 653 new cases of typhoid fever have been reported to the health authorities, with 45 deaths. Most of these are in West Philadelphia, where there is a very poor water supply. The reservoir from which the supply is obtained is entirely too small, and therefore the people are compelled to drink from the direct pumpage of the river regardless of the condition of the water. There will be a new filtration plant finished by February, 1903, and until it is in operation physicians advise that all drinking waters be boiled.

Legacies to Hospitals.—Under the will of the late J. Alfred Kay, of Philadelphia, the Pennsylvania, Germantown, University, Jefferson, Orthopedic and Polyclinic Hospitals receive \$5,000 each for the endowment of free beds to be named in memory of Mary Kay, a sister of the deceased. The St. Agnes's, St. Joseph's, Jewish, Hahnemann, Presbyterian, German, Children's, Howard, Medico-Chirurgical and Gynecean Hospitals receive \$1,000 each. The will directed that the income of the entire estate was to go to a sister, but as she recently died the bequests became immediately available under the terms of a codicil.

Widener Memorial.—The erection of the buildings for the Widener Memorial Training School for Crippled Children will be begun very soon, on a tract of 36 acres situate at Old York Road and Thorp's Lane. The plant will consist of a convalescent and educational building, the industrial building and two cottages. The buildings and endowment will represent an expenditure of about \$2,000,000 by Peter A. B. Widener in memory of his wife. At the institution the helpless children will receive medical and surgical attention, as well as a general education and instruction in such lines as will assist them in supporting themselves.

The Nathan Lewis Hatfield Prize for Original Research in Medicine.—The College of Physicians of Philadelphia announces through its Committee that the sum of \$500 will be awarded to the author of the best essay in competition for the above prize. Subject: "The Relation between Chronic Suppurative Processes and forms of Anemia."

Essays must be submitted on or before March first, 1902. Essays must be typewritten, designated by a motto or device, and accompanied by a sealed envelope bearing the same motto or device, and containing the name and address of the author. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers on their agents within one year.

The Committee reserve the right not to make an award if no essay submitted is considered worthy of the prize.

The treatment of the subject must, in accordance with the conditions of the Trust, embody original observations or researches of original deductions.

The competition shall be open to members of the medical profession and men of science in the United States.

The original of the successful essay shall become the property of the College of Physicians.

The trustees shall have full control of the publication of the memorial essay. It shall be published in the Transactions of the College, and also when expedient as a separate issue. Address

J. C. WILSON, M.D., Chairman,
College of Physicians,
219 South Thirteenth Street, Philadelphia, Pa.

SOUTHERN STATES.

Typhoid.—Fearing an epidemic of typhoid fever the Board of Health of Huntington, W. Va., has ordered that all water for culinary and drinking purposes shall be boiled. It is said that more cases of the disease prevail in the city than were ever known before.

Milk Dealers' School.—Dr. Raymond, of the Health Department in Brooklyn, moved by hearing repeated complaints of retail milk dealers against the wholesalers who are given they claim to adulterating the milk, has decided to establish a school of instruction in which the use of the lactometer shall be taught so that the retail men may themselves detect adulteration and make specific complaint to the department.

Quarantine Station.—During 1901 39 patients were treated at the quarantine station at Baltimore, Md. Of these 21 were smallpox cases, but only 14 of them came from the city, the rest being from the counties. Sixteen persons were quarantined and there were two cases of scarlatina. Inspections were made of 1,007 vessels and the fees and fines amounted to \$17,805. The expenditures amounted to \$17,961.17. The per capita cost to the city of the 39 patients from Baltimore was only about \$3.55. The quarantine physician, Dr. Heiskell, recommends the purchase of another and larger quarantine boat, the erection of a crematory for the cremation of persons who die from smallpox or yellow fever, the erection of a detention barracks for suspects, and the establishment of baths in connection with these barracks.

WESTERN STATES.

Doctor's Bill.—The court considers valid the bill for \$1,000 presented by Dr. William Wilson of Coldwater, Mich., for attending a family stricken with smallpox and effectually preventing it from spreading further.

New Sanatorium.—It is announced that General William J. Palmer has donated 100 acres of land and \$50,000 for the establishment of a sanatorium, on the German plan, in Colorado Springs for tuberculous patients. As it is planned there will be two buildings, costing \$200,000 and \$50,000 respectively, in the first of which 100 patients able to pay a fair price for treatment will be accommodated and the other will have capacity for 50 patients who can pay little or nothing. It is expected that the revenue from the larger building will maintain the smaller one.

FOREIGN NEWS AND NOTES

GENERAL.

Foot-binding.—The Dowager Empress of China has issued an edict prohibiting foot-binding in the kingdom.

Training School for Nurses.—The great scarcity of nurses in Turkey has led to a proposition, made by the faculty of the American College for Girls in Constantinople to its trustees in Boston, that in connection with the academic course a medical department in the form of a hospital and training school for nurses, should be established. It is claimed there is a splendid opening for nurses in taking charge of the native women who lead idle, aimless lives and take very little air or exercise and who consequently develop many real or imaginary diseases. These women greatly need someone to instruct them in the simple laws of hygiene and the care of the body and nurses would be heartily welcomed by them. The Turkish hospitals import their nurses from Germany.

GREAT BRITAIN.

Smallpox Insurance.—Many insurance policies against smallpox are being written in London. Some of these are for sums as large as £1,000 and £2,000, at the annual rate of 10 shillings per cent. Persons can be insured against smallpox which is in a house on either side of them.

The possibilities of the phonograph in the accurate registration of sounds forms the subject of a demonstration by McKendricks before the British Association, Glasgow. The sounds emitted by a large phonograph may be intensified by causing the waves to fall upon a microphone which in turn affects a loud-speaking telephone. It was suggested that language might be recorded, not by words and syllables, but by signs or symbols which should indicate the necessary movements of the vocal and of the articulating organs for the production of any given sound. Thus phonography would become a means of accurate registration of the actual sounds and accents which might be stored away for the use of future generations. Allusion was made to the experiments of Marage, who was able to reproduce vowels with a degree of fidelity by artificial contrivances and to Jespersen's alphabetic method of recording sounds by means of letters and symbols.

CONTINENTAL EUROPE.

Pellagra.—Statistics sent to the Surgeon-General of the United States Marine-Hospital Service, regarding pellagra in Venice, Italy, shows, by comparison of the records for the years 1898 and 1901, that the disease has decreased in that province. There were 3,902 cases in 1898, as against 3,433 cases for the year 1901.

Bureau of Information.—It is reported that the Council of the United States Faculty of Medicine is considering the establishment within the precincts of the Faculty, of a bureau of medical information for the benefit of visitors to Paris. An official will be in attendance to furnish all necessary information regarding lectures, courses of instruction, hours of hospital attendance, and the foreigner will be able to obtain also a list of his fellow countrymen resident in the city.

Tuberculosis Inquiry.—A commission of 32 members, appointed by the French Parliament to investigate the subject of pulmonary tuberculosis in France, its extent and cause and progress made toward its cure, has submitted a report through M. Amodru, who says that 150,000 people die annually of that disease in France, and that Paris is one of the great centers. Statistics prove that tuberculosis is on the increase in France and Italy and is decreasing in England, Germany and other countries. It attacks people of all ages, but it is established by statistics that it is between the ages of 15 and 60 that it is contracted and proves fatal, and that men are more liable to it than women. The army, the marine, the railroads and all other conglomerations prove to be centers for its ready development. It was Villemain, in 1865, in a celebrated letter to the Academy of Medicine, who first declared the contagiousness of tuberculosis. Moist heat, sunlight and fresh air are the best known agents for the destruction of the bacilli of tuberculosis, which have great power of resistance, for after heating them 3 hours at a temperature of 100° they still retained all of their virulence. Savinski drew his conclusions from many experiments with sputum "that these expectorations could retain their virulence indefinitely while they remained in darkness, but that they lost it when exposed to the action of sunlight." All authorities agree that the breath and physiologic secretions of the patient contain no bacilli and afford no contagion. Although the disease may be communicated by milk and perhaps meat, it is the sputum, dried and reduced to dust, which is the active agent when it rises in the air, enters the respiratory organs and infects the bronchial tubes and lungs. Heller calculates that the bacilli expelled by a tuberculous patient in one day numbers not less than 7,200,000,000. Although tuberculosis may not be hereditary, it is certain that the children of consumptives, by the mere fact of their birth in a state of organic weakness, are predisposed to the

bacilli. In the same manner children and adults characterized by infantilism are more subject to tuberculosis than others. General debility, overwork, every kind of excess predisposes one to that disease. Professor Landouzy says "alcohol makes the bed for tuberculosis." Tuberculosis produced by alcohol generally occurs at an advanced age and its progress is very rapid. Of 252 patients suffering from pulmonary tuberculosis Jacquet found 180 caused by alcohol. It has been shown that the increased mortality from tuberculosis in France is in exact proportion to the increased consumption of alcohol. The prohibition and punishment of spitting on floors is recommended, and the progress made in that direction in the United States marked. Other recommendations are profuse sprinkling before sweeping, thorough ventilation and disinfection of rooms after the departure of patients, careful inspection of meat and milk, the prohibition of alcohol among soldiers and the placing everywhere of large metallic spittoons containing an antiseptic solution. The report declares that pulmonary tuberculosis is curable at all stages. Mr. Darenberg affirms that "during the last ten years he has cured a number of consumptives, who have resumed their active occupations, have married, and now have healthy children." The one efficient remedy is life in the pure open air of mountain or seashore, night and day, combined with absolute physical and mental repose and plenty of food.

OBITUARIES.

Paul Fortunatus Mundé, a well-known physician of New York, February 7, aged 55. Dr. Mundé was born in Dresden, Saxony, and came with his parents, when 3 years old, to Florence, Mass., where his father founded a water-cure establishment, one of the earliest in the country. In 1863, after having attended the Boston Latin School, he entered the Yale Medical Department, but abandoned his course to serve as acting medical cadet in the Civil War during six months of 1864. In 1866 he graduated from the Harvard Medical School, and went to Germany and served as volunteer assistant surgeon on the Bavarian side in the war of 1866. When he was mustered out of the Bavarian army he became resident physician to the maternity hospital in Würzburg, where he came under the influence of Scanzoni, the gynecologist. In 1870 he enlisted for the Franco-Prussian War, in which he served as battalion surgeon with rank of first lieutenant in the Bavarian army, and received from the Emperor the Iron Cross for his heroism in rescuing patients from a burning hospital in the Paris suburbs. In 1871 he took his diploma as Master of Obstetrics from Vienna, and after spending two years in visiting European hospitals commenced practice in New York in 1873, devoting himself to gynecology and consulting obstetrics and became connected later with the staffs of several city hospitals. He was also editor of the *American Journal of Obstetrics* from 1874 to 1892; President of the New York Obstetrical Society from 1886 to 1888, and a member of many other medical societies. He was an honorary fellow of the Edinburgh Obstetrical Society and honorary President of the International Congress of Obstetricians and Gynecologists, and author of several standard books on his specialty. In 1897 Dr. Mundé received the degree of LL.D. from Dartmouth, where he had been professor of gynecology since 1880.

Adam Trau, of Philadelphia, president emeritus of the Medical Board of the German Hospital, February 7, aged 62. Dr. Trau came to Philadelphia from Germany early in life, was educated at the High School and the Medical School of the University of Pennsylvania, from which he graduated with honors. He served all through the Civil War as surgeon in the navy.

W. Murray Weldman, of Reading, Pa., February 8, aged 66. He was one of the leading physicians of the eastern part of the state, associated with the Reading hospitals, President of the Berks County Alumni of the University of Pennsylvania. He served as a surgeon all through the Civil War.

T. A. Hudson, of Stockton, Cal., February 5, aged 83. He served for four years as surgeon of the Twenty-sixth Iowa Regiment in the Civil War, and for a number of years was physician in charge of the San Joaquin Hospital.

Henry Corson, of Forest City, Pa., February 6, aged 108. Dr. Corson was born in Camden, N. J., began the study of medicine in Philadelphia in 1812, and practised medicine for 75 years in Susquehanna County, Pa.

Edwin Wollaston Pyle, first assistant surgeon of the New York Ear and Eye Hospital, at his home in Jersey City, February 7, aged 53.

William E. Troxell, of Lilly, Pa., was struck by a train and killed while returning from a professional call February 9, aged 32.

E. H. Plank, a prominent physician of Christiana, Pa., February 5, aged 52.

M. L. Herr, a prominent surgeon of Lancaster, Pa., February 8, aged 63.

John Burbank Andrews, of Lynn, Mass., February 10, aged 62.

Joseph Wilkins, of Baltimore, February 5, aged 69.

Alonso Boothby, of Boston, February 9, aged 62.

Edward Swartz, of Knoxville, Ill., February 4.

SOCIETY REPORTS

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

NINETY-SIXTH ANNUAL MEETING, HELD AT ALBANY, JANUARY 28, 29, 30, 1902.

[Concluded from page 217.]

The Civilized Indian: His Physical Characteristics and Some of His Diseases.—A. D. Lake, Gowanda, gave a graphic description of the Iroquois in their pristine condition, when they lived according to the laws of nature, and became such perfect types of manhood as to fully justify the description given of them as the Romans of the new world. They were equally distinguished for their prowess and their intelligence. A system of hygiene formed part of their religion, and diseases now so common among their descendants were largely unknown to them. Since they had come into contact with the white man they had become degenerate and feeble, both as a race and as individuals. They ceased to depend for their livelihood on hunting and fishing; their food rapidly changed from its primitive form; they were deprived of their spirit of independence; drunkenness became common among them, and they became subject to European diseases from which they had previously been free. The change was particularly noticeable in the character of their children, who had imperfect and poorly developed physiques, in striking contrast to those of their progenitors; and when they grew to manhood they were weak and ailing, the consequence being that the same amount of work could never be got from them as from white laborers. They were particularly liable to be affected by changes of climate, and were more prone than white people to tuberculosis, bronchitis and other diseases, the mortality among them being correspondingly high. In few instances was it found that they were able to stand operations well. One curious fact was that while history showed that syphilis was once very prevalent among them they seemed to have become immune to that disease, though gonorrhea existed among them to a remarkable extent. The low-water mark in the physical degradation of this particular tribe of aborigines was apparently reached some 30 years or so ago. Since then institutions have been established for the training of Indian children, and the results have been so far satisfactory as to give ground for the belief that the physical regeneration of these people was not an impossible task. A supplementary paper on **Indian Medicine**, by Nelson W. Wilson, Buffalo, was to have followed, but the author was absent when his name was called.

Human asymmetry was another topic of general interest somewhat out of the usual line of subjects discussed at medical meetings. It was introduced in an able paper by W. S. Ely, of Rochester, who began by remarking that no individual was constructed with absolute symmetry, and proceeded to show that in this respect the human race was not different from nature generally. A close study of the matter showed a marked asymmetry in man. The nearest approach to symmetry was in infancy; asymmetries developed with growth. Two sides of the head were seldom alike. The ears rarely corresponded in place or size. There were generally pronounced differences in the eyes, and it was the same with the nostrils and the turbinate bones, the teeth, the tonsils, and other parts which the mirror of the laryngologist made apparent. Pelvic asymmetry was no less marked than that of the testicles. The feet were never alike by nature, and the shoemaker often assisted to increase the difference between them. Most people had their best eye and their best ear; while nearly all of them would find on examination that in walking they had one leg which led while the other lagged. The heart itself was very unsymmetrical; parts of the brain were unequally developed; head and ear aches were often one-sided; the pulse was very unequal. The diagnostician was frequently confused by the asymmetry of symptoms, for normal as well as abnormal asymmetry had to be taken into account, and it was not always easy to distinguish between them. Every child, he maintained, should be stripped and examined with a view to the discovery of asymmetries, some of which might be corrected, though it was a question to what extent absolute symmetry should be aimed at. The paper was discussed by Drs. Hopkins and Howe, Buffalo, and Dr. Carlos F. McDonald, New York, the last-mentioned of whom referred to the too common tendency to assume degeneracy on the part of criminals and others because of certain asymmetries which were supposed to make them irresponsible. The fact was that there was no perfectly symmetrical brain or body.

Goiter: Medical and Surgical Treatment.—Thomas P. Scully, Rome, said he had used many different forms of treatment, with different results. The fact that results varied so much probably accounted for so many remedies being used. His own experience covered everything from mercury to adrenalin. Carbolic acid and iodine he had found to yield good results in some cases, and there were other cases in which he considered electricity a useful aid. In the cystic or fibrous forms of goiter, however, it was useless to experiment with drugs or electricity; surgical interference in these cases was imperatively called for, and by its means the mortality had been reduced to about 1%.

A case of sarcoma of the tonsil was reported by Arthur G. Root, Albany; Dr. John O. Roe, Rochester, described his method of treating fractures of the nose; and **The differences between constitutional and catarrhal deafness** were discussed by Sargent F. Snow, Syracuse. **The use and abuse of atropin and other mydriatics in determining the refraction of the eye**, as well as the diseases of that organ, was the subject of a paper by Frank Van Fleet, New York. Edward L. Peck, New York, contributed an essay on **Glioma of the Retina**, and Lucien Howe, Buffalo, exhibited an **apparatus for testing the eyes in a position of rest**. Thomas R. Pooley, New York, adduced evidence to prove the priority of his inventions in connection with the **sideroscope**.

The treatment of pelvic suppuration was the subject of a paper by Dr. Charles P. Noble, Philadelphia, which will be published in *AMERICAN MEDICINE*.

Gonorrhea of the Prostate.—John Vander Poel, New York, dwelt on the importance of confining the disease to the anterior part of the urethra. Of course, the destruction of the gonococcus at as early a period as possible should be aimed at, but it was of at least equal importance that care should be taken to prevent the germs from being conveyed to the prostate, where they might remain dormant a long time, and give rise to complications which it was difficult to get rid of.

Educational Management of the Neurasthenic.—Edward B. Angell, Rochester, said that he had been much impressed in the course of a visit to Europe by the success which attended a number of different methods of treating patients of this kind. As a consequence, he had come to the conclusion that the problem presented by nervous diseases was as much psychologic as it was physiologic, and therefore that education must play a larger part than was usually accorded it in the treatment of such cases. He did not want to minimize the importance of the use of drugs, but besides making use of drugs, it was essential that the physician should do what he could to strengthen the will power of his patients and cure them of their morbid consciousness of bodily affections. With a view to this end, it was of primary importance to gain the confidence of the patient and also that his time should be so arranged as to keep him continually occupied. The benefits of good nutrition and increase of weight were not to be overlooked, and with a view to the building up of the system electricity, cold douches, exercise and rational treatment generally would be found of the greatest utility. Dr. E. D. Fisher, New York, endorsed the conclusions of the author, and referred particularly to the value of suggestion when made use of by competent persons.

Dr. Mary Dixon Jones, New York, read a paper on **discoveries in pathology, and a new method of bisecting the uterus in abdominal hysterectomy** was described by Dr. C. H. Richardson, Albany.

An epidemic of typhoid fever in the back woods of Maine was reported by E. G. Brush, Mount Vernon, who traced the original infection to a stream in which the first person to catch the disease was in the habit of bathing. Some 60 or 70 miles further up the country there was a camp where typhoid was known to have been prevalent, but otherwise there was no known source from which it could have come. A large proportion of the inhabitants of the small community were subsequently attacked, the transmission of the disease being presumably due to barrels of drinking-water, which were used in common by the members of each family as well as by visitors from other households to which the disease was carried, the ladle with unused contents being passed back into the barrel. Dr. Jacobi addressed some questions to the reader of the paper for the purpose of ascertaining more definitely the original source of infection, but the author had to admit that he could not furnish anything more tangible than the suggestion he had thrown out—namely, that it had been carried down from the lumber camp, and caught by the young man who bathed in the stream.

A Case of Strangulated Hernia of the Left Ovary and Tube.—A. T. Bristow, Brooklyn, referred to the literature on the subject, which covered about a hundred cases, and said that operation was always called for when the ovaries were found to be thus affected. The mortality was so low that he had found only one fatality recorded after the operation.

Toxic Dosage in the Treatment of Some Nervous Diseases.—William C. Krause, Buffalo, showed the necessity of pushing mercury, arsenic, nux vomica, or nitroglycerin to the point of tolerance, or at least to that by which the desired physiologic effects were produced, even if this involved the giving of enormous doses.

Discussion.—Dr. JACOBI said he objected to the title of the paper. If instead of speaking of "toxic" dosage the author would say large and effective doses, it would be much more correct. He himself had given digitalis in cases of pneumonia in exceedingly large doses, as much as 10 or 12 grains every few hours, and he had obtained excellent results from so doing. Such large doses were not to be described as toxic; they were simply the proper and most effective doses for particular cases.

The Pathology of the Tissue Changes Caused by the Röntgen Rays.—Carl Beck, New York, spoke among other things of the possibility of carcinomatous cells and various kinds of growth being reached by the rays when they could not be got at with the knife. Exposure to the rays should sometimes be continued for a period of several weeks. In one case a woman, suffering from lupus erythematosus, was exposed

for 25 minutes every second day, and it was not until the twentieth exposure that the redness decreased and some of the nodules began to shrink.

Treatment of Ringworm.—George Thomas Jackson, New York, advocated the use of iodine and goose grease.

A case of epilepsy with possible medicolegal complications was the subject of a report by Dr. Frederick Sefton, Auburn. A young man who was a candidate for initiation in a college secret society was roughly treated during the ceremony and was taken home unconscious. Subsequently he appeared as well as ever, but months afterwards, he became morose and irritable, and without reason shot at his sister, fortunately missing her. He then fled from the house, and being pursued was brought home unconscious. At a still later period he had made an attempt to commit suicide, but having been put under medical treatment, had to a large extent recovered, and was now acting as purser of a ship. The patient had no recollection either of the attempted shooting of his sister, or of the taking of poison with supposed suicidal intent; and it was suggested that interesting legal questions might have arisen in regard to his responsibility. The lesson to be learned from the case, in the author's opinion, was the necessity of making such a change in the law in regard to expert evidence as would render it less of an *ex parte* character.

Acute Lymphatic Pseudoleukemia, with Report of Case and Autopsy.—John L. Heffron, Syracuse, remarked that nothing was known about the etiology and very little about the pathology of this disease, which was usually known as Hodgkin's disease. Though there were differences of opinion upon the point, he was inclined to agree with Sternberg in regarding it as a lymphatic tuberculosis.

The changes of the leukocytes in disease as an aid to diagnosis and prognosis formed the subject of an instructive paper by Dr. Thomas R. Brown, Baltimore.

An unusual case of abscess of the liver was reported by Dr. Edgar A. Vanderveer, Albany. Dr. E. W. Mulligan, Rochester, discussed the subject of **gunshot wounds of the liver**, and reported a case. A paper concerning the **surgical treatment of peritoneal tuberculosis** was contributed by Dr. John W. Whitbeck, Rochester. **Unusual hernia, with a report of complete hernia of the bladder**, complicating a strangulated hernia, and requiring resection of the bowels, was the subject of a paper by Dr. John B. Harvie, Troy. **A new symptom in the diagnosis of dystocia due to a short cord**, was described by Dr. Samuel M. Brickner, New York, and **tendon transplantation in the treatment of paralytic deformities** was discussed by Dr. Arthur W. Elting, Albany. Dr. Rowland G. Freeman, New York, described a simple method for determining the **percentage of milk in home modifications**. Among the other papers were: **Obesity of adolescence**, by Dr. Heinrich Stern, New York; a unique case of **double dacryoadenitis**, by Dr. D. H. Wiesner, New York; **puerperal hemorrhage**, by Dr. George Seymour, Utica; **the treatment of pneumonia**, by Professor R. W. Wilcox, New York; and **observations on broken necks**, by Dr. Reginald H. Sayre, New York.

Protest of Hospital Boards.—The Board of Managers of the Manhattan State Hospital and that of the Long Island State Hospital adopted unanimous resolutions protesting against the passage of the bill now before the Legislature which provides that Boards of Managers of the State Insane Institutions shall be abolished and their powers transferred to a Commission in Lunacy, who shall be aided by visitors appointed for a term of one year at \$10 a day cash for each day's service. One of the reasons given for the protest is that as the Commission on Lunacy would consist of but 3 men they would be unable to exercise guardianship over the 23,000 insane contained in the widely-separated state institutions, that the proposed visitors could not become familiar with the individual conditions of such institutions in a year's service. It is claimed that without the present Boards of Managers, who serve without pay, a careless or unscrupulous commission might entirely conceal the existing conditions behind the barred windows and locked doors of the asylums.

Oleomargarin Bill.—The completed bill to be introduced into Congress provides that all substances made in imitation of butter or cheese that are transported into any state or territory for use in the same, will be subject to the law of that state or territory, governing the manufacture of such articles. The section defining butter and imposing a tax upon and regulating the manufacture, sale, importation and exportation of oleomargarin, will also hold subject to the provisions thereof any person who adds to oleomargarin any ingredient or coloration that causes it to appear like butter and then sells, vends, or furnishes it to others as butter. When oleomargarin is not made in imitation of butter a tax of one-fourth cent will be levied for its importation. When made in imitation of butter the tax will be ten cents a pound. Wholesale dealers must keep books as required by the commissioner of internal revenue with the approval of the secretary of the treasury, these books to be open at all times to the inspection of any internal revenue officer or agent. Any violation of this provision will be punishable by a fine of not less than \$50 nor more than \$500 and imprisonment not less than 30 days and nor more than six months.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

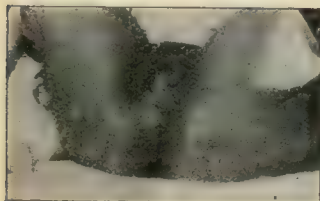
PREGNANCY, WITH ATRESIA OF THE LABIA MAJORA AND VAGINA, FOLLOWING MEASLES: SHOWING THE VITALITY AND MIGRATORY ABILITY OF THE SPERMATOZOA.

BY

J. WILLIAM McDOWELL, M.D.,

of St. Louis, Mo.

Mrs. B., aged 36, consulted me January 22, 1901. She gave a history of pregnancy of about seven months. I examined her breasts and abdomen, neither of which showed any striae. The mammae were very large and pendant; the abdomen very nearly round, with a somewhat flattened area about the umbilicus; fetal movements were visible, and were very marked, almost constant. Bimanual examination outlined a well developed fetus, but not being sure of the position, I attempted to locate the fetal heart-sounds with the aid of the phonendoscope, but without success, hearing only the placental souffle, the maximum intensity of which was to the right of and above the umbilicus. I suggested a digital examination. The patient at first objected, but finally consented. I could not find the vaginal entrance, and asked her if there was any abnormality.



She replied that she thought there was something wrong. On inspection the following condition was revealed:

There was seemingly no entrance to the vagina; upon closer observation a very small round opening was seen near the upper angle of the labia majora, about one inch above the clitoris. Through this small opening came urine

and menstrual flow. The patient stated that it took her 30 minutes each time to urinate, and as to menstruation, to use the language of the patient she "flowed a little all the time."

From her history as given it appeared that she had had only one serious illness in her life, an attack of measles when she was about nine. After this illness she had considerable difficulty in urinating, and finally could scarcely urinate at all; still she said nothing to anyone about it, but while looking for the cause one day she discovered that her vagina had almost closed. Her parents being dead and as she was without anyone to look after her, she remained in this condition.

She was married when but 16, thinking that everything would come all right in due time. Attempts at coition were without result and were finally abandoned, the husband contenting himself with ejaculation inter femora. This relation was maintained for 20 years, when the patient ceased to menstruate and her abdomen began to enlarge. When she consulted me, January 22, 1901, she was 6½ or seven months pregnant.

An operation was advised, and the patient was taken to the hospital February 1, 1901. February 3, at 10 a. m., she was anesthetized and an incision was made from the small round opening just below the anterior commissure of the labia to a point corresponding to the posterior commissure. Hemorrhage, which was great on account of the anastomosis and increased size of the pudendal arteries having been stopped, the wound thoroughly cleansed and dried, the mucous membrane of the labia majora was brought over and sutured to the integumental edges of the wound by interrupted silk sutures, thus obliterating completely the raw surfaces of the wound.

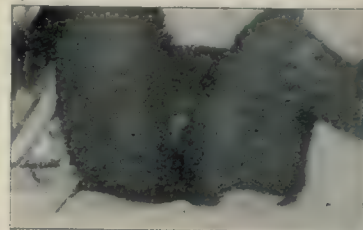
The labia minora were very poorly developed, being only marked by slight elevated ridges. The hymen, which was found intact, was ruptured by the finger and it was found that the vagina was full of adhesions, almost to the point of complete atresia. These were broken up with a specially prepared sigmoid speculum, the vagina irrigated with a 5% carbolic solution and packed with iodoform gauze and the patient then placed in bed.

The after-treatment consisted of the daily irrigation of the vagina with a solution of mercuric chlorid 1 to 3,000, and a loose pack of the iodoform gauze. The fourth day the stitches

were removed, the irrigation and the packing being maintained for two weeks, when the patient was taken home. In four weeks from the date of the operation the first normal coitus took place.

I did not see the patient again until April 21, 1901, when I was called to attend her in labor.

Examination revealed the os dilated to about the size of a silver dollar and the membrane intact. I placed the patient in Sims' position, hoping by the application of a hot towel, wet with sterile solution, to the perineum, to avoid a laceration and assist the parts to dilate. When the head engaged the outlet, it was seen that it would be impossible to prevent a laceration, perhaps a complete one, as the vaginal outlet was much too small for the exit of the head.



There being no likelihood of further dilation, I ruptured the perineum from the fourchette down to the sphincter ani. With the next pain the child, a girl weighing seven pounds, and perfectly developed, was delivered. After the completion of labor, the vagina and the external parts were thoroughly cleansed with a solution of mercuric chlorid 1 to 3,000; the perineal pad was then adjusted and the patient made comfortable. The next day, I repaired the perineum by two deep silk sutures. The patient made a rapid recovery without any further trouble.

This case shows the importance of closely watching all patients suffering from an attack of measles or any other of the eruptive fevers, owing to the great liability of the mucous membranes, especially in the young, to develop inflammation and subsequent adhesion.

TREATMENT OF CERTAIN TOE DEFORMITIES.

BY

FREDERICK GRIFFITH, M.D.,

of New York City.

Surgeon, Bellevue Dispensary; Fellow of the New York Academy of Medicine.

Deformities of the toes arising from vicious footwear are minor surgical affections, but become of major importance to the individual concerned when neglected.

Shoe fashions of the present day are much nearer the shape required to retain the normal contour of the foot than formerly, but that there is still plenty of room for improvement might be demonstrated by the collection of corns, bunions and hammer-toes obtained from a critical survey of the feet of an assembly either in a drawing-room or a clinic. In the following methods of simple treatment the results obtained proved their worth:

L., a girl of 12, for six months has had a deformity of the little toe of her right foot, occasioned by wearing a tight slipper. The distortion consists of an overriding and rotation outward of the ungual and second phalanges of the fifth toe upon the proximal phalanx of the fourth toe. The condition appeared to be due to the reaction of the tendons of the extensor longus and brevis digitorum in walking. By means of a half inch strip of rubber plaster a foot long the toe was looped over the second articulation, the tail of the bandage brought under the sole up over the instep like a sandal thong, and tightened sufficiently to rotate the toe into alignment. The child experienced at once a sense of comfort. She was ordered to wear a larger stocking and a broad shoe; this treatment, continued for a month, resulted in complete restoration. The second case was a similar one in a lad of 16, was caused by a pointed shoe. Being of much more recent date of formation, the application of the loop strap was required but for the space of two weeks.

For displacement of the great toe inward or hallux valgus, with or without an associated bunion, I can recommend the employment of a wedge made from an ordinary deep-flanged wooden spool of suitable size, or a portion of a tight roller bandage gashed upon one-quarter circumference to enable it to be retained in position. Placed between the great and second toes upon retiring will give almost immediate relief. Its use should be continued over a lengthened period. I have not found a complicating displacement of the second toe as the pressure is exerted directly forward and out against the distorted phalanges of the great toe from the soft parts of the web.

THE DARTOS REFLEX.

BY

J. H. McBRIDE, M.D.,

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If the dartos reflex has been described in print the description has escaped my notice. This reflex is elicited through the same sensory nerve and is displayed in the same region as the cremaster reflex and it is important that they be distinguished.

Both are obtained by irritation of the inner side of the thigh, third lumbar sensory nerve. The dartos muscle is composed of unstriated muscle fiber and is supplied by the third sacral anterior root. The cremaster muscle is composed of striped muscle fiber and is supplied from the second lumbar segment. It seems hardly necessary to say that the cremaster reflex varies with age, that it may be "crossed" in disease, and as C. K. Mills has shown, may in some cases be obtained by irritation of the skin as low as the ankle.

A transverse lesion between the third lumbar and the fourth sacral would abolish the dartos reflex but would not affect the cremaster reflex. A transverse lesion at the second lumbar would abolish the cremaster reflex but would not affect the dartos. A lesion at the third lumbar segment would abolish both reflexes by breaking the sensory part of the reflex arc. In a total transverse lesion higher up in the dorsal region, the striped muscle reflex (cremasteric) would be abolished, while the unstriated muscle reflex (dartos) would be preserved.

The dartos reflex is shown in a crinkling of the skin of the scrotum, and is to be carefully distinguished from the lift of the testicle by the cremaster. The dartos is not so active in old as in young men. It is more easily obtained when the parts are cool. It is a very delicate reflex and is somewhat variable. In many cases it is quickly exhausted. I omit any reference to this reflex as a diagnostic aid, as I hope soon to report upon it in more detail. My attention was first called to it by Dr. W. H. B. Stoddart, a young London neurologist, now an assistant physician in the Bethlehem Insane Hospital.

CASE OF TETANUS. RECOVERY.

BY

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Following is a report of a case of tetanus in which the patient was treated by repeated hypodermic injections of .5% watery solution of carbolic acid. The patient recovered:

CASE.—A girl aged 13, presented herself for treatment at my office on July 22. She gave the following history: Seven days previous she had fallen upon a barbed wire fence, severely lacerating her right hand. Physical examination revealed a cicatrix at the seat of injury (palmar surface of right hand), a slight stiffening of the masseter muscles, and a spasm of the flexor group of the right forearm. The child complained of difficult deglutition, and a slight drowsiness. Considering the nature of the injury, it was thought best to freely incise the parts. This was done and the wound thoroughly irrigated with a solution of H_2O_2 (3%) and lightly packed. On the following day the patient presented clearly defined symptoms of tetanus. There were generalized spasmodic contractions. The skin was hypersensitive, and the reflexes were greatly increased. The jaws were nearly set, and the eyes very sensitive. The right hand was markedly flexed. Deglutition was difficult, micturition and defecation were normal. The temperature was normal and the mind clear. The child was confined to a dark room, kept quiet, given a laxative and a dose of bromids. The wound was irrigated with a 3% solution of H_2O_2 , and a series of hypodermic injection of .5% watery solution of carbolic acid were then made in a circular manner surrounding the wound. Altogether 30 minims were injected.

On the next day the symptoms were more intense. The same treatment was continued—the injections were made more frequently, however—30 minims being injected every three hours.

On July 25 the child showed signs of improvement. The jaw muscles were somewhat relaxed and the right hand could be extended by passive motion. On the following day there were signs of systemic poisoning from the carbolic acid. The injections were therefore reduced to one a day. The next day the spasms were aggravated, the jaws were more tightly set,

and the right forearm and hand rigidly flexed. The injections were again administered more frequently, three times a day. These were followed by a gradual relaxation of the muscles, and from July 27 till the middle of August there was a progressive improvement, until August 19, when the child was able to walk to my office. The injections were gradually diminished until but one was given every second day. The bromids were administered daily.

The point of special interest in the case was the striking relation between the carbolic acid injections and the subsequent relaxation of the muscles. In looking over the reports of tetanus cases, and comparing the results from the use of tetanus antitoxin with those cases treated by chemical antidotes, it would seem that the latter should not be discarded altogether for the former for the following reasons: (1) Actual figures appear to indicate as many cures from the use of chemical antidotes as from antitoxin; (2) as tetanus antitoxin is an agent of which we know comparatively little, and carbolic acid one of which we know considerable, it would seem that we shouldn't so soon forsake the latter for the former; furthermore, the latter is stable, in contrast to the instability of the former; (3) it is difficult, if not impossible, to ascertain just how much antitoxin should be administered; and the quantity of the carbolic acid solution can be measured, and its systemic effect closely watched; (4) The use of antitoxin in a given case does not appear to contraindicate the use of carbolic acid.

A CASE OF ACUTE SUPPURATIVE HEPATITIS.

BY

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CASE.—The patient was a negress, aged 34. She had always been strong and healthy, with the exception of occasional slight attacks of abdominal pain which she called "colic," but which were never severe enough to confine her to bed.

Present Illness.—During the night of November 16, 1901, she was seized with, what was, judging from her own description, an ordinary attack of cholera morbus, of moderate severity. Late the previous evening she had eaten some cold, cooked oysters, and in the absence of any other explanation, this was cited as the cause of the attack.

I saw the woman for the first time about the middle of the next day. The acute symptoms had passed, and she was very much better. Late the same afternoon she had a severe attack of abdominal pain, accompanied by a chill, with nausea and vomiting, but no movement of the bowels. I saw her again about ten o'clock that night; the pain had left her, and the nausea was much less than it had been, and she seemed better in every way. During the next three days, she had several profuse sweats which sometimes lasted several hours; these were more marked at night. During the same period she had also two or three more chills with occasional attacks of severe abdominal pain, colicky in character, judging from what she said, though her description of her own symptoms was never very clear. On the third day, a slight yellowing of the conjunctiva was noticeable, though on account of her color, no change could be detected in the skin, but examination of the urine showed the presence of bile. About the same time she complained of soreness in the right hypochondriac region, examination elicited marked tenderness, with rigidity of the abdominal muscles. The area of liver-dulness was decidedly increased in a downward direction. At this time her temperature was 102.5° , the highest noticed at any time; the pulse rate was 100. During the same day her nose bled freely three different times, the last time very profusely.

The next day the abdominal tenderness and rigidity had disappeared, and the patient felt very much better. A diagnosis of cholelithiasis had been made, and she was put on a mixture of sodium phosphate and sodium sulfate, associated with an intestinal antiseptic. The bowels had moved freely from the outset, the color of the stools varying, sometimes being very light, at other times dark. The next day the tenderness and rigidity in the neighborhood of the liver returned, and remained till death occurred. For two or three days she kept in about the same condition, not improving, though apparently getting no worse, being free from pain and having no more chills or sweats.

On November 23 she was seen by a surgeon in consultation, who agreed in the diagnosis of obstructive cholelithiasis, and advised operation, but this was not agreed to, and it was decided to wait. Two days later she was seen by another surgeon, whose diagnosis agreed with that previously made, and who also advised operation. Up to this time, the ninth day of the disease, her pulse rate had been in the neighborhood of 100 all the time; the temperature varied from 102.5° on the third day to normal, having a gradual downward tendency; but on

this day the pulse ran up rapidly to 120 and 130, and it was decided to send her at once to a hospital for immediate operation. The diagnosis at the hospital was the same as that made outside. An incision was made over the gallbladder (which, on account of the decided enlargement of the liver, was lower than usual) with the expectation of finding a stone in the common duct, but there were no signs of obstruction in any of the ducts; the gallbladder was not distended, and no stone could be felt anywhere: the only abnormal condition discoverable being the great enlargement of the liver, which looked somewhat darker in color than normal and was firmer in consistency. The wound was closed, and though the woman stood the operation well, considering her poor condition, and appeared to rest fairly well, she died suddenly five hours later.

A complete autopsy could not be made, though the wound was reopened and enlarged and the abdominal cavity examined. As I was unable to be present, I report what was told me of the conditions found:

All the tissues were deeply bile stained; the liver, which was removed from the abdominal cavity, was enormously enlarged and the surface was not so smooth as normal. On section, it was found to be filled with minute collections (about the size of a pin's head) of puriform fluid, giving the appearance, on first sight, of a liver filled with miliary tubercles, though the spots, instead of being firm, as in the latter condition, were fluid and purulent in character. Unfortunately no sections were taken and no bacteriologic or microscopic examination made. There was no sign of obstruction in any of the biliary ducts, and there were no stones in the gallbladder, which was normal in size and showed no signs of disease. No seat of infection was discovered round the portal vein and nothing was found which could explain the general infection of the liver.

Of course, in this case the interesting questions are with regard to the cause of the condition and to its diagnosis. As no bacteriologic examination could be made, it is impossible to say positively what the exact nature of the process was; though in the absence of any other channel of infection it seems most probable that the infecting material came from the bowel through the common duct, the violent peristaltic movements occurring during the attack of cholera morbus possibly producing a backward current in the same. Though this explanation does not sound very plausible, it seems to be the only one that can be suggested when we take into consideration the findings of the autopsy, and this unfortunately, on account of its unavoidable incompleteness, did not throw much light on the ultimate cause of the condition, which was, from a pathologic as well as clinical standpoint, the most important thing to be determined.

MEDICAL REGISTRATION IN CANADA.

BY

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In the editorial comment of AMERICAN MEDICINE for December 14, there appeared a paragraph on medical education in the United States in which it was stated "that there is still a lack of uniformity in medical education in this country such as cannot be found in any European country." It will be generally admitted that one of the best means of attaining this desirable result would be a greater uniformity in the standard of requirements of the licensing bodies of the several states, and ultimately the establishment of a licensing board under the authority of the Federal government. It may interest readers of AMERICAN MEDICINE to know something of what is being attempted in Canada in that direction.

When in 1867 the colonies were federated as provinces into one Dominion, it was provided that the control of educational matters should be left in the hands of the provincial authorities. Unfortunately a distinction was not made between general education and professional education, the natural result being that each province developed along its own lines and consequently the requirements for license to practise medicine are as separate and distinct in the several provinces as if confederation had never taken place. Many attempts have been made to secure reciprocity between the provinces, but little progress was made till within the last few years, when the idea of interprovincial registration was abandoned, and the idea of Dominion registration was adopted. The leading spirit in the movement is Dr. Roddick, of Montreal, late president of the

British Medical Association, who by reason of the eminent position in medicine which he attained, and the fact that he is also a member of the Canadian Parliament, is well fitted to accomplish the solution of this problem. In consultation with legal authorities a plan has been worked out by which without interfering with the provincial authority a Dominion registration is made possible. Into the details of the measure it is unnecessary to enter here, but a bill was prepared and submitted to the Dominion Parliament at its last session. It did not proceed further than the first reading, the object being to allow all interested to become familiar with its provisions. At the annual meeting of the Canadian Medical Association held at Winnipeg in August last, the bill was considered and received an enthusiastic endorsement from those present. We are now looking forward hopefully to the passing of the measure at next session of Parliament. It will then be in order for the provinces to adapt themselves to the new measure. Of course there will be differences in detail to be adjusted and difficulties to be met, but with a steadily increasing sentiment in favor of such a measure, both among the profession and the public, these will be gradually overcome. We seem to be within measurable distance of a uniform registration for Canada—a consummation to be devoutly wished for.

THE ADOPTION OF THE METRIC SYSTEM BY PHYSICIANS.

BY

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I notice in your journal a protest against the "metric system." It is a very great pleasure for many of us to learn that some "medical magazines are printed in the metric style to the utter exclusion of the old system." It is precisely this condition that we are working and hoping for, the absolute abandonment of the old system. The physician who acknowledges that he knows nothing of the metric system, in which all scientific work all over the world is performed and published, and who calls its use pedantic, and assumes that it is at the present time peculiarly French, is not aware of the intellectual position he voluntarily assumes. Strictly speaking, it is the only legal measure in the United States, and the affectation, if any, is by those who do not use the official system of their profession nor the legal system of their country, which is now making more rapid progress in popular use and appreciation than ever before, and which, through its recent adoption by Russia, has become almost universal among civilized nations. Dr. Morgan's paper was intended to call attention to the unfortunate use by many physicians of unnecessary and badly selected fractional quantities in translating their prescriptions from the old to the metric form, in which 10 doses should always be the basis, then moving the decimal point one place will give the amount of a dose, which can be done instantly, in thought. The quantities, as Dr. Morgan says, should be, whenever possible, in even grams, and the whole amount a fraction or multiple of 100 cc. or grams.

Professional Earnings in France.—A recent report states that of the 2,600 physicians in Paris 40 earn from £8,000 to £12,000 a year, 50 earn £4,000 a year, 50 from £2,000 to £4,000, 200 from £1,200 to £2,000, 200 from £800 to £1,200, whilst 1,700 earn on an average £145, and the rest are not accounted for. The gross earnings of the 16,000 practitioners throughout France would average less than £120 for each.

Library of College of Physicians of Philadelphia.—The annual report of the Library Committee, submitted recently, shows the number of volumes in the library is 64,916, an addition of 3,557 having been made during 1901. Of the new publications added, 36 were written or edited by Fellows of the College. By the generosity of a few Fellows, Dr. J. Stockton Hough's collection of rare and valuable books was procured: 515 of which were printed before 1700; 76 in the fifteenth century; 175 in the sixteenth century, and 264 in the seventeenth century. Bequests of Dr. John Ashhurst, Jr., and Dr. Alfred Stillé furnished 1,707 volumes. During the year there were donations from 211 persons, a number of them giving more than 50 volumes.

ORIGINAL ARTICLES

SURGICAL TREATMENT OF INJURIES AND DISEASES OF THE PANCREAS.¹

BY

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If ten, or even five years ago, one had been asked to write a paper on the surgery of the pancreas he could have dealt with the subject in a very few paragraphs, and in a very unsatisfactory way. That so much has been accomplished in the surgery of this viscus within the past few years again speaks volumes for the rapid progress which surgery is still making. It is scarcely more than a decade since Fitz, a pathologist and internist, rendered such signal service to surgery by outlining the surgery of the appendix, and gave also to surgery its first distinct impetus toward operative intervention in the acute lesions of the pancreas. That this organ has been about the last of the abdominal viscera to be subjected to surgical procedures has been due to two reasons: Its deep situation with complicated anatomic relations, and our partial ignorance of its physiology and the peculiarity of its secretion. Moreover, the proximity of the great solar plexus and of numerous important vascular trunks combine to add to the dangers of its conditions which call for surgery, and also to the difficulties of these operations. The pancreas is a racemose gland of soft texture, easily bruised even by contusions on the outside of the abdomen, acute hemorrhage having been known to follow such injuries. (Robson.) Slight injuries at least are unavoidable during certain operations upon the biliary passages, and a case in which I once operated for my colleague Dr. Stockton, has shown me that even this unavoidable handling may have disastrous results. The fat and areolar tissue which surround the pancreas are continuous with that which surrounds the left kidney and descending colon, which will explain the tendency of pus, formed in or about the pancreas, to burrow around the left flank, and shows as well the wisdom of posterior drainage.

The pancreas being six to eight inches long, and from 1½ to two inches wide, is large enough to be injured in various ways. When both walls of the stomach are perforated, the pancreas is quite likely to be hurt. A very much dilated stomach or a congenitally displaced one may complicate or change indications which would otherwise be plain. The pancreas being so liable to injuries from contusions, it is probable that numerous pancreatic cysts arise from this source. When the organ is so bruised as to allow its peculiar juice to escape, this may lead to fat solution and necrosis, it being possible that such leakage may occur as a result of contusion, implying thereby laceration (or what we speak of as contusion in the brain) and yet without direct perforation. Should there be an external wound, the deeper this extends the greater is the liability to such escape. Perforating wounds made from behind may enter the pancreas and extend far enough forward to open the peritoneum. Naturally, next to a division of its vessels the greatest harm comes from division of its duct.

When necessary the pancreas may be reached:

1. Through the gastrohepatic omentum above the stomach.
2. Through the gastrocolic omentum below the stomach.
3. Through the transverse mesocolon back of the colon and stomach.
4. From the loin behind the peritoneum.

¹ Read before the New York State Medical Society, January 29, 1902, in the Symposium on Diseases of the Pancreas.

5. Through the liver (with a thermocautery) (Rasumowsky).

The various conditions which may call for surgical intervention upon the pancreas are:

- (a) Traumatism.
- (b) Prolapse.
- (c) Malignant disease.
- (d) Cysts (those due to stones as well as hemorrhage, etc.).
- (e) Calculi (see chronic pancreatitis).
- (f) Acute pancreatitis with or without fat necrosis, with or without hemorrhage, with or without pus, with or without gangrene.
- (g) Subacute pancreatitis.
- (h) Chronic pancreatitis (operation mainly needed on biliary passages which produce it).
- (i) Tuberculosis.

Experience has not yet shown that in man a complete removal of the pancreas would be either justifiable or successful, even though its blood supply or the principal duct were destroyed. Dogs have lived without a pancreas but as yet no human being has had it removed, save when sequestered, while the anatomic conditions make it almost impossible; nevertheless, a good portion of it has been and can be spared and nearly all of a prolapsed pancreas has been successfully removed.

(a) In acute traumatism the indications are, first to check all bleeding; second, to prevent escape of pancreatic juice, to suture, etc.; third, to disinfect the cavity, and fourth, to repair the balance of the injury. More will be said about operative technic later.

So far as gunshot wounds are concerned, there are at least four cases on record, three of which occurred during our Civil War, in men shot through the pancreas who lived from 12 to 35 days after their injuries, and then died rather from complications than from the pancreatic injuries alone. How many others have had this viscus injured and completely recovered may never be known. Doubtless if these four could live so long others have absolutely survived.

In case of injury to the upper abdomen, exploration having been decided upon, and it is to be hoped early, one should estimate so far as he can the chances of injury to this organ. This of itself is not easy, especially when the patient is very stout. It is still less easy if, after opening the abdomen, the stomach be found very full. If there be absolutely no sign of posterior perforation of the stomach, then the pancreas may *probably* be disregarded. If it be really suspected, then it would certainly be wise either to explore it from the front or to open at the costospinal angle on the left side and explore the retroperitoneal space, with due provision for drainage. Naturally, exposed bleeding vessels should be secured, loose pieces of gland should be removed, and any wound which can be reached should be sutured. The time has come now when we may reasonably hold that if a wound be so placed as to make injury of the pancreas probable, it will be considered wise and life-sustaining to make a high laparotomy and explore the region of the pancreas, even without reference to what may have happened to other viscera. For this purpose the generally accepted route will be that through the gastrocolic omentum. After doubly ligating its vessels and making this opening sufficiently large, the colon may be depressed, the stomach held up and a fair examination may thus be made. Through it the pancreas may be sutured or the peritoneum sutured in front of it and through it, also a drain may be inserted. Moreover from this cavity a blunt instrument or even a sharp knife may be pushed backward to be cut down upon from the loin, the renal and other vessels being in this way carefully avoided. If posterior drainage be thus amply provided for, it would probably be well to close the peritoneum in front of the pancreas. This, of course, would still leave open the question of the propriety of anterior drainage, which would probably still be wise if

there were much laceration of other viscera. The opening made through the omentum should also be closed with sutures save for an outlet for the drain. With anterior and posterior drainage thus provided for, one may feel reasonably secure so far as drainage enables one to be. Even when all this has not been done promptly and early, so much of it as is necessary can still be done two or three days later if required, even if the abdominal wound were reopened and a posterior drain provided.

(b) *Prolapse*.—Prolapse of the pancreas has been noted in a few cases and experience has shown that this organ becomes occasionally quite detached from its surroundings and quite movable, as indeed it must be to permit of such cases as the following: Laborde, in 1856, tied off a portion of the tail of the pancreas which had prolapsed through a penetrating wound, in the abdomen of a girl aged 10 years. (*Gazette des Hôpitaux*, Nos. 2 and 9, 1856). Kleberg removed about 10 cm. of pancreas protruding from a wound between the umbilicus and the right costal border. (*Archiv. f. klin. Chir.*, Vol. IX, page 523). Otis, in the Surgical History of our War, reports two similar cases seen in army hospitals. Dargan reports having successfully reduced such prolapse. (*Phil. Med. and Surg. Reporter*, August 22, 1874), while Caldwell is said to have had a similar experience in 1816, and yet other cases have been reported by Earl, Allen, and Adevoine (Körte). Thus it will be seen that altogether there are eight cases reported of actual prolapse of at least some portion of the pancreas.

(c) *Malignant and Benign Tumors*.—For malignant tumor of the head of the pancreas there is probably no hope, but in cases of localized abscess or tumor of the splenic portion, excision of the splenic end has been successfully practised and is quite justifiable, just as in removal of this portion for gangrene. This is not the place to discuss the symptomatology of pancreatic tumor. The surgical indications do not differ from those elsewhere but comprise its exposure, its separation from surrounding tissues, ligation of that part of the pancreas from which it is to be detached and its excision in the ordinary way. It is worth while to remember that Remo collected 127 cases of tumor of the pancreas in only 12 of which was the disease limited to that organ alone. Moreover, the relation of the pancreaticoduodenal artery to the superior mesenteric artery and its branches makes radical removal in most of these cases quite impossible. There is insufficient collateral circulation if these vessels be tied. Moreover, along the upper border of the pancreas lies the splenic artery whose ligation might also be required, although in one case it was tied by Mikulicz without apparent consequence (Takayasu), while in another case Bilroth tied both artery and vein.

After rehearsing these cases it is worth while to note what has been done in the way of removal of these growths. Krönlein has removed an angiosarcoma of the head of the pancreas through an opening made through the gastrocolic ligament; Biondi, an adenoma in the same way, and Sandler a tuberculous tumor which he took out through the lesser omentum. Ruggi extirpated a pancreatic carcinoma through an oblique lumboabdominal incision in the left side, finding in his case that the pancreas was dislocated somewhat downward. Briggs has removed a tumor of the tail of the pancreas. Routier has enucleated a lymphosarcoma embedded in the organ. Terrier removed a cystic cancer weighing about 2,500 grams and Malthe has also enucleated a carcinoma from the tail of the pancreas. Nine cases collected by Körte are those at present on record, of these six patients recovered.

Trendelenburg also has removed a large sarcoma, which seemed to proceed from the pancreas, by a posterior lateral incision through which he also removed the spleen. Bardenheuer has exposed in this way the head of the pancreas for diagnostic purposes. Tuffier has advised to attack from this direction a biliary

calculus impacted in the intrapancreatic space. Braune has also demonstrated the accessibility of the duodenum from the right lumbar region.

(d) The question of *pancreatic cysts* has been abundantly dealt with by Senn and by others, and the surgery of pancreatic cysts was for some years the only topic mentioned in connection with the pancreas. Operation for such cysts is often made difficult by the adhesions which they contract to all the surrounding organs, adhesions often of exceeding strength so that, for instance, Rokitsky once even tore the colon in trying to separate it from such a cyst wall. These cysts are exposed like any other abdominal cyst or tumor, save that the omentum will probably be found stretched over them, especially when they are nonadherent, and will need to be parted before sufficient access can be made. The cysts may then be tapped with such a trocar as is used in ordinary ovarian cysts and after being sufficiently emptied can be caught with forceps and drawn out as far as possible, in order that they may be the better emptied. A portion of the redundant cyst wall may be cut away and the remaining portion may be sewed to the abdominal wall, following out the method practised first by Gussenbauer, while drainage of the cavity of the cyst may be provided for through a large tube. This is the course to be pursued in most of these instances. It has in a limited number of cases been possible to extirpate such a cyst, since a few of them have been so pedunculated, or provided with a peduncle that could be tied off, that they permitted complete removal of the tumor. The surgeon should be prepared to find more or less of the true tissue of the pancreas stretched over such a peduncle, should he find a cyst so arranged, and, if it can be done, it would probably be best to peel this pancreatic tissue back before ligating the peduncle.

The mass of fluid discharged from these cavities is sometimes relatively enormous, far exceeding that which can be furnished by the pancreas under normal circumstances. Fortunately in those cysts for which radical measures are impossible drainage usually is followed by slow contraction and final healing. In one case of my own, of enormous cyst, which was pushing the diaphragm upward and the abdominal wall forward and seriously embarrassing the heart and lung, I could do nothing more than drain, but final healing was secured after months of drainage and almost daily attention with the irrigator.

If the character of the cyst and of the cavity occupied by it permit, it would be most desirable to explore in the depths of the same for calculi embedded somewhere in the pancreatic texture near its head, because certainly some pancreatic cysts are the result of obstruction of the duct of Wirsung, and removal of such calculi, if they can be detected, should certainly be made part of the operative procedure.

So far as calculi by themselves are concerned, it is rare that exact diagnosis of the condition can ever be made previous to operation. The symptoms and signs which they produce may be necessarily so confused with those in the biliary passages proper as to lead wisely to operation and exploration, and now that large experience is rapidly accumulating with regard to the biliary passages, it is being made plainer and plainer that in case of obstructive jaundice the pancreatic duct should be palpated as well as the biliary.

(e) *Pancreatic calculus*.—If once found, its removal by excision is certainly indicated. Whether this shall be made through the texture of the gland, or through the extremity of the duct, perhaps aided by expression of the stone if this can be done without much force, or through the duodenum in selected cases, must depend upon the conditions as ascertained at the moment. In some instances it has been possible to draw the stomach so far forward and outward as to bring the duodenum into the field sufficiently to justify opening it and going

through it into the diverticulum of Vater, and one should be prepared to do this if necessary.

(f) It seems to me scarcely proper to speak of several different forms of *acute pancreatitis*. I would much rather classify the lesions with Robson, speaking of acute pancreatitis with or without fat necrosis, with or without hemorrhage, with or without pus, and with or without gangrene. In other words, acute pancreatitis is characterized, especially in the case in hand, by fat necrosis, hemorrhage, pus, or gangrene. Such a division as this, it seems to me, can be justified both pathologically and clinically. If now we accept Fitz' description of acute pancreatitis as characterized by "sudden, severe, often intense, epigastric pain, without obvious cause in most instances, followed by nausea, vomiting, sensitiveness and tympanitic swelling of the epigastrium," with prostration, collapse, etc., we may see that when a case presents these features we ought certainly to make exploratory abdominal section. In those conditions in which diagnosis as between perforating ulcer of the stomach or duodenum and perforation of the gall-duct is impossible, when only a more or less vague tumor occupies the position of the lesser peritoneal cavity, which tumor may present more or less regularly in front, in those cases, I say, exploration is the safest and only promising resource. If we are to check progressive peritonitis and burrowing of pus, this lesser cavity must be emptied and drained, and if in such a case we find that instead of a perforation as above we have to deal with an acute pancreatitis of either of the above types, then the indication is equally well met. Even when shock has been severe it has been shown that emptying this cavity and packing it with gauze are of the greatest benefit. (Lund.) It is the cases of the severest type which most need early and prompt intervention, because these are the cases in which the patients die in the shortest time from shock and escape of blood. Those which go on to gangrene offer more hope for surgery. Sometimes the tumor may even be felt in the left lumbar region. In such a case the entire operation may be done from the rear.

When there is time for it, it may be well to follow Robson's suggestion and give three or four daily doses of from two to four grams of calcium chlorid, and to give it by enema in double doses after operation. This is done with a view of checking liability to oozing. Robson believes that there is less danger of serious hemorrhage in patients jaundiced from gallstones than when the jaundice depends upon pancreatic disease. Bleeding from the pancreas is sometimes very troublesome, and occasionally fatal, even when the operation has been on the gallbladder and when the pancreas itself has not been touched. In these cases it seems to simply ooze blood, and this has been especially noticed in instances of cancer.

There is as yet some mysterious connection between pancreatic disease and hemorrhage. Hildebrand has suggested that the hemorrhage in acute pancreatitis is due to trypsin. This tendency is always intensified by jaundice, or at least in the presence of jaundice, and though often associated with pancreatic disease, does seem to occur without it. Robson believes that hemorrhage may be due to the glycerin set free when fat splits up into glycerin and fatty acids, since when injected in small amounts into small animals glycerin produces hematuria, as it does in human beings after it has been injected into the uterus to produce abortion.

In 1899, Anders collected from literature 40 cases of pancreatic hemorrhage. He has shown that the immediate effects of bleeding may be survived, and that death may occur later from shock and increasing anemia. Roche divides pancreatic hemorrhages into those produced by (a) injury; (b) diseases of vessels, *i. e.*, apoplexies; (c) poisons (mercury, hydrochloric acid, etc.); (d) toxins (diphtheria); (e) diastatic substances, *e. g.*, papain; (f) infections.

Parenthetically, it will be seen that at least some of these may lead to the formation of cysts, which have already been considered. Carnot claims that the more acute the symptoms the greater the liability to hemorrhage, and that it often follows grave traumatism as well as sometimes poisoning by mercury and other chemicals.

The treatment of acute pancreatitis is virtually that of peritonitis of the upper abdominal cavity, and consists very largely, as Fitz has suggested, in drainage. No time should be lost when suspicious symptoms are present. Simulation of intestinal obstruction may lead to sad waste of time in administration of cathartics, etc. Early operation is just as wise as in fulminating appendicitis. Even if no pus should be found, no harm would probably accrue. Once the diagnosis is established, drainage, preferably posteriorly, should be made. It will often be well to make the posterior opening so large as to admit the whole hand.

First incision should be made in the median line from the sternum to the umbilicus. In desperate cases it can be done under local anesthesia. Approach to the lesser cavity must be made through one of the routes already mentioned, ordinarily above or below the stomach. Masses of debris, clot or pus should be rapidly removed, and bleeding checked by gauze packing. If the pancreas be found necrotic so much of it as possible should be removed. In probably every case, if the condition of the patient permit it, opening should be made posteriorly, and this preferably large, as just remarked. It is possible to drain the subphrenic space by resecting the tenth or eleventh rib in the posterior axillary line (Lund). This may be called for if symptoms at the base of the left pleural cavity point to a pocket of pus above the spleen. Should this exist, this pocket must be drained, even though the pleural cavity be traversed, though as a matter of fact, this cavity will usually be walled off by adhesions in such cases. Perforation of the diaphragm which might have been prevented in this way, had it been foreseen, has been reported in one case (Lund).

The liability to mistake when symptoms indicate intestinal obstruction or acute appendicitis has been emphasized by Carnot in two cases reported by him, hence the surgeon should not be taken aback should he unexpectedly come upon acute pancreatitis with fat necrosis when he expected rather to meet one of the above conditions.

W. J. Mayo has recently reported a case of acute fat necrosis, at first regarded as gangrenous cholecystitis with perforation, opened through the right upper rectus. Only after exposure was the condition appreciated. Beside the enlarged necrotic pancreas there was found separate from it a thickened gallbladder with a large stone. After removal of this biliary calculus the gallbladder was drained through the right loin by a stab wound, while a large wick of gauze was placed in the right kidney pouch and brought out of the same opening. The abdominal wound was completely closed. The patient recovered. This will well illustrate the possibilities of drainage in this location and on the right side. It illustrates also the sequence of acute necrosis of the pancreas upon cholangitis extending to the pancreatic ducts.

(g) *Treatment of Subacute Pancreatitis*.—Little needs to be said about this. It consists for the most part of an exposure of and drainage of localized abscess. The condition will be more or less blind till the hand is introduced into the abdomen. Median incision will enable more accurate recognition of local conditions, and abscess if found, should of course be drained posteriorly, if possible. If this be not possible, then anteriorly through a large tube with plenty of gauze wicking.

(h) *Treatment of Chronic Pancreatitis*.—This consists, in large measure, of attacks upon the biliary passages, which for the main part are best approached by incision

through the right rectus, or by Bevan's sigmoid incision, splitting the rectus as far as needed, the cut being several inches long. Most cases of chronic pancreatic disease are produced by conditions having their origin in the biliary passages and involving the pancreas only secondarily, hence the above statement. Cases of pancreatic calculi causing obstruction of the duct of Wirsung are of course well known, and would probably be more frequently reported were operations and examinations more often performed. In some of these cases the pain is referred to the umbilical region, and it has been known to be made worse by walking upstairs or uphill. Most all of these cases are characterized by jaundice as well as by enlargement of the liver and gallbladder. Cipriani has emphasized the diagnostic importance of glycosuria, as well as the presence of calculi in the feces, along with thirst and increase in appetite, as enabling the surgeon better to foresee whether calculi are in the biliary or pancreatic passages.

In some of these cases the difficulties met will be so great as to suggest the expediency of cholecystenterostomy, which, though far from an ideal operation, may offer the best way out of serious difficulty, especially when there is well-marked obstruction in the neighborhood of the diverticulum of Vater. The relief of tension afforded by draining the bile-ducts may indirectly drain the pancreatic duct, as Robson has shown, and thus lead to subsidence of the pancreatitis. In this connection, Robson has reported a case of complete closure of the opening made between the gallbladder and the duodenum within three months after its formation, and death in consequence. I would like, moreover, to place on record a recent experience of my own in which with a Murphy button I connected a large and much thickened gallbladder with the colon, the patient passing the button within two weeks. Within three months it was necessary to reopen, and it was found that this opening had completely closed, and I was compelled to do a button operation again.

The simulation of malignant disease by chronic interstitial enlargement, especially of the head of the pancreas, which has so confused many an operator, should not be a bar to operating in any case of chronic jaundice when health is failing, since much may be done so long as malignant disease is not present.

Calculus embedded in the head or impacted in the duct of the pancreas may be reached by opening the second part of the duodenum and exploring the diverticulum and duct, or it may be reached by passing between the duodenum and the hepatic flexure of the colon, going through the peritoneum and then cutting down upon the stone through the pancreas, suturing if possible and then putting in a small drain. If it should be wise to go through the duodenum and to open the papilla in order to reach the calculus, this particular portion does not need suturing unless badly torn. The duodenum, of course, should be closed as usual by mucous and serous sutures. Drainage should be made preferably by posterior opening. Within the past year Robson has reported 22 cases of this kind, only one of which ended fatally soon after the operation.

There is much might be said about the intimate relations of the pancreas, the duodenum, and the biliary passages, especially in connection with concretions and the trouble they produce, but explicit advice is very hard to give and it must be enough here to again emphasize the frequency of these complications, one with another, and to urge that in operations on the gallbladder and ducts, the pancreas be not disregarded.

(i) *Tuberculosis.*—There is but one matter left to be spoken of, and that briefly. Lohéac has shown that pancreatic tuberculosis may assume either the form of gummatous nodules or diffuse interstitial proliferation. He would explain the relative infrequency of tuberculous disease in this location by virtue of the peculiar pancreatic secretion which he thinks to be protective as

against this kind of infection. Most cases of pancreatic tuberculosis are certainly due to extension from neighboring foci and primary tuberculosis here is surely very rare. Should it be encountered, it may be regarded as amenable to surgical attack on lines and by methods already pointed out.

I have but one more paragraph to add to the above review of the surgical treatment of pancreatic lesions; that is an appeal, an earnest appeal, for the earliest possible intervention in these conditions. So much harm comes from delay, so much good may be done by promptness, that I would apply the rule to which I try to adhere when dealing with acute appendicitis, or with certain injuries to the cranium and brain, namely, *when in doubt, operate*. The cases in which one should not operate, and early, are those about which he feels very confident that the matter of surgical intervention will not have to be raised at all.

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Antismoke Ordinance.—The rapid growth of the smoke nuisance in Baltimore has resulted in an appeal to City Councils that the antismoke ordinance, introduced a year ago and the subject of discussion on several occasions since, be made operative.

Bill to Improve Meat Supply.—The secretary of the Maryland State Board of Health will shortly introduce a bill into the Legislature which provides for the imposition of a heavy penalty upon those who knowingly have diseased cattle slaughtered for human food. The present law has proved inadequate, as it only allows the confiscation of the sick or wounded animal, and does not provide punishment for the persons responsible for having it killed. Investigation has shown that the slaughter of diseased or wounded animals is more general than is believed. In confirmation of this the following facts are related: Hogs are put in the same car with steers, on the theory that they can readily move around under the legs of the steers, and as a consequence many are wounded, and upon arrival at the stockyards are immediately prepared for market. Sheep have been known to arrive sick or wounded, and to have been hidden until a favorable opportunity presented itself for their slaughter. Also, owners of cattle have been discovered sending sick animals to be butchered, as otherwise the disease might prove fatal and the animal prove a complete loss to them.

A CONSIDERATION OF 28 CASES OF TUBERCULOUS PERITONITIS AT THE BOSTON CITY HOSPITAL, WITH PARTICULAR REFERENCE TO THE RESULTS OF OPERATIVE TREATMENT.¹

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The effect of laparotomy on tuberculous peritonitis has received much attention for the past 15 years. Reported results vary greatly, not so much with respect to the advisability and benefit of operative treatment as to the proportion of recoveries resulting therefrom. In many reported cases the diagnosis was a clinical one only; in others, reports were made too soon after operation: thus results obtained were often subject to criticism. Consequently, in the following series, an attempt has been made to exclude all cases in which the clinical diagnosis was not confirmed either by the microscope, the tuberculin test, or by autopsy, and to report as recoveries only such patients as were seen or heard from not earlier than one year after operation.

In just what proportion of cases of tuberculosis the peritoneum shows tuberculous lesions we do not, as yet, know. The difficulty of making an absolutely certain clinical diagnosis of the disease, and the fact that in its whole course it may be entirely latent, account in part for this uncertainty. Nor do the reported results of autopsies tend to make us more secure on this point. Nothnagel, in his recent work, states that he finds among reported observations the remarkable variation of from 1.25% to 16.16%. Borschke is the authority for the highest figure. Of 4,250 autopsies performed during six years at the Breslau Pathological Institute, tuberculosis was found in 1,393 (32.8%); in 226, or 16½% of these 1,393 cases, the peritoneum was affected. In commenting on this wide variation, Nothnagel says that, while he has never found tuberculous peritonitis in so large a proportion of cases as did Borschke, yet he has met it much more frequently in Vienna than in other places where he has taught. Undoubtedly the frequency varies with the locality. Of 1,170 autopsies at the Boston City Hospital from January 1, 1895, to January, 1900, tuberculosis was present in some form in 197; in 14 of these the peritoneum was affected. In other words, in 16.8% of the autopsies, tuberculosis was found, and the peritoneum was affected in 7.1% of these—less than one-half as frequently as in the Breslau cases, in which, by the way, tuberculosis in general was about twice as frequent as in the Boston City Hospital cases.

Whatever may be the uncertainty with regard to the frequency of tuberculous peritonitis in general, primary, uncomplicated, tuberculous peritonitis is certainly very uncommon. In his 226 cases, Borschke found it twice; Munsterman met it once in his 46 cases; Osler mentions five cases in 17 necropsies, of which he has notes, and reports one case; it was found in none of the City Hospital autopsies, and writers, as a rule, consider it rare. The disease is usually a secondary process. Sick's statistics of 2,500 autopsies show 25% of the cases of tuberculous peritonitis to be secondary to tuberculous disease of the genital tract and 65% to tuberculosis of the intestinal tract. Pribram (quoted by Wood and Fitz) of 165 cases examined post mortem attributed 87 to intestinal, 65 to pulmonary, 8 to tubal and uterine, and 5 to osseous tuberculosis. Borschke, on the contrary, in his 226 autopsies, failed to find a single case secondary to a primary isolated tuberculous lesion of the intestine; in fact, in 86 of his cases the intestine was almost or entirely free (as it was in one of the series of cases given in the table); while in 140 there was a primary tuberculous affection of the lungs, associated with marked tuberculous lesion of the intestine. Phillips (quoted by Anders)

reports 107 cases, in 99 of which the lungs were involved; in 60 the pleura, and the intestine in 80.

Nothnagel thinks the primary affection is most often in the lung. The genitourinary tract, the intestines, the bones (particularly the hipjoint), the head, and the bronchial and mesenteric lymph-glands may show the primary focus. F. Markel has recently called attention to the frequency with which the initial point is found in the glands at the bifurcation of the trachea.

Operative statistics go to prove that the disease is much more common in women than in men, Nothnagel and Lidner finding that 90% of the reported cases were in women. König, in 1890, reported 120 of 131 cases operated upon as occurring in women. Osler's collected statistics show the disease to be twice as common in women, though of his own 21 cases 15 were men. Of Nothnagel's 164 cases 101 were in men. Most autopsy records seem to indicate that the disease is more common in men, the proportion being as three to one. Eighty-nine of König's 107 cases discovered post mortem were in men; of the 14 autopsies at the City Hospital, 8 were on women and 6 on men. It is probable that the disease is really more common in women; for it seems scarcely credible that the great predominance in women of reported operated cases can be due solely to the fact that laparotomy is performed more often on that sex and for that reason alone the disease is found more frequently. In this series the sexes are about equally represented—13 men and 15 women.

The disease may occur at any period of life, though it is not common in old age. The analysis of the present series shows 3 patients under 10 years of age (4½, 7 and 5 years, respectively), 9 between 10 and 20, 13 between 20 and 30, 1 between 30 and 40, 1 between 40 and 50, and 1 over 50. Adding to these the result of analysis of 346 cases by Osler and 164 by Nothnagel, we have 538 cases, divided as follows: Under 10 years of age, 30; between 10 and 20, 112; between 20 and 30, 137; between 30 and 40, 122; between 40 and 50, 93; between 50 and 60, 31; between 60 and 70, 11; and over 70, 2. Between the ages of 20 and 40 it is most frequent.

If we may draw conclusions from the cases under consideration, the family history of the patient seems to play an unimportant role in the etiology of the disease. In the 28 cases it was noted as entirely negative in 23 and as tuberculous in only two. The disease itself was mentioned in the antecedents of but one patient, whose grandfather is said to have had it.

An interesting feature in the history of these cases is the fact that in 11 there is a story of a previous abdominal trouble, apparently inflammatory in its nature; in 2, "inflammation of the bowels" (2 to 3 years previously); in 6, typhoid fever (4, 3, 12, 1, 14, and ? years previously); in 2, previous abdominal operations with drainage, and in one, a previous attack similar to the present. This may not be significant, but it is, at least, worthy of note. The past history of 12 cases is negative; in 1, tuberculosis is acknowledged.

Examination of the chest showed probable tuberculous affection of the lungs in 9 of the patients and was said to have been negative in 11; in 8, no examination was recorded. Of the 9 cases in which the lungs were said to have been affected, 4 of the patients died; autopsy disclosed lung affection in 2 other fatal cases in which it had not previously been suspected. Of the patients that recovered, the lungs had been found negative in 7 and affected in 1; in 3 cases they were not examined.

The onset may be acute or gradual. It was acute in 13 of these cases, gradual in 13, and in 2 could not be classified. In 17 of the cases pain was the first symptom noticed; in 8 malaise, and in 2, distention. Pain was present during some portion of the course of the disease in 26 cases; it was entirely absent in only 2. When not the first symptom, it followed after periods varying from a few days to 6 months. It disappeared before operation in 4 of the cases. Distention was present in 23 cases, in

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2 of which it was very slight. It usually came early in the course of the disease, but in 2 cases was much delayed, appearing in 1 case 1½ years, and in another 1½ years after the onset. Abdominal tenderness, loss of flesh and strength, nausea and vomiting and disturbance of the intestinal functions were also prominent symptoms.

The disease may be very acute both in onset and course and may simulate closely an attack of acute appendicitis. On the other hand, it may be almost entirely latent and in 1 case of this series, though there had been an entire absence of symptoms up to 6 weeks before operation, the autopsy disclosed a process which must have been of very long duration.

All the patients showed some degree of fever. The temperature was usually irregular, the afternoon rise being fairly well marked. The morning temperature averaged between 99° and 100°, and the afternoon between 101.5° and 103°. Osler speaks of cases which run a subnormal temperature throughout their entire course. This series offers no example of such cases, though several showed periods of varying duration during which the temperature was subnormal. Pigmentation of the skin was not noticed in any of this series, nor was enlargement of the inguinal glands, which Spaeth found in his 4 cases. The erythema which, in some patients, surrounds the umbilicus and which, when present, is considered pathognomonic by Henry, was not found in any of these.

Aldibert's classification of the various forms of tuberculous peritonitis is accepted by most writers on the subject, and is made use of here. The cases are separated into three divisions, viz.: (1) Ascitic. This form may be either acute or chronic; the chronic cases may be either general or encysted; (2) fibrous, which may be either dry or adhesive; (3) ulcerative, which may be either dry or suppurative. Under these headings the present series divides itself into (1) 19 cases of the ascitic type, 10 of which are acute and 9 chronic; of the chronic cases, 6 were general and 3 encysted; (2) 7 of the fibrous type, 2 of which were dry and 5 adhesive; and (3) 2 of the ulcerative type, both of which were suppurative.

A tabular view of the cases and the results of operation is appended.

The operation is usually simple and does no harm even in cases in which it is unsuccessful as a curative agent. When necessary it may be done under local anesthesia. Incision into the peritoneal cavity, evacuation of the fluid, if any is present, and closure of the wound give as good results as more extensive procedures. Should the tubes and ovaries, etc., be removed, if affected? Clark's experience has led him to believe that results are just as favorable when these organs are not disturbed. Winckel thinks they should be removed only when their removal can be accomplished easily. The appendix was removed in three of these cases, and the uterine adnexa in one. The postoperative history in all but one differed in no way from that of the other cases. One patient from whom the appendix was removed developed a fecal fistula and died.

If the peritoneum covering these organs is affected only as a part of a general miliary tuberculosis of the cavity, there seems to be no good reason why they should be removed. However, if involvement further than this can be discovered, and their removal can be readily accomplished, it would seem wise to remove them. The advisability of the removal of omental masses is questionable. Clark speaks against it. Such masses cannot usually be entirely removed, and even when left in situ often disappear after the more simple operation. The same may probably be truly said of infected mesenteric glands. In a case of this series but one of the glands was removed, though several were easily palpable. Yet the patient has had no abdominal symptoms since the operation, and at present gives no sign—subjective or objective—of trouble in the right iliac region, where the infected glands were. Fibrous bands and infiltration of

the gut, causing obstruction, demand the same surgical treatment in tuberculous as in other cases.

The majority of observers now agree that drainage is of no special benefit; sinuses and fecal fistulas are very apt to follow its use. Eighteen of these 28 cases were drained; in 5 a fecal fistula followed; 4 of these patients died and one recovered; in 10 of the 11 fatal cases drainage was employed. The wound was closed in 11 cases; only one patient died. In one closed case the wound opened spontaneously later, but the discharge never became fecal; in another a fecal fistula developed; in still another reaccumulation of the fluid made a second operation necessary; drainage was then used and recovery followed. None of these 28 patients died as a direct result of the operation. The mortality in reported cases is from 2½% to 3%.

Fecal fistulas are very apt to occur if the intestine suffers much injury. The frequent adherence of loops of intestine to the parietal peritoneum of the anterior abdominal wall, to the omentum and to each other necessitates great care in the operative technic. Careless attempts to break up adhesions and carelessly made abdominal incisions often result disastrously.

According to Syms, sepsis is not so apt to occur as in operations on the healthy peritoneum. It followed as a direct result of operation in none of these cases. Tuberculosis of the wound rarely occurs. Nausser reports one such case.

Immediate Results of the Operation.—The immediate effect is almost always an improvement, at least in the general condition, if not in the local. Twenty of these patients showed immediate improvement in some way; 11 of the 20 were improved both locally and generally; 9 were improved in their general, but little, if any, in their local condition. Immediate improvement, however, does not ensure final cure. Of the patients who at first improved both locally and generally, one died later; two could not be traced. Four deaths occurred among patients who at first improved in a general way. Of the 4 patients in whom operation caused improvement neither locally nor generally all died.

Considerable abdominal pain and some degree of abdominal distention is apt to remain for some days or weeks after the operation, even in those cases which ultimately result most favorably. Some postoperative pain remained in 9 of these cases; some distention in 11. Entire absence of abdominal pain and distention was very uncommon even in the most favorable cases when the patients were discharged from the hospital, i. e., usually about 3 weeks after the operation. So, the final outcome of a case cannot be well foretold from the immediate results of the operation, though, when the operation is followed by improvement in no way, the outlook is not promising.

The reaccumulation of fluid is not a contraindication to the doing of a second laparotomy, nor does it mean failure to cure ultimately. In 1 case of this series the fluid reaccumulated shortly after the first operation. Recovery followed a second laparotomy. Herzfeld reports 3 such cases, the exudate reappearing within a month after operation. In each a second laparotomy was done and recovery followed. Another case of this series was discharged 3 weeks after operation without subjective symptoms but with sure signs of the reaccumulation of the exudate. He recovered entirely without a second operation.

In most of the cases operation causes a falling of the temperature—not to normal by any means—but after the operation the temperature, which is usually still more or less elevated, runs at a lower plane than before operation. Most of the cases—even among the most favorable ones—were having a slightly elevated temperature when discharged from the hospital.

More Remote Results of Operation.—What duration of good health after operation shall constitute a recovery? There is certainly danger of reporting simply quiescent

TYPE.	Case Number.	Sex.	Age.	Time between onset and operation.	Drained or closed.	RESULTS OF OPERATION.	
						Immediate.	Remote.
I. ASCITIC.	VI.	F.	14	3 months.	D.	General condition improved; local condition not improved, abdominal pain and distention when discharged, 4 months after operation.	Recovery, 3½ years.
1. Acute.	VII.	M.	40	1½ years.	C.	Improvement in general condition; still some abdominal distention; discharged 17 days after operation.	Recovery, 8½ years.
	XIII.	F.	20	1 month.	D.	Some pain for 1 month after operation; marked improvement from the first; wound healed. Discharged 76 days after operation.	Not traced.
	XV.	M.	12	2½ months.	D.	General condition very good; still has abdominal pain, distention and discharge. Discharged 28 days after operation.	Death, 2 months.
	XVI.	F.	28	3 weeks.	C.	Diarrhea; abdominal pain and distention continued; spontaneous opening of wound 22 days after operation.	Death, 35 days.
	XVIII.	M.	22	13 days.	C.	Improvement generally and locally from the first. Discharged 1 month after operation.	Not traced.
	XIX.	M.	5	Operation 80 days after operation for hernia.	C.	Improvement from the first; slight distention remained. Discharged 25 days after operation.	Recovery, 1½ years.
	XXI.	F.	12	17 days.	C.	Improvement from the first. Discharged 16 days after operation.	Recovery, 1½ years.
	XXIII.	M.	21	24 days.	D.	Not much improvement; fecal fistula 42 days after operation. Discharged 58 days after operation.	Death soon after leaving hospital.
	XXV.	F.	29	9 days.	C.	Symptoms relieved; fluid reaccumulated; second operation 11 days after first; drained. Discharged 79 days later in excellent condition.	Recovery, 1½ years.
2. Chronic.	VIII.	M.	4½	2 weeks.	D.	No improvement for 6 weeks; then marked improvement began; slight distention remained. Discharged in good condition 57 days after operation.	Death, 4 months.
(a) General.	IX.	M.	23	4 weeks.	D.	General condition improved; still some pain; wound closed. Discharged 26 days after operation.	Not traced.
	X.	F.	10½	6 months.	D.	Improvement in every way from first. Discharged 19 days after operation.	Recovery, 3½ years.
	XI.	M.	22	35 days.	C.	Fluid reaccumulated; spontaneous opening of wound 23 days after operation; general condition fair; local condition unchanged at discharge, 4 mos. after operation.	Improved, 14 months.
	XIV.	M.	28	26 days.	C.	No subjective symptoms; fluid reaccumulating; general condition good on discharge, 15 days after operation.	Recovery, 2 ½ years.
	XXII.	M.	60	7 weeks.	D.	Improved generally for a short time; fecal fistula 22 days after operation.	Death, 6 weeks.
(b) Encysted.	V.	M.	11	10 weeks.	D.	Slight distention for 1 month after operation; wound closed; in excellent condition at discharge, 55 days after operation.	Recovery, 4½ years.
	XX.	F.	19	1 month.	D.	Local condition unchanged; general condition fair at discharge, 10 weeks after operation. Reentered 1 month later, with fecal fistula; distention but no pain nor tenderness.	Death, 3½ months.
	XXVI.	M.	31	10 weeks.	D.	General condition much improved; distention remained; wound closed at discharge, 5 weeks after operation.	Death, 4 months.
II. FIBROUS.	I.	F.	23	4 months.	D.	Wound closed; great improvement, both locally and generally; no symptoms on discharge, 26 days after operation.	Death, 3 months.
1. Dry.	XXVIII.	F.	19	4 weeks.	C.	Improvement both generally and locally from first; no symptoms on discharge, 30 days after operation.	Improved, 10 months.
2. Adhesive.	II.	F.	19	2 months.	D.	Improved in every way from first; no symptoms on discharge, 40 days after operation.	Recovery, 5½ years.
	III.	F.	24	3 months.	D.	No improvement; gradually failed; fecal fistula on eighth day after operation.	Death, 7 weeks.
	IV.	M.	24	6 months.	D.	Slight improvement in general condition after operation; no improvement in local; fecal fistula on sixth day after operation; gradually failed.	Death, 3 weeks.
	XXIV.	F.	19	18 days.	D.	Improved both locally and generally from first; indurated tumor to right of wound still to be felt at time of patient's discharge, 25 days after operation.	Recovery, 1½ years.
	XXVII.	F.	24	2 days.	C.	Improvement both locally and generally from first. Discharged 23 days after operation.	Recovery, 2 years.
III. ULCERATIVE.	XII.	F.	7	2 months.	D.—Post-operative sinus.	Excellent general condition; sinus still open. Discharged 3½ months after operation.	Not traced.
1. Suppurative.	XVII.	F.	22	5 weeks.	D.	No improvement in any way; fecal fistula from the very first.	Death, 5 weeks.

cases as recoveries. All patients reported here as recoveries were in good health 1 year or more after operation. Four are well between 1 and 2 years after operation; 2, between 2 and 3 years; 3, between 3 and 4 years; 1, between 4 and 5 years; and 1 over 5 years. In all the fatal cases the patients died within 4 months after the operation: 3 died in about a month or in less than that time; 4, between 1 and 2 months; 1, 2 months after; 1, between 3 and 4 months; and 2, 4 months after the operation. Hence it does not seem unfair to consider as recovered any patient who is well 1 year after the operation, and in whom no signs of recurrence can be found.

In two of the patients whom I have classed as recovered, there was at the time I saw them a slight evening rise in temperature, being 99° in one and 99.5° in the other. A single observation of this kind, especially in the absence of all other symptoms, has little significance. But would not even so slight an afternoon rise, if fairly constant, be of some value in deciding whether some (per-

haps latent) focus of tuberculosis still remains? The afternoon temperature was taken in 7 of these cases classed as recoveries and was normal in 5.

Remote Results.—Seemingly desperate cases have been completely cured, and although Kummel, Richelot, Welch, Nausser, Jordan and Wunderlich have demonstrated anatomic cures (the last-named in 19 out of 500 cases), the important thing for us is the clinical cure. In what proportion of cases does it occur? The literature of the subject supplies many answers. Roersch reports 250 cures in 353 cases—70%; and of these 118 were seen six months, 79 one year, and 53 two years or more after operation. Treves puts the percentage of recoveries at 35; Parker Syms at 30% to 35%; Mazzoni reports 35 cases with 33 cures—94.3%. Winkel says we may expect cures in from 70% to 80% of all cases. König has reported cures in 25% of his cases. Wunderlich, of his 500 cases, reports cures in 23.3% of the ascitic variety and 9.8% of the adhesive variety. To

show how statistics may vary even when the truth of the clinical diagnosis has been established by microscopic examination, let us mention Frees' 18 cases and the 29 reported by Herzfeld; in all cases of both series the clinical diagnosis was confirmed by the microscope. Frees reports 33% of cures, Herzfeld 62%. Why statistics vary thus widely does not appear. None of these last-mentioned cases was reported earlier than six months after operation, and yet, if we may judge from as few cases as are contained in the series reported in the table above, fatal cases usually reach their end before that much time has elapsed. But it seems only prudent to wait at least a year before reporting cases as cured. The fact that this has not been done may account in part for the great variation in the percentage of reported recoveries.

Of this tabulated series of 28 cases, 11 patients recovered and an equal number died, making 39.3%. Two patients (7.1%) improved and four (14.3%) could not be traced. Of the 19 patients of the ascitic type, eight (42%) recovered, seven died, one improved and three could not be traced. According to most authorities, operation is attended by the best results in the ascitic form of the disease; in this series operation on the fibrous variety gave equally successful results. The prognosis in the ulcerative form is always bad.

Of the many other treatments for tuberculous peritonitis; of the many theories as to why laparotomy is often followed by a cure of the disease, nothing will be said. It may be noted in passing that tapping was tried as a means of relief in six of the cases; in every instance the fluid reaccumulated in a very few days.

The importance of early operation, so far as prognosis is concerned, is probably not great. The average time from the date of the onset of symptoms to the day of operation was practically the same in cases that terminated fatally as in those that recovered. The comfort of the patient is, of course, to be considered and that may demand early interference.

To summarize briefly:

1. We may reasonably expect cures (*i. e.*, one year or more after operation) to follow the operation in from 30% to 40% of all cases. In fatal cases the patients usually die within a few months after operation.

2. Family history does not appear to be important etiologically. Previous inflammatory affections of the abdominal viscera may have etiologic significance.

3. Operation usually affords at least temporary improvement either locally or generally even in cases that later may prove fatal. The use of drainage following the operation should be avoided when possible.

4. Inferences as to the remote results of operation should be drawn very guardedly, if at all, from the immediate results; though in cases which do not immediately receive from an operation either local or general benefit, the prognosis is very unfavorable.

Murrain.—The Secretary of the Treasury has issued a circular requiring disinfection of hides of all cattle imported into the United States from Bluefields, Nicaragua, as the United States Consul in that place has advised him regarding the prevalence there of murrain, an infectious and fatal disease of cattle.

Anthrax.—The Department of Agriculture has issued an important bulletin on anthrax, aiming to instruct stockmen in the nature of this disease, its cause, the manner of spreading among herds and preventive measures. It shows that present serious losses are not the only outcome of negligence in dealing with it, but if the carcasses are buried and not burned with due care, the land itself may be rendered infective for 50 or 100 years; already certain farms and districts, both in the East and West, are known to be anthrax infected, and the disease breaks out on them at regular periods, the animals dying with alarming suddenness. The spores get in the ground, and may remain there in a dormant state for years. Vaccination for blackleg in cattle, sheep, and goats producing an immunization which lasts for about a year is now being carried on extensively and successfully in the West.

THE INHIBITION OF THE CONTRACTION OF STRIATED MUSCLE.¹

BY

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The investigation of the role played by inhibition in animal and human physiology, begun about half a century ago, has already achieved gratifying results. First studied in connection with the inhibitory effects exerted by the pneumogastric nerve over the heart, inhibition was afterwards found to be exerted in the various kinds of smooth muscle. Only recently has the subject been studied in connection with the contraction of striated muscle.

Gaskell¹ has demonstrated distinct sets of inhibitory nerves supplying the visceral muscles. No one, however, has as yet demonstrated conclusively the presence of any distinct paths for inhibitory influences to striated muscles; that such anatomic paths exist is a conclusion that might be drawn from the abundant experimental evidence accumulated within the past few years. It is my object to review this evidence and consider inhibition theoretically from the standpoint of its nature and purpose in the animal economy, particularly in relation to the function of the striated muscles.

Verworn² declares that there is no ground for believing that striated muscles are supplied with inhibitory nerves; that the inhibition of striated muscles is passive, resulting from the suppression of the activity of the cells in the anterior horns of the spinal cord. He holds that there is no physiologic necessity for the active inhibition of muscles which are under direct voluntary control; such active inhibition occurring only in the case of the visceral muscles which are endowed with an independent condition of tonus. This subject, however, cannot be dismissed on mere theoretic reasons. Although no inhibitory nerve fibers have been traced to voluntary muscles, and although inhibition of the latter can be and is, frequently exercised through the medium of the ganglions in the anterior horns, yet it is quite probable, in view of the evidence at hand, that direct inhibition of striated muscles occurs.

Under ordinary circumstances, when a muscle or its nerve is stimulated, there results a contraction. To what extent this contraction represents an unrestrained activity we do not know. It is possible that the impulses transmitted along a nerve motor, consist of two kinds, the one promoting contraction, the other checking it, just as two antagonistic influences descend along the vagus to the heart, the one increasing, the other decreasing its activity. Piotrowsky³ studied the claw muscles of the crayfish, which are in a continued state of tonic contraction. He found that by direct as well as by indirect stimulation he could produce relaxation of the abductor muscle. This phenomenon was observed only in winter when the temperature was about 8° C. or lower. Biedermann⁴ experimented on the sartorius muscles of frogs poisoned with veratria. By attaching such a muscle in Hering's double myograph and clamping it in the middle, he could cause each half of the muscle to record its characteristic curve upon stimulating it with the induced current. While the muscle was in its characteristic condition of prolonged relaxation, he sent into it a constant current, with the following results: The closing constant current produced contraction of the cathodic half, and a sudden quick relaxation of the anodic half; the opening current caused contraction of the anodic half and relaxation of the cathodic half. The effects are due to the polarizing action of the constant current. The relaxing of the anode is due to the fact that the excitability of this half of the muscle is diminished, when the constant current

¹ Read before the College of Physicians and Surgeons, May 1, 1901.

is closed. At the same time the excitability of the cathode is increased; hence the cathodic half contracts. The diminution in the excitability of the anode causes a suppression of the processes going on in this half of the muscle, which processes lie at the basis of the muscular contraction. Other means have been resorted to for the purpose of getting the muscle into a condition of contraction, and then trying to inhibit this by means of the constant current. By immersing part of the nerve of an ordinary muscle-nerve preparation, in concentrated glycerin, Kaiser⁵ observed that the muscle went into a condition of tetanus. By stimulating a portion of the nerve not contained in the glycerin, he produced a rapid relaxation in the contracted muscle, thereby inhibiting the condition of tetanus.

The results obtained in the foregoing experiments are similar to those which have been obtained in the case of the snail's heart. When this is fixed at the end of a glass canula communicating with the ventricle, and if the ventricle and part of the canula are filled with salt solution, the heart will beat until it finally stops in systole. If at this moment a constant current be passed from base to apex, in closing the current, at the anode the heart relaxes and the wave of relaxation passes toward the apex.⁶

Jessop⁷ conducted a series of experiments on the iris of the cat's eye, tending to show that dilation of the pupil is due to the inhibition of a previously contracted state of the sphincter muscle of the iris. By placing a disc of pilocarpin (gr. $\frac{1}{100}$) in the eye of a cat, causing contraction of the pupil, and then stimulating one long ciliary nerve, the pupil dilated at the part innervated by the nerve that was stimulated, the rest of the pupil remaining motionless. In man the iris muscle is unstriated and involuntary, but in birds it is striated and voluntary. According to Grünhagen⁸, there are two sets of nerve fibers supplying the iris muscle, one causing contraction, the other dilation, an inhibitory effect. He also points out that the sphincter can be made to dilate by direct stimulation.

Morat and Doyon⁹ came to the conclusion that the cervical sympathetic is the inhibitory nerve of accommodation. Against the views of Jessop, Grünhagen and Morat and Doyon, Langley and Anderson¹⁰ claim to have proved that there is no inhibition of the sphincter muscle of the iris; that dilation of the pupil is dependent on contraction of the radial fibers of the iris, brought about by impulses transmitted along the sympathetic.

In view of the conflicting evidence as to inhibition of the activity of the circular muscle of the iris, this question is still in abeyance. If it be proved that such inhibition does occur, we have here the example of a muscle, which is striated in birds, being supplied with inhibitory nerves.

Besides responding to direct and indirect electric stimuli, inhibition has been set up reflexly and directly by chemic and mechanic stimuli.

1.—*Reflex Inhibition*.—That reflex inhibition of the contractions of the respiratory muscles takes place, through the agency of the vagus nerve, is a fact that is generally accepted and need not be dwelt upon. By stimulating certain centripetal nerves, Sherrington¹¹ produced relaxation in muscles already the seat of contraction. This led him to formulate the theory of "reciprocal innervation," which holds that each motor nerve consists of both excitatory and inhibitory fibers; that when an impulse is sent along the excitatory fibers of a motor nerve causing its muscle to contract, the latter reflexly causes an impulse to be transmitted along the inhibitory fibers going to the antagonist of the contracting muscle, causing it to relax. Cleghorn,¹² in experiments upon human subjects, showed that it is possible, by means of sensory stimuli, to produce more active relaxation in muscles caused voluntarily to contract.

The above results do not exclude the possibility that reflex inhibition may be due to passive inhibition of the

muscles, *i. e.*, inhibition occurring either in the cortex or in the anterior horns of the spinal cord.

2.—*Inhibition the Result of Chemic Stimuli*.—Locke¹³ found that ether could inhibit the contracture of veratrinized muscle, the peculiar contracture effect returning as the influence of the ether passes off. The following may be mentioned as another example of chemic inhibition of a contraction process: If a veratrinized muscle be caused to contract a number of times we notice that it soon fails to respond with a prolonged contraction, but exhibits the sudden switch of normal muscle. After a period of rest, the peculiar veratria effect returns. Apparently, the products elaborated in the muscle during its activity tend to inhibit the excessive excitability that manifests itself in the form of a contracture.

3.—*Inhibition the Result of Mechanic Stimuli*.—Brunton and Cash¹⁴ discovered that the veratria effect can be obtained only within a moderate range of temperature. If the temperature of the muscle be raised or lowered beyond certain limits, the contracture is prevented.

Drying the end of a nerve in a muscle-nerve preparation can produce inhibition. Wedensky¹⁵ showed that the drying of the nerve first gives rise to a series of feeble contractions, then to stronger and more frequent ones, after which the muscle enters into a tetanus of considerable intensity. This is followed by a stage in which the tetanus becomes feebler and feebler, until finally the muscle relaxes almost completely. If strong induced currents are now applied to the nerve they fail to arouse the slightest contraction; but so soon as the dried portion of the nerve is cut away the same stimuli evoke strong contractions which continue to respond for some time. Apparently the drying of the nerve at first stimulates the muscle to contract; later, when the drying becomes greater, the action on the muscle is that of inhibition. It was found that when the nerve is cooled to 2° C., so as to reduce its conductivity, the effect is to cause the muscle which has already relaxed as the result of the extreme drying of the nerve, to resume its former condition of intense tetanus. What do these experiments suggest? According to Wedensky, in the first place they show that the nerve is capable of transmitting two kinds of influences—the one excitatory, and the other inhibitory; secondly, that the inhibitory influences are more sensitive to a diminution in the conductivity of the nerve, such diminution acting as a bar to the inhibitory influences, but allowing the excitatory influences to pass.

When we come to inquire into the manner in which the electric stimulus produces the sudden relaxation of a contracted muscle, we are led to ask ourselves the following question: Does the electric or mechanic or chemic stimulus set up active changes in the muscle whose effect is exhibited in its active relaxation, or does it inhibit the changes that produce a contraction, the elasticity of the muscle causing it to rapidly resume its original shape? To answer this question it is necessary to review the current theories as to the nature of muscle relaxation.

Is relaxation an active force distinct from elasticity? According to Kaiser,¹⁶ relaxation of a muscle is nothing but its elastic recoil after the contraction process has ceased. Warren Lombard¹⁷ expresses the opinion of many physiologists when he states that "the relaxation like the contraction process is an active process, and it is analogous to the contraction process." It is highly probable that the active force whose outward and visible sign is the muscle relaxation, while it may in part be due to the elasticity of the muscle, is also due to something else. If we examine any large number of myographic tracings, we notice numerous variations in the relaxing phases of the tracing, while the contraction phases are subject to comparatively little variation, at least so far as their form is concerned. These variations in relaxation cannot be explained as due to differences in the elasticity of the muscle, for the latter, if investigated

by other means, will probably be found as nearly a constant quantity for the same muscle, which under different circumstances (*e. g.* fatigue, temperature, action of toxic drugs) will exhibit wide variations in its relaxation phases. Moreover, there is no evidence that veratria or similar drugs influence the elasticity of a muscle in any way. Lauder Brunton¹⁸ suggests that the muscle cell may contract not only in its length, causing contraction of the muscle, but also in its breadth, causing its relaxation. This suggestion, fanciful as it may seem, at least emphasizes the importance of looking at the relaxation of muscle as an active manifestation.

In answer to the question propounded above, it is my opinion that in the various experiments described, the stimulus not only inhibits the processes that lie at the basis of the contraction, but also stimulates the active forces that make for relaxation. This explanation would suggest the following conclusion, namely, that under normal conditions two sets of stimuli reach a muscle, one arousing it to contract, the other arresting the contraction after it has reached a certain stage, at the same time stimulating the forces that cause relaxation.

That there are antagonistic agencies controlling the function of the muscles, is conclusively shown by the following experiment of Biedermann¹⁹ on the claw muscles of the crayfish, which are of the striated variety. On stimulating the nerve supplying both the abductor and adductor muscles, by means of a faradic current of weak strength, the result was a contraction of the abductor, the adductor not responding; increasing the strength of the shock would still evoke a contraction of the abductor and none of the adductor. With a greater strength of current there was no contraction of either muscle. Increasing the strength of the current still more, at a certain stage the adductor would contract, but not the abductor, which would be the case with increasing strength of current until with the maximal stimulus there resulted a contraction of the abductor and not of the adductor, as with the weakest stimuli. The explanation of these phenomena is as follows: Each muscle is supplied both with excitatory and inhibitory nerves. In the case of the abductor muscle, weak stimuli arouse impulses in both the excitatory and inhibitory nerves, but the excitatory changes predominate and cause contraction of the muscle. On the other hand, weak stimuli in the case of the adductor cause a predominance in the changes in the inhibitory fibers, so that the adductor does not contract. With the stronger stimuli the effect is just the reverse, and with intermediate strengths of current the inhibitory fibers to both muscles prevail. The strongest stimuli cause a predominance of the excitatory fibers of the abductor and of the inhibitory fibers of the adductor.

By means of experiments similar to these of Biedermann, Wedensky²⁰ was able to produce inhibition of the contractions of a muscle in an ordinary muscle-nerve preparation, by varying the strength and frequency of the induced current. "A muscle no longer contracting in response to induced currents sufficiently strong and frequently repeated, soon commences to react and enters into complete tetanus, provided that the strength of the shocks be diminished to a very moderate degree; all that is now necessary is to augment the stimulus in order that the muscle shall again relax, and so on."

The presence of inhibitory and excitatory fibers in motor nerves, would make them analogous to the vagus, which contains cardioaccelerator and cardioinhibitory fibers. In the case of the heart when we stimulate the vagus, the inhibitory influence prevails. When stimulation ceases, the inhibitory influence of the vagus has a short after-effect; the influence of the accelerator fibers, however, has a long after-effect. In the case of the stimulation of the chorda tympani and sympathetic fibers supplying the submaxillary gland, the influence of the chorda, which is inhibitory, has a long after-effect, while that of the sympathetic which augments secretion

of the gland, has a short after-effect. In view of the occurrence of these differences in the after-effects of the inhibitory and augmentator fibers in the cardiac and glandular nerves, Meltzer²¹ concludes that the same after-effects occur in the action of the excitatory and inhibitory fibers of the motor nerves. Both influences are simultaneously transmitted along the nerve; the excitatory influence predominating over and being mitigated by the inhibitory influence. The latter has the longer after-effect. Upon stimulation of a motor nerve a contraction follows; as soon as the excitatory process ceases, the inhibitory process continues alone, with the result that the muscle relaxes.

The idea of two stimuli reaching a muscle, the one arousing it to activity, the other inhibiting that activity, is not an extravagant one. To quote Gaskell,²² "The fact that involuntary muscles are supplied with two efferent nerves which differ not only in function, but also in their anatomical course, leads naturally to the conception that a similar double nerve-supply exists for all tissues."

The fact that a stimulus can cause a muscle to relax at first sight appears to be anomalous. According to Burdon Sanderson, such a phenomenon seems to be against the function of the muscular apparatus. "If stimulation is the equivalent of *Auslösung*, the discharge of function, we cannot designate as stimulation an action by which activity is quelled. A living organism cannot be waked into inactivity."²³

A theory formulated by Gaskell²⁴ seeks to explain the fact that the inhibition of muscular contraction, far from being against the function of the muscular mechanism, is a necessary part of it. Muscular contraction is accompanied by catabolism. In order that the muscle should survive, it is necessary that anabolism should go hand in hand with catabolism. According to Gaskell's theory, the inhibitory nerves cause assimilation or anabolism, and the anabolic process stops for a time the catabolic process. This theory harmonizes with that of Hering which holds that all physiologic manifestations are the resultant of two opposite activities, anabolism and catabolism, occurring simultaneously in all vital matter.

Recalling the definition of inhibition as being the checking of physiologic processes, we may assume that the object of this controlling influence is to prevent them from displaying inordinate activity. When a muscle is caused to contract, it is probable that without such inhibitory regulation there would be extraordinary evolution of the energy of heat and visible motion. Being a storehouse of explosive material would it not extinguish itself in one sudden explosion unless there be something to prevent the extension of the process resulting in the transformation of the latent energy of the muscle? There are numerous illustrations of such inordinate manifestations of contraction. I believe that the contraction of a veratrinized muscle is one of them. During the contraction of such a muscle the amount of work done and heat generated are increased above the normal.²⁵ Repeated stimulation causes a speedy consumption of the latent energy of the veratrinized muscle, which sooner than in normal muscle, passes into the condition of rigor mortis. Other drugs, such as caffeine, cornutin, etc., have the same effect, which is a toxic one, tending to check or destroy these influences, whatever they may be, which tend to keep the active manifestations of the muscle within bounds.

There are instances in which the muscle has a tendency to go into a condition of contracture. The application of excessive degrees of heat or cold, stimulation with excessively strong electric currents, tend to produce contracture. Even single moderate electric stimuli have been observed to elicit contractures in the case of the gastrocnemii muscles of spring frogs.

Recently, Sherrington²⁶ has directed attention to the phenomenon which he termed "decerebrate rigidity." On removal of the cerebral hemispheres from a monkey,

there is observed a condition of contracture of certain groups of muscles, mainly extensors about the joints of the extremities. This condition can be inhibited reflexly by stimulating afferent nerves leading from the antagonists of the contracted muscles (reciprocal innervation), and when only one hemisphere has been removed, by stimulating distinct areas of the cortex.

The facts that muscles sometimes go spontaneously into a condition of contracture, and, that this condition frequently results from the action of drugs, point strongly to the idea there is a constant tendency for striated muscles, in the absence of inhibitory influences, to go into a condition of contracture.

There is a certain amount of evidence gleaned from pathology which would tend to support this idea. We may here allude to "congenital myotonia," a rare disease, in which, whenever the patient attempts to move an extremity, the muscles do not contract normally, but go into a condition of prolonged spasm, resembling that seen in veratrinized muscles. This resemblance is also seen in the fact that the tendency of the muscles in congenital myotonia to go into a condition of contracture, disappears after the muscles have been used for a short time, and reappears after a period of rest. The disease is associated with structural changes in the muscle substance; the most marked and characteristic change noticed is that the muscle fibers are nearly twice as broad as normally.²⁷ According to Gowers, "the phenomena of congenital myotonia suggest that the (muscle) cells respond abnormally to the voluntary stimulus, that this causes at first an increased tonic activity, slowly ceasing as their energy is lessened by action."²⁸

It now remains to sum up briefly the points which this essay has sought to bring out.

1. It is possible, by means of electric, mechanic, physical and chemic stimuli, to inhibit a condition of muscular contraction.

2. All motor nerves probably contain two sets of fibers, one excitatory and the other inhibitory—the excitatory ones ordinarily predominating in their effect on the muscles.

3. The function of the inhibitory fibers is to prevent an excessive manifestation of the energy of the muscle, when the latter has been aroused to contract; the inhibitory fibers bearing a relation to the muscle-machine somewhat like that of the "governor" to the steam engine.

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RESPIRATORY GYMNASTICS: PULMONARY ATELECTASIS: PULMONARY ANEMIA.¹

BY

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Thorough lung ventilation is of indisputable importance in the prevention and treatment of respiratory diseases. By its aid we are in a position to regulate the oxygen supply and the elimination of the respiratory excreta.

The organism is, according to Bouchard's conception, a receptacle and laboratory of poisons. Were it not for special avenues of excretion, man would succumb to autointoxication. The lungs are important avenues for the elimination of poisonous substances, many of which are scarcely known. We may also regulate the local and general blood and lymph circulations. Such effects are not only local, but general, for every protoplasmic unit of the body to live must have its essential quantity of oxygen, and, receiving this, yields in return its products of activity. The physiologic principles involved in respiration are not always strictly in accord with clinical observation. By this I mean that civilized man has so subverted primeval respiration, by attire and modes of living, that what is now regarded as physiologic is really pathologic. Physiology teaches that the lungs, even at the termination of expiration, are in a stretched condition, and the experiment is frequently cited of making an opening into the pleural cavity

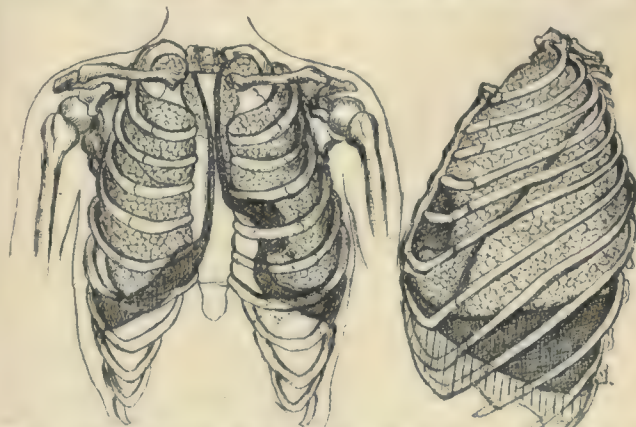


Fig. 1.—Showing pleural spaces shaded. (Eichhorst.) Fig. 2.—Pleural spaces (shaded) on the lateral surface of the left lung. (Eichhorst.)

which drives a certain amount of air into the trachea. Without entering further into a discussion of this matter, let us learn to what degree such physiologic teaching is in conflict with clinical evidence. The lungs do not by any means fully occupy the thoracic space. The costal and visceral layers of the pleura make up a sac in which, so to speak, the lungs are let in. In certain thoracic situations the pleural sac is larger than the lung volume and forms spaces, known as pleural or reserve spaces. Such spaces permit of changes in the lung volume which otherwise would be impossible. The pleural spaces exist throughout the entire extent of the lung borders, the largest, known as the sinus phrenicocostalis, being located at the lower outer lung-border at a point where the costal passes over into the diaphragmatic pleura. Figs. 1 and 2 show the sites of the pleural spaces (shaded) on the anterior and lateral aspects of the thorax.

Even the deepest inspirations are not sufficient to cause the lungs to fully occupy the pleural spaces. The pleural space on the lateral aspect of the thorax may be filled, if the patient lies on the opposite side and conducts deep and forced inspirations. In quiet respira-

¹ Read before the Oregon State Medical Society, September 26, 1901.

tion, the difference in the position of the lower lung borders during the respiratory phases is about 1 cm., whereas, if the respiratory excursions are more pronounced, especially in the lateral chest region, the difference may be as great as 13 cm. This active mobility of the lung borders is always greater than the passive mobility which is influenced by the body posture. Having succinctly reviewed these anatomic facts, we will now present the clinical findings which contravene the assumption of the physiologist, that the lungs are always in a stretched condition. I have frequently directed attention in the literature¹ to constant areas of diminished lung resonance varying from dullness to flatness as obtained by percussion. In number and situation these areas vary, but they admit in the aggregate of definite localization. These areas of dullness, or atelectatic zones, as I have called them, possess one characteristic feature, they may be dispelled by repeated forced inspirations. By this simple maneuver, resonance will supplant dullness. The atelectatic zones are dependent on circumscribed pulmonary atelectasis or collapse of limited portions of the lung, and dissociated with any demonstrable lesion. While it is true from the standpoint of the physiologist, that the lungs are in a stretched condition, it is equally true from the position of the clinician that certain portions of the lungs are collapsed and deprived of sufficient air to yield a dullness, and in some instances, a flatness on percussion. The atelectatic zones vary in size from a 25-cent piece to a dollar, or even larger, and are permanently absent

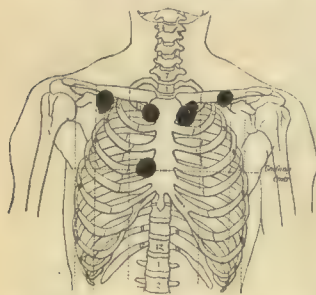


Fig. 3.—Patches on the front surface of chest.

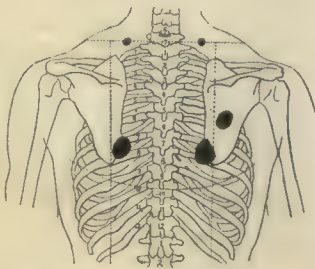
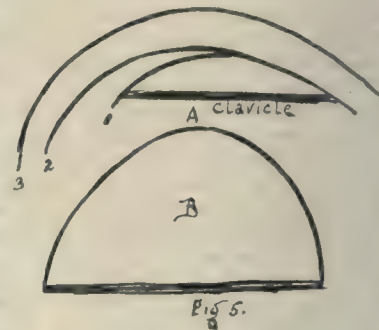


Fig. 4.—Patches on the posterior surface of chest.

when the lungs are emphysematous and temporarily so, after repeated deep inspirations, but they reappear in a few minutes when tranquil breathing is resumed. In Figs. 3 and 4 I have projected a composite picture defining the situation of the atelectatic zones based on an examination of over 100 apparently healthy persons, children as well as adults. On the posterior surface of the chest, the zones are more frequently encountered, and admit of more definite localization than those on the anterior surface of the thoracic wall. Since the advent of the Röntgen rays I have observed the following: (1) Atelectatic zones throw circumscribed shadows on the fluoroscope, which will vary according to the degree and area of the pulmonary atelectasis. (2) The shadows cast by the atelectatic zones can be made to disappear by continuous forced breathing, and they will reappear after a variable period when quiet breathing is resumed. (3) Before deciding whether the shadow cast on the fluoroscope is really due to pulmonary consolidation, the subject should be instructed to make forced inspirations; if the shadow disappears, and is supplanted by a bright reflex, it is due to atelectasis; if the shadow persists, pulmonary consolidation may safely be concluded to exist, excluding, of course, other anatomic conditions that would interfere with the transmission of the Röntgen rays to the fluoroscope. (4) Radioscopy of the lungs demonstrates that the opacities on the fluoroscope, corresponding to the atelectatic zones, greatly exceed the percussional areas of the latter, and, furthermore, that in individuals in whom no zones can be

demonstrated by percussion, opacities are sometimes present, which disappear after forced inspiration. (5) Before and during a radioscopic examination of the lungs it is always imperative to instruct the patient to practise forced breathing.

What are the practical conclusions that may be formulated as a result of the foregoing observations? (1) Danger may accrue from confounding the physical signs of atelectatic dullness with dullness caused by lung consolidation, an error which can always be avoided, if the patient is directed to practise forced inspirations before percussion of the chest is attempted. Whenever a localized dullness of the lung is detected, it is a wise provision to instruct the patient to take a series of deep breaths; if the dullness disappears, we are dealing with an atelectatic zone, if, however, the dullness persists, we are justified in concluding that there is some lung anomaly. I hold that topographic percussion as obtained ordinarily is of inconstant value. The limitation of organs by percussion, especially the heart, will vary from day to day, and the percussional area of dullness in the same case and at the same time will be variously obtained by



different diagnosticians. The borders of the liver, heart, and spleen are dependent on the degree of the lung inflation, and must vary according to the activity of respiration. Topographic percussion must always be based on the state of pulmonary inflation, and the results governed accordingly. The aid afforded by auscultation in the elimination of atelectasis is obvious. Auscultation of the lungs should be conducted with the patient in different postures, the object being to utilize the actual respiratory capacity of the lungs, thus eliminating the auscultatory phenomena of atelectasis and accentuating abnormal sounds which may be present. The recognition of the atelectatic zones is of the greatest importance to the skiascopist, as failure to recognize them may lead to the grave error of misinterpreting the shadows cast on the fluoroscope as evidence of lung tuberculosis. Stubbert² in a recent contribution maintains that he is unable to confirm my observations relative to the atelectatic zones. It is gratifying, however, for me to add, that Cabot,³ in his recent book, makes mention of my observations and confirms them. Any physician who places sole reliance on percussion, or the shadows cast on the fluoroscope, as evidence of lung consolidation, will commit the egregious blunder of interpreting tuberculosis in more than 50% of the patients coming to him for examination.

In Fig. 5A, we observe the fluoroscopic reproduction of the lung apex in a normal individual. Note the area of luminosity represented by the apex in tranquil breathing (1). Observe how this area is augmented after forced deep breathing (2) and again after elicitation of the lung reflex (3). Observe the extraordinary increase in luminosity after strapping the lower chest which permits of breathing in the upper chest only (B). A word of caution is necessary to those who are desirous of confirming the latter observations. Owing to the extraordinary respiration in the upper chest area, the clavicles may obscure by their elevation, the luminous apical area, hence, the latter area should only be gauged when the patient practises forced expiration which will cause a descent of the clavicles.

I have already mentioned the fact that the atelectatic zones may be dissipated by forced inspirations, but this is not always true, for there are instances when only repeated

forced inhalations of compressed air will cause their evanescence. There are two methods, which will cause their disappearance: by evoking the lung reflex, which will be referred to in a later contribution, and by change in the posture of the patient. The latter method I have only observed recently. I found that, when the patient bends forward for a few seconds, the zones can no longer be elicited. This phenomenon I attribute to interference with the movements of the diaphragm which evokes compensatory costal breathing. Not infrequently the lung apex in its entirety is atelectatic and this may even occur in a condition of apparent health. Kernig confirms this observation, to which I have frequently referred. Experience has taught me to regard most highly the observation originally referred to by Seitz, the value of percussing the upper borders of the lung apices, for the earliest evidence of tuberculosis. Both apices rise usually to the same height as determined by percussion, and the latter sign shows that the apices rise during inspiration and fall during expiration. Any difference in the height of the apices or any retarded dislocation during the phases of respiration must always be regarded with grave suspicion. Figs. 6 and 7 show the normal height of the apices. Owing to the difficulty experienced in the exact demarcation of the apices anteriorly, I rely almost wholly on the evidence furnished on the posterior surface of the chest.



Fig. 6.—Extreme area of apical resonance on anterior surface of the chest.



Fig. 7.—Extreme area of apical resonance on the posterior surface of the chest.

Atelectasis bears an important relation to pulmonary tuberculosis and pulmonary anemia. In the former affection the zones bear an almost definite relation to the points of election and paths of distribution of the lesions in chronic pulmonary tuberculosis.

Pulmonary Anemia.—In children, less often in adults, an anemia is often associated with atelectatic zones. This anemia I have designated as pulmonary. Pulmonary anemia attends multiplication or augmentation in area of the zones. The syndrome of anemia disappears upon a course of methodic respiratory gymnastics, while its recrudescence is always associated with a reappearance of the atelectatic zones. Pulmonary anemia is not an invariable concomitant of lung atelectasis, although as a rule, when anemia of pulmonary origin is present, atelectatic zones may be demonstrated. In association with the anemia, fatigue on exertion, dyspnea, and heart palpitation, anomalies of digestion and constipation are usually present. Loss in weight is quite characteristic of pulmonary anemia, whereas in the essential anemias, the well-nourished condition of the patient is manifest. There is another sign which distinguishes pulmonary from other forms of anemia, the one exception being perhaps, progressive pernicious anemia, and that is, that while the ferruginous preparations benefit pure anemias, in pulmonary anemia they are practically valueless, at any rate, the benefit accruing from their use is evanescent. The real pathognomonic sign of pulmonary anemia is the therapeutic test. Subject such an individual to a single pneumatic cabinet treatment, employing inhalations of compressed air, and one invariably finds an increase in hemoglobin percentage if the anemia is of pulmonary genesis. The quan-

tity of iron in pulmonary anemia is probably normal, the element lacking is oxygen, and this hypothesis is evidently correct, inasmuch as all my pulmonary anemics were cured by breathing exercises only. The recognition of pulmonary anemia as one of the earliest trustworthy signs of tuberculosis is of greatest importance. I cannot adduce statistics in support of my contention, for that is a difficult matter. When, in the 15 years of my practice, I encountered an instance of pulmonary anemia, the patient was treated and not subjected to scientific observation, so it is impossible for me to say how many of my untreated cases of pulmonary anemia would have terminated in bacillary tuberculosis. There are certain observations in medicine which must necessarily be purely empiric. I will instance a few observations which have some bearing on this subject:

Observation I.—In a tuberculous family, of whom three members died of the disease, two daughters came to my office for examination. In one daughter atelectatic zones were variously distributed over the chest. Hemoglobin reduced to 60%. Usual subjective symptoms of anemia. Treatment with the pneumatic cabinet. A period of five years has elapsed and the patient is still healthy. The other daughter also had the subjective symptoms of anemia and the hemoglobin was reduced to 70%. Only one atelectatic zone was present, situated on the anterior surface of the chest close to the manubrium sterni on the left side, and about three inches in circumference. This patient underwent no treatment. Two years later she returned to my office with pronounced tuberculosis. Cavitation of the lung corresponding to the atelectatic zone previously mentioned was evident. Six months later the patient died.

Observation II.—A young man, aged 16. Pronounced evidence of anemia. Atelectatic zones present. Treatment with the pneumatic cabinet of short duration. Three years later the patient died of tuberculosis.

Observation III.—Girl, aged 14. Hemoglobin reduced to 50%. Red corpuscles reduced to 70%. Atelectatic zones present. No other symptoms. One year later patient presented herself with symptoms of pulmonary tuberculosis. Patient cured.

The foregoing observations have been selected from a small number of analogous cases, and only justify the importance I have attached to pulmonary anemia as an early sign of tuberculosis. If pulmonary anemia is dependent on lung atelectasis, as I have attempted to show, the treatment indicated is lung development. All my patients showed immediate and permanent improvement after daily inhalations of compressed air. The color of the patients improved, the oxyhemoglobin and number of red corpuscles increased, and the subjective signs of anemia disappeared. Whenever the organism is compelled to dispose of more oxygen it produces more oxygen carriers. If relapses occurred, which were not infrequent, they were attributed in the main to neglect of lung gymnastics or a return to former modes of life.

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Tangkong.—Captain George A. Zeller, assistant surgeon, U. S. A., describes a peculiar Bicol practice known as tangkong, which consists in repeated skin stretching on both sides of the neck, until tumors are produced. The operation is performed by grasping the skin firmly between the semiflexed index and middle fingers, drawing it out as far as possible and letting go again and again. As the skin is successively stretched it becomes quite elastic, and when it becomes very sensitive, a strong salt solution is applied, and the operation is repeated. It is used as a general cure-all, but its greatest virtue lies in the relief it affords in severe headache. Being simply a method of counterirritation, this is quite natural. So universal is the practice that it is rare to find a native without these tumors on the back of the neck. From the photographs of a number of native prisoners of war, selected at random from a company, the tumors seem to be as large as good-sized oranges. Leeching, cupping, the application of cataplasms or vesicants, and the employment of the scarificator are general procedures in most diseases, and most Filipinos are covered with scars on their bodies.

ONE OF THE ETIOLOGIC FACTORS IN THE PRODUCTION OF DEFLECTED AND DEFORMED NASAL SEPTUMS AND THE METHODS FOR ITS RELIEF.

BY

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Deformed nasal septums were first recognized by Quetzalitz (1750) who ascribed the condition to the habit of putting the finger into the nasal cavity. Various theories have since been advanced as to its etiology and while many writers have given good corroborative proof with their theories, they do not seem consistent with their beliefs when they come to treat the condition.

Some of the theories advanced as to the etiology are, that deviations might be produced: by the action of astringents, which dry the membrane and cause it to contract;¹ by some defects in the primary laws of organization;² by the excessive development of the vomer;³ by traumatism received in utero or at delivery. Burnett⁴ says, "It is difficult to arrive at a definite origin of this deformity," and claims that hypertrophic rhinitis will cause deviated septum. In direct opposition to this, Bosworth⁵ asserts "that hypertrophic rhinitis is a sequel of deviated septa; it certainly is true that nasal catarrh and hypertrophic rhinitis are always present when there is deviation of the septum, but the reverse is not true."

Harrison Allen⁶ says, "Whatever may be the etiology of these confusedly obscure variations, the fact remains that one chamber, commonly the left, is smaller; errors in growth and development may arise in the nasal chambers, as elsewhere in the economy; but the condition is generally acquired and is often the result of injury."

Delavan⁷ divides the causes into predisposing and exciting; considering diathesis and racial characteristics as a most important predisposing cause, he cites persons suffering from strumous, syphilitic, tuberculous or rachitic diatheses as most liable. Asche⁸ thinks the diathetic origin hardly borne out, his experience having been that the majority of patients observed seemed free from any constitutional taint. Deviated septa are much more common in civilized races than in savage, this being probably due to the admixture of types occurring in civilized countries, as the result of emigration. Races with aquiline noses are more apt to have the deformity, excepting the American Indian, who is singularly free. As exciting causes Asche⁸ gives imperfect or unequal development of the plates of the vomer, the result of malnutrition or inflammation; he considers traumatism, unless accompanied by fracture of the nasal bones, as only an occasional cause of deflection. Ingals⁹ regards local malnutrition as the important factor. Roe¹⁰ in a paper on the etiology of deviation of the nasal septum considers that heredity plays an important part as a predisposing cause and that the most frequent exciting causes are trauma, nasal obstruction and unequal growth of the component parts of the vomer. Kyle¹¹ in his "Diseases of the Nose and Throat," divides the causes into deviation or deflection from disease, traumatic deflection, and congenital deflection.

Under disease, he gives the various inflammatory processes which involve the nasal mucous membranes which may weaken the cartilage, especially when accompanied by strumous or rachitic diathesis; for instance, the superficial ulceration in syphilis, tuberculosis and lupus, and those following infectious diseases. In fact, any change of an inflammatory nature that results in the destruction of a portion of the cartilage, leaving the soft parts intact, gives marked deviation and deformity. It may also follow diseases of the teeth and atrophic rhinitis; in uric acid diathesis he says there is a pronounced irritation of the mucous membrane which may result in

perichondritis and tend toward deflection and deformity. My observation has been that the uric acid diathesis is an accompanying feature of the deflected septum and the consequent impaired breathing, which results in imperfect oxygenization of the blood and consequent nonelimination of this result of animal metabolism.

Under traumatic deviation Kyle¹¹ says, "Great difficulty may be experienced in determining the cause of deflection," that slight dislocations occur in a larger percentage of cases than is usually believed. Many of the so-called congenital deformities he believes to be the result of pressure exerted upon the soft bones of the nose in the birth canal. He has noticed that the formation of a superior arch has much to do with the free passage of air through the nostril, and accounts for it by the poor breathing through the nose allowing the bones to form so as to produce often the high V-shaped hard palate so commonly found in mouth-breathers; again, the constant sniffing which is noticed in children with obstructed nasal breathing and the continual drawing down of the facial muscles while bony union is taking place will cause narrowing of the arch and give a peculiar "dish-faced" expression. Mark this paragraph: "I assert then that what is often termed malformation or congenital deformity is in reality developmental deformity, brought about by imperfect nasal respiration or imperfect and irregular development, due to systemic malnutrition or dyscrasia. The worst feature of these developmental deformities is that unless perfect nasal respiration is established early in life, *i. e.*, before the fifth or sixth year or not later than the seventh, the bony and cartilaginous framework becomes so firm that little can be done toward increasing the nasal space for breathing, and the individual will of necessity be a mouth-breather for life."

Schaus¹² remarks that certain abnormal conditions of facial development are frequently associated with deformities of the septum, the most marked changes being seen in the development of the superior maxilla. With the deformed nasal septums are associated high palatine arches; the alveolar processes instead of forming a wide arch come together at a comparatively acute angle, the incisor teeth frequently overlapping; the palate is asymmetric, the smaller half corresponding to the narrower nostril, and the alveolar processes being of unequal length, the longer usually lying on the side toward which the septum deviates. The cause of this Schaus believes to be due to faulty development of the facial skeleton. This description Bosworth⁵ thought to be a typical picture of a rachitic case, and he inclines to the belief that the deformities are caused most frequently by traumatism; the injury to the nose need not necessarily produce immediate development of the deformity but it may cause the establishment of a low grade of inflammatory action by jamming the septal cartilage against the vomer or perpendicular plate of the ethmoid, this develops slowly and finally results in an angular spur.

Jarvis¹³ regards the high-arched palate as the cause of the deflection, the septum being crowded upward by the hard palate until it yields to the pressure brought to bear upon it. This is also my opinion, but I disagree with the author upon what he considers the cause, *i. e.*, "the cause of the palatal deformity being explained on the theory of atmospheric pressure, occlusion of the nasal passages, creating in them through inspiration a partial vacuum, disturbing the equilibrium of pressure upon the upper and lower aspects of the roof of the mouth. This inequality of atmospheric pressure, exerted during infancy and early growth of the child, gives rise to the permanent deformity of the hard palate, thus interfering with the normal development of the septum, in turn further disturbed by the disturbance of respiration." "The bony ridges found along the line of suture of the septum with the superior maxillary bone are due probably to primary injury, aggravated afterward by hypernutrition."

With this brief outline of the present etiologic status, let us consider the anatomic construction of the face, beginning with the septum. We find it to be composed of cartilage and bones; the posterior part is formed by the vomer. The anterior or cartilaginous portion, known as the triangular cartilage or cartilage of the septum, is somewhat quadrilateral, being thicker at the margin than in the center and completing the separation between the nasal fossas in front. Its anterior margin, thickest above, is connected from above downward with the nasal bones, with the front part of the two upper lateral cartilages and with the inner portions of the two lower lateral cartilages. Its posterior portion is connected with the perpendicular plate of the ethmoid; its inferior margin with the vomer and palate processes of the maxillary bones.

Taking the elementary parts of the septum; the ethmoid bone, as stated by Gray, is exceedingly light and spongy, consisting of three parts—a horizontal plate, which forms a part of the base of the cranium; a perpendicular plate, which forms part of the nasal septum; and the walls of the ethmoidal cells. The horizontal plate lies between the two orbital plates of the frontal bone in the ethmoid notch, and, with the perpendicular plate, forms the letter "Y," the two arms form an obtuse angle. These two arms support the frontal lobes of the brain and form an inverted arch with the horizontal body of the ethmoid acting as a keystone at the junction of the two orbital plates with the perpendicular plate.

According to Gray, "The ethmoid bone is much thinner at the middle than at its circumference, and is generally deflected to one side. The posterior border, divided into two parts, articulates by its upper half with the ethmoidal crest of the sphenoid, by its lower half with the vomer; the inferior border serves for the attachment of the triangular cartilage of the nose. The upper half of the anterior border of the vomer usually consists of two laminae of bone which receive the perpendicular plate of the ethmoid; the lower half, also separated into two laminae, receives between them the lower margin of the triangular cartilage of the nose; the inferior border, the longest, is broad and uneven in front, where it articulates with the two superior maxillary bones.

"Of the maxillary bone, the parts which come into consideration are the alveolar and palate processes. The inferior surfaces of these bones being concave, form an arch which meets the "keystone" (the inferior surface of the vomer) at their junction in the median line; thus we have formed a structure extending from below upward, consisting of an arch with its "keystone" supporting a perpendicular plate, on top of which is superimposed an inverted arch with its "keystone" forming a structure something like in the figure. The teeth of the upper jaw resting upon the lower jaw forms the base of support for the lower arch.

Taking into consideration the development of the several bones involved, we find at birth the ethmoid consists of two lateral masses which are small and ill-developed. The horizontal and perpendicular plates begin to ossify about the first year after birth, and the lateral masses become jointed to the cribriform plate. The formation of the ethmoid cells, which completes the bone, does not commence until about the fourth or fifth year. The vomer, which consists of two laminae, commences to ossify from a single center, beginning to coalesce at the lower part, but their union is not complete until after puberty. The superior maxilla commences to ossify at a very early period, but the sutures between the palate processes persist until middle life. Thus the lower arch with its two arcs is fairly well formed at birth, with a joint at the junction with the "keystone" which is not solid, and which supports the perpendicular plate which is partly cartilaginous up to puberty; and the triangular cartilage of the septum is firmly held in bony surroundings for fully two-thirds of

its circumference. To my mind, if simple pressure is applied in the right direction to the arched supports, the natural law of force will produce deflection of the cartilaginous portion of the septum; provided, that the perpendicular plate of bone cannot resist the force. This it cannot do if it is in an abnormal condition as a result of injury or disease. The following diagrammatic sketch will serve to illustrate the idea:

Let *AA* represent the supports of the inferior arch or the alveolar process and upper teeth, *BDC* represent the perpendicular between the two arches and *C*, the "keystone" of the inverted, superimposed arch; let force be applied in the direction of the arrows at *AA*, that would bring pressure to bear at *B* which will be communicated through *D* to *C*; if *C* will not give and the force continues at *AA*, then *D*, which is the weakest portion of the structure, would have to give laterally or buckle.

When the nasal septum or perpendicular between the two arches becomes weakened, by disease or trauma, the act of mastication, in which a force of from 50 to 300 pounds is brought to bear upon the upper jaw by the lower, forces a large proportion of the pressure to the septum through the palate bones at their junction with the vomer. If the support is lessened or weakened at this point, the obtuse angle formed by these bones necessarily must become less obtuse and more acute pushing before it the weakened septum and causing it to buckle or, if it has the tendency to separate the two plates forming the diamond-shaped split septum. This arching of the palate causes the lateral diameter of the upper jaw to become less, so that the outer cusps of the molars and bicuspid strike within those of the lower jaw. This stage being reached, the force at the palatovomer junction is increased in mastication and keeps up a constant irritation upon the already distorted septum. Besides this the intermaxillary bone is forced forward producing the projecting incisors and laterals found in these cases.

The following case, which first brought to my attention the effect the high-arched palate has on the deflected septum, is a fair illustration of the aggravated case:

CASE.—Miss F. G., aged 33; her family history was fair; there was suspicion of specific history on father's side, he having hemorrhage 30 years ago. The mother died of uremia and was a morphin subject.

Previous history.—She was an only child; she had scarlet fever at five years, and her ears commenced to discharge two years later and continued discharging until two years ago. She had grip one year previous to my seeing her. She had been a mouth-breather since she could remember, and when seen first was just convalescing from a severe attack of nervous prostration. She sought relief from her deafness.

On examination her hearing was found to be nil in the left ear, but by bringing the lips almost in contact with the concha of the right she could hear the voice; both nares were occluded, the right by a deflection of the cartilaginous septum almost at the external meatus, the left by a bony deflection farther posterior and by an arching of the floor of the naris on that side. In passing the probe over the floor of the left naris I noticed that it did not pass back on a level but up an inclined plane and then down toward the nasopharynx. On examining the roof of the mouth the reason was quite evident, the left side of the palate being at least one-quarter inch higher than the right at



AA. Teeth, upper jaw, primary position, normal. A¹A¹. Teeth, upper jaw, secondary position, with high palate arch. EE. Teeth, lower jaw, overlapping AA. IIII. Direction of force of muscles of lower jaw, 50-300 lbs. B. Junction of arch of palate and septum, primary position, normal. B¹. Junction of arch of palate and septum, secondary position, resulting from pressure transmitted through wedges EE. C. Ethmoid, "keystone" of superimposed arch. D. Septum, primary position, normal. D¹. Septum, secondary position, deflection resulting from pressure transmitted through B and counter pressure at C.

the median line, forming almost a perfect step. Dr. G. V. I. Brown was called in to see the patient and advised widening the lateral diameter of the upper jaw, as it was completely within the lower. This was done, and to my surprise and delight it was found that the stenosis of the nares was relieved to a considerable extent and that a slight operation, after the manner of Asche, upon the deflected septum straightened it out and gave her perfect breathing. Her speech, which, owing to the high V-shaped palatine arch, was very imperfect, changed remarkably after the removal of the apparatus for widening the jaw; her hearing was somewhat improved by further treatment, for she could hear the voice, if a little louder than the conversational tone, at a distance of about two feet from the right ear.

She was seen five months after the operation; in this time she had gained 15 pounds, heard better and could breathe perfectly through the nose and talk very much plainer.

December 1, 1900. The patient is married; probably the result of improved facial appearance.

Seven cases of septal deformity are now being treated by Dr. Brown. The patients are having the lateral diameter of the jaw widened so that the teeth occlude properly. In two cases, one of which is a case of split septum in a girl of 20, in which there was complete stenosis of the nares, and the dorsum of the nose was concave from the effects of a blow received in childhood; and the other a lateral deflection occluding the left naris, the process of widening has progressed to such an extent that the patients can now breathe through the occluded nares. When the bite of the jaw is properly adjusted one of the classic operations for the correction of deformed nasal septa will be performed with much more assurance of success and less annoyance to the patient, from the fact that the nasal splints do not have to be worn so long. The septum being relieved from strain, the deformity is not likely to recur.

To summarize: In cases of deflected septum the bony structure has become weakened primarily by traumatism, strumous or rachitic diathesis, nasopharyngeal adenoids, or the result of some of the infectious diseases of childhood, in fact, anything which tends to lessen the resisting power of the bony septum. The resistance to what seems to me to be the natural tendency of the palatal portion of the maxilla to becoming more V-shaped, being to a certain extent weakened in the median line, it continues to arch, buckling the already weakened perpendicular septum more and more, the cartilaginous portion yielding the most (as it is the weakest and is two-thirds surrounded by the bony structure of the septum) until it occludes the nares. It must be remembered that the etiologic features which tend to produce irregularities of the superior maxilla are causative factors as well.

The fact remains, that in order to achieve a satisfactory and permanent result in deflected and deformed nasal septa with the high arched palate, we should go to the orthodontist and primarily have removed the active factors, the high-arched palate and acute-angled alveolar processes.

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The New York State Medical Society, at its annual convention adopted a resolution that a committee of five appointed by the president confer with a similar committee representing the State Medical Association, with a view to the reorganization and unification of the profession in that state. The recommendation was made that a state law be enacted licensing midwives who have passed a satisfactory examination before a state board appointed for the purpose. Resolutions were adopted against Senator Brackett's bill legalizing the practice of osteopathy.

POPULAR DOSE MEASURES, AND THEIR RELATION TO THE USE OF THE METRIC SYSTEM IN PRESCRIPTION WRITING.

BY

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Authors of articles written with a view of making the metric system of weights and measures more popular with the medical profession, usually lose sight of a very important factor that is likely to be a serious impediment to the introduction and use of a decimal system. This objectionable feature lies in the fact that custom has sanctioned the practice of regarding the capacity of certain household utensils as being equal to definite values of weights and measures. For instance, the teaspoon is credited with having a capacity equal to a fluid dram, while a tablespoon is supposed to hold four times that quantity or half a fluid ounce. A wineglass and an ordinary teacup are said to have a capacity of two and four ounces respectively.

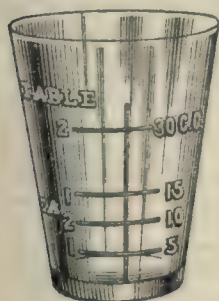
A few comparative tests, made with these domestic standards and an accurately graduated measure, or even a 2-oz. and a 4-oz. medicine vial, obtained from the corner drug store, will readily convince even the most ardent believer, that these commonly accepted equivalents are not even approximately correct. Should we have access to a collection of the so-called souvenir spoons we would have material for a still more instructive object lesson. By comparing these spoons we will find that they differ considerably in their size and capacity, so much so that while the contents of a two-ounce vial will fill the smallest of the teaspoons perhaps 14 times, never 16, as is popularly supposed, the largest teaspoon will empty the same vial in seven times. Therefore, if a doctor directed medicine to be taken in teaspoonful doses, and the patient used this large spoon to measure it, he would be getting 140% more than the dose intended. The relative size of the teaspoon and tablespoon is also of interest as it is popularly supposed that the tablespoon represents a capacity four times that of a teaspoon. In actual practice we will find but few tablespoons that will hold much more than three times that of the accompanying teaspoon. Nor do they appear to vary so widely from the usually accepted equivalents, so that medicines that have been ordered in doses of tablespoonfuls will come very near being measured out in the quantities intended by the prescriber. As to wineglasses and teacups, the mere mention of their variation in shape and size should be sufficient proof of their unfitness to be definite values of capacity. This variation of domestic dose measures does not appear to be recognized, nor considered of sufficient importance to be brought to the attention of the medical practitioner. We find absolutely no mention of it in the popular treatises and textbooks of therapeutics and materia medica. It is probable that few physicians take sufficient interest in the subject to find out for themselves how their medicines are being measured and whether or not the patient is getting more or less of an active ingredient than was intended for him.

It must of course be admitted that so long as medicine is not an exact science, and if each dose of medicine given to a patient is more or less of an experiment, that this variation in the measures usually employed is probably of little scientific importance. The arbitrary ruling as to the equivalents of these various utensils has, however, played a very important part in delaying the adoption of the metric system of weights and measures in the practice of even the more advanced and progressive medical practitioner.

At the present time there is probably not a single college of medicine in the United States in which the doses of drugs and medicines are taught in the metric system, and a physician, after he has learned the doses

of the various compounds and preparations in grains and fractions, is severely hampered if he should attempt to use the decimal system in writing his prescriptions. He would at first be obliged to think of his doses in fractions of an ounce or a grain, and then convert these into their metric equivalents. In thus transposing it is probable that he would not think of rounding off the resulting figures, but will put down the exact equivalent even to the third and fourth decimal, and as a consequence his prescriptions not only look but really are quite complicated. If, in addition to this grotesque array of figures representing the quantities of the various drugs desired, the physician directs his medicines to be dispensed in vials that are supposed to hold 4, 8, 16 or 32 doses of 4, 8 or 16 cc. each, he will have managed to gather together a combination of factors that would appear to be as foreign to a decimal system of notation as one could possibly imagine. Therefore it need not surprise us if after a short trial of such a complicated modification of the metric system he discovers that it requires too much time and thought for his everyday practice. While he admits that a decimal system of weights and measures has decided advantages in his scientific work and laboratory practice, when he probably uses full decimal quantities and percent solutions, he nevertheless thinks that a working knowledge for bedside practice is too difficult to acquire. It is sometimes

difficult for one who has accustomed himself to think in metric quantities to appreciate arguments that are advanced against the metric system, especially when these objections are based on futile attempts to acquire its use while thinking in fractions or in figures that are but poorly adapted to decimal quantities. It can hardly be denied that if we wish to use a decimal system all the factors entering into such use should be well adapted to a decimal system of notation.



At the German Hospital, Philadelphia, where for upwards of 10 years the metric system has been used exclusively in the making of galenic preparations, the preparing of prescriptions, and in dispensing doses to patients, we have found that the most important factors in the introduction of the decimal system were the dispensing of medicines in vials marked in metric quantities, and the use of a medicine glass on which the equivalents of the tea and tablespoon were given in decimal figures.

The prescriptions and stock preparations used at this hospital are all dispensed so as to conform with the equivalents as given on this medicine glass. As will be noted by an inspection of the accompanying illustration, the teaspoon on this glass is given as the equivalent of 5 cc. This is just 35% nearer the actual capacity of an average teaspoon than the usually accepted equivalent of one fluid dram, or the exact metric equivalent of 3.8888 cc. Any one that is sufficiently interested can readily demonstrate this for himself, by making a few comparative tests.

The equivalent of the tablespoon is given as 15 cc. This was done for several reasons. In the first place it was not thought advisable to deviate too far from the usually accepted equivalents, as many of the medicines prescribed at the hospital are taken to the homes of the patients, who would probably use an ordinary medicine glass or the average spoons, and these, we have found by comparative tests, come nearer the ratio of three to one than the usually accepted ratio of four to one. While it is no doubt true that the tablespoon used in this country is generally of slightly greater capacity than the equivalent given here, it seldom reaches and never exceeds the equivalent as adopted in France and other countries where the metric system is in use and in which the

tablespoon is usually given as the equivalent of 20 cc. Another point that should not be lost sight of, is that persons who are likely to use measures of this kind are not experts, and while they are not likely to fill a spoon to its full capacity, for fear of spilling some of the contents, they are apt, when using a medicine glass, to develop a tendency to exceed the prescribed quantity and give rather full measure. For this reason the equivalent, while approximating the capacity of the corresponding spoon, should not exceed it.

With us the term tablespoonful is seldom used in actual practice, doses being usually designated as 1, 2 or 3 teaspoonfuls; or, what is still more practical, and more to our purpose, as 5, 10 or 15 cc.

Another possibility which may deter a physician from giving the metric system a trial, is the thought that the pharmacist may not be able to dispense a prescription written in the metric system. This factor need not enter seriously into consideration on the part of the doctor, for if the pharmacist is at all worthy of confidence, he will be found to be fully up to date, and to be this he must have used the metric system for upwards of 20 years, as the United States Pharmacopeia has used decimal parts by weight, or metric quantities, in both the 1880 and 1890 revisions. It is safe to say that a professional man that is more than 20 years behind his official standard and guide should not be depended on when the life of a patient may be involved. In addition to being thoroughly familiar with the various factors of the metric system, an up-to-date druggist will also see that metric prescriptions are dispensed in appropriate metric vials. Being assured of these points, our advice to a doctor who is willing to give the metric system a fair trial, is not to think of the equivalent of any certain quantity in grains or grams, but to find out the dose he wishes to give in grams, or decimal portions of a gram. If at first he finds it necessary to transpose his doses, let him be careful to round up the resulting figures of his metric equivalents. For instance, in case he wishes to give about three grains, if instead of writing 0.194, the exact equivalent, he writes 0.20, he will have a neater looking prescription and one that is more in keeping with a decimal system. This single instance could be duplicated many times, but the fact we wish to impress, is that if the doctor will confine himself to full round figures, or at most a single fractional five, he will be able to give, within a small fraction, the exact equivalent of any possible dose, and in addition he will soon accustom himself to think exclusively in metric quantities. If, in addition to using metric doses, he will direct his medicines to be taken in quantities of 5, 10 or 15 cc., and dispensed in vials holding 5, 10 or 20 of these doses, he will soon discover that the metric system is not difficult to acquire nor to practise, after he has once mastered the first principles of the factors necessary in a decimal system of notation.

The free hospital for consumptives has increased its working facilities by the creation of five new committees. Dr. Joseph Walsh has been appointed bacteriologist.

Change in Hospital Control.—Bellevue and the allied hospitals, Harlem, Gouverneur, Fordham and the Emergency Hospital, on Twenty-sixth street, passed, February 1, from the control of the Charities Department to that of the board of seven trustees appointed by Mayor Low in accordance with the provisions of the revised charter. The members of the board are: President, Dr. John W. Brannon; secretary, James K. Paulding; Morris Tierney, Samuel Facus, Martin Stine, Theodore E. Tack, Howard Townsend, and Commissioner of Charities Homer Folks, ex officio. The morgue and the drug branch in the Bellevue grounds are still under the authority of the Departments of Charities. The reorganization of the insane pavilion at Bellevue has been begun in the appointment of Dr. Flavius Paeker to the charge of the pavilion, and Dr. Gregory as his assistant, to the end that patients received there may have the attendance of experts from their reception until their departure, and to obviate difficulties which have existed in having patients from the insane pavilion admitted into the state institutions.

SPECIAL ARTICLE

MEDICAL ALLUSIONS IN SHAKESPEARE'S PLAYS

BY

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The physician who is a student of Shakespeare's plays cannot fail to be impressed with the extensive knowledge of the art of medicine displayed by the poet; indeed, so exact and intimate is his familiarity with the healing art as practised in his day that many ingenious arguments have been advanced to prove that the "myriad minded" must have been actually engaged in the study of medicine during some of the obscure years of his manhood. It is reasonable to suppose he was assisted in his researches by his son-in-law, Dr. John Hall, who married his daughter, Susanna, in 1607, and was a physician of wide experience and much originality. Shakespeare lived with Dr. Hall and his daughter at the "New Place" in Stratford from the time of their marriage until his death in 1616. During these years of intimate association it is very probable that the plastic mind of the great dramatist received many enduring impressions of the medical arts from his accomplished son-in-law, who also attended him in his last illness, the "new fever," then epidemic in Stratford and its vicinity. The "new fever" seems to have been a well-marked case of smallpox which, in those prevaccination days, was usually fatal.

In considering the medical allusions to be found in Shakespeare's plays, it must be remembered that the dramatist wrote in the days when the science of medicine was in its infancy and had not fully emerged from the mysticism of antiquity, so that any comparison of his medical knowledge with that of today would be impossible. As the medical art of Shakespeare's time appears to us obsolete and unscientific, so may our boasted achievements in medicine, surgery and the collateral branches seem 300 years hence. Bucknill¹ (to whom I am indebted for much information in the preparation of this paper) tells us that Shakespeare's theoretic knowledge of medicine closely corresponded to that prevailing in his time amongst its professors and that he had authority for his most glaring absurdities, which proves that he was widely read in medical literature. His references to the medical profession are characterized by almost unvarying respect; indeed, it would be difficult to find in the works of any nonmedical author a higher ideal of the physician and his calling than he gives us. Only in two wellknown instances does he hold the physician up to ridicule. Once, in the "The Merry Wives of Windsor," in the character of Dr. Caius, whom Dame Quickly declares is a combination of the fool and the physician, and who is supposed to be a burlesque on Sir Theodore Mayerne, a French doctor who was expelled from the College of Physicians in Paris in 1603 because of his "rashness, impudence and ignorance of true physick." He afterward settled in London and became famous as a fashionable doctor and court physician. The second instance is that of Dr. Butts in "Henry VIII," but he is shown as a courtier rather than a physician.

The physicians who were the creations of Shakespeare's brain were portrayed as men of high character and skilled in the practice of their time. In "Lear," the doctor is an expert alienist and neurologist, and manages the case of the demented monarch with such tenderness and skill as to earn the gratitude of the devoted Cordelia. In "Macbeth," the physician who is called upon to attend Lady Macbeth in her mental collapse following the murder of "the unguarded Duncan," proves himself at once a shrewd Scotchman and a tactful practitioner. Before he undertakes "to minister to a mind diseased" or "pluck from the brain a rooted sorrow," he cautiously finds out from her gentlewoman-in-waiting the exact condition of his royal patient, and honestly admits "she more needs the divine than the physician" to soothe her distressed conscience; that her disease is beyond his practice, and after giving her attendants some good advice to watch her carefully and "remove from her the means of all annoyance," he prudently with-

draws. Later, when Macbeth asks him "What rhubarb, senna or what purgative drug would scour these English hence?" he answers with that caution so characteristic of his race, "Were I from Dunsinane away and clear, profit again should hardly draw me here."

Of surgeons as distinguished from physicians, Shakespeare did not have a high esteem. In his day the art of surgery was in the hands of the barbers, and the evolution of the surgeon was a tedious process. It was only in 1635 that Charles I repealed the law which forbade a surgeon to trepan the head, open the chest or belly, or cut for the stone but in the presence of a learned physician.² Millingen³ (quoted by Bucknill loc cit), explains the origin of the barber surgeons from the decadence of medical practice amongst the clergy. He says that in 1163, at the council of Tours, Pope Alexander III prohibited the study of medicine and of law amongst all who had taken religious orders, hence the practice of shaving, bleeding and teeth-drawing was delegated to the barbers because of their familiarity with cutting instruments. The barbers and surgeons were finally duly incorporated by Henry VIII in 1518. The apothecary and his calling were contemptuously described by the dramatist in the familiar lines from "Romeo and Juliet" (Act v, scene 1):

"Meagre were his looks, sharp misery had worn him to the bone,
And in his needy shop a tortoise hung,
An alligator stuff'd; and about his shelves
A beggarly account of empty boxes
Were thinly scattered to make up a show."

The allusions to diseases and ailments in Shakespeare's plays are so numerous that the pleasing task of quoting them would require an amount of space far beyond that allotted to me, so I will content myself with bringing to the notice of my readers a few of the more interesting. Bucknill has also written a most entertaining book on "The Mad Folk of Shakespeare," in which he has with rare skill analyzed from the standpoint of the alienist and neurologist the mental characteristics of "Hamlet," "Lear," "Ophelia" and "Lady Macbeth." In this work will be found much psychologic information of extreme interest to the medical student of Shakespeare, to whom I cordially recommend its perusal.

Regarding the true nature of the circulation of the blood the great dramatist was without accurate knowledge, for it was not until 1616 (the year of his death) that Harvey gave his immortal discovery to the world. There are, however, many references to this subject in Shakespeare's plays which show that he was well informed about the functions of the heart and arteries as understood by the best medical authorities of his time. For instance, in Julius Caesar (Act ii, scene 1), Brutus uses the remarkable expression:

"You are my true and honorable wife,
As dear to me as are the ruddy drops
That visit my sad heart."

These lines formed the basis of an essay in the second volume of the Shakespeare Society's papers, in which the author sought to prove that Shakespeare was informed by Harvey himself of his great theory about 1603—the year in which the play was written—but there is no proof that the dramatist had any acquaintance with Harvey, who at that time was studying anatomy and physiology at the University of Padua. In many of the plays, notably in "Love's Labor Lost" and "Henry IV," are found allusions to the Galenic doctrine, that the arteries contained not blood but air or "nimble spirits." The position of the heart in the thorax is described in "Mid Summer Night's Dream" (Act v, scene 1):

"Out sword and wound the pap of Pyramus,
Ay, that left pap wherein the heart doth flop."

A familiar allusion to cardiac palpitation resulting from nervous excitement is of interest by reason of its quotation by the late Dr. J. M. DaCosta,⁴ of this city:

"His hand, that yet remains upon her breast,
(Rude ram to batter such an ivory wall),
May feel her heart, poor citizen distressed,
Wounding itself to death, rise up and fall
Beating her bulk, that his hand shakes withal."
(Rape of Lucrece.)

In "Twelfth Night" (Act ii, scene 4) anemia is described as "a worm i' the bud," which fed on Viola's "damask cheek" with "a green and yellow melancholy." The effect of wine upon the liver and the influence of the emotions in the production of jaundice are faithfully shown in the following lines from "The Merchant of Venice" (Act i, scene 2):

"And let my liver rather heat with wine,
Than my heart cool with mortifying groans,
*** and creep into the jaundice by being peevish."

Again, in "Troilus and Cressida," "What grief hath set the jaundice on your cheeks?" (Act i, scene 3.)

Old Adam in "As You Like It" (Act ii, scene 3) ascribes his hearty old age to his youthful temperance and chastity.

"Though I look old, yet I am strong and lusty,
For in my youth I never did apply
Hot and rebellious liquors in my blood
Nor did I with unbashful forehead woo
The means of weakness and debility.
Therefore, my age is as a hoary winter—
Frosty but kindly."

The change of voice with old age is noted by Jacques in "As You Like It" (Act ii, scene 7):

"And his big manly voice, turning again toward childish
treble—
Pipes and whistles in his sound."

Fistula forms the basis of the plot of "All's Well that Ends Well." In Shakespeare's time the word fistula meant any discharging sinus, and was applied by him to an abscess of the chest wall from which the King of France suffered. Helena, daughter of Gerard of Narbon, a famous physician, was in love with Bertram, a courtier, but he did not return her tender passion. Her father having left her a secret remedy for the cure of fistula—"the dearest issue of his practice"—she conceived the plan of curing the King of his malady, in the hope that as a reward for her success he would give her the husband of her choice. The King was sceptical, saying that "our most learned doctors and the congregated colleges have concluded that laboring art can never ransom nature from her inaidable estate," and furthermore "that we must not prostitute our past cure malady to empirics." Finally, he yields to her beauty and importunities with the result that he is cured and Helena receives her promised reward. (Act ii, scene 1.)

Many allusions to syphilis and its consequences are found in Shakespeare's works. The expression "French crown," a slang term for the "Corona Veneris," is repeatedly used. In "Mid Summer Night's Dream," Quince says to Nick Bottom, "Some of your French crowns have no hair at all." A similar reference is found in "All's Well that Ends Well." The fearful imprecation addressed by Timon of Athens to the courtisans, gives many of the secondary and tertiary effects of syphilis.

"Crack the lawyer's voice
That he may never more false title plead
Nor sound his quilllets shrilly.
... Down with the nose,
Down with it flat; that his particular to foresee
Smells from the general weal—
Make curl'd pated ruffians bald:
And let the unscarred braggarts of the war
Derive some pain from you. Plague all
That your activity may defeat and quell
The source of all erection."

—(Act iv, scene 3.)

The merciful law that an unborn child is innocent of the guilt of its mother, and that a woman in pregnancy under sentence of death cannot be executed until after her baby is born, is beautifully illustrated in "The Winter's Tale" (Act ii, scene 2), when the accused queen has given birth to a child in prison. Paulina demands it from the jailor on the grounds that "the child was prisoner in the womb and is not a party to the anger of the king, nor guilty of, if any be, the trespass of the queen." Again in Henry VI (Act v, scene 4), when Joan of Arc is about to be burned at the stake as a sorceress, she demands a reprieve and implores her captors to "murder not the fruit within my womb, although ye hale me to a violent death."

The operation of cesarean section has two notable illus-

trations in Shakespeare's plays. Once in "Macbeth" (Act v, scene 7), when Macduff tells the distracted king that he was "untimely ripped from his mother's womb," and in "Cymbeline," when the mother, in the vision scene, declares that Posthumous was from her "ripped" and "came crying amongst his foes—a thing of pity." (Act v, scene 4.)

In "Macbeth" (Act v, scene 7), the king's evil and its cure by royal touch is described by the English doctor, who has in readiness for the king "a crowd of strangely visited people, all swollen and ulcerous—the mere despair of surgery." It is noteworthy that this ancient superstition continued in England at least until the time of Doctor Samuel Johnson "who was touched for the evil" but without success. An interesting reference to goiter and its prevalence in those who dwell in mountain regions, will be found in "The Tempest" (Act iii, scene 3), where Gonzalo declares "There were mountaineers dewlapp'd like bulls, whose throats had hanging at them wallets of flesh."

A remarkable description of approaching dissolution is given by Dame Quickly in her account of the death of Falstaff from a "burning quotidian tertian." (Henry V, Act v, scene 3). She tells how she "saw him fumble with the sheets and play with the flowers and smile upon his finger ends that his nose was as sharp as a pen that he bade me lay more clothes on his feet and they were cold as any stone, and then I felt to his knees and so upward and upward and all were cold as any stone."

Macbeth's expression "Throw physic to the dogs" has oft been quoted as an illustration of Shakespeare's contempt for the art of medicine; but this opinion has been refuted throughout the plays by the respectful way in which the immortal bard refers to its exponents and their teachings. While he portrayed the starved apothecary in "Romeo and Juliet"; the supercilious Dr. Caius in "The Merry Wives of Windsor" and the courtier, Dr. Butts in "Henry VIII," he also sketched with matchless skill in "King Lear" and "Macbeth"—physicians who are types of all that is best in medical ethics.

BIBLIOGRAPHY.

- ¹ Bucknill: Shakespeare's Medical Knowledge, London, 1860.
- ² Memorials of the Craft of Surgery in England, South, p. 215, Lond., 1886.
- ³ Curiosities of Medical Experiences, Millingen.
- ⁴ Physical Diagnosis, J. M. DaCosta, p. 452, eighth edition.

Deaths in Hospitals.—The Health Commissioner of New York City has ordered that all deaths of patients occurring in hospitals under care of the Health Department must be telegraphed immediately to the next of kin or to the authorities of the hospital from which the patient was removed. This order arose from the fact that a 2-year-old child suffering with measles and alleged to have died from exposure in being transferred from one hospital to another, was dead two days before its friends at the hospital from which it was first removed were notified.

The Eastern Medical Society of the city of New York, consisting of 350 practitioners in that city at a special meeting held January 25, 1902, passed resolutions condemning most emphatically the Bracket Bill to legalize the practice of osteopathy, on the ground that the legislation of osteopathy would largely nullify all the medical legislation of recent years, and the passage of a bill of this nature would jeopardize the public health by placing it to a certain extent at the mercy of incompetent individuals. A copy of the resolutions were forwarded to the Secretary of the Senate Judiciary Committee.

Children's Aid Society.—A report of the year's work shows that the New York Society has been the means of helping nearly 54,000 children. The Society has a number of industrial schools and kindergartens in which the unfortunate little ones of poor shiftless or ignorant parents are trained into habits of cleanliness and regularity. It has been found that in many instances it was necessary to give nourishment before the children were able to do the ordinary school work. As a result of this, hot lunches are given in all the schools under their jurisdiction. Among the children assisted were 183 helpless little cripples who were taken to and from school in wagonettes provided for the purpose. In the summer as many children as possible are sent to the country or seashore for as long a period as possible. The sick or crippled children generally stay two weeks or longer. A number of Italians who in years past attended the school have raised the sum of \$1,300 among themselves and given it to the Society with the request that they establish another school in the East Side district for the children of Italian immigrants.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

February 8, 1902. [Vol. XXXVIII, No. 6.]

1. Autotoxemia as a Factor in the Neuroses. GEORGE F. BUTLER.
2. The Uses of Tuberculin. CHARLES DENISON.
3. The Importance of Heredity as a Cause of Insanity. ARTHUR MCGUGAN.
4. Incipient Amyotrophic Lateral Sclerosis, with Recovery: Brachial Neuritis, Angina Pectoris and Epilepsy from Electric Injury: Traumatic Neuritis and Persistent Brachial Neuralgia from Hypodermic Injection. LEO M. CRAFTS.
5. Alexia from Cyst Caused by Bullet Wound Operation: Death. G. W. MCCASKEY.
6. The Economic Limitations of the Visual Acuity in Various Trades and Professions. H. V. WÜRDEMANN.
7. What Amount of Visual Defect Should Disqualify in Railroad Service? FRANK ALLPORT.
8. The Problem of Heredity. JAMES G. KIERNAN.
9. Note on Gauging Vesical Capacity. G. FRANK LYDSTON.
10. Primary Sarcoma of the Esophagus and Stomach. WILLIAM TRAVIS HOWARD, JR.

1.—Autotoxemia in the Neuroses.—Fatigue produces autotoxemia by the direct products of nerve waste and interference with the organs of sanguification and elimination through loss of central inhibitions. From the disturbance of the thermotoxic centers in nerve shock results the autointoxication underlying saburral fever. The symptoms may be those of profound depression or of convulsive and exciting types. It has been suggested that epileptic attacks were due to a proteid toxin and the acquired diathesis may become transmissible. In early life and sometimes in the adult the balance of consciousness is so disturbed by irritations from autotoxemia that relief produces a buoyancy out of proportion to the elimination secured. The morbid irritations produce anxiety and uncertainty or a state of nervous adynamia and sometimes a more deep-seated disorder which will not yield to treatment of the primary cause alone. A common type is a disorder mimicking locomotor ataxia, and often accompanied by convulsive attacks. Confusional insanity, transitory frenzy, melancholia, stupor, amnesia and in milder cases unilateral headache, dermatoses, irritable bladder, etc., are the expressions of the conditions. The autotoxemia may be due to inhibitory effects on liver, kidneys, uterus, to emotional disturbances, to local irritations as in eyestrain, adenoids, etc. Therapeutics will depend on the type. Diet, eliminatives and general hygiene is indicated in the milder types and in the deeper, removal from home surroundings. [H.M.]

2.—Uses of Tuberculin.—The diagnostic effect is obtained from the culture fluid, the immunizing quality from the germs themselves. In diagnosis small doses may create tolerance and so miss the mark and from a large dose there may be too much reaction. The size of the initial dose must depend on suspicions of infection, age, sex and susceptibility. The dose may be doubled each morning till 20 or 30 milligrams are reached. Instead of a temperature rise there may be sensations of oncoming grip. There are also local effects in even slightly affected lung tissue, the infiltration and congestion of the efforts of repair giving rise to higher pitched breath sounds. The various tuberculins are described and a table of 213 cases is given showing that the immunizing and curative properties of the watery extract (v. Ruck) are the most effectual. In tuberculosis, gradual immunization is prevented by the building of walls of nonvascular tissue around the germs and the enshrouding of the latter in a coating of fat. There is not enough absorption of the toxin to stimulate Nature's antitoxic power and finally there is not enough antitoxic power remaining in the exhausted system to be stimulated. Cases for treatment should be selected. Incipient cases may be cured in two or three months while in those past the beginning of the ulcerating stage two or three years may be required. [H.M.]

3, 4, 6 and 7.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 542.

8.—Heredity.—Besides immediate heredity, immediate atavism, remote atavism and fetal and postnatal environment during growth, must be recognized. The higher vertebrate embryo contains the organs and potentialities of all lower vertebrates. Varying conditions stimulate these potentialities at the expense of the later acquired human organs. The female

function in reproduction is the most potent. If at certain periods of intrauterine stress, through deficient nutrition, remote atavism gains the day, cerebral states result analogous to those of animals so far as the encephalic basis is concerned. Because of the struggle for existence between the different factors of heredity and of varying environment at periods of stress hereditary acquirements are rarely able to overcome remote or immediate atavism so as to pass through the period of stress. Malformations are not explained by the photographic theory of maternal impressions, but are simple arrests of development due to maternal shock, destitution, etc. The cause of the majority of cerebral deformities exists prior to the appearance of separate organs, hence in the hereditary psychosis somatic malformations often affect the body elsewhere than the nervous axis. In alleged defect from paternal heredity the influence of the father on maternal environment must be taken into account. With advance in evolution the reproductive power is decreased. The occurrence of large families is an expression of degeneracy. So also is sometimes old age in a family of short-lived people, the absence of deep emotional feeling enabling the one to survive. [H.M.]

9.—Gauging Vesical Capacity.—In cases of frequent micturition of a purely nervous type, distinguished clinically by lessened frequency at night, and in certain organic conditions in which rest produces similar improvement, the patient should be instructed to drink water moderately in the evening, and when aroused at night to pass water on each occasion in a separate vessel. The greatest single quantity represents bladder capacity from a clinical standpoint. When frequency is aggravated at night, mechanic means must be used. The chief sources of error are exaltation of the urinary besion by irritation from the catheter and too rapid distention, producing peremptory muscular reflex in the bladder wall. These can be minimized by a hypodermic of morphia, cocaine applications to the prostatic urethra, a small catheter or use of the hydrostatic method under low pressure. [H.M.]

10.—Primary Sarcoma of Esophagus and Stomach.—Howard reports the twelfth recorded case of sarcoma of the esophagus. Analysis of the 12 cases shows the disease is more common in males and at the period when carcinoma is most common, but may occur in early life. The lower half was involved in nine cases. The lumen may be surrounded or polypoid masses project within. Symptoms of obstruction and metastases occurred. It is more rapidly fatal than carcinoma. The four new cases of sarcoma of the stomach reported make the total 61. The sexes are equally affected; 44.7% occurred before 40; the pyloric end was involved in 26.23%. The tumor begins in the submucosa, and all varieties have been found. The average duration of life is from 9 to 10 months; metastasis is not as common as in carcinoma; there are no distinctive clinical symptoms. Large gastric tumors projecting below the umbilicus may be diagnosed as sarcoma. They have been mistaken for tumors of spleen, omentum and ovaries. Operation should be as successful as in carcinoma. [H.M.]

Boston Medical and Surgical Journal.

February 6, 1902. [Vol. CXLVI, No. 6.]

1. The Proposed Boston Academy of Medicine. J. G. MUMFORD.
2. A Plan for the Municipal Control of Tuberculosis in Boston. AGNES C. VIETOR.
3. Six Cases of Operation for Cleft Palate. C. A. PORTER.
4. The Treatment of Congenital Cleft Palate by Mechanic Appliances. GEORGE A. RAYMOND.
5. Rabies: Report of Cases. CHARLES J. PATTON.

2.—Municipal Control of Tuberculosis.—The only definite decrease in the statistics of tuberculosis yet recorded is (1) from cures effected by open-air life with superfeeding, etc.; (2) in New England from increase of outdoor recreations, and (3) in Germany from the work and educational influence of sanatoriums. As it is impossible to provide institutions for the treatment of all cases it is suggested that a committee be appointed by the municipality which shall have the appointment of various subcommittees on air and light in tenements, factories, schools, etc.; on instruction in foods and cooking; on methods of decreasing street dust and noises in order that better ventilation of houses may be promoted; on nursing and

disinfection. A sanatorium should be erected in each section of the city as a model and a distinctly charitable hospital should be provided for the destitute. [H.M.]

3.—Operation for Cleft Palate.—C. A. Porter reports six cases operated upon for cleft palate. The ages of the six patients at the time of operation were as follows: Nine months, 18 months (second operation at two and one-half years), three years, four years, 16 years and 35 years. With the child operated upon at nine months there was complete failure of union; likewise with the one operated upon at 18 months, but a second operation in the latter case at two and one-half years was completely successful. For anesthesia, chloroform is preferred; and after operation the child is kept firmly on its back in bed by means of a swathe, and the hands are confined loosely. Both nares are plugged with cotton after recovery from anesthesia to forced mouth-breathing and thus keep the palate dry. Quiet is secured by administering chloral, bromid or the deodorized tincture of opium. Rectal alimentation is resorted to for four or five days. No spraying of the wound should be resorted to, especially in young children. Mechanic appliances are not used. Silk is preferred for the sutures, which should be three-eighths of an inch apart and introduced at the same distance from the edge of the denuded tissue. Hypertrophied tonsils and adenoid growths should be removed before the operation in question. Sutures are almost always tied too tightly. The after-treatment, such as dividing adhesions about the palate, and exercising the soft palate by means of the finger, if necessary, should not be neglected. [A.B.C.]

4.—The Treatment of Congenital Cleft Palate by Mechanic Appliances.—Raymond asserts that in all his experience he has never seen a case in which perfect speech resulted from operation upon cleft palate; that there is no claim of effecting anything by the operation except improvement of the voice, and since this is not accomplished the procedure is useless, and a mechanic appliance is by far the best means of giving the patient anything like perfect speech. He cites a number of cases illustrative of the benefit derived from this appliance. [A.B.C.]

Medical Record.

February 8, 1902. [Vol. 61, No. 6.]

1. The Diagnosis of Pericarditis. ARTHUR R. EDWARDS.
2. Dengue: A Study of its Mode of Propagation and Pathology. HARRIS GRAHAM.
3. Treatment of Vessels from Yellow-Fever Ports. EDMOND SOUCHON.
4. Nephrectomy: A Clinical Study of Four Cases. LOUIS J. LADINSKI.

1.—Diagnosis of Pericarditis.—In this paper, devoted to descriptive detail, the physical findings are first described. All symptoms are frequently absent and no symptom is diagnostic. Etiologic diagnosis is important and is considered under infective diseases, contiguity, and cachexias, or dyscrasias. Differentiation is discussed, and also diagnosis of the character of the exudate. [H.M.]

2.—Dengue: Propagation and Pathology.—Graham suspected the mosquito as the missing link needed to harmonize the contagious and miasmatic theories as to the disease. Only certain forms of the culex are found in the vicinity of Beyrouth. Experiments tended to prove that the disease was not contagious after all mosquitoes were destroyed by disinfection; and inoculation by mosquito bites caused the disease in persons and localities otherwise free from infection. Numerous blood examinations revealed a protozoon differing from that of malaria in its life history, the changes of phase developing more slowly. These are described in detail and are illustrated by cuts. [H.M.]

3.—Vessels From Yellow Fever Ports.—Souchon challenges several of the conclusions reached by Reed and Carroll as to measures against the importation of yellow fever. Yellow fever at foreign ports is not always promptly reported to us, as many of these have no medical inspectors; physicians there are careless, and there is unrestricted intercourse with all other ports. The Louisiana Board has almost done away with quarantine detention by placing inspectors on vessels carrying passengers from fruit ports to take temperatures daily and

keep clinical records of all cases of fever however slight, making the vessel thus a detention camp, the vessel then being given credit for the days in transit. Cases are cited to show the danger of allowing a vessel to proceed immediately after disinfection if the disease has developed enroute. Records are also quoted to show that yellow fever has developed on vessels more than 20 days out, and after disinfection. Instances are related tending to prove that fomites will carry infection. Figures are given to show that five days quarantine is sufficient. [H.M.]

4.—Nephrectomy.—In this paper Ladinski reports four nephrectomies, the cases representing the four chief surgical diseases of the kidney. The first was for calculous pyelonephritis, in a Hungarian girl of 18. She had suffered more or less for five years. Nephrectomy was done and the kidney found badly diseased. In the second case nephrectomy was performed for a tuberculous kidney in a woman of 33. She had suffered for 18 months. The author believes the disease was of the ascending type, since the patient had a vaginitis, urethritis and cystitis. The third nephrectomy was for adenoma of the kidney or struma suprarenalis in a woman of 55, who had suffered from urinary symptoms for three years; and the fourth was for acute suppuration of the kidney, in a married woman of 19, due probably to infection in confinement by a midwife. Nephrectomy was done on the tenth day after delivery; great improvement followed, but the kidney refusing to functionate and symptoms of suppuration persisting, nephrectomy was performed some days later. In all of these cases recovery was complete. [A.B.C.]

New York Medical Journal.

February 1, 1902. [VOL. LXXV, No. 5.]

1. The Management of the Tendency of the Upper Fragment to Tilt Forward in Fractures of the Upper Third of the Femur. RUSSELL A. HIBBS.
2. Meckel's Diverticulum and its Relation to Ileus, with Report of a Case. C. O. THEINHAUS.
3. A Case of Hydronephalocoele. DAVID E. WHEELER.
4. The Influence of Electric Ozonation upon Disease. G. LENOX CURTIS. (Concluded.)
5. The Treatment of Defectives. MAXIMILIAN P. E. GROSZMANN.
6. Typhoid Perforation, its Frequency, Prognosis, Diagnosis and Treatment. HUGH M. TAYLOR.

1.—Fractures of the Upper Third of the Femur.—Hibbs says that in such cases the long traction hip-splint, such as is used in the treatment of hip-joint disease, offers a means of applying direct and constant extension which is always in the same line, and may be made to control muscular contraction absolutely. It is direct and constant because it is not affected by changes in the position of the patient or dependent for its force upon the weight of the body, and the degree is absolutely under the control of the surgeon. While it is more efficient with the limb fully extended, as it is used in the treatment of fractures of the shaft of this bone lower down, than when the limb is flexed, even in these cases it is less so than in the case of the hip-splint extension. Coaptation splints are applied as follows: Two steel bands are attached to the sheath of the splint, one running posteriorly half round the thigh near the groin, and another at the middle point of the thigh, with a felt or leather backing resting upon them, completed anteriorly by two webbing bands. This splint is applied as is done in a case of hip-joint disease, with the adhesive plaster extending to the point of fracture. The patient should be anesthetized, not only because it saves the patient suffering, but because it relieves muscular spasm entirely and it never recurs to the same degree afterward because its cause, the irritation from mobility at the point of fracture, is removed. The limb should be held at about 135° by means of an inclined plane. Photographs of a patient under treatment by this method are given, and a case is reported. [O.A.O.]

2.—Meckel's Diverticulum and its Relation to Ileus.—Theinhaus reports a case of ileus in a boy of 17. Five days before operation he was suddenly taken sick with sharp pains in his abdomen and constant vomiting which became stercoraceous on the second day. High enemas and small doses of opium given in suppositories failed to give relief. On the fifth day the parents consented to operation. After opening the abdomen, a string of about the size of a little finger, extending from the umbilicus to a part of the ileum, was encountered.

over which was hanging a large coil of small intestines. A reddish looking mucous-secreting tumor of the size of a walnut which had been on his naval since his birth, together with the skin and the band, was dissected out, and the stump, where the string entered the ileum, was sutured with Czerny-Lembert sutures and inverted into the bowel. Complete recovery followed. In such cases food by the mouth should be discontinued, the stomach washed out, and high nutriment enemata given together with *small* doses of opium in suppositories. The author says that this treatment with perhaps injections of atropin, is the only justifiable internal treatment of ileus. He concludes as follows: (1) When you can make the diagnosis of ileus caused by intraabdominal strangulation, no internal treatment can come into question. Immediate operation is the only justifiable treatment. (2) If a positive diagnosis concerning the nature of ileus cannot be made and the internal treatment, as advocated above, does not relieve the symptoms of ileus within five hours from the onset, advise immediate operation. (3) Do not obscure the picture in a case of ileus by *large* doses of opium or morphin. [C.A.O.]

3.—A case of **hydrencephalocoele** is reported by Wheeler in a vigorous female child weighing 8 pounds. The tumor was 12 inches in circumference, covered with skin, translucent and markedly fluctuating. The fluctuation was not communicated to the anterior fontanel. The child steadily lost weight and the tumor increased in size and became more tense. There was no symptoms of digestive disturbance nor any convulsions, even when the tumor was compressed. On the twenty-fifth day the child died with dyspnea and cyanosis. The cyst was then 17 inches in diameter and was found to contain clear serum. The chief points noted on autopsy were (1) osteoporosis of cranial bones and (2) pedicle entering the skull in the median line to connect with the left lateral ventricle. [C.A.O.]

4.—The influence of electric ozonization upon disease is discussed by Curtis. The machine used by him for this treatment is a high-frequency one, having a voltage of 1,000,000 and an amperage of $\frac{1}{2}$. There is no unpleasant sensation produced by its use. It is portable, has one pole, and can be used at the bedside instead of the ordinary oxygen apparatus, provided an electric-lighting current is at hand. The patient remains in a cabinet for from 20 to 30 minutes to get the best results, and during this time inhales ozone and receives the current. The effect of the treatment on the blood is shown by an increase in the number of red corpuscles and an augmentation of the percentage of hemoglobin, together with a diminution in the number of white corpuscles. The author has used this treatment in about 250 cases, and concludes that it is useful in both acute and chronic disorders. Among the diseases in which he had observed benefit are tuberculosis, syphilis, carcinoma, locomotor ataxia, paralysis agitans, hysteria, meningitis, leukemia, anemia, dysmenorrhea, oöphoritis, septicemia, Bright's disease, diabetes mellitus, impotence, paresis, torticollis and neuritis. He has used it in a number of cases of pulmonary tuberculosis associated with fever and bacteriologic evidence of mixed infection. Two treatments were given daily, and in each instance the sputum became more liquid, the night sweats diminished, and food which had previously been rejected was retained. Daily observations on the sputum of such patients under this treatment has proved to him beyond doubt that the ozone so influences the tubercle bacilli that they die quickly. Very good results followed the use of electric ozonization in some cases of melancholia, and in 10 cases of diabetes mellitus. The effects of this treatment has been excellent in both acute and chronic cases of alcoholism, and it has been employed with complete success in 25 cases of muscular rheumatism. In rheumatoid arthritis the results have been good, though obtained slowly. [C.A.O.]

5.—The treatment of defectives is discussed by Grossmann in a very interesting article. He believes that in all such cases the physician should seek the counsel and cooperation of the educator and psychologist, who, in their turn, will act wisely by combining their efforts with those of the physician so as to establish perfect harmony between the various curative forces. [C.A.O.]

6.—**Typhoid Perforation.**—Taylor quotes statistics from the United States census report for 1896, which states that

directly and indirectly 75,000 deaths occur annually from typhoid fever, and from the U. S. Marine-Hospital Report for the same year, which asserts that there are 500,000 cases of typhoid fever each year in the United States, and 50,000 deaths. Osler and other writers affirm that 33% of the deaths from this disease are due to perforation. Granting this, we have the startling fact that almost 25,000 people die annually in the United States from typhoid perforation. Osler has also stated that it is possible to save the patient in one-half of the cases of perforation if the severe cases are watched carefully for symptoms of perforation and are operated upon early. Granting this, Taylor urges early intervention in such cases, and maintains that we need greater proficiency in diagnosis, far more than we do an improved operative technic. He attaches most importance to pain, muscular rigidity and inhibited peristalsis. [C.A.O.]

Medical News.

February 8, 1902. [Vol. LXXX, No. 6.]

1. The Surgical Treatment of Ascites Due to Cirrhosis of the Liver. GEORGE EMERSON BREWER.
2. On the Etiology of Cirrhosis of the Liver. JAMES K. CROOK.
3. On the Treatment of the Alcoholic Cirrhoses of the Liver. GEORGE M. CONVERSE.
4. On the Diagnosis of Cirrhosis of the Liver. J. C. WILSON.
5. Cirrhosis of the Liver as Seen in Children. W. C. HOLLOPETER.
6. Intestinal Obstruction Due to Gallstones. LEWIS STEPHEN PILCHER.
7. Percussion of the Lower Border of the Liver. ALBERT ABRAMS.
8. Tumors of the Liver. GEORGE RYERSON FOWLER.

1.—**Surgical Treatment of Ascites Due to Cirrhosis of the Liver.**—Brewer states that the consensus of opinion is that when ascites due to cirrhosis of the liver arises, the average case terminates in about eight weeks. The surgical treatment of this affection is discussed in reference to its origin, its present status, and the net results. To Morison, of England, really belongs the credit of the operation which, by means of adhesions between the upper surface of the liver, the anterior surface of the spleen and the omentum on the one hand and the adjacent peritoneum on the other, seeks to divert the blood through newly-formed bloodvessels, from the portal system to anastomotic branches, which will convey it back to the great trunks leading to the heart, thus avoiding the liver. Brewer reports five cases operated upon by himself, four of them terminating fatally. Concerning these cases he says all were greatly distended with fluid, and apparently in the last stages of toxemia from the disease. All but one had marked evidences of nephritis. One died of uremia, due to mistake in using ether for anesthesia in a patient with marked evidence of nephritis; one from shock, due probably to faulty technic resulting in too long an exposure on the operating table; the third died from septic peritonitis, due in all probability to faulty technic in managing the drainage subsequent to operation. The fourth case, although the most unfavorable of all, recovered from the operation without an untoward symptom, for the following reasons: Only a very small amount of chloroform was used, the operation was completed in about ten minutes, and no permanent drainage was employed, removal of the fluid being accomplished by subsequent tapings. The fifth died of general sepsis. The author collected from literature and reports in tabulated form 60 cases operated upon, the statistics of which show that at least six cases were cured of ascites by this procedure and have remained well for a period of two years or more; six others were relieved of this symptom for from two to six months, but have died either without a return of the ascites, or have not been under observation long enough to demonstrate that the cure is permanent. Another case, that of a patient suffering from hemorrhages from the alimentary canal, was promptly cured by this operation, and a number of others have been materially improved. Thirty-eight recovered from the operation. [A.B.C.]

2.—**Etiology of Cirrhosis of the Liver.**—In venous or atrophic cirrhosis males from 35 to 55 furnish the greater proportion of victims. Health Board statistics show that 73% of cases are foreign born and beer-drinking Germans supply almost as large a percentage as those using more alcoholic liquors. These beverages are most dangerous when the stomach is comparatively empty. Syphilis, malaria, many other infectious diseases, overeating, highly spiced foods, min-

eral poisons, cardiac disease, diabetes, inherited tendency, fright, etc., are among other causes considered. The etiologic factors in hypertrophic cirrhosis are similar. In biliary cirrhosis there seems to be an extension of some pathogenic influence through the biliary system. [H.M.]

3.—Treatment of Alcoholic Cirrhosis of the Liver.—Alcohol must be prohibited and an exclusive milk diet be given until all gastrointestinal symptoms have subsided, followed by a return to eggs, vegetables, etc., and meat last of all. Laxatives, rest, open air and hydrotherapy are important adjuncts. Under this treatment in hypertrophic cirrhosis regeneration of hepatic cells may occur. After ascites in atrophic cirrhosis the average of life is eight weeks. Improvement varying from several months to several years has occurred. Over $\frac{3}{4}$ of reported cases of relative cure of cirrhosis with ascites are of the hypertrophic variety. If the fluid is due to mechanic obstruction in the portal system frequent tapplings will probably precipitate the end. [H.M.]

4.—Diagnosis of Cirrhosis of the Liver.—The atrophic form in typical cases is marked by the pinched face, with distended venules and subicteroid hue, spare chest, thin arms, distended belly, distended veins and diminished liver dulness. In the hypertrophic form there is jaundice, fairly preserved nutrition, a big liver without ascites, and occasional irregular fever. Cases of cirrhosis without jaundice, with a high degree of portal obstruction, the liver being normal in size, are not rare. The symptoms may be neither those of the atrophic nor hypertrophic form. No definition can be framed that will include all cases. Clinically, not all forms can be recognized. Symptoms may be referable to other organs, especially the gastrointestinal tract. This is frequently the case in the fatty form and in the multilobular form with or without atrophy. Adhesive pylephlebitis resembles the atrophic form. In the hypertrophic form the early icterus may resemble that of catarrhal jaundice. In hepatic capsulitis the symptoms are those of the atrophic form of chronic interstitial nephritis. [H.M.]

5.—Cirrhosis of the Liver in Children.—This is less uncommon than is generally taught. It is probably syphilitic in infants. Alcohol is the most frequent cause, administered by shiftless parents to offset care. One-third of the cases follow acute infectious diseases. There are vague symptoms of indigestion with improvement and relapses, the abdomen finally growing larger with wasted, waxy limbs, enlarged veins, edema of the feet, and, generally, enlarged spleen; two cases are reported. [H.M.]

6.—Intestinal Obstruction Due to Gallstones.—Pilcher cites a case occurring in a woman of 60. Previous to the onset of the trouble, she had considered herself in good health. The symptoms were those of any intestinal obstruction, without, however, so much shock as is sometimes seen. Fecal vomiting occurred early. Laparotomy was done, and in attempting to deliver the intestines in the neighborhood of the duodenum, it was found that a mass was bound down by adhesions. Exploration showed this to consist primarily of a loop of intestine containing a large gallstone. This was removed, and recovery was uneventful. The author states that in this, as in other cases of which he has known, it was not the size of the stone alone which caused the obstruction. Often the diameter of an obstructing stone is not sufficient to occlude the lumen of the gut, but the heavy stone occupying a dependent loop of the gut, sets up inflammation, causes a localized peritonitis with adhesions, and consequent obstruction. The stone causes in such cases what he terms "decubital irritation." There is no way to positively differentiate intestinal obstruction in these cases from obstruction due to other causes. [A.B.C.]

7.—Percussion of the Lower Border of the Liver.—As ordinarily practised it may give no evidence of enlargement if examination is made in the recumbent posture. The patient should be instructed to incline his body backward as far as possible, the hands resting on the hips. Percussion must be light, and the finger deeply embedded. This posture approximates the liver to the parietes, thus affording a like medium for the transmission of sound. In the recumbent position the same object may be achieved by forcible contraction of the abdominal muscles. Fecal concretions should be cleared by purgation

when possible. Massage will demonstrate the presence of fecal masses. Inspiration will dislocate the liver downward. [H.M.]

8.—Neoplasms of the Liver.—In this paper Fowler lays particular stress upon echinococcus cysts of the liver, their etiology, growth, the symptoms they produce, and their treatment. The diagnosis is made certain only by exploratory operation or by aspirating and finding a clear fluid, devoid of albumin and containing the characteristic hooklets. The treatment of these cysts is operative, and consists of partial hepatectomy, whenever feasible, by either the abdominal or transpleural route. The operation is usually best done at one sitting, carefully emptying the cyst by aspiration after exposing it, and then after isolation of the liver by large gauze pads, removing the cyst-wall and a thin slice of adjacent liver substance by means of the thermocautery. Five of the author's cases operated upon after this method have all recovered most satisfactorily. In large tumors with many adhesions this radicle procedure may not be practicable, in which case the fibrous capsule may be sewed to the edges of the abdominal incision, and the operation completed by opening the sac at once, or even after several days. In case the cyst is too adherent for removal, final obliteration may be secured by injecting diluted tincture of iodine (1 to 8). Aspiration, followed by the injection of various solutions, or leaving a canula *in situ* for permanent drainage, is condemned. [A.B.C.]

Philadelphia Medical Journal.

February 8, 1902. [Vol. ix, No. 6.]

1. Tumor of the Brain. Localized Clinically and by the Röntgen Rays. CHARLES K. MILLS and G. E. PFAHLER.
2. The Treatment of Paralytic Attacks. A. PICK.
3. A Case of Cerebral Bulbar Palsy. CHARLES L. DANA.
4. Myasthenia Gravis (Asthenic Bulbar Paralysis). WHARTON SINKLER.
5. Scleroderma and Sclerodactylia. B. SACHS.
6. Hypochondria. F. X. DERCUM.
7. Fibroma of the Upper Dorsal Region of the Spinal Cord. M. ALLEN STARR.
8. The Surgery of the Spine. SAMUEL LLOYD. (Continued.)
9. The Sensory Segmental Area of the Umbilicus. WILLIAM G. SPILLER.
10. Remarks on the Treatment of Syphilis of the Nervous System. JOSEPH COLLINS.
11. A Case of Cerebellar Tumor. JAMES HENDRIE LLOYD and T. PERCEVAL GERSON.

1.—Tumor of the Brain Localized Clinically and by the Röntgen Rays.—Mills details the history, ophthalmoscopic record, operation, and postmortem findings of a case of cerebral fibrosarcoma. The diagnosis and position of the tumor were verified by the operation. The patient died two hours subsequent to the surgical procedure. This is the second case on record in which a brain tumor has been localized in the living subject by means of the x-ray, and the first in which this localization was of service in indicating the field for operation. Pfahler details a series of experiments in the living subject and on the cadaver, from which he draws the following conclusions: Fibrosarcomas, and probably other tumors, can be photographed in the living subject and their location and extent shown; various tumors can be photographed in their most common locations; other abnormalities and deficiencies in brain tissue itself can be photographed, which will probably be of value in the diagnosis of cysts, softening and hemorrhages; the over-exposure of one series and the under-exposure of another show that good results will follow only the most careful technic and keen judgment as to the special conditions in each case; and that the shadows obtained in normal parts of the brains studied indicate that great care is necessary in the interpretation of any shadow obtained in the living subject. [F.C.H.]

2.—The Treatment of Paralytic Attacks.—Pick advocates prophylactic treatment directed against the effects and complications which occur sooner or later and to which the patient generally succumbs. An attack may be interrupted when due to the irritation of a filled bladder, a filled rectum, or some other pathologic irritation like an unobserved furuncle, and by any slight febrile affection, as in the attacks of eclampsia of children. Ergotin injections are condemned. In repeated epileptiform attacks chloral enemata, two to three grams, or other inhalations may be employed in order to prevent injury,

which may give rise to phlegmons and septic inflammation. Care should be exercised to prevent acute bedsores, devoting particular attention to the extremities in which pressure sores and blisters may occur. The greatest caution is required to prevent hypostasis; systematic cleansing of the entire body is essential. It is necessary to employ such measures as will prevent autoinfection from the various portions of the alimentary canal. The mouth and nose should be carefully cleansed with potassium permanganate or some diluted mouth wash, and high enemas of either pure water or a boric acid solution should be repeated at regular intervals. All nourishment should be so administered as to reduce to a minimum the danger of deglutition pneumonia. Broths are preferable, but if liquids cannot be swallowed without giving rise to coughing, then the nourishment should be given per rectum, in which event the enema should be bland and small in quantity, not over 100 grams of fluid, as these precautions will facilitate its retention. Daily rectal injections of normal salt solution are of value, but if these are not retained, they can be supplemented by hypodermoclysis. If the methods of rectal nourishment should prove persistently unsuccessful, and if the deglutition of fluids is still difficult, it will then be necessary to feed by means of the sound; but this procedure should be excluded as far as possible by the general physician, because it is difficult and often harmful. The treatment herein described with suitable modifications is indicated and may be used to advantage in all other protracted comatose conditions. [F.C.H.]

3.—A Case of Cerebral Bulbar Palsy.—Dana has made a special study of the cortical localization of the tongue center on account of its interest and the divergent views regarding it, and also because of its practical importance in connection with the subject of cerebral paralysis. He details a case in which there was distinct paralysis of the tongue and less of the lips. His conclusions are that in the human brain the lip and tongue centers are closely connected, and are more or less identical; one group of centers for the tongue is in relation with the articulatory movements of the lips, and another with the movements of mastication, opening and shutting the mouth and deglutition; the area for the excitation of movements of the tongue is a wide one, being associated probably in its lower parts with the articulatory movements and in the upper parts with the masticatory movements; the centers lie at the base of the precentral and postcentral gyri; the paralysis of the tongue and, to some extent, of the lips, from a one-sided cortical lesion occurs, and may perhaps be explained by the fact that in many individuals the brain becomes accustomed to use only one center in controlling the movements of these parts. When this center is destroyed there is for a time paralysis of the movements, and when the center upon the opposite side becomes awakened to its capacity it takes up these movements and the paralysis disappears. That a permanent bulbar palsy can be caused by a cortical lesion of one hemisphere is doubtful, and if it occurs, must be considered an anomaly. [F.C.H.]

4.—Myasthenia Gravis.—Sinkler has made an exhaustive study of this disease, only 73 cases being found in the literature of the subject. The characteristic symptoms of the disease are weakness, beginning in the bulbar muscles—that is, in the muscles of the tongue, lips, larynx and in the ocular muscles. Exhaustion after the use of the muscles and partial recovery after rest are the most striking and typical symptoms. In the morning, after arising, the muscles are in the best condition; as the day advances they grow weaker and the paralysis becomes more or less complete. Both sexes are equally affected. The etiology and symptoms are fully described. In the majority of cases no lesion has been found postmortem. None of the numerous theories advanced as to the pathology of the disease are entirely acceptable or plausible. Well-marked cases are easily diagnosed. The striking feature of rapid exhaustion of the voluntary muscles on exertion and partial recovery after rest, the absence of atrophy and fibrillary tremors, the absence of sensory changes and the myasthenic reaction should make the case clear. Nearly 50% of the recorded cases ended fatally. The duration of life varied from 14 days to 15 years. There is no satisfactory treatment. Strychnia, potassium iodid and mercury are not beneficial; faradism and galvanism do more harm than good; arsenic has been of service in some cases;

building up the general health and improving the whole nutrition has been of most service. [F.C.H.]

5.—Scleroderma and Sclerodactylia.—Sachs details the history and treatment of four cases. He noticed especially the pinched and attenuated nose, the sunken cheeks and the retraction of the upper lip in the more advanced stages of scleroderma, presented by his cases. He urges a careful trial of thyroid gland in the treatment of scleroderma and sclerodactylia. [F.C.H.]

6.—Hypochondria.—Dercum in his excellent article on hypochondria, separates it from hysteria and neurasthenia, affections to which it is related and with which it is frequently confounded. [F.C.H.]

7.—Fibroma of the Upper Dorsal Region of the Spinal Cord.—Starr has been able to find 35 cases of spinal tumor which had been operated on; in the case detailed as in the majority of the others, the operation was too late to save life. The successful cases have been those in which after an early diagnosis prompt operation had been undertaken; and if this fact is appreciated no unnecessary delay will be allowed. In his case the operation was delayed in order to try antisyphilitic treatment. [F.C.H.]

8.—The Sensory Segmental Area of the Umbilicus.—Spiller details a case of fracture of the tenth thoracic vertebra with complete compression of the cord. He has drawn the following conclusions from a study of this case: That Head is probably correct in placing the umbilicus between the ninth and tenth thoracic sensory areas; that the Babinski reflex may be absent in cases of lesion of the lumbar and sacral regions of the cord, though the clinical symptoms may indicate merely that the cord is compressed above the lumbar region, the absence of the Babinski reflex in such cases may possibly be a valuable sign of disorganization of the lumbar and sacral regions; and, that while loss of the patellar reflexes may occur from transverse lesions of the cord above the lumbar region, the cause of this loss in a certain number of cases is found in lesions of the area through which the reflex arc passes. [F.C.H.]

10.—Treatment of Syphilis of the Nervous System.—According to Collins, the treatment depends upon whether the patient is syphilitic or parasyphilitic. The employment of mercury and potassium iodid alone and in combination, and the methods of administration, are detailed. [F.C.H.]

11.—A Case of Cerebellar Tumor.—Lloyd and Gerson detail a case of a very large tumor which was found lying upon the vermiform process of the cerebellum immediately beneath the tentorium. The tumor was very vascular, and was 6½ cm. long in its anteroposterior diameter, and 4½ cm. in its vertical diameter. On section it presented the appearance of a sarcoma. Its most striking characteristic, next to its size, was its comparative freedom from connections with the surrounding brain substance. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Stiller's Sign, Floating Tenth Rib¹.—For a number of years, Stiller, of Buda Pesth, has maintained that a floating tenth rib—costa fluctuans decima—is a pathognomonic sign of enteroptosis and the functional conditions with which this is associated. Normally the tenth rib is firmly fixed to the ninth costal cartilage, not, however, as Stiller at first thought, by a cartilaginous bridge, but by a fibrous connection. After death, as Tandler showed, the rib is quite movable, and its tip is separated from the ninth costal cartilage by a distance of from one-half to one centimeter; but during life, in persons who are perfectly healthy and are not predisposed to enteroptotic conditions, this space is, according to Stiller, not discoverable. Its existence after death he attributes to a general relaxation and loss of resilience of the tissues. In those having the costal stigma, the freely-movable point of the tenth rib may, during life, be felt at a distance of from one and one-half to three centimeters from the ninth costal cartilage.

¹ References: Berlin. klin. Woch., 1899, No. 34; Arch. f. Verdaunungs-krankheiten, vi, Heft 3; Ibidem, vii, Heft 4, 5.

The condition with which the floating tenth rib is associated, and of which, in Stiller's opinion, it is absolutely pathognomonic, is that variously designated as enteroptosis, nervous dyspepsia, Glénard's disease, or asthenia universalis congenita. It is characterized by prolapse of the stomach, floating kidney, and a general tendency to descensus of the abdominal viscera. The stomach is atonic and often dilated. Stiller maintains that succussion splash is the most characteristic symptom of this atonic dilation. Schüle is also of the opinion that splashing sounds are abnormal, and are indicative of atony, such as is found in enteroptosis and gastric neuroses. Boas and his pupils, however, do not lay much stress upon succussion as a symptom of atony. Elsner holds that succussion is a characteristic symptom of gastropptosis, but not of atony; but Stiller contends that atony is an invariable and necessary concomitant of gastropptosis. There is, in atony, a peculiar changing resonance of which Stiller gives details. If the patient lies diagonally on his left side, dullness appears in the epigastric and mesogastric regions which disappears when the patient turns on his back or on his right side. If the dullness is found immediately after a meal, it indicates atony and descent of the stomach, at least of the greater curvature. If it is present after the normal period of digestion, it signifies motor insufficiency, and if found several hours after the test meal or even during fasting, it is indicative of retention and ectasia.

In defending himself against the attacks of those who, like Zweig, for example, deny the pathognomonic value of the floating tenth rib in nervous or atonic dyspepsia, Stiller states that his sign is not to displace accurate methods of investigation, but is of particular value to the general practitioner who cannot perform all the modern tests, but to whom the costal stigma gives a clue to correct diagnosis. Incidentally, several other valuable hints are given, viz., nocturnal gastric pains indicate hypersecretion; pains occurring in the forenoon suggest a nervous affection of the stomach; gastric cramps in mature, well-nourished women, are most often due to gallstones.

While the reading of both sides is calculated to cause uncertainty regarding the transcendent diagnostic value of the costal stigma, there is no doubt that the sign is present in a very large proportion of cases of nervous dyspepsia.

Acute Suffocative Pulmonary Edema.—Steven¹ describes a symptom complex characterized by the sudden onset without warning of marked dyspnea, thoracic oppression, and the expectoration of large quantities of white, finely frothy, watery sputum. The fluid seems to flow up the trachea and is expelled with a "hawk." The expectoration continues during the whole period of the dyspnea, and the seizure is not usually accompanied by fever. The pulse may be rapid, and wheezing and fine moist rales are audible throughout the lungs. The extremities soon become cold and blue, the face ashen gray, and the agony and anxiety of the patient are extreme. After a little while the frothy sputum becomes slightly pink in color, and in some cases after the attack has lasted an hour or two, definitely bloody. In the course of five or six hours as much as 1½ pints of this frothy fluid may be expectorated. The clinical picture is interpreted as an acute suffocative edema of the lungs—the pulmonary alveoli being suddenly inundated with watery serum. The differential diagnosis between this condition and pulmonary embolism, acute spasmodic asthma, uremic asthma of the ordinary type and acute pulmonary edema is pointed out. In the treatment stimulants—whisky, strychnin, digitalis, etc., are indicated. The notes of two illustrative cases are given. [A.O.J.K.]

Experimental Cholecystitis and Cholangitis of Auto-infectious Origin.—Ehret and Stolz,² whose previous experiments have established that impaired motility of the gallbladder will be followed by an increase of germs in the bile, give the re-

sults of continued experiments to determine the possibility of thus producing inflammation without the artificial introduction of germs from without. Five dogs were laparotomized, and from 8 to 12 hollow glass balls, 10 to 13 mm. in diameter, and pierced at two opposite points, were, after sterilization in a current of steam, introduced into the gallbladder of each. The wounds were closed, and for two or three months all the dogs increased in weight. After two months one of them, while in best of health, was laparotomized and then killed. There was no inflammation, but there was, beside the glass balls, a great number of germs in the gallbladder. Three months after the operation the diet of the remaining four dogs was changed to cold food of inferior quality, and occasionally spoiled meat. More or less violent diarrhea followed, and one dog died in 12 days, another in three weeks, greatly emaciated, and with a localized purulent infectious cholecystitis, similar to that produced by artificial infection, while the two others remained healthy at the end of half a year. In the gallbladders of six other dogs from 10 to 20 previously sterilized balls of cotton, ½ cm. in diameter, were packed. Two of the animals, in apparent health, were killed after 8 and 10 weeks respectively. In both the gallbladder was found to be about the size of a small apple and with thick white walls, and the contents strongly bile-colored and very fluid. In one case one tampon, and in the other two were in the cystic duct. There was a great quantity of nonvirulent germs. The other dogs sickened and died, some with, others without diarrhea, but all with rapid emaciation, in from 8 to 16 weeks. In all four there was purulent inflammation, with infiltration to the finest branches of the bile tree, and in one there were numerous small pericholangitic abscesses in the liver. The germs were of many different kinds, the Coli groups being most frequent. There were, moreover, Streptococci and Staphylococci beside Bacillus mesentericus, and in one case yellow and white Sarcinae. As the animals did not sicken until long after the operation, and then suddenly, there can be no doubt of the inflammation being autoinfectious. [J.C.S.]

Observations on the coincidence of blood-pressure and intercranial tension made by Cushing¹ in the *Laboratorio di Fisiologia* of Tunis in the Physiological Laboratory of Bern, lead to the establishment of a simple and definite law, namely, that "an increase of intercranial tension occasions a rise of blood-pressure which tends to find a level slightly above that of the pressure exerted against the medulla. It is thus seen that there exists a regulatory mechanism on the part of the vasomotor center which, with great accuracy, enables the blood-pressure to remain at a point just sufficient to prevent the persistence of an anemic condition of the bulb, demonstrating that the rise is a conservative act and not one such as is consequent upon a mere reflex sensory irritation." [C.S.D.]

Susceptibility to Revaccination.—Andrews² gives some interesting remarks and statistics based upon the inoculation with vaccine virus of 171 persons, or 158 persons previously vaccinated, perfect vaccinia resulted in 72—45.57% imperfect vaccinations in 65—41.14%, and no vaccinia in 21—13.29%.

Primary Pulmonary Carcinoma with Cancer-cells in the Pleural Exudate and in the Sputum.—In an exhaustive report of this interesting case, occurring in a man of 52, Josefson³ says that he succeeded in demonstrating the presence of cancer-cells in the hemorrhagic pleural exudate and in the sputum. After centrifugating the exudate, it was hardened in absolute alcohol, imbedded in celloidin and cut with a microtome. The cells showed beautiful mitosis. The patient was directed to expectorate into absolute alcohol. The sputum was imbedded in celloidin and cut with a microtome, etc. The necropsy findings verified the clinical diagnosis, there being found a primary cylindroepithelial carcinoma of right lung with metastases in left lung, right pleura, bronchial lymph-nodes, kidneys, liver, thyroid gland, and pericardium. [A.E.E.]

The Prognosis and Treatment of Nephritis Occurring in Certain of the Specific Fevers.—Caiger⁴ states that the production of nephritis is a well recognized manifestation of the

¹ Bulletin of the Johns Hopkins Hospital, September, 1901.

² Lancet, January 11, 1902.

³ Hygiea: Journal of the Swedish Medical Society, Stockholm, November, 1901.

⁴ Practitioner, November, 1901.

¹ Lancet, January 11, 1902.

² Berliner klinische Wochenschrift, January 6, 1902.

scarlatinal virus. In diphtheria, nephritis, sufficiently distinctive to assert itself by definite symptoms, is far less common, although temporary albuminuria, due to the irritation of the renal tissue by the diphtheritic poison circulating in the blood, is some three or four times as frequent as it is in scarlet fever. The supervention of nephritis during the course of typhoid fever is not sufficiently common to warrant the assumption of any special renal susceptibility in that disease, although both albuminuria and typhoid bacilli are of frequent occurrence. In scarlet fever the incidence of nephritis varies considerably in different outbreaks. The general management of the scarlatinal attack with the object of minimizing the chances of nephritis supervening, and the treatment of the nephritis itself are given in detail, the generally well-known principles being emphasized. The same is also true with regard to diphtheria and typhoid fever. [A.O.J.K.]

Urticaria Caused by *Dermanyssus avium*.—Heinicke¹ reports two cases that were caused by this parasite, and suggests that when nettle rash is seen, inquiry should always be made if there is a canary bird or parrot about the house, or perhaps a swallow's nest under the rafters. These parasites are abroad at night feeding on victims that come in their way. The symptoms, therefore, usually disappear by day, but reappear the following night. The treatment consists, in removal of the cause. [J.C.S.]

The Value of Tetanus Antitoxin.—Möllers² states that from animal experiments it is evident that the conditions under which an individual may be saved by means of tetanus antitoxin are very rarely met with. Often the great amount of poison absorbed into the system cannot be neutralized by the use of antitoxin at all, while in other cases, so long a time has elapsed between the first symptoms of tetanus and the injections that the originally mild condition can no longer be combated. In all such cases the serum therapy is of no use whatsoever, since the changes brought about by the toxin in the ganglion cells of the motor centers can no longer be altered. The only hopeful method of treatment with the antitoxin consists in its *early* administration, in other words, as soon as tetanic symptoms appear, or, in its use as a prophylactic *immediately* after the injury. [H.H.C.]

Red and Pale Muscle.—Hay³ describes a series of experiments yielding the following conclusions: The difference in character and duration of the contraction of the two forms of muscle is due to some essential difference in muscle substance probably in the relative amounts of sarcoplasm. The red muscles are much better able to resist the cutting off of their blood-supply than the pale. The red muscles examined showed low excitability and the pale high excitability to reflex stimulation. Bulk for bulk the nerve fiber supply is equal numerically; the fibers to the pale muscles are larger. The afferent fibers are equal. There is an equal distribution of muscle-spindles. No essential differences were found in the nerve endings or the muscle-spindles. [H.M.]

Skin Eruptions in Bright's Disease.—Pringle⁴ discusses the skin eruptions in Bright's disease according to the following classification, suggested by Thursfield: (1) The affections which characterize (or may arise in) the early stages of renal disease—pruritus, urticaria, eczema; (2) those which occur in the final stage and in uremic conditions—the universal erythematous, bullous or desquamative eruptions; (3) purpura and other hemorrhagic eruptions; and (4) those affections which are seen only with marked edema. It is stated that so little is known of the immediate causation of the skin eruptions occurring in Bright's disease that its discussion may well be brief. Probably the process is similar to that by which eruptions are caused in septicemia or ptomain poisoning, toxins acting through the vasomotor and trophic nerve centers. It is certain that neither urea or uric acid is the toxic substance at play, and it has been suggested that substances of the aromatic group which reduce Fehling's solution and which are frequently present may be the active agents; but no cogent evidence has been adduced on the point. [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

Disinfection of the hands is a subject of general interest about which there seems to be no end of writing and investigation, though there has probably been comparatively little advance in methods during the past ten years. One of the most thorough discussions of this subject which has come to our notice is an Inaugural Dissertation, presented as a part of the requirement for the doctorate in medicine at the University of Leipzig, by Alfred Klemm (Ueber die Verschiedenen Methoden der Hände-Disinfection). In his bibliography Klemm refers to 87 articles which have appeared on this subject, practically all of them during the past ten years. He discusses the various methods which have been suggested in considerable detail, and we believe his conclusions will be of considerable interest to all engaged in surgical work. At first the methods of disinfecting the hands were mainly by the use of chemic disinfectants without much attention to scrubbing the hands thoroughly. During recent years there has been a reaction in favor of mechanic methods of disinfection, which has gone so far that some—for instance, Schleich—are inclined to use this method to the exclusion of chemicals entirely. Others advise the use of tincture of green soap, and believe that by combining alcohol with soap and water sufficient surgical cleanliness can be obtained. Ahlfeld and Mikulicz have been the best known advocates of this method of preparing the hands. Many surgeons—among others, Klemm tells us Tillmanns—still prefer to combine thorough mechanic disinfection with the use of various chemic disinfectants. Bacteriologic investigations seem to show very conclusively that the marble dust soap of Schleich and purely mechanic methods of disinfection, while reasonably satisfactory if thoroughly used, are by no means certain to remove all germs from the skin. The alcohol and soap method gives somewhat better results from a bacteriologic standpoint but also fails to render the hands surgically clean. Several investigators, specially Krönig and Blumberg, have shown quite conclusively that by combining mechanic and chemic methods it is usually possible to render the hands perfectly sterile. Klemm believes that the use of potassium permanganate solution followed by oxalic acid is a valuable addition, but this method he considers complicated, somewhat expensive, and it has a more or less injurious effect on the hands. Under ordinary conditions he believes that perfect surgical cleanliness is rarely obtained even by the thorough scrubbing, followed by soaking the hands in a solution of mercuric chlorid. With this in mind several surgeons have suggested various means of preventing the escape of germs from the skin. Menge has suggested applying xylol and soft paraffin. Kossmann recommends chirol, a kind of varnish, for the hands, but Klemm believes that these methods of preventing the escape of germs have proved unsatisfactory from the fact that the coating is generally rubbed off in a short time through manipulations, handling instruments, tying, etc., during the operation. Very often indeed small particles of the coating on the hand are rubbed off together with the secretion of the sweat and the sebaceous glands which has accumulated beneath it. Mikulicz has advised the use of thread gloves but after operation many bacteria can be demonstrated on these gloves and their value seems doubtful. Menge has suggested impregnating the gloves with paraffin solution and this no doubt acts as a double protection, coating the hands to a greater or less extent as well as impregnating the glove. Wölfler prefers to use leather gloves, but these are difficult to sterilize and also do not prevent the escape of bacteria. Halsted suggested the use of rubber gloves in such operations as suture of the patella, herniotomy, etc., as early as 1889.

¹ Münchener medicinische Wochenschrift, December 31, 1901.

² Deutsche medicinische Wochenschrift, November 21, 1901.

³ Liverpool Medico-Chirurgical Journal, September, 1901.

⁴ Practitioner, November, 1901.

Klemm gives Halsted credit for this, but in characteristic German style gives most of the credit to a German, Zöge Manteuffel, who evidently adopted the use of rubber gloves independently and was the first to suggest their use in Germany in 1897, eight years after Halsted's publication. Although the hands can be rendered perfectly free from bacteria in certain cases by the combination of purely mechanic disinfection with chemie disinfection it seems very unlikely that in general practice this is usually accomplished. Hence the use of rubber gloves seems imperative for all who would do ideal aseptic surgical work. Although the use of gloves was suggested so long ago, most surgeons have been slow to recognize their importance. By their use the surgeon not only gives his patient a most important safeguard against infection but when performing operations in septic cases he protects himself. If rubber gloves were systematically used there need be no more deaths from septic infection among surgeons. When used regularly in operative work the surgeon soon becomes so accustomed to them and that they do not in the least hinder his manipulations.

Excision of the Clavicle for Round-celled Sarcoma.—Beatson¹ cites the case of a girl of 16 who for 7 months had noticed an enlargement to the left of the root of the neck which increased in size. A diagnosis of sarcoma of the left clavicle was made and operation decided upon. The tumor involved three-fourths of the clavicle. All the diseased portion—forming a tumor 5 inches by 3 inches in size—was removed, with a small part of the sternal end of the second rib. The patient made a complete recovery, and when last seen had regained almost the normal motion of the left arm. A microscopic examination of the removed tumor showed it to be a round-celled sarcoma. [A.B.C.]

Gonorrheal Pyelitis.—Atlee² reports a case of gonorrheal pyelitis. A young man of 17 reported a severe chill; examination revealed a bubo in the left groin, a gonorrheal discharge from the urethra, and a soft chancre in the glands. Local treatment afforded but little improvement in his condition and an incision was made in the bubo, releasing a small quantity of bloody pus. Improvement for two weeks with healing of the wound followed, then a sudden attack of chills, high fever, nausea, vomiting, and pain in the left side, although abdominal palpation revealed no tenderness except a slight amount in the left renal region. Since neither thoracic lesion, malarial plasmodium, typhoid reaction or severe bladder symptoms were present, and since the symptoms were too pronounced to be accounted for by syphilitic fever, a diagnosis of gonorrheal pyelitis following a gonorrheal cystitis seemed certain. The urine revealed only mucus, pus, a few blood-cells, and traces of albumin. Recovery was complete. [H.H.C.]

An Improvement in the Technic of Spinal Anesthesia.—Guinard³ believes that the bad results following spinal anesthesia are the result of three factors: Traumatism of the meninges during the introduction of the needle, the introduction of water as a vehicle, and perhaps least important the cocain itself. He reports a case in which he injected sterile water alone. This produced a rise of temperature to 40° C., with intense headache and on inserting the needle again cloudy fluid containing fibrin flakes was withdrawn. He believes that water is a bad vehicle for the cocain, and capable of causing serious results when introduced into the spinal canal. The most natural substitute for the water is the cerebrospinal fluid itself. He advises inserting the needle under the usual precautions and withdrawing 60 to 80 drops of cerebrospinal fluid into a sterilized vessel. This is mixed with 6 or 7 drops of a concentrated aqueous solution of cocain, one centigram to two drops of water, and this solution is slowly injected. In 50 operations in which he has used this technic he has not had a single unfavorable result. [M.B.J.]

The Needle Forceps.—Kurz⁴ describes an instrument used

by him for ligation and suturing in cauteries in which the use of the ordinary needle holder is often difficult. The instrument, which is shaped like a fixation forceps, has at the end of its lower blade a small groove which holds a short, notched, threaded needle. When used the instrument is thrust into the cavity half opened and the blades are closed upon the tissue to be sutured, thus forcing the needle through the tissue grasped. At the same time the notch in the needle catches in a slit in the upper blade, and as a consequence, when the instrument is withdrawn with half opened blades the needle comes with it, attached to the upper blade. [H.H.C.]

Ambulatory Treatment of a Ruptured Achilles Tendon.

—Lynn Thomas¹ records that while en route to South Africa with troops, and while engaged in the hopping stage of the drill, he ruptured an achilles tendon. He refused to use the time-honored slipper with tape to the heel, plaster-of-paris or any other dressing usually advocated. He was anxious to devise some means of splinting the foot which would permit him to move about with freedom. This was accomplished by using an aluminum spatula, bending the same to fit the anterior shape of the foot and ankle, passing the bent spatula through rubber tubing and holding it in place by putting it beneath the shoe-lace. It was not placed behind both layers of lace, but rather between the two layers. This acted as an efficient splint, and the result was entirely satisfactory, union being perfect in every respect. [A.B.C.]

Spinal Anesthesia.—At a meeting of the French Surgical Congress, Villar,² of Bordeaux, reported a series of 39 cases of spinal anesthesia with cocain in which no bad results followed. In two of these cases the anesthesia resulting was incomplete, but the solution used was old which is thought to account for this. The technic suggested by Tuffier was used, 4 cc. of the solution of cocain sterilized at 120° C. in the autoclave being employed. He does not consider lumbar cocainization the method of choice, but in certain cases it has decided advantages. The aid of an anesthetist is unnecessary. There is no danger of pulmonary affections following the operation and in certain cases in which the aid of the patient is desirable it is especially valuable. [M.B.T.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Prematernity Hospitals and Antepartum Hygiene.—A famous French litterateur once said that "a woman escaped being sick twelve times a year by having an illness that lasted nine months." While this may be a sweeping statement, yet it clearly indicates the necessity for careful attention being given to the pregnant woman in order to ameliorate or avoid any complication of pregnancy or parturition. To be carried safely through the period of gestation, the most critical time of her life, physiologically speaking, the pregnant woman needs special care. Attention is to be given her in the selection of diet, exercise, rest, sleep, clothing and bathing. The mental condition should be watched, careful pelvic measurements should be made, and excretions studied. When we consider the carefully prepared statistics of J. Whitridge Williams, and find that of 2,123 women delivered in the obstetric department of Johns Hopkins Hospital, 278, or 13%, had contracted pelves, the importance of pelvimetry becomes apparent. On the other hand, when we realize how few general practitioners systematically practise pelvimetry, we do not wonder at the high fetal mortality, the maternal complications, and the frequency of dystocia. Measurements should be made in all primiparas, and in all multiparas who present a former history of difficult labor. In a recent lecture on "Maternities and Prematernities," delivered in the Royal Maternity and Simpson Memorial Hospital, Edinburgh (*British Med. Jour.*, January 18, 1902), J. W. Ballantyne, to whom we owe so much for

¹ British Medical Journal, January 18, 1902.

² Pennsylvania Medical Journal, June, 1901.

³ Revue de Chirurgie, November 10, 1901.

⁴ Münchener medicinische Wochenschrift, November 26, 1901.

¹ British Medical Journal, January 18, 1902.

² Revue de Chirurgie, November 10, 1901. Vol. xxi, No. 11.

his thorough study of antenatal conditions, makes a strong plea for the establishment of prematernity hospitals. It is usually difficult for a woman to gain admission to a maternity hospital until near the end of gestation. General hospitals also frequently decline to admit patients suffering from the complications of gestation. Pregnancy is a great strain upon the resources, anatomic and physiologic, of the body; and labor is a crowning test of a woman's strength; yet in too many instances the parturient patient comes to this test with little or no preparation. Ballantyne argues that the diseased pregnant woman is entitled to hospital care both for her own sake and that of her infant, and that it ought not to be a matter of favor that she gains entrance to a maternity hospital. There should be a ward attached to every maternity for the treatment of diseases of pregnancy. There can be no doubt that a patient who has passed through a morbid pregnancy will be more liable to difficult labor than is one in whom the changes of the wonderful gestation period have been accomplished in a physiologic fashion. There are many conditions which we classify under the pathology of pregnancy that could be better treated in a special institution, such as hyperemesis so often found in the early months, disorders of the urinary tract, or the toxemia of pregnancy in which prompt stimulation of all the eliminating organs of the body is so essential. Patients suffering with valvular heart disease would be far better off if kept under the close observation practicable in a special institution. In a recent contribution by J. Clarence Webster (*Medicine*, February, 1902) on "Valvular Heart Disease in Relation to Pregnancy and Labor," the author emphasizes the fact that when pregnancy occurs in a woman suffering from cardiac disease she should be carefully looked after from its very beginning. Her daily routine should be regular and well ordered. She should be guarded from strain, worry, anxiety, or sudden shock. Medical treatment should be instituted when there are signs of heart failure such as breathlessness, dyspnea, cough, edema, and increasing irregularity or weakness of the pulse. Undoubtedly the chances for mother and child in such cases would be increased if such a patient was in a prematernity hospital. There has been endowed in the Royal Maternity of Edinburgh a bed for the study and treatment of the diseases of pregnancy and it has already had an occupant suffering from hyperemesis and hydramnios. This may be the small beginning of a prematernity institution. No obstetrician who has had to deal with dispensary cases in our large cities but who has been impressed by the fact that many poor and worthy pregnant women drag out a miserable existence of from 6 to 9 months, suffering from complications of pregnancy treated under most adverse circumstances and obtaining very little relief because of the lack of proper care, who would be much better cared for if they could be admitted to some prematernity institution. The care of the pregnant woman and her unborn child should be just as near to the heart of the philanthropist as the founding of colleges or the building of libraries.

Simple Methods in Pelvic Surgery.—Deane¹ advocates the reduction of technic in this field of surgery to the simplest form, since skill and applied knowledge avail where stacks of instruments may not. He prefers the abdominal route, believing it simple, less liable to distribute infection, affords opportunity to wall off infected areas by gauze packing, and renders injuries to the bowels, bladder, etc., less likely. It diminishes the danger of hemorrhage, enables the operator to use the least number of instruments, and affords facilities for inspection. In many cases the Trendelenburg position is of value. The most highly developed sense of touch is not always able to accomplish alone what it may if aided by vision. Radical operations done through the vagina are disapproved on account of the limited space for manipulation, the inability to see the

field unless the uterus is removed, which should only be done when that organ is itself sufficiently diseased, the increased danger of hemorrhage, of injuring the ureters, bladder, etc., the inability to reopen such injuries, and the danger of doing incomplete surgery. Again, should the appendix be involved, it cannot be dealt with safely by this route. [H.H.C.]

Choice of Operation for Myomas.—Since the climacteric symptoms are much greater after artificial menopause than after the normal, Olehausen¹ emphasizes the importance of retaining one ovary, or a portion of one, whenever possible; for these symptoms are caused, not by cessation of the menses, but by the failure of the secretion of the extirpated gland. In recent years he with Rosthorn Zweifel, and Werth, has made it a principle, unless disease of the adnexa or some technic reason makes necessary the removal of both ovaries, to retain one at least. Of 48 cases of supravaginal amputation in 1900 and 1901, he left both ovaries in seven cases, one ovary in 30 cases, and removed both in 11 cases, of which ten occurred in patients between 45 and 54. He also retains the uterus in whole or in part whenever it is possible, and for this purpose he advocates the enucleation of the myoma, an operation he performs more frequently in the last two years. The weight of enucleated myomas often reaches 500 to 1,000 grams, and cases in which they weighed as much as 3,000 grams have been reported. The choice of amputation or enucleation cannot always be determined until the abdomen is opened, and the decision depends upon the position of the ovary. If it can be felt above the apex of a uterine tumor having the form of a pregnant uterus, amputation is possible; but if the ovary is deep-seated, it is probable the myoma can be enucleated from the fundus. As enucleation is used more and more, in his opinion the vaginal operation will be restricted in favor of the abdominal, the former being used only when the uterus is small, not larger than in the second or third month of pregnancy. Then usually there is little disturbance and no indication for surgical interference. Finally, for the future, he recommends limiting amputation in favor of enucleation, but to restrict the latter no more to one or to a few small myomas. For the purpose of complete removal he advises the abdominal route with a few exceptions rather than the vaginal one. [W.K.]

The Vomiting of Pregnancy.—Cristeanu² accounts for incoercible vomiting by the awakening in gestation of an arthritic or herpetic diathesis in which there is incomplete combustion and retarded elimination with the accumulation of toxic substances in the organism. An effort at elimination by the gastric and buccal mucosa leads to irritation, producing nausea, vomiting and sialorrhea. In one case traces of urea were found in the saliva. Baths, lithium carbonate, vichy, belladonna and antiemetics are recommended. [H.M.]

Hysterectomy for Fibromyomas.—F. G. Madden³ reports the removal of a fibromyoma weighing 53 pounds from an Egyptian woman, with recovery in 6 weeks. The main points of interest in the case were the size and weight of the tumor, the fact that it was quite solid and yet gave such perfect fluctuation, the absence of pressure symptoms and urgent respiratory obstruction, and the good general condition of the patient before operating. [W.K.]

Mammary Hypertrophy during Pregnancy.—A. Foges⁴ reports the case of a woman married at 18, at which time the mammary organs were very small. On her becoming pregnant, they began to increase very rapidly with the development of what appeared as supplementary mammas in the armpits. This was attended with loss of appetite and a general anemic condition accompanied with distressing pains. At the end of three months both breasts were amputated by Gersuny, the right mamma weighing 6,000 grams, and the left 6,500. The patient left her bed on the third day; her appetite returned and her condition so improved that in two weeks the axillary tumors were also removed, one weighing 300 gr., and the other 350. The course of the pregnancy was not interrupted, and at term a strong, healthy child was delivered. [W.K.]

¹ Centralblatt für Gynäkologie, January 4, 1902

² Medical Press and Circular, September 18, 1901.

³ British Medical Journal, January 11, 1902.

⁴ Wiener klinische Wochenschrift, December 19, 1901.

¹ Hot Springs Medical Journal, July 15, 1901.

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Hints in Hydrotherapy.—Success in the use of hydrotherapeutic procedures demands a clear understanding on the part of the physician of the physiologic effects of water when applied to the human body. The temperature of the water, the duration of the procedure, and mechanic stimulation, either in the form of friction on the part of the attendant or active movements performed by the patient, materially affect the therapeutic result. In the full bath, which is the most generally familiar and useful procedure, the most important effects may be epitomized under three heads: (1) The effect on the body-temperature; (2) the effect on the nervous system, and (3) the effect on metabolism. The first two are chiefly concerned in the treatment of acute disease; on the third depends the results obtained in the management of chronic disorders. The quantity of heat abstracted depends on the volume of blood passing through the vessels of the skin and on the reaction; for the greater, within certain limits, the reduction in temperature, the greater will be the reactive elevation. Protracted and gradual abstraction of heat is more permanent and is followed by a slower and less intense reactive elevation of temperature than a greater degree of cooling of brief duration. Thus, a moderately cool bath at say 80° F., if prolonged, will abstract more heat than a cold bath at say 65° to 70° F., lasting from 10 to 15 minutes. The abstraction and subsequent generation of heat depend in the main on the alterations in the pressure and distribution of the blood. It is to be remembered that the primary contraction of the cutaneous vessels, that follows the application of cold water to the body, ultimately gives place to dilation; and that, in order to maintain the active interchange of hot and cooled blood between the periphery and the internal organs, on which the lowering of the temperature depends more than on radiation, mechanic stimulation in the form of vigorous chafing must be employed during the bath. A far more important factor in practice is the effect on the nervous system, to which the gratifying results achieved by the bath treatment in typhoid fever must be largely attributed. Here the rule to be remembered is that a stimulating effect is produced by cold baths of brief duration, accompanied by active manipulation; while protracted baths at a higher temperature, with little mechanic manipulation, have a sedative effect. To give a concrete example in the case of a nervous disease, the paralytic and ataxic symptoms in tabes dorsalis may be influenced by cold baths of brief duration, while for the relief of the lancinating pains a protracted warm bath will be employed. The effect on the nervous system is exerted through the thermic and mechanic stimulation of the nerve endings in the skin. The failing heart in the capillary bronchitis of childhood may be strengthened, and the shallow respirations deepened by a momentary immersion in cold water, say at 60° F., or, if the physician lacks the resolution for such a heroic measure, by means of cold affusions. The cold bath, like any other general invigorating procedure of augmenting metabolism, has the effect, hence its action is more hygienic, than curative. In obesity, cold baths combined with muscular exercise afford an excellent means of stimulating the oxidation processes, and at the same time improving the general condition and increasing the activity of the blood-producing organs. Steam and hot air baths and other procedures capable of inducing perspiration, however, occupy a more prominent place in the management of metabolic disorders.

Intracerebral Injections of Antitetanic Serum in the Treatment of Tetanus.—Arnat (*Bulletin Général de Thérapeutique*, July 15, 1901) publishes a review of five cases of tetanus, in which intracerebral injections of antitetanic serum

were made, with good results. The author gives the following directions for treatment of this disease: (1) When in the presence of a suspected wound soiled by dirt from the streets, manure, animal substances, skins or excrements, it is not only necessary to antisepticize the wound, but also to give a preventive subcutaneous injection of 2½ drams of antitetanic serum as soon as possible. This injection may be repeated without danger for five or six days. (2) When the diagnosis of tetanus is confirmed, intracerebral injections should be given without delay, if the intoxication is profound and the condition not favorably influenced by a subcutaneous injection of at least 5 drams of antitetanic serum; it is necessary to inject 2½ to 4 drams of serum into the brain of an adult, and 1 to 2 drams into the brain of a child. Injections should be repeated according to the severity of the symptoms. [L.F.A.]

Hydro-electric Baths.—An excellent method of making use of general faradization, galvanization, or galvano-faradization, is the hydro-electric bath. These baths, especially when timid, weak, or nervously excitable individuals are the patients, present great advantages over the other methods, for here instead of a successive action upon the various parts of the body, we obtain a simultaneous and equable action upon the entire surface, without, however, the stimulating muscular action. The entire bath may be looked upon as a large enveloping electrode. Our knowledge of the effects of these baths is by no means completed. According to the investigations of Eulenburg, Lehr, and others, the action of the monopolar bath is a markedly sedative one, as evidenced by reduced pulse and respiration frequency and decrease of body temperature. Lehr has called attention to the circumstance that metabolism (excretion of uric acid) is markedly augmented by means of the dipolar bath. Stimulation of the sensory cutaneous nerves is, of course, produced, provided sufficient current be employed. The direct result of the faradaic bath is said to be an increase of physical and psychic powers; appetite, digestion, and general nutrition are improved. The effect of the galvanic bath is said to be more particularly the production of fatigue and drowsiness, with consequent improvement in sleep. All in all, the indications for the use of a hydro-electric bath must be very much the same as the indications for the employment of any skin-irritating bath (saline baths or carbonic acid baths) plus a direct sedative or refreshing action upon the central nervous system. The choice of the bath will, therefore, depend upon the action desired, a combined effect being obtainable by means of a galvano-faradaic bath. The addition of salt to the bath is always unnecessary, and in the dipolar bath objectionable; for the conductivity of the water is thereby materially increased, and the current will be, to a great extent, conducted past the body. The strength of the current to be used will, in the case of a faradaic bath, be determined purely subjectively by the sensations of the patient, while in the galvanic bath, on account of the slight current density, a very high current strength—up to 150 milliamperes—may be employed. The duration of the bath should not exceed one-half hour. The temperature should be from 32° to 35° C. (say 89° to 95° F.).—G. W. Jacoby in Cohen's "Physiologic Therapeutics."

Treatment of Cough in Pulmonary and Laryngeal Tuberculosis.—Levien (*Buffalo Medical Journal*, September, 1901) after reviewing the usual remedies, including inhalations, recommends glyco-heroin as the most satisfactory in the treatment of cough in pulmonary and laryngeal tuberculosis. Each teaspoonful, the usual dose, contains ⅛ grain heroin, 1 grain hyoscyamus, 3 grains ammonium hypophosphate, with white pine bark, balsam of tolu, glycerin and aromatics. It is also said to give satisfaction in asthma. [R.M.G.]

Urotropin.—Golze and Gottlieb (*Prager medicinische Wochenschrift*, August, 1901—from *Treatment*, Vol. V, No. 8, 1901) have arrived at certain interesting conclusions with regard to this drug: 1. It is a powerful antiseptic, its bactericidal power being greatly increased by heating to body-temperature. 2. The presence of albumin does not interfere with its antiseptic properties. 3. *Bacillus typhosus* seems to be particularly sensitive to the action of urotropin. 4. Uric acid concretions are dissolved by its action. 5. Given internally in 7 gr. doses the

drug is well borne (this dose may safely be increased to 10 grs. three times a day) and does not irritate the bladder. In a case of uric acid calculus small clay-colored masses of uric acid were passed which were softer than those voided previous to the administration of the drug. It appears, therefore, that urotropin is a thoroughly trustworthy intestinal, as well as urinary, antiseptic, and may be used advantageously for this purpose, especially in typhoid fever. [R.M.G.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended February 7, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles.....Jan. 18-25.....	5	
	San Francisco.....Jan. 19-26.....	14	
Illinois:	Belleville.....Jan. 25-Feb. 1.....	1	
	Chicago.....Jan. 25-Feb. 1.....	5	
	Danville.....Jan. 25-Feb. 1.....	1	
	Galesburg.....Jan. 25-Feb. 1.....	2	
Indiana:	Crawfordsville.....Jan. 18-Feb. 1.....	14	
Iowa:	Clinton.....Jan. 26-Feb. 2.....	6	
Kentucky:	Covington.....Jan. 26-Feb. 2.....	6	
Louisiana:	New Orleans.....Jan. 25-Feb. 1.....	4	1
Massachusetts:	Boston.....Jan. 25-Feb. 1.....	47	12
	Brookline.....Jan. 18-25.....	1	
	Cambridge.....Jan. 25-Feb. 1.....	5	
	Chicopee.....Jan. 18-25.....	1	
	Malden.....Jan. 25-Feb. 1.....	1	
	New Bedford.....Jan. 25-Feb. 1.....	5	
	Somerville.....Jan. 25-Feb. 1.....	1	
	Waltham.....Jan. 25-Feb. 1.....	1	
	Woburn.....Jan. 25-Feb. 1.....	1	1
Michigan:	Ann Arbor.....Jan. 11-16.....	1	
	Detroit.....Jan. 25-Feb. 1.....	6	
	Ludington.....Jan. 26-Feb. 2.....	1	
Minnesota:	Minneapolis.....Jan. 18-25.....	28	
Montana:	Butte.....Jan. 12-26.....	9	
Nebraska:	Omaha.....Jan. 25-Feb. 1.....	51	
New Jersey:	South Omaha.....Jan. 24-31.....	172	
	Camden.....Jan. 25-Feb. 1.....	7	
	Jersey City.....Jan. 25-Feb. 1.....	25	1
New York:	Newark.....Jan. 24-Feb. 2.....	40	11
	Binghamton.....Jan. 25-Feb. 1.....	3	
	New York.....Jan. 25-Feb. 1.....	42	15
Ohio:	Cincinnati.....Jan. 24-31.....	16	1
	Cleveland.....Jan. 25-Feb. 1.....	3	
	Middletown.....Jan. 25-Feb. 1.....	2	
Pennsylvania:	Toledo.....Jan. 25-Feb. 1.....	3	
	Auburn.....Nov. 16-Jan. 25.....	48	1
	McKeesport.....Jan. 25-Feb. 1.....	1	
	Norristown.....Jan. 25-Feb. 1.....	1	
	Philadelphia.....Jan. 25-Feb. 1.....	73	13
	Pittsburg.....Jan. 25-Feb. 1.....	1	
	Williamsport.....Jan. 25-Feb. 1.....	2	
Rhode Island:	Providence.....Jan. 25-Feb. 1.....	1	
South Carolina:	Charleston.....Jan. 18-25.....	1	
	Greenville.....Jan. 16-25.....	1	
South Dakota:	Sioux Falls.....Jan. 24-Feb. 2.....	4	
Tennessee:	Memphis.....Jan. 25-Feb. 1.....	12	
Washington:	Tacoma.....Jan. 19-28.....	3	
Wisconsin:	Green Bay.....Jan. 24-Feb. 2.....	10	
	Milwaukee.....Jan. 25-Feb. 1.....	3	

SMALLPOX—FOREIGN.

Brazil:	Para.....Nov. 1-30.....	14	1
	".....Dec. 1-31.....	11	1
Colombia:	Cartagena.....Jan. 13-19.....	1	2
	Panama.....Jan. 20-27.....	25	
France:	Paris.....Jan. 11-18.....	7	
Great Britain:	Bristol.....Jan. 4-11.....	1	1
	Liverpool.....Jan. 11-18.....	3	
	London.....Jan. 11-18.....	877	60
India:	Bombay.....Dec. 31-Jan. 7.....	1	
	Karachi.....Dec. 29-Jan. 5.....	8	2
	Madras.....Dec. 14-20.....	3	
Italy:	Naples.....Jan. 11-18.....	15	3
Russia:	St. Petersburg.....Jan. 4-11.....	5	1
Uruguay:	Montevideo.....Nov. 8-Dec. 7.....	268	26

YELLOW FEVER.

Brazil:	Para.....Oct. 1-Dec. 31.....	24	
Dutch Guiana:	Paramaribo.....Jan. 9.....	2 cases	suspect
Mexico:	Vera Cruz.....Jan. 18-25.....	1	

CHOLERA.

India:	Bombay.....Dec. 31-Jan. 7.....	1	
	Calcutta.....Dec. 28-Jan. 4.....	88	
	Madras.....Dec. 14-20.....	4	

PLAGUE.

China:	Hongkong.....Dec. 14-21.....	1	
India:	Bombay.....Dec. 31-Jan. 7.....	213	
	Calcutta.....Dec. 28-Jan. 4.....	22	
	Karachi.....Dec. 29-Jan. 5.....	31	25

Changes in the Medical Corps of the U. S. Army for the week ended February 8, 1902:

CABADA, Contract Surgeon EMILIO F., will proceed to his home, Cienfuegos, Cuba, for annulment of contract.

PERSONS, First Lieutenant ELBERT E., assistant surgeon, is relieved from duty at Fort Keogh, and will rejoin his proper station, Fort Snelling.

DADE, Captain W. H., assistant surgeon, is granted leave for one month, on surgeon's certificate, with permission to leave the limits of the department of California.

PERSONS, First Lieutenant ELBERT E., assistant surgeon, is granted leave for one month.

WALL, Contract Surgeon FRANCIS M., will proceed from Fort Thomas to Columbus Barracks for duty with the detachment of recruits about to be placed en route for San Francisco, Cal.

WAKEMAN, Major WILLIAM J., surgeon, upon his arrival at San Francisco, Cal., will report to the commanding officer of the model camp, Angel Island, Cal., for duty at that camp to relieve Major Edward R. Morris, surgeon, who will report for transportation to the Philippine Islands, where he will report for assignment to duty.

Orders of January 20, which direct First Lieutenant Edwin W. Rich, assistant surgeon, upon his relief from duty at Fort Totten, to proceed to San Francisco, Cal., are revoked, and Lieutenant Rich will report to the commanding general, department of the East, for assignment to duty with the detachment of 800 recruits to be sent to San Francisco, Cal., where he will report for transportation to Manila, P. I., for assignment to duty.

METCALF, Contract Surgeon BEN H., now at Winthrop, Mass., will report at Fort Banks for temporary duty.

CASSADAY, Contract Dental Surgeon GEO. H., now at San Francisco, Cal., will report for transportation to the Philippine Islands, where he will report for assignment to duty.

GLENNAN, Major JAMES D., surgeon, upon his arrival at San Francisco, Cal., will report to the commanding general, department of California, for duty, to relieve Major Robert J. Gibson, surgeon.

So much of orders of October 28, as direct First Lieutenant Charles L. Marrow, assistant surgeon, to proceed to Fort Morgan for duty, is amended so as to direct him to proceed to Fort Totten for duty.

RICH, First Lieutenant EDWIN W., assistant surgeon, will proceed to Fort Slocum for duty with the detachment of 800 recruits now under orders to proceed to San Francisco, Cal., en route to the Philippines. Upon arrival at San Francisco Lieutenant Rich will report to the commanding general, department of California for orders.

RICHARD, Major CHARLES, surgeon, is granted leave for 15 days, to take effect upon being relieved from duty at Fort Leavenworth.

Orders of January 31 as direct First Lieutenant Edwin W. Rich, assistant surgeon, to report for transportation to Manila, P. I., are revoked, and Lieutenant Rich will upon his arrival at San Francisco, Cal., and the completion of his duties with recruits report at the U. S. general hospital, Presidio, for duty.

HICKS, Contract Surgeon GEORGE L., now at Cambridge, Md., will proceed to Fort Totten for temporary duty.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the 14 days ended February 6, 1902:

KALLOCH, P. C., surgeon, granted leave of absence for 14 days from February 5—February 4, 1902.

KINYOUN, J. J., surgeon, department approval of June 28, 1901, granting Surgeon Kinyoun leave of absence for 4 months, amended so that said leave shall be for one month and 21 days—February 4, 1902.

THOMAS, A. R., passed assistant surgeon, to proceed to London, England, for special temporary duty—January 30, 1902.

CLARK, TALIAFERRO, assistant surgeon, granted leave of absence on account of sickness, for 14 days from January 16—February 4, 1902.

BULLARD, J. T., acting assistant surgeon, granted leave of absence for 25 days from February 1—February 4, 1902.

GOLDSBOROUGH, B. W., acting assistant surgeon, granted leave of absence for 2 days—January 28, 1902.

WALKER, R. T., acting assistant surgeon, granted leave of absence for 4 days from February 18—February 5, 1902.

MAGUIRE, E. S., hospital steward, granted leave of absence for 30 days from February 5—February 4, 1902.

Changes in the Medical Corps of the U. S. Navy for the week ended February 8, 1902:

FURLONG, Assistant Surgeon F. M., ordered to the Naval Hospital, Norfolk, Va., instead of to Topeka—February 3.

ULSH, Assistant Surgeon W. H., detached from the Annapolis and ordered to the Naval Hospital, Mare Island, Cal., for treatment—February 6.

WAGGENER, Medical Inspector J. R., detached from the Constellation and to duty at the Marine Recruiting Rendezvous, Boston, Mass.—February 6.

URIE, Surgeon J. F., detached from the Marine Recruiting Rendezvous, Boston, Mass., and ordered to the Naval Dispensary, Washington, D. C.—February 6.

SPRATLING, Surgeon L. W., ordered to duty at the Naval Hospital, Portsmouth, N. H.—February 6.

EVANS, Passed Assistant Surgeon S. G., detached from duty at the Naval Hospital, Portsmouth, N. H., and ordered to the Pensacola Navy Yard—February 6.

CORDEIRO, Surgeon F. J. B., detached from the Pensacola Navy Yard and ordered to the Constellation—February 6.

OMAN, Assistant Surgeon C. M., ordered to duty at the Naval Hospital, New York—February 6.

American Medicine

FOUNDED, OWNED, AND CONTROLLED BY THE MEDICAL PROFESSION OF AMERICA

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Scientific Investigation and the Newspapers.—

In the dearth of sensational news, and in the wild rush for items to fill their dolorously adipose Sunday issues, the yellow journals are sometimes compelled to "work up" and flaunt before their readers marvellous accounts of scientific research. When an intelligent person catches glimpses of such doings there are several questions that arise in his mind: Is the scientific worker responsible for the newspaper accounts? Either from vanity, for purposes of advertisement, or from any other ulterior motive, has he authorized or allowed the reporter to proceed? If so, or if not so, how should his scientific colleagues of the world treat him? The purely scientific truth and value of the discovery or investigation should also be considered. About the first of the present year the newspapers began publishing the most astonishing accounts of the discovery of the "secret of life," "the mystery of generation," "of vital activity," etc. All the great problems of physiology, according to trumpet headlines, were at last solved. Foreign journals began to copy, and, we may add, began to sneer. The best indulged in cynical smiles, the more indiscriminate in scorn and laughter, at the expense of American scholarship and scientific morals. Caricaturists used the incident to give point to plebeian jokes. Then scientific and medical journals, in order not to seem out-of-date, quoted and commented, some in irony, some in awe; all without understanding. But the quotations, some of them of column-length, in so-called scientific journals, it was soon learned, were from the newspapers, and some of the author's original articles had not yet been published in any technical periodical, whose readers alone could be supposed to have any understanding of the matter in hand. Not even the imagination of a hard-pressed newspaper reporter could ever have invented such discoveries or shammed such erudition. Somebody was surely blameworthy.

The Reputation of American Science and Scholarship Hurt by Yellow Journalism.—When newspapers scream at the crowd misrepresenting accounts of scientific matters so completely beyond the common comprehension that hardly a dozen men in a nation can understand anything whatever of the matter, it is easy to foresee that the reputation of men, of institutions, and even of a country may be injured. Do American uni-

versities, came the question from abroad, sanction the publication of the results of the most recondite researches of their professors in the Sunday newspapers? If not, how did these papers secure the long ear-marked quotations? An experiment in parthenogenesis is quoted as it is described by the "American" reporter as "the jelly-fish did not jell," and Europe laughed. We have been at a great deal of pains to ascertain the facts as to responsibility for the newspaper outgivings in the special case alluded to, and we find beyond all question that the principal man mentioned as the revealer of all mystery not only had nothing whatever to do with this newspaper notoriety, but that it misrepresented him as completely as it was loathsome to him. No blame whatever can attach to him. Students acting as reporters, and for it dismissed from the institution, and others who were careless, or worse than careless, were accountable for a quickly recognized injury to friendships, to institutional and national reputation, and to science itself. The lessons are plain: All who believe, as do we, that the person principally quoted is utterly innocent should hasten to compensate him for the injury done him by the criminal folly of others; and assure him of the honor in which he is held by the discriminating, and for the credit that will finally be recognized as due to American science through the work of a most worthy investigator. Next in importance is the proper punishment of the wilful blunderers. But most of all should every scientific man guard against any such possible happenings in the future.

Professor Loeb's Investigations.—There have lately appeared in newspapers, and even in many better periodicals, extensive accounts of the noteworthy experiments and conclusions of Professor Loeb, of the Chicago University. We have hitherto hesitated to allude to them, partly because of a most regrettable newspaper publicity for which the distinguished author is in no way responsible, partly because the latest investigations have not been published in any scientific journal, and again because without most extensive quotation and analysis our readers could not understand the purport of the recondite researches. We purpose at present only to give references to some of Professor Loeb's papers for the benefit of those who may wish to read them at first hand. The preliminary paper on the "Toxic and Anti-

toxic Effects of Ions" appeared in *Pflüger's Archiv*, Bd. 88, pp. 68-78, Heft 1 and 2, November 21, 1901. The full paper is published in the *American Journal of Physiology*, Vol. VI, pp. 411-433, No. 6, issued February 1, 1902. His paper on the "Prolongation of the Life of the Unfertilized Eggs of the Sea Urchin by Potassium Cyanid" appeared in the *American Journal of Physiology*, Vol. VI, pp. 305-317, No. 5, issued January 1, 1902. In the same journal, Vol. IV, No. IX, January 1, 1901, pp. 423-459, is the contribution entitled, "Experiments on Artificial Parthenogenesis in Annelids (*Chaetopterus*) and the Nature of the Process of Fertilization." In the same periodical, Vol. V, No. VI, July 1, 1901, there is a paper "On an Apparently New Form of Muscular Irritability (Contact Irritability) Produced by Solutions of Salts (Preferably Sodium Salts) Whose Anions Are Liable to Form Insoluble Calcium Compounds." It is the opinion of those whose studies have fitted them to judge that Professor Loeb's researches possess not only special value in themselves, but that they have greatly stimulated biologic research and promise to wield a stimulative influence in the future. He combines in his work not only the enthusiasm and energy of the tireless experimenter, but brings to bear on its interpretation observant and analytic faculties of a particularly philosophic type. As a "pathfinder" in physico-chemic research applied to biology he may be misjudged largely because few are qualified at present to follow him understandingly. His investigations are in many ways interesting and suggestive.

It is, however, necessary to distinguish sharply between his experimental facts and hypotheses founded on them. For instance, the observations on which he bases the conclusion that sodium ions are the essential thing for the automatic contractions of the heart-muscle are doubtless correct. But, as Howell has recently pointed out (*Am. Jour. Physiol.*, Vol. VI, p. 181), they may equally well be interpreted as showing that the essential thing is calcium. Again, Loeb has certainly elicited some interesting relations between the toxic and antitoxic effects of certain ions and their valency. But it is too early to throw overboard the idea that the physiologic action of electrolytes may be partly, at least, determined by the specific character of their ions, and to conclude that it is determined solely by the number and sign of the electrical charges of these ions. Loeb does not, it is true, go quite so far as this.

The annual meeting of the stockholders of the American-Medicine Publishing Company was held on February 11, and was attended by a very large majority of the shareholders either in person or by proxy. The success of the journal during the first ten months of its history was the cause for much satisfaction and felicitation by the shareholders. The meeting was in every respect harmonious and satisfactory. The reports of the President and Treasurer of the company were listened to with great interest and were unanimously accepted and approved by the meeting. The results indicated by the year's business were gratifying from a professional and from a financial point of view. AMERICAN MEDICINE, the officers said, was established

by physicians who felt the need of a professional medical journal which should be independent and should be controlled by themselves rather than subjected to the dictation of capitalists and their professional agents. The response to this demand has been so marked as to make the history of the first ten months of the publication of this journal without parallel in the history of similar publications. In that brief period it has obtained 15,000 subscribers, and the business outlook of the journal for the coming year indicates a reasonable certainty that its income will meet all of its expenses and leave some excess for further development or for the payment of dividends to its shareholders.

The establishment of a professional journal is generally a serious business enterprise. It demands, of necessity, a large outlay of money and has in it many possibilities of failure. And even when success is achieved it is generally after years of patient effort and hazardous uncertainty. AMERICAN MEDICINE has passed with safety its initial experimental stage and has already reached a position in which it is self-supporting. This satisfactory result has been attained by an expenditure of but little more than \$50,000 of the money of its shareholders as an investment fund or "plant." This rapid growth is due to two important causes, which are worthy of careful consideration and should be kept before us as a guide for our future operations. The first of these causes is the earnest sympathy and cooperation of a large number of studious and progressive American physicians, who recognize the value of independent medical journals, free from the dictates of commercialism, whose controlling object is to aid subscribers in their work and to unify and elevate the medical profession, and which never subordinate this object to add financial value to their property.

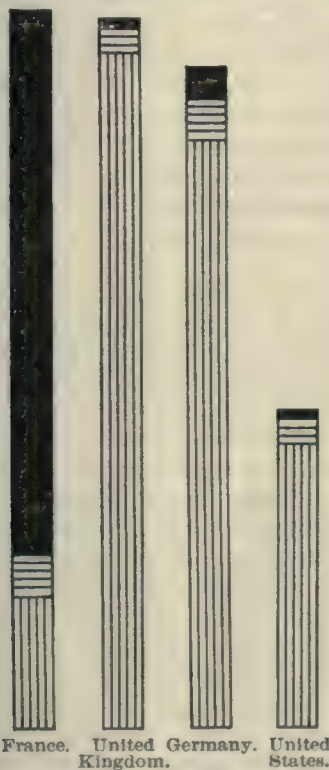
The second cause is that not only professionally but financially the journal has been established upon a cooperative plan and has not been exploited for the purpose of private profit or of selling stock. Every dollar subscribed to the capital stock has been purchased directly from the company and has gone into its treasury for development purposes and not into the pockets of private individuals disposing of their holdings for personal gain. Let us continue to pursue these methods and thereby maintain our journal upon this unique basis of cooperative development. If we do so it seems reasonably certain that the well-founded expectation of prosperity for the coming year, as indicated by the report of the officers, will be realized; and that the ethical, literary, and professional features of AMERICAN MEDICINE will in future receive still wider recognition and will make it not only the leading independent medical journal of our country but a financial property which will eventually afford to all of its shareholders ample remuneration for the capital invested.

The Use of Alcohol in England, France, Germany, and the United States.—This question should be of considerable interest both from a medical, sociologic and political standpoint. Very much has been written on the subject, but for the most part by persons more or less biased in their opinions. Very often such papers

have been inaccurately written by persons entirely inexperienced in dealing with statistical matters, and hence they have very little value to those interested in the real facts. In the *Fortnightly Review* of January, 1902, Schooling, a professional statistician with more than twenty years' experience, gives a short paper on this subject, with a graphic representation of the condition of the drink question in these countries, which we reproduce. He finds that there has been a steady increase in drink consumption per head of population during each five-yearly period from 1886 up to the present date. Comparing the period 1896-1900 and the period from 1886 to 1890 he finds that the percentage of increase has been smaller in Great Britain than in any of the other three countries, while Germany and France

have had the largest relative increase. In the United States, however, the increase of 20% in the consumption of alcoholic liquors per head of population is largely due to an increase in beer drinking, while the consumption per head of wine and spirits has declined. In the United Kingdom, France, and Germany the increase has been in each kind of drink, but mainly an increase in the consumption of beer in Germany and the United Kingdom, with an increase of wine consumption in France. The current criminal statistics for England record a material increase in prosecutions for drunkenness during recent years somewhat proportional to the increase in consumption of liquor.

The French drink more spirits, more wine and have a larger total consumption per head than any of the other three countries. Schooling notes as a most striking fact that the consumption of liquors in the United States is very much lower than in any of the other countries. The American total per head is less than one-half of the total consumption per head in any of the other three countries. The superior sobriety of the American workman as compared with Englishmen has often been noticed, and observations in social grades higher than that of the artisan tends to show that American superiority in this respect is a general superiority not confined to workmen only. Schooling believes that the developed alertness and prompt energy of the American may, it is quite likely, be due in some part to this relative abstinence from alcoholic drink.



The drink-consumption per head of population in 1900. Wine, solid black. Spirits, horizontal lines. Beer, vertical lines.

We are very glad to see this statistical study from so authoritative a source and to know that the results are so favorable to our own country. Temperance reformers who are sometimes more fanatical than accurate have frequently tried to convince us that our country is rapidly going to the bad as the result of strong drink, and that it is undoubtedly in worse condition than any other civilized country on the surface of the earth. While some increase is noted in the use of alcoholic liquors, we notice that it is mainly in the use of beer and light wines, which are decidedly the least harmful as regards their effect on health.

The Journal of Universal Antiism, literally "agin" everything that is established or rational, seems at last to have appeared. It is called *Our Home Rights*. It is one of the best examples of American humor we have seen, and that means, of course, that the fun is not intentional. It has twenty-nine departments, or, as the editor spells it, *depts*, each under a dept editor. Among these depts are the following: Socialistic, Philosophic Anarchy, Vegetarianism, Anti-war, Medical Freedom, Therapeutic Suggestion, Single Tax, Free Thought, Astrology, Botanic Medicine, Individual Opinion, Sex Ethics, Dumb Animals, Economic and Political Salvation, Antivaccination—and, lastly, the Cranky Notions Dept. Each dept has a 12-mo. page all to itself, but a goodly share of this allotted space is consumed by the title heading and pictures of the editors. Most of these depts are clearly inserted to rally the antis under one banner, and that as certainly is antimedicine. It is this maniacal hatred of everything medical that inspires and unites the Falstaffian crowd of warriors. Antivaccination, antivivisection, anti-everything-medical is everywhere in these pages full of folly and fury. Governor Crane, of Massachusetts, is flattered in a full-page portrait, and the antiregistrationists and anti-examinationists and antieducationalists hope that he will "act with firmness when he understands that the people demand the repeal of the law compelling doctors to pay tribute to an incompetent board, when the only party demanding registration is a handful of ignorant doctors who have monopoly ideas in their heads. He will no doubt recognize the constitutional rights of the people." We shall watch for their opinion of the Governor when they learn that he is not a supporter of anti-civilization.

Sentimentalism and the Care of Animals.—If horses and cattle were as cheap as dogs it is evident that experimental science would not have incurred the hatred of the antivivisectionists. The sufferings, or the supposed sufferings, of the large useful animals would not have affected these animal lovers so much. For nineteen years the School of Veterinary Medicine and the Veterinary Hospital of Harvard have been a source of expense to the University and at last they have had to be closed. The reason of the failure of support is given by President Eliot in his last report, and through it we get a glimpse of the injustice of popular sentimentalism as regards the care of those animals to which our greatest gratitude should be due. Fashionable folk will take

their pampered pet dogs to hospitals, in carriages drawn by docked horses with bearing reins, and will pass unnoticed the pathetic cart horse which after a life of patient service is given over to the abuse and neglect of hoodlum drivers and owners who are bent on extracting the last dollar's worth of service out of its life and loyalty. President Eliot says:—

"The university has never before been compelled to abandon a department of instruction once adopted by it. The fact seems to be that small domestic animals, like dogs, cats and birds, engage the affection of their owners to such a degree that money will be spent freely to save their lives or relieve their sufferings; but the larger animals, like cattle and horses, do not so much enlist affection, so that moderate money value and the restoration to usefulness are allowed to limit the expenditure upon them when disabled."

Dowie Gains Recruits from the Salvation Army.

—The sister of Ballington Booth, Mrs. Booth-Clibbern, with her husband and others, have left the Salvation Army and joined Dowie's church. Mrs. Booth-Clibbern has been in charge of the Army work in Italy, Holland, France and Switzerland. The seceders tell their old friends in a circular that they believe that "divine healing is based on the atonement," and they write to Dowie that since he has given them light on "the Elijah matter," which was even for them a great stumbling block, they offer themselves to him. Those who think the days for founding new religions are past should also look at "this Elijah matter" seriously. It is interesting to note how inevitably these crazy sects of a thousand kinds find their source of strength in miraculous healing. If it is not so at first they sooner or later come to that in order to revive their enthusiasm and draw support. Heretofore the Salvation Army people, strangely enough, have not been attracted by "divine healing," but the leaven is at last beginning to work.

Two bad methods of fighting the antivaccination craze have lately been illustrated. In the West a member of the wild-eyed tribe long famous for similar doings, in order to advertise himself, but ostensibly to disprove the vaccination creed, is said to have smeared himself with smallpox virus and then to have exposed himself wilfully to as many people as possible. According to report a mob burned down his house. In an eastern state another "unvaccinated" crank was permitted by the board of health to go among the smallpox patients, and then without disinfection to mix with crowds, and to wave his infected handkerchief in public meeting "in the faces of his friends," etc. As a result of his folly he is now down with smallpox in a virulent form. In the long run, of course, this method would effectively remedy the evil if all the consequences of such folly could be traced. But they cannot be traced, and if they could the method is not the proper one. Let us have just laws for compulsory vaccination and against the wilful exposure of persons likely to spread infectious disease among the innocent. And then let us see that these laws are executed. The criminally insane should not be allowed free in the community, and men such as these are criminals and insane.

The plague in India is increasing so rapidly as to cause the gravest apprehension. From the figures given in the last *Public Health Reports*, we learn that from November 17 to December 21, 1901, there were 59,639 cases reported with 32,373 deaths. One cannot know how many cases were not reported, but these numbers show us the tremendous difficulties encountered by the profession and the English government in their attempts to introduce civilization among the Indian peoples. When these nations were uncontrolled by a foreign power, war was the principal Malthusian means of keeping down the exuberant multiplication of the population. Feuds, revolutions, and wars being prevented famine and disease take their places. Viewed in themselves they are hardly lesser evils, but as they are the necessary means or stages through which these peoples pass to more civilized and healthy conditions, they must be met bravely and scientifically, as indeed our colleagues are meeting them in the East. Perhaps the practical teaching of the laws of physiology and medicine is the greatest good of "expansion" and "imperialism." If our government is really minded to travel this road, our profession should be setting about its great task with more foresight and determination.

Endowments for medical research, it is most gratifying to know, are being progressively recognized as the best means of philanthropy. President Eliot, in his last report, states that the invested funds of Harvard Medical School have increased from \$45,186.54 in 1870 to \$1,098,489.74 in 1901. He says that research is more and more endowed, and that in endowing professorships recent givers wish the professors to have leisure for original research. Our medical schools are now determined that extensive and well-equipped laboratories are absolutely necessary for the progress of our science and for individual college success in the race with rivals. The purely didactic medical college "must go!" The proper endowment of medical colleges enables them to advance their standards of admission and to make their courses of study more severe. This has been done by a number of our best schools, not merely in theory, but in whole-hearted practice. Among these is the University of Pennsylvania Medical Department, which is now beginning the building of extensive laboratories at a cost of \$600,000. Conviction and confidence are shown in the fact that only half the amount required is at present subscribed.

The Results of the Pasteur Preventive Treatment of Rabies are thus epitomized by Dr. Ravenel:

Since the commencement of the Pasteur Preventive Treatment, some 55,000 persons have been inoculated, the treatment now being administered in twenty-five laboratories in different parts of the world. The total average mortality at all these laboratories is about 0.77 of 1%. This includes a number of people who have been bitten by wolves, the bites of these animals being especially fatal, the mortality reaching as high as 80% in every 100 bitten. At the parent institute in Paris from 1886 to 1899, inclusive, 23,245 cases have been treated, of whom 103, or 0.44 of 1% have died. The mortality during the first year was 0.94 of 1%, and has steadily gone down until during 1899 it was 0.25 of 1%, the lessened mortality being due to some extent at least to the smaller number of persons bitten by

wolves who have been treated there in late years, owing to the fact that there have been laboratories instituted in other parts of Europe nearer to the regions where wolves abound.

The value of the preventive treatment is well brought out by statistics. In Hungary, from April 15, 1890, to December 31, 1890, 5,899 persons were bitten, of whom 4,914 were inoculated, with a mortality of 1.2%, while the mortality among those who did not take the treatment reached 14.94%.

False Preaching and an Over-zealous Convert.

—Those who would spread among the community by deportation of tuberculous immigrants, etc., a belief that tuberculosis is a dangerously contagious disease, should consider the results that may follow the acceptance of such teaching upon the part of ignorant and panicky people. An excellent illustration is an incident that occurred recently at Frederick, Maryland. A church trustee met a funeral procession at the door of the church and refused to allow services to be held in the church over the body of a woman who had died of tuberculosis. This obstreperous person carried his point, causing hardship and arousing great bitterness of feeling. This is a good method of making people hate even legitimate methods of encouraging preventive medicine.

Correction.—Dr. Prince A. Morrow, in a courteous note, justly complains that, in our issue of February 15, page 249, by printing *controvertible* for *convertible*, he (and we) are made to say the opposite of that desired. We regret the typographic blunder.

EDITORIAL ECHOES

The Health of Soldiers.—The fact is, the old pipe-clay doctrine that everything must yield to "military" exigencies is out of date, and the sooner this is recognized by generals in command of troops the better it will be for the army and for the nation which has to pay for that very costly luxury. The maintenance of the health of the men is a "military exigency" of vital importance, and when public opinion has been sufficiently educated to grasp this truth, it will be held, in the words of our correspondent, "to detract as much from a general's reputation and his claims on a grateful country to lose a thousand men by preventable disease as by a useless or ill-managed fight."—[*The Practitioner*.]

Athletics and College Growth.—From a tabulated statement of the contests in track athletics, base-ball, rowing, football, and debate, for the calendar years from 1891 to 1900, inclusive, between Harvard and Yale, compared with the preliminary and final candidates for admission during the same years, the conclusion is drawn by President Eliot that there is no relation between athletic victory or defeat for Harvard and the increase or decrease of either preliminary or final candidates for admission in the following year. The same inference is drawn from a similar table concerning Yale and Princeton, though in a less positive manner. President Eliot suggests that: "If the American colleges and universities could satisfy themselves that success in athletics is not indispensable to college growth, or, better still, be persuaded that too much attention to athletic sports, or a bad tone in regard to them, hinders college growth, there would probably result a great improvement in the spirit in which intercollegiate contests are conducted; they would come to be regarded as the by-play they really are, and would be carried on in a sportsmanlike way as interesting and profitable amusements." [*Boston Med. and Surg. Jour.*]

BOOK REVIEWS

Index Catalogue of the Library of the Surgeon-General's Office, U. S. Army. Second Series, Vols. V and VI. Presented by JAMES C. MERRILL, Major and Surgeon, U. S. Army.

The high standard set by the Index Catalog in years past is well maintained in these volumes, lately received. This publication contains a mine of information and is an absolute necessity for medical writers; and in themselves the volumes form a valuable reference library for the busy practitioner.

International Clinics.—A Quarterly of Clinical Lectures and Especially prepared Articles, Edited by HENRY W. CATTELL and others. Volume 3. Eleventh Series, 1901. Philadelphia, J. B. Lippincott Co., 1901.

The present volume of this well known and deservedly popular Clinical Quarterly contains 299 pages inclusive of the index. Among the most interesting articles, mention may be made of Phototherapy After Finsen's Methods, by Valdemar Bie; Antitoxic Sera—Their preparation and Standardization, by J. W. H. Eyre; Convulsions in Infants and Children Under Three Years of Age, by John Abercrombie; Some Acute Affections of the Gallbladder and its Associated Ducts, by Howard Lilienthal; The Clinical Laboratory in Private Practice and in the Physician's Office, by C. N. B. Camac. Many of those not mentioned are equally good.

Clinical Hematology.—A Practical Guide to the Examination of the Blood, with Reference to Diagnosis. By JOHN C. D'ACOSTA, JR., M.D., Assistant Demonstrator of Clinical Medicine, Jefferson Medical College; Hematologist to the German Hospital, etc. Containing eight full-page colored plates, three charts, and 48 other illustrations. Octavo, 450 pages. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1901. Price, \$5.00 net.

This work and a subject which is daily being studied with greater care and scrutiny by scientific medical men will justly make its impress upon the profession. It is unquestionably one of the most important medical books of the year. The author discusses the various phases of the subject in a simple straightforward manner, sensibly avoiding most of the mooted and unsettled problems. The technic of blood examination is so fully discussed, and the methods of proceeding so definitely laid down that the mastery of these details becomes simple and easy. In this connection such late adjuncts to precision as Wright's coagulometer and Engel's alkalimeter are fully explained. The histology of the normal blood is carefully set forth, and the changes incident to the various blood diseases are carefully detailed. The author relates the blood changes which take place in the various diseases of the human body; and especially worthy of commendation are the research and investigation made by him in reference to the blood changes in appendicitis, enteric fever—including Widal's reaction and spot-cultures, malaria, sepsis, filariasis, etc. In the discussion of the primary anemias, and those peculiar to infancy, prominent clinical features other than those relating to the blood, are briefly mentioned for the purpose of differential diagnosis. The colored, original plates are valuable adjuncts, showing as they do, pictorially, the various normal and abnormal histologic elements in the blood. The volume bears every evidence of careful and painstaking preparation, and it can be safely asserted that a more valuable book for the student and the practitioner has not yet appeared on this interesting and highly instructive subject.

A Manual of the Practice of Medicine.—By GEORGE ROW LOCKWOOD, M.D. Attending Physician to Bellevue Hospital, New York. Second edition, revised. Octavo, 847 pages, and 103 illustrations. Philadelphia and London: W. B. Saunders and Company, 1901. Cloth \$4.00.

That in the present state of medical education, books of moderate size on the practice of medicine merit a distinct place must be conceded. The test of their utility is that they present accurately, concisely, and in a manner attractive to the junior student, the essential facts of the practice of medicine. Lockwood's Manual meets these requirements in an acceptable

manner. The second edition shows considerable improvement over the first; the book has been enlarged, several new sections have been added, and many of the old sections have been rewritten, especially those treating of malaria and of diseases of the gastrointestinal tract. The descriptions of symptoms and diagnosis are as full as could be expected, while those devoted to treatment are especially full. Of obsolete matter there is little, of inaccuracies there are few. To junior students, and even to the young practitioner who desires hurriedly to look up some point, the book may be recommended. That it should replace the larger and more serviceable treatise, on practice is probably not expected even by the author.

The Medicinal Plants of the Philippines. By T. H. PARDO DE TAVERA, Doctor en Medicina de la Facultad de Paris, Comisionado Cientifico de S. M. en las Islas Filipinas y Delegado General en las Mismas de la Societe Academique Indo-Chinoise de Francia, Miembro Fundador Correspondiente de la Sociedad Espanola de Higiene, etc. Translated and Revised by JEROME B. THOMAS, JR., A.B., M.D., Captain and Assistant Surgeon, U. S. V. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1901. Price, \$2.00 net.

This book, evidently carefully prepared, is a valuable contribution to the literature of materia medica. The author spent two years in the collection and study of specimens and has not only searched the available literature but has also investigated the practice of the native "herb doctors." The mixture of scientific therapeutics and empiric, often superstitious, drugging, contains much that is worthy of attention and further proving; for as the author well points out, the first step toward the establishment of the relative value of any remedial measure is the use founded on daily experience; and certain specific practices, often handed down from father to son, may have rational employment in advance of their scientific explanation. Unfortunately, the specimens collected by the author for study at Paris were spoiled in transit and he has not been able to replace them. Hence the botanic portion of this work is submitted in an incomplete state and subject to the correction of better opportunities. The same is true of physiologic experimentation and pharmaceutic investigation. The translation is well done, and the publishers have performed their part of the work in their usual acceptable style.

The Principles of Pathological Histology.—By HARVEY R. GAYLORD, Professor of Surgical Pathology in the University of Buffalo, Attending Surgeon to the Erie County Hospital, Buffalo, N. Y., and LUDWIG ASCHOFF, M.D., Professor and First Assistant in the Pathologic Institute of the University of Göttingen, Germany, with an introductory note by WILLIAM H. WELCH, M.D., Professor of Pathology in the Medical School of the Johns Hopkins University, Baltimore, Md. Illustrated with 81 engravings in the text and 4 full-page plates. Philadelphia and New York: Lea Brothers & Co., 1902, pp. 359.

We heartily concur in the prediction made by Dr. Welch in his introductory note to this excellent book, that "it will find a welcome from both teachers and students." The book is remarkable for the splendid photomicrographic reproductions, which excel anything we have ever seen in a medical textbook. There is no stronger evidence of the advance that has taken place in the past 25 years in the science of medicine than that afforded by the modern medical textbooks; they fairly make the physician of 30 years' standing wish that he might begin again with such adequate aids to education, the like of which was unknown a generation ago. This book "is intended to supplement the regular courses in pathologic histology and to lead the student and graduate to the application of such knowledge in practice." Parts I and III cover very thoroughly the modern technic of histologic preparation, microtomy and microscopy; while Part II includes the principal portion of the work and deals with the pathologic histology of organs. The treatment is brief and clear, the discussion of each organ starting with the normal histologic structure, and following with a description of the various pathologic conditions, giving in each case concise directions for the preferable mode to be followed in the practical examination. Bibliographic references are given to the most recent monographs, and the book is furnished with an excellent index. On page 97 *veterinorum* should be *veterinorum* Rudolphi, or better, *polymorphus*, Diesing.

Sollmann's Pharmacology. A Textbook of Pharmacology.—Including Therapeutics, Materia Medica, Pharmacy, Prescription-writing, Toxicology, etc. By TORALD SOLLMANN, M.D., Assistant Professor of Pharmacology and Materia Medica, Western Reserve University, Cleveland, Ohio. Royal octavo volume of 880 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Company, 1901. Cloth, \$3.75 net.

This is one of the very best books on its topic ever written. We commend it heartily to every physician interested in rational therapeutics. It is not, like most of its recent competitors, a mere compilation without arrangement or originality made to sell to the student of the "professor," but is a well-thought-out, well ordered, and thoroughly scientific treatise abreast with the advances of biology, physics, and chemistry. The new pharmacology has no clearer exponent, and while a few errors of omission and commission may be pointed out, as *e. g.*, the misprint of "negative pole" for "positive pole" on p. 537 in relation to Cl ions; the lack of reference to adrenalin (Takamine); and the limited consideration given to certain therapeutic methods and agents, the scientific method and the general matter of the work leave nothing to be desired. Its style is lucid and concise; its text is accurate; its typography excellent.

Handbook on Sanitation.—A Manual of Theoretical and Practical Sanitation. For students and physicians; for health, sanitary, tenement-house, plumbing, factory, food, and other inspectors; as well as for candidates for all municipal sanitary positions. By GEORGE M. PRICE, M.D., Medical Sanitary Inspector, Department of Health, New York City; Inspector New York Sanitary Aid Society of the 10th Ward, 1885; Manager Model Tenement-houses of the New York Tenement-house Building Company, 1888; Inspector New York State Tenement-house Commission, 1895. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1901. 12mo. xii+317 pages; 31 figures. Cloth, \$1.50 net.

The comprehensive character of this little book, made possible by a concise method of treatment, is perhaps best indicated by a review of the table of contents. Under the heading of Sanitary Science, we have 12 chapters treating of Soil and Sites, Air, Ventilation, Warming, Water, Water Supply, Disposal of Sewage, Sewers, General Principles of Plumbing, Plumbing Pipes, Plumbing Fixtures and the Examination and Tests of Plumbing for Defects. The second part treats of the Tenement-house Problem, Tenement-houses, Private Dwellings, Lodging-houses, Sweat-shops, Workshops and Factories, Mercantile Establishments, The Smoke Nuisance, Bakeries, Stables, Slaughter-houses, Offensive Trades, Food, Meat, Milk and Milk Inspection, Infectious Diseases, Disinfection and Disinfectants, School Inspection. Part Third.—Sanitary Inspection, and Part Fourth.—Sanitary Law—are equally comprehensive in scope.

The book is preeminently practical as to matter and method of treatment and will be found most serviceable to municipal inspectors and others concerned directly or indirectly with public sanitation.

Medico-Surgical Aspects of the Spanish-American War.—By Lieutenant Colonel Dr. NICHOLAS SENN, Chief Surgeon U. S. Volunteers, Chief of Operating Staff with the Army in the Field, Professorial Lecturer on Military Surgery Chicago University.

In this interesting book of 379 pages the author begins with a running account of camp life at the important points of mobilization prior to the embarkation of the troops for Cuba. The medical and surgical equipments of the army are discussed and the difficult task of thorough equipment in a short space of time elucidated. The main activities center, of course, on Cuban and Porto Rican soil; and the author takes to task certain newspapers and journals which had published articles reflecting upon the efficiency of the medical and surgical service in the campaigns in these islands. An exhaustive and painstaking chapter is devoted to "Recent Experiences in Military Surgery After the Battle of Santiago." This is of special value to the surgeon, as it deals scientifically with the character of wounds inflicted by modern firearms, their treatment and the expectancy of life. Camp diseases peculiar to the region are discussed at length. On the whole the work is well written, interesting and instructive, and not too technical to be of interest and instruction to the public at large.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox in the United States as reported to the Surgeon-General of the U. S. Marine-Hospital Service December 28, 1901, to February 7, 1902, shows a grand total of 12,105 cases and 292 deaths. For the corresponding period in 1901 there was a grand total of 4,359 cases and 55 deaths.

A Dangerous Practice.—French physicians warn persons who allow birds to take sugar and other dainties from the lips. It has been discovered that trainers of young birds in Europe frequently contract in this way a peculiar disease of the throat and lungs that is frequently fatal.

International Congress of Physicians.—An association to further scientific research is now under process of formation. It will be known as the International Congress of Original Medical and Surgical Investigation. Applicants for membership must be graduated from a school of medicine recognized by the association, and if such applicant is under 40 years of age must have performed satisfactory work in original medical and surgical research for 10 years. Dr. Rennes is reported as representing Germany; Dr. Hallion, France; Professor Beattie, Austria; Professor Starling or Professor Fister, England, and Dr. J. Byron Coakley, of Chicago, the United States.

Legislation for Pure Food.—A bill to establish a food bureau in the Department of Agriculture has been introduced into Congress. The work of the proposed bureau will cover the inspection, labeling and stamping of food-stuffs, the analysis of samples by special chemists and the prosecution of violators. Dealers and manufacturers refusing to produce samples when asked to do so will be fined, and any article of food or drink when proved detrimental to health shall be confiscated. Such goods will be condemned and disposed of under direction of court, and if sold, the proceeds less the legal costs will be paid into the United States Treasury. Sale of these goods will be prohibited in any state contrary to law. The bureau will be in charge of a dairy and food commissioner, who shall be appointed for a term of four years at a salary of \$6,000 and expenses incurred in the discharge of his duties; he shall have an assistant, whose salary will be \$3,500 a year. It is believed that an annual appropriation of \$100,000 will maintain the bureau.

EASTERN STATES.

Insane Convicts.—Of the 52 convicts serving life sentences in the Connecticut State Prison more than 17% have been pronounced insane.

Free vaccination from house to house by a corps of 134 physicians sent out by the Board of Health has been instituted in Boston. The districts were divided into sections and a physician assigned to each. Little opposition was encountered, Dr. Pfeiffer's fate having had its effect, possibly, but a record was made of all cases of refusal.

Warrant for Eddyist.—In Portsmouth, N. H., a warrant has been sworn out against Miss Ada G. White on the charge of practising as a physician without due registration. A patient died under her treatment and the coroner's jury found that "the disease was aggravated by lack of proper attendance and medical treatment; that if proper nourishment and medicines had been administered to her at proper times, it is probable she would have recovered." The penalty for the charge alleged in the warrant is a fine of \$1,000 and 3 months in jail.

NEW YORK.

Nurses' Association.—Trained nurses throughout New York State have formed an association with a view of raising the educational standard of nursing, promoting the efficient care of the sick and maintaining the honor and character of the nursing profession. When fully organized they will seek legislation that will require a uniform standard for graduate nurses and the recognition of their calling as a profession.

Mortality in New York.—The aggregate number of deaths for the year 1901 was 130,757, making 18 for each 1,000 persons in the state. The mortality was 7,500 in excess of the average of the past five years, but the rate was the same as that of 1900. The deathrate for infants is unusually low. Deaths from diphtheria, measles, typhoid fever and acute respiratory diseases were decreased, but those from scarlet fever and smallpox far exceed the average rate of the past few years.

Medical Combinations.—At a recent meeting of the Medical Society of the State of New York the retiring president, Henry L. Elsner, was made chairman of a committee of five to confer with a committee of equal number representing the New York State Medical Association for the purpose of formulating a plan by which the regular profession of the state of New York might be united. Dr. Elsner has selected as his associates on this committee Dr. Abram Jacobi, of New York;

Dr. Albert VanderVeer, Albany; Dr. A. M. Phelps, of New York, and Dr. George Ryerson Fowler, of Brooklyn.

Milk Investigation.—The report of the Rockefeller Institute on the conclusion of its investigation of milk shows that 330 epidemics of disease were due to infected milk. There were 195 outbreaks of typhoid fever, and in 147 of these the disease was prevailing at the farms from which the milk-supply was obtained, in 67 it was traced to contaminated wells. In 99 outbreaks of scarlet fever, 68 were traced to dairies where persons were ill from the disease; in 17 the employees themselves were ill, and in ten they were officiating as nurses for scarlet fever patients. There were 13 epidemics of diphtheria traced to dairies.

Amalgamation of Medical Organizations.—At the Council meeting of the New York State Medical Association on February 7, relative to the amalgamation of the medical organizations of New York State, the following resolution was passed:—

WHEREAS, the Medical Society of the State of New York, having appointed a committee to confer with a similar committee from the New York State Medical Association, with the view to a union of the two organizations and notice of such creation of a committee having been officially given to our president, together with the request that a corresponding committee be appointed by us; therefore, be it

Resolved, That this Council (the executive board of the association) appoint for the purpose of the conference in question, a committee of five, consisting of Dr. E. Eliot Harris as chairman, and Drs. William H. Biggam, Emil Mayer, Parker Syms, and Frederick Holme Wiggin, to which committee the president is added as a member ex-officio.

PHILADELPHIA, PENNSYLVANIA, ETC.

University of Pennsylvania.—Dr. George E. de Schweinitz has been elected to the chair of ophthalmology recently made vacant by the death of Dr. William Fisher Norris.

The Atlantic County Medical Society (N. J.) at a meeting held February 5, 1902, elected the following officers: President, William Edgar Darnall; vice-president, I. Senseman; secretary and treasurer, Edward Guion; reporter, A. B. Shriver.

Through the efforts of antivaccinationists a verdict of \$1,000 against Dr. Harvey M. Righter, of Philadelphia, was rendered in a suit brought against him recently by Mrs. Nugent on the ground that her 6-year-old son died of impetigo contagiosa as a result of vaccination by the defendant, who it was alleged used virus which was not hermetically sealed.

The Philadelphia Neurological Society.—On February 25, Dr. Adolf Meyer, Director of the Pathological Institute for the New York State Hospitals will, by invitation, deliver an address entitled "Conditions for Psychiatric Research." Members of the profession are cordially invited. After the address a reception will be tendered Dr. Meyer at the University Club.

Milk cans with yellow rings furnished to milk dealers for the delivery of milk to houses quarantined for smallpox has been decided upon by the Board of Health of Philadelphia as a precautionary measure against the spread of the disease. The quarantine officer at each house will receive the can from the milkman and empty it into a pitcher belonging to the quarantined family.

Suit Against a Township.—Two months ago, it is reported, Dr. J. R. C. Thompson entered into a written agreement with two of the three members of the township committee to attend for \$2,000 a case of smallpox which had developed in Dividing Creek, N. J. After he had taken the case another physician offered to treat the patient for \$500. Recently Dr. Thompson pronounced the patient completely recovered and presented his claim, which the authorities refuse to settle. His counsel will bring suit for the bill.

Disinfection by Formaldehyd Gas.—The Philadelphia Board of Health has adopted a system of disinfection by means of formaldehyd gas. They have purchased 130 generators and it is probable that more will be secured. By this method it is claimed that a room or building can be thoroughly fumigated in eight hours without injury to the most delicate fabric or household article. Schoolbooks also can be safely disinfected without spoiling either paper or binding. Hereafter, it will be only necessary to close the schools needing disinfection 24 hours instead of the minimum 48 hours before required.

SOUTHERN STATES.

New Marine Hospital.—A bill has been introduced by Senator Clay providing for a marine hospital for Savannah, Ga., as there is none nearer than Wilmington, N. C., and Savannah is an important shipping port.

The Lodge-Gillette bill which has been recently introduced into Congress, provides a penalty of fine and imprisonment on all persons subject to the jurisdiction of the United States who are convicted of supplying arms, opium, or alcohol in any form to the aboriginal natives of our Pacific possessions.

The new city hospital of Wheeling has received the following endowments this year: \$5,000 from William P. Hubbard, of Wheeling; \$5,000 from Mrs. E. W. Ogley, of Cleveland, O., formerly of Wheeling. There is now \$31,000 in the endowment fund. The hospital contains 50 beds and a training school of 17 nurses.

Registration of Births.—The Health Department of the District of Columbia has almost daily application for transcripts from the records of births in connection with pensions, insurance cases and for proofs of parentage in cases involved in the courts of this or other countries. Many of these cannot be supplied owing to the negligence of physicians and midwives to make the reports and to the ignorance of the general public in regard to the law concerning registration. In order to stimulate compliance with the law and to bring general attention to the matter the health department has decided that on and after February 1, the parents of each child whose birth is recorded, shall receive an official notification that such record has been made.

WESTERN STATES.

Chicago Medical College.—Dr. John B. Deaver, of Philadelphia, addressed the Chicago Medical Society in Mercy Hospital February 12, on the occasion of the opening of the new amphitheater costing \$25,000, built in Mercy Hospital at the expense of the Northwestern University Medical School, Chicago Medical College, bringing into closer relations the affiliation between Mercy Hospital and the medical school.

Against Smallpox.—At a recent meeting of the general managers of all the railroads entering Chicago, stringent precautions and measures were agreed upon to be continued until the smallpox epidemic which is ravaging the northwest and the Mississippi Valley States shall be wiped out. To this end every car which arrives in the city from every direction will be submitted to fumigation for six hours under the direction of the health department of the city before other passengers are allowed to enter it. All employees of the railroad companies must be vaccinated or revaccinated by February 17 or resign their positions.

Mortality of Michigan.—There were 2,824 deaths returned to the Department of State for the month of January, 1902, an increase of 54 deaths over the number returned for the preceding month. The deathrate was 13.5 per 1,000 population, the same as for December. There were 442 deaths of infants under 1 year of age; 197 deaths of children aged 1 to 4 years inclusive, and 910 deaths of elderly persons aged 65 years and over. Important causes of death were as follows: Tuberculosis of lungs, 182; other forms of tuberculosis, 18; typhoid fever, 45; diphtheria and croup, 39; scarlet fever, 34; measles, 24; whooping-cough, 19; pneumonia, 378; influenza, 64; cancer, 125; accidents and violence, 147. There was a slight increase in the number of deaths from pulmonary tuberculosis and pneumonia, and a considerable decrease in the mortality from diphtheria and croup, as compared with the preceding month.

CANADA.

Toronto hospitals are reported as so crowded that the corridors have been pressed into service. The large majority of the cases are surgical.

The Ontario Medical Library has had a donation of books from Dr. Howard A. Kelly, of Baltimore, selected from the books of the late Dr. Sweetnam, by the curator of the library, Dr. N. A. Powell.

A Medicolegal Case.—A Montreal clergyman who died recently left property amounting to \$95,000, which he inherited from a former wife. Shortly after his death his widow gave birth to a son who died six hours after his birth, and who was baptized before he died. If he was born viable he became his father's heir. The other heirs claim he was not born viable, and the medical testimony is awaited with interest.

Notices in Hospitals.—The suggestion has been made by a Toronto judge that hereafter hospitals receiving pay patients should have notices posted up stating clearly under what conditions such patients should be charged for medical attendance. This is done because a physician recently tried to recover the amount of his bill from the estate of a pay-patient whom he had treated during life. His claim was refused on the ground that he was only a member of the junior staff of the hospital when the services were given.

Appointment of Health Officers.—The Ontario Legislature is considering an amendment to the Medical Health Act, which will provide for the appointment of a county health officer, who will have entire charge of all matters pertaining to the health of his county. Under the existing law each township appoints its own health officer, whose annual salary ranges from \$50 to \$100. This insufficient pay renders many mechanical or even careless in the performance of their duties, and it is thought that better service could be secured on adoption of the proposed amendment.

FOREIGN NEWS AND NOTES

GENERAL.

Bubonic Plague.—Great mortality from the ravages of the plague is reported from the Punjab.

Medical School for Indo-China.—A medical school under the charge of Dr. Yersin and two assistants, will be established at Hanoi by the government of Indo-China.

Bacteria on Money.—Bacteriologic examination made of money at the Hospital du Bey at Algiers revealed the fact that all species of bacteria exist on currency. The germs of suppuration, however, were most frequently observed. Experiments showed that metal coins have an antiseptic quality, as bacteria were destroyed in a comparatively short time by the action of the metal without the assistance of any other agency. Gold was found to be slower in its action than the other metals. This was shown by the fact that *Bacillus typhosus* lived from five to seven days upon a gold coin, while it was effectually destroyed in about 18 hours on silver and copper coins.

Sanitary Measures in Havana.—For the treatment of tuberculosis, 1,465 cases of which have been found in the city, a dispensary has been opened by the Sanitary Department. A search for victims of the disease has been made through the cigar factories and slums, and the 182 tuberculous subjects found there were advised to go to the dispensary as outpatients. The reader in each factory, who is paid by the workers to read aloud from the newspapers now reads part of the time from works on hygiene as the sanitary department wish rather to educate the people to consider these subjects and act upon the knowledge gained than to enforce regulations. At the Sanitary Congress, just opened, an attempt will be made to cause the adoption of a resolution recommending the abolition of quarantine against yellow fever.

GREAT BRITAIN.

The Workhouse Sick.—A committee to investigate the nursing of the sick in workhouses has been appointed by the London Local Government Board. The dietary in some cases is complained of, and in some the sleeping accommodations and often the absence of efficient nurses. The nurses are frequently overworked and underpaid.

Investigation of Malaria.—The surgeons of the ships of the Imperial Direct West Indian Mail Service sailing between Bristol and Jamaica will be furnished, it is said, with means for taking blood films in cases of suspected malaria. Besides the necessary outfit for this, a printed form containing directions for taking and preserving the films and for filling in clinical details of the cases is also furnished. The films will be sent to Bristol Medical School for classification and future demonstration. Although Jamaica is comparatively free from malaria, it is thought specimens may be obtained from patients coming from other parts of the West Indies, and a careful classification and study of these will demonstrate the varieties of fever endemic there.

CONTINENTAL EUROPE.

The violet rays of electric light as a substitute for cocaine in local anesthesia are used by Professor Minin, the Russian surgeon, who claims for them an antiseptic property also.

Alpine Climbing.—During the past year the record of deaths from fatalities in mountain climbing in Switzerland amounts to 119; this is said to be more than double that of the year before.

Regulation for Vivisection.—A measure restricting former legislation in favor of vivisection has been passed by the Norwegian Parliament. According to the last ruling animals cannot be used for scientific experiment until permission has first been obtained from the King in Council.

Medical Press Congress.—During the Easter holidays there will be held in Rome, under the presidency of Professor Durante, Senator of Italy, a National Congress of the Italian Medical press, with the object of affording to all, without distinction, who aid in the increase of the Italian Medical press the opportunity to meet and discuss their interests.

American Hospital.—The land has already been secured in Paris, and plans are under consideration by American architects for a hospital where all citizens of the United States will find careful medical and surgical attention in cases of illness, free of charge. Funds are said to be available for the erection of buildings and complete equipment of a model modern hospital and for its endowment.

School of Tropical Medicine.—The medical authorities of the Portuguese navy are considering a plan for providing special instruction in colonial hygiene and pathology in connection with the navy.

tion with the naval hospital, and Dr. Miguel Bombarda, editor of *A Medicina Contemporanea*, in a recent address urges the establishment of a school of colonial medicine on the same lines of the schools for the study of tropical diseases in London and Liverpool.

The Hugo Prize.—The Paris Academy of Medicine has awarded this prize, amounting to 1,000 francs, to Dr. Melanie Lipinska, of Warsaw, for her work on "History of Women Physicians from the Middle Ages to the Present Time," as this was adjudged to be the best work upon a subject relating to medicine written in the French language within the past five years. The title Laureate of the Academy of Medicine was conferred with the prize.

Homeopathy in Germany.—The Baden Homeopathic Association recently requested the government to establish chairs of homeopathic medicine in the universities of the Grand Duchy. When the matter was laid before the medical faculties of the Universities of Heidelberg and Freiburg, they objected strongly to the innovation. The Senate agreed with the stand taken, and the government consequently notified the Homeopathic Association that it could not grant their request, nor would it permit the practice of homeopathy in hospitals used for medical education.

Eddyism in Germany, promoted chiefly by four American women who lecture on the subject, and have established three clinics in fashionable districts, has grown to such proportions that the Emperor is devising means to stem the spread of the cult, and has issued a notification through the *North German Gazette* that all persons connected with spiritualism, Eddyism, or allied cults will be rigidly excluded hereafter from the imperial court. The enthusiasts welcome the anticipated excitement, averring that if measures of repression are undertaken it will give Eddyism an impetus.

Congress of Obstetrics and Gynecology.—The International Obstetrical and Gynecological Society will hold its fourth meeting in Rome, September 15 to 20, 1902. Baccelli has accepted the office of honorary president and Pasquali that of president-general. Pestalozzi will act as general secretary. Morisani will preside over the obstetric section and Mangiagalli over the gynecologic section. The themes selected for discussion are: (1) The medical indications for the induction of labor; (2) hysterectomy in the treatment of puerperal infection; (3) tuberculosis of the genitals; and (4) the surgical treatment of uterine cancer.

OBITUARIES.

Thomas Neall Penrose, of Philadelphia, Medical Director of the U. S. Navy, retired, February 13, aged 67. Dr. Penrose entered the army as assistant surgeon and served throughout the Civil War. In 1862 he was ordered from the Washington Navy Yard to the U. S. steamer *Harriet Lane*, attached to Farragut's fleet, and under the command of Commodore Porter passed through the hottest battles of the Gulf.

Spirido Mavrogeny Pasha, chief physician of the Empire and chief physician to the Sultan, in Constantinople, January 22, aged 83. He took his medical degree at Vienna and was very highly educated. He edited a medical journal in Turkish and French and among his medical writings those on cholera, leprosy, and rabies are most worthy of mention.

John L. Million, of Springfield, Ohio, February 14, aged 75. Dr. Million was surgeon of the Thirty-first Illinois Infantry during the Civil War. He was a member of the Board of Pension Examiners by appointment of Presidents Cleveland and McKinley.

J. A. Fife, of Peterborough, Canada, February 12, aged 64. He was a graduate of Victoria University and Toronto School of Medicine and a postgraduate of Bellevue, N. Y., and served two years as a surgeon in the U. S. Navy during the Civil War.

Hayes C. French, of San Francisco, Cal., a well known ear and eye specialist, February 5, aged 62. Dr. French was attached to the Army of the Potomac during the Civil War.

A. Dixon Wagner, of Cornwall, Can., one of the best known physicians of Eastern Ontario, February 13, aged 53.

H. T. Ford, a prominent physician of Wheeling, W. Va., and a veteran of the Civil War, February 13, aged 62.

J. A. Baird, of Dunlo, Pa., killed by a train while rescuing some women from the track, February 10.

Howard B. Martin, of Philadelphia, at Pasadena, Cal., February 3, aged 39.

Frank R. Warren, of Worcester, Mass., February 15, aged 32.

James Albert Harvey, of Philadelphia, February 12, aged 30.

James Hine, of New Milford, N. Y., February 11, aged 79.

D. A. Fulmer, of Philadelphia, February 10, aged 50.

Louis Z. Lajoie, of Haverhill, Mass., February 13.

Dr. Kegler, of Dubuque, Iowa, February 10.

M. L. Herr, of Lancaster, Pa., February 8.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

A SIMPLE FORMALIN METHOD OF PRESERVING EYE-SPECIMENS.

BY

HAROLD G. GOLDBERG, M.D.,

Resident Surgeon Wills Eye Hospital, Philadelphia.

There is in use at Wills Hospital a simple method of preserving eye-specimens by a formalin-gelatin method. Gelatin and glycerin are mixed in the following proportions:

Best French gelatin	3iss
Glycerin.....	3viij
Distilled water.....	3viij

Soak the gelatin in about a pint of water, preferably in a sterilizer, until it swells. The gelatin sinks to the bottom of the jar. Pour off the water and add glycerin and water, of each 3viij, and the albumen of two eggs (avoiding the yolk) and the shells. Cook the entire mass in a sterilizer about two hours (until the albumen is completely coagulated); filter through filter paper until clear, and add 3iss of formalin (Schering's, 5%), mix and allow it to harden. Formalin hardens the jelly and should be thoroughly mixed, as otherwise hard lumps will form. The jelly may be melted in a water-bath or in a sterilizer. By this method is produced an almost colorless jelly, which will keep indefinitely.

Tissues hardened in 5% formalin solution having remained in the solution a week or more may be frozen, cut and mounted without any further preparation. If tissues hardened by the other methods, after having passed through the alcohols are placed in a 5% solution of formalin for 12 hours their preservation will be more complete and permanent. When the tissues are impregnated with formalin solution a capsule 5 or 6 mm. in thickness is formed around the eye, due to the hardening action of formalin upon the jelly. If the vitreous chamber is not already filled it will be occupied by a mass of tough jelly which preserves the form of the globe.

I have mounted several eyes enucleated for incipient panophthalmitis that had remained in 5% formalin solution only 12 hours. These were frozen, cut and mounted in the jelly immediately, and the vitreous was preserved showing the first changes noticed. At the expiration of two weeks the specimens are in as perfect condition as when first mounted.

VERATRUM VIRIDE IN PUERPERAL ECLAMPSIA.

BY

M. W. VAN DENBURG, A.M., M.D.,

of Mount Vernon, N. Y.

The report of a case by Dr. J. W. Ward, of Oil City, Pa., in *AMERICAN MEDICINE* for January 11 issue, is of interest, from what seems to me, a mistaken diagnosis of mania.

Stille says the physiologic action of this drug is to produce "copious watery evacuations per anum," and that "all observers agree that it is an emetic." He also says, "It produces faintness, somnolency or coma, dim sight, dilated pupils, vertigo, headache, rarely delirium, impaired muscular action, clammy sweat, and persistent vomiting." It is also "credited with having produced abortion in the pregnant female." Potter says, "It is a systemic emetocathartic, having little or no diaphoretic or diuretic action." Bartholow says, "The surface of the body is cold and covered with cold sweat, with vomiting and retching extreme, somnolence and coma, pulse almost undistinguishable." Hare says that jervin and veratridin alkaloids of *veratrum viride* "may, in poisonous doses, produce (jervin) violent epileptiform convulsions, (veratridin) muscular twitchings and convulsions, but generally less severe than jervin." It seems from these authors that we may glean a logical and broad picture of puerperal eclampsia. In the New

York State Medical Reporter, Vol. III, No. 1, January, 1896, may be found the reports of several cases of puerperal convulsions, in which the patients were treated by veratrum viride in much smaller doses than that used in the case reported by Dr. Ward. My conclusions are: Toxic doses produce a state very similar to puerperal eclampsia; veratrum viride is as nearly a specific for this terrible condition as anything we know of at present; it must be given in "physiologic doses;" it will produce "great elimination per anum" by the mouth, and as a sudorific; it may produce a transient, though violent mania. If the vomiting is less, the stools will be proportionately more.

A RARE FORM OF PLACENTA SUCCENTURIATA.

BY

C. E. ZERFING, M.D.,
of Lead, South Dakota.

The following extremely rare condition of placenta succenturiata recently came under my observation:

CASE.—The patient was a multipara, aged 36. Ten years previous she had a very severe attack of puerperal fever, and with this exception has had good health. On September 24, 1901, she was attended by a midwife, who failed to deliver the placenta. I was summoned about 1½ hours after the child was born. The following conditions were noted. The placenta was undelivered, there were evidences of marked hemorrhage with the usual constitutional symptoms. Pulse was 140, small, and compressible. After 15 minutes of persistent effort the placenta was delivered by expression. The uterus contracted readily after the delivery of the placenta, and the hemorrhage seemed to cease entirely. Careful examination of the placenta was made to discover the extreme difficulty experienced in affecting its delivery; excepting its rather small size no abnormality was present. Six hours later the patient was again visited; there had been moderate hemorrhage. Her temperature was 99.5°; pulse, 140. She complained of slight weakness, but was comfortable. Twenty-four hours after delivery the temperature was 100°, and the pulse 144. There had been only moderate hemorrhage during the 24 hours, probably because there had been considerable prior to my being called. I concluded that the slight fever and rapid pulse were due to the hemorrhage that had occurred before the placenta had been delivered, but later developments tended to show that the persistently rapid pulse was due to a constant leakage of blood during the first 48 hours after delivery. On the morning of the third day I was shown a placental mass, which had been expelled during the night. Her temperature was 101°, and pulse 148, but she was quite comfortable. The mass which was expelled was remarkable for its size, shape, and mode of attachment to the uterus. It was a stalactite mass seven inches in length, perfectly conical, with a base 2½ inches in diameter, where it had been attached to the uterus, being apparently free in the rest of its surface. It was surrounded on all sides, except its base, by a layer of amniotic membrane. There were no evidences of a cord. The mass was composed of placental tissue, and weighed 12 oz. The temperature and pulse reached normal about the sixth day.

EXCESSIVE FETAL DEVELOPMENT.

BY

W. MILTON LEWIS, M.D.,
of Baltimore, Md.

In AMERICAN MEDICINE, Vol. iii, page 139, Dr. John Kinneinan reports a case of "Excessive Development of the Fetus," in which the child weighed 15½ pounds. This report calls to mind a case which I had occasion to observe several years ago.

On March 15, 1893, I was called to deliver a woman with her fourth child. I found that a midwife had been in attendance for several hours who, because of the apparent slow progress which was being made, had been giving *fld. ext. ergot* in full doses at intervals of one-half to one hour. The head was well down in the pelvic canal, but the shoulders appeared to be impacted at the superior strait. I applied forceps, and after considerable effort, succeeded in delivering the head, but the immense size of the shoulders, made their passage beneath the pubic arch most difficult. Systematic and careful traction, however, was followed by the birth of the largest fetus which I have ever seen. My notes only mention the weight and length, however, and I am unable to give from memory the other measurements. The child weighed 20 pounds and measured 30 inches from the top of its head to the soles of its feet, and was well proportioned in every way. In appearance it suggested

an infant six or eight months old. Unfortunately, as is so often the case when *ergot* is given to the extent of producing its full contractile effect, the infant was dead.

It may be interesting to note that this patient's first child weighed 17 pounds, and the other two, 12 and 16 pounds respectively. She was of medium height, but had a very broad pelvis, pelvic measurements, however, were not made. The father was born in Maryland; is of small stature, weighing about 130 pounds, and was of tuberculous family. The mother was born in Virginia and of healthy ancestry. A search of the records of the several lying-in-hospitals of this city at that time, showed no example of such marked fetal development. In my cases, as in the one reported by Dr. Kinneinan, the period of gestation was about 285 days.

BLINDNESS FROM INHALATION OF METHYL ALCOHOL AND CHARCOAL FUMES: COMPLETE RECOVERY.

BY

J. FREDERICK HERBERT, M.D.,
of Philadelphia.

I was very much interested in reading the article by Dr. Würdemann, published in AMERICAN MEDICINE under date of December, 1901, as I had a very similar case under my care just a year ago.

George Bernhardt, aged 38, consulted me November 23, 1900. History was as follows: He was employed in a brewery from October 15, to 19, inclusive. He used a charcoal stove (such as is ordinarily used by painters) to burn off all the old varnish from the interior of several large tanks, and subsequently revarnished the vats. During this period he inhaled both charcoal and alcohol fumes. On the evening of October 19, he was compelled to give up the work on account of nausea and dizziness. He staggered home, and did not remember how he got to bed. He slept continuously for three days (until Monday night), and when aroused he found he could not distinguish the light which was burning in his room—he was totally blind. A physician was called in, but apparently there was no improvement under his treatment. He was led into my office on November 23. I found that he barely had light perception, no pupillary reaction (pupils dilated ad maximum).

Ophthalmoscope. Optic discs opaque white, vessels contracted. In addition to the usual treatment I ordered turkish baths to be taken frequently (three times a week). There was a marked improvement of the vision after each bath. I am satisfied that the stimulation and elimination brought about by the hot baths, helped very materially in the rapid recovery of the patient.

December 10, V=⁶/_{xxx}. The field of vision was very much contracted. He gradually began to distinguish colors in their normal ratio.

December 22, V=⁶/_{vi}? I then lost sight of the patient until April 16, 1901. V=⁹/_{vi}+ for distance, and I ordered for near work +0.50 D. sph. with which he could read the finest type.

CHILDREN AND MATCHES.

To the Editor of AMERICAN MEDICINE:—In your issue of February 8, I notice a reprint from Medical News: "Children and Matches," which is very timely; the matter should be further agitated. That an adequate punishment, as suggested in the article, would in a measure diminish the casualties arising from careless handling and use of matches is very true, but to eliminate the sources of the danger, the use of the parlor and so-called sulfur matches should be restricted. This would prevent all such casualties, not only to children but to women and property.

Legislation against the use of parlor and sulfur matches could be obtained with the aid of the insurance companies, which would, to their own interests, prefer the exclusive use of the safety matches. Such legislation has been passed in several countries of northern Europe.

That this much-needed reform in "fire-making" should originate with the medical profession would go to show that the profession is always awake and alert to recommend, introduce and adopt any and all improvements which may prevent the loss of life or the maintaining of the human species.

Philadelphia.

A. F. WATCH.

ORIGINAL ARTICLES

THE ETIOLOGY OF YELLOW FEVER.*

A Supplemental Note.

BY

WALTER REED, M.D.,

Surgeon, U. S. A.,

AND

JAMES CARROLL, M.D.,

Contract Surgeon, U. S. A.;

of Washington, D. C.

In former contributions to this subject, we have shown by observations made on human beings that yellow fever may be produced in the nonimmune individual either by the bite of the mosquito¹ (genus *stegomyia*) that has previously been permitted to fill itself with the blood of a patient suffering with yellow fever, during the first three days of the attack, or by the subcutaneous injection of a small quantity of blood² (.5 to 2 cc.) drawn from the general circulation of such a patient during the active stage of this disease. For further particulars regarding these observations the reader is referred to the original papers.

Although these experiments have demonstrated that the specific agent of yellow fever is present in the blood, we may say that the prolonged microscopic search which has been made by other investigators, as well as by ourselves, both with fresh and stained preparations of blood, taken at various stages of this disease and during early convalescence, has proved thus far entirely negative. We may add that the efforts which we have made with reasonable hope of reward, both in the bodies of infected mosquitos, dissected in the fresh state, as well as by serial sections of the hardened insect, have likewise given no results which we consider worthy of record at the present time. Leaving out of consideration, therefore, for the time being, the further microscopic search for the specific agent in the blood of the sick and in the bodies of infected mosquitos, we desire to call attention to some additional observations bearing on the etiology of the disease, which one of us (Carroll) has recently made at Las Animas Hospital, Havana, Cuba, and at Columbia Barracks, near Quemados, Cuba.

We here desire to express our sincere thanks to Dr. Wm. H. Welch, of the Johns Hopkins University, who, during the past summer, kindly called our attention to the important observations which have been carried out in late years by Loeffler and Frosch relative to the etiology and prevention of foot-and-mouth disease in cattle. In the course of their investigations concerning a reliable method of immunization in this disease, the authors had occasion to dilute and afterward to pass several times through a porcelain filter, lymph which had been collected from the blebs present in the mouth and on the feet of cattle sick with foot-and-mouth disease.³

These observers having already ascertained that immunity could be conferred upon cattle by the subcutaneous or intravenous injection of $\frac{1}{10}$ - $\frac{1}{20}$ cc. of pure lymph previously mixed with 1 cc. of the defibrinated blood of an animal that had recently recovered from the disease, desired to find out whether the injection into calves of given quantities of this filtered and bacteria-free lymph would not, also, enable them to confer immunity of, perhaps, a higher degree upon cattle.

The results were quite surprising, since it was shown that calves which had received $\frac{1}{10}$ - $\frac{1}{20}$ cc. of the diluted and filtered lymph developed foot-and-mouth disease just as promptly as calves that had been injected with corresponding quantities of the unfiltered lymph.

According to Loeffler and Frosch, there were two possible explanations of this remarkable result; either that the filtered lymph held in solution an extraordinarily active toxin, or that the specific agent of the disease was so minute as to pass through the pores of a filter which prevents the passage of the smallest known bacteria.

The authors accept the latter explanation, since they were able, in later experiments,⁴ by means of the filtered lymph to convey the disease through a series of six animals, the last of which sickened just as promptly after the injection of the filtered lymph, as the first of the series.

Having, therefore, conclusively determined that the microorganism of foot-and-mouth disease of cattle is so extremely minute as to pass readily through a porcelain filter, it was natural that Loeffler and Frosch should have put forward the suggestion that, perhaps, the specific agent of some of the acute infectious diseases of man and animals, such as smallpox, scarlet fever, measles, rinderpest, etc., might also belong to this group of ultra-microscopic organisms.

It was for the purpose of ascertaining whether observations conducted along the same lines as those above mentioned, might throw additional light upon the etiology of yellow fever, that the following experiments were undertaken.

Of course it will be thoroughly appreciated that in experimentation on human beings, aside from the grave sense of responsibility, at times well-nigh insupportable, which the conscientious observer must always feel, even with the full consent of the subjects to be experimented upon, there must be added another factor, viz., the difficulty of finding willing and suitable nonimmune individuals for experimentation just at the proper and urgent moment. It so happened that on the day of Dr. Carroll's arrival at Havana, August 11, 1901, the first patient of the series of seven cases of yellow fever which Dr. Guit  ras⁵ had produced by bites of infected mosquitos, was taken sick. The fatal termination of three of these cases produced a somewhat panicky feeling toward experimental yellow fever among the nonimmunes at Havana, which feeling was intensified by the sensational and distorted statements in one of the local Spanish papers. It was, therefore, extremely difficult—in fact, practically impossible—to obtain for inoculation purposes persons who could with reasonable certainty be regarded as nonimmunes.

Further, as it was not practicable to withdraw blood from any case of yellow fever under treatment in the city of Havana, it became necessary to produce cases by means of the bites of infected mosquitos—*Stegomyia fasciata*—accepting such subjects as were willing to submit to this mode of inoculation. In all six individuals, supposedly nonimmunes, were bitten by mosquitos; of whom four gave a negative and two a positive result.

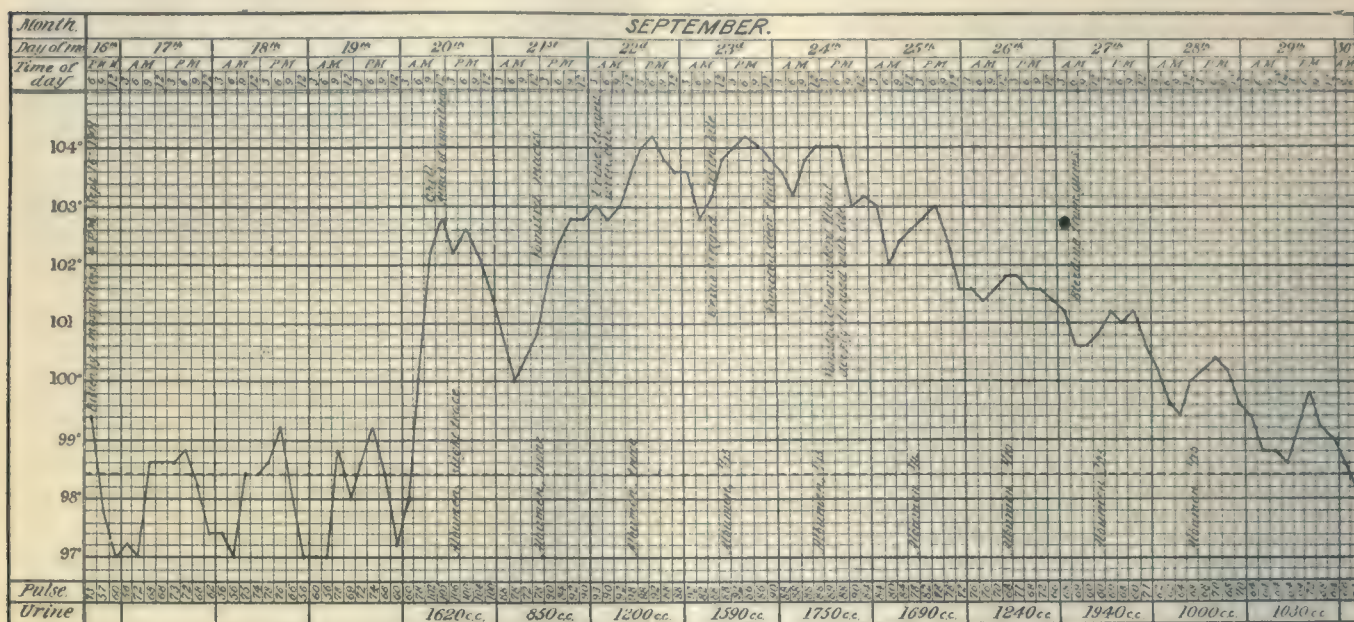
The following are the negative cases:

August 14, 1901, S. V., Spaniard, resident of Havana for a few months, was bitten by two insects that had been applied to a yellow fever patient 34 days previously. Result negative, although the bites of two mosquitos from this same lot had already infected an individual, who later died of yellow fever.

September 5, 1901, J. T., American, was bitten by nine insects that had been applied to a mild case of yellow fever on the second day of the attack, 23 days before. He was again bitten 30 days later by four mosquitos that had been applied to a moderately severe case of experimental yellow fever 11 days before. The result of both inoculations was negative. This man had resided one year in Central America, and we were afterwards informed that he had confessed to a previous attack of the disease.

September 11, 1901, A. P., Spaniard, was bitten by three insects which 53 days previously had bitten patient with a typical case, on the third day of the attack. These were among a lot of mosquitos that had already infected three individuals, two of whom died of yellow fever. The result was negative. Five weeks later he received a subcutaneous injection of about $\frac{1}{2}$ cc. of blood drawn from a patient with a mild case of yellow fever, on the second day of illness. Result negative. The previous history

* Read before the third annual meeting of the Society of American Bacteriologists, Chicago, Ill., December 31, 1901, and January 1, 1902.

Chart I.—Yellow fever, produced by the bite of *Stegomyia fasciata*. Incubation, 72½ hours.

of this man was not satisfactory, as he had recently returned from a residence in Mexico.

September 9, 1901, A. V., Spaniard, was bitten by three mosquitos that had been applied to a mild case of yellow fever on the second day of the attack, 27 days before. Three weeks later he was again bitten by one mosquito 49 days after it had been applied to a fatal case of yellow fever, on the third day of the attack. The result of both inoculations was negative.

We give brief sketches of the two positive cases:

CASE I.—P. R. C., a Spaniard, had served in the Spanish army in the Philippines. He arrived in Havana from Spain about August 30.

On September 16, 1901, he was bitten at 4 p. m. by 4 mosquitos that had previously fed upon cases of yellow fever as follows: One had bitten a patient having a fatal case, on the third day of the disease, 53 days before, and 3 had bitten a patient having a fatal case, on the second day of illness, 34 days previously. His attack began at 4.30 p. m., September 19, after an incubation period of 72½ hours. At the onset he experienced a slight chill with rigors, and loss of appetite. Later in the evening he complained of slight frontal headache and pains in the lumbar region. On the following day the headache and backache were more severe. At 10 a. m., he vomited about six drams of slightly greenish fluid containing mucus. On the second day of the attack the gums were swollen, pale and spongy and there was soreness upon deep pressure over the epigastric and hypogastric regions; the face was flushed and the eyeballs were slightly yellow. September 24, fifth day, he was well jaundiced, epigastric and abdominal soreness were pronounced, and there was nausea with eructations. At this time an unfavorable prognosis was given by two physicians of large experience in yellow fever. Happily, with the decline of temperature on the sixth day, the symptoms were much ameliorated and the patient made an uninterrupted recovery. Albumin appeared in the urine on the third day, and persisted for 17 days. The microscope showed the presence of bile-stained epithelial and granular casts on the third and subsequent days.

Early on the second day blood was drawn from the median-basilic vein with all precaution and 10 drops were immediately added to each of four flasks containing 200 cc. of sterile nutritive bouillon. The flasks were kept under observation in the incubator and at room temperature for 14 days without the development of any growth. At the end of that time each flask was agitated and an agar slant was freely inoculated with fibrin and fluid from its contents. These cultures remained sterile 16 days later after being kept four days in the incubator and 12 at room temperature.

On the second day, blood was drawn for the purpose of obtaining serum for filtration, but owing to an accident to the vacuum pump the experiment had to be abandoned.

Specimens of the fresh blood were examined for malarial parasites with negative results on the second and fourth days of the attack. (Chart I).

CASE II.—J. M. A., Spaniard, recently landed at Havana, was bitten at 4 p. m., October 9, by eight mosquitos that had been applied to a severe case of yellow fever (Case I) on the second day of the disease, 18 days previously. The attack which followed was mild. According to his own account he

went to bed on the evening of the twelfth feeling in perfect health. He awakened about midnight with frontal headache but had no chill. October 13, 7 a. m., temperature was 102.2° F., pulse 92; complained of pain in the head and back; later in the day there was marked photophobia, pain in the region of the kidneys and slight pains in the lower extremities. The eyes were injected moderately and the gums slightly so. On the following day, October 14, the frontal headache was more severe, there was considerable soreness on pressure over the stomach and abdomen and he complained of sharp lumbar pain. An examination of the fresh blood proved negative for malarial parasites. At 4 p. m. blood was drawn from a vein at the bend of the elbow and 10 drops were inoculated into each of two flasks containing 200 cc. of sterile bouillon. One flask remained sterile, the other developed a growth which proved to be a white staphylococcus.

October 15, the gums were pale, swollen and spongy, their margins distinctly reddened, and blood could be easily pressed out from beneath the lower gums.

October 16, there was free oozing of blood from the gums and margin of the tongue. The case pursued a mild course, the temperature falling to normal at 9 p. m. of the fourth day. A trace of albumin was present in the urine passed on the morning of that day, and for a few days following hyalin and granular casts were found. The patient made a speedy recovery (Chart II).

On October 15, 11.30 a. m., at the beginning of the third day of illness, the temperature was 101° F.; 65 cc. of blood were drawn, with antiseptic precautions, from a vein at the bend of the elbow. This was placed in a sterile test-tube and set aside in the refrigerator. At 6 a. m., 5½ hours later, 19 cc. of a slightly bloodstained serum were pipetted off into another sterile tube. After the addition of an equal quantity of sterilized distilled water the diluted serum was slowly filtered through a new Berkefeld laboratory-filter that had been subjected to previous sterilization in an Arnold's sterilizer. In this way 35 cc. of a slightly bloodstained filtrate were obtained, a part of which was subsequently used for the inoculation of Cases VII, VIII and IX of this report.

The original level of the blood having been marked upon the tube into which it was drawn, a sufficient quantity of sterilized distilled water was then added to replace the 19 cc. of serum that had been pipetted off and to make up the original volume of blood. The whole, consisting of clot, remaining serum, and distilled water, was poured into a sterile vessel and whipped up with a sterilized egg-beater. The mixture, which approximately represented the partially defibrinated blood, was then divided into two parts, one of which was reserved for the inoculation of a control subject (Case III), while the other part was placed in a double water-bath previously heated, and exposed to a temperature of 55° C. for 10 minutes. It was then removed and immediately cooled in icewater. This cooled material was subsequently used for the injection of Cases IV, V and VI.

It will thus be seen that we have at our disposal, for purposes of inoculation, three kinds of materials, derived from the blood in Case II, viz.: (a) The unheated and partially defibrinated blood; (b) the partially defibrinated blood which had been heated to a temperature of

55° C. for ten minutes, and (c) the diluted blood-serum which had been filtered through a Berkefeld filter. Each of these materials was used for the inoculation of one or more nonimmune individuals with the results that follow herewith:

(a) THE UNHEATED AND PARTIALLY DEFIBRINATED BLOOD.

CASE III.—M. G. M., Spaniard, arrived at Havana October 4, 1901. At 4 p. m., October 15, he was given a subcutaneous injection of 0.75 cc. of the unheated and partially defibrinated blood obtained from Case II, 15½ hours previously, which had been kept 5½ hours in the refrigerator and 10 hours at room temperature. The earliest symptom, frontal headache, was complained of at 6 p. m., October 20, or at the expiration of 5 days and 2 hours after inoculation. Temperature 100.6° F., pulse 80. At 3 p. m. of the same day the temperature was 98.4° F., pulse 80. At that time the patient did not complain of any discomfort and there was nothing to indicate that he was about to be taken sick. October 21, 5 p. m., nearly 24 hours from the onset, there was flushing of the face, injection of the eyes and gums, and moderately severe headache: pain in the back, and tenderness on pressure in the epigastric region made the picture complete. On the third day the face was deeply flushed, eyes congested and distinctly yellow. There was slight oozing of blood from the gums. The urine passed at 7.30 p. m. contained a distinct trace of albumin. The case was seen by the Havana Board of Yellow Fever Experts and the diagnosis confirmed. The patient passed through a mild but typical attack, the temperature touching normal on the fifth day. (Chart III.)

This case, therefore, serves as a "control" for the observations which are to follow, since it demonstrates

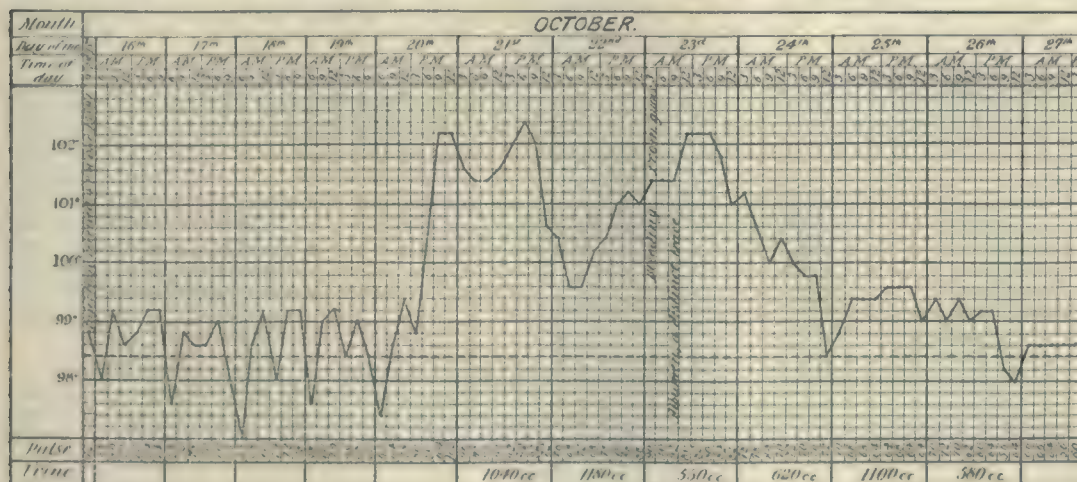


Chart III.—Yellow fever, produced by injection of 0.75 cc. of blood. Incubation, 5 days, 2 hours.

that the blood drawn from the general circulation of Case II, at the beginning of the third day, contained the specific agent of yellow fever, and, in this respect, confirms the observations which have heretofore been reported by us.⁵

(b) THE PARTIALLY DEFIBRINATED BLOOD HEATED FOR 10 MINUTES AT 55° C.

CASE IV.—A. C., [Spaniard, nonimmune, arrived at Havana, October 6, 1901. At 4.35 p. m., October 15, he was given

subcutaneously 1.5 cc. of the partially defibrinated blood which had been subjected to a temperature of 55° C. during 10 minutes. The specimen had been drawn from Case II, 16 hours before. The result of this injection was entirely negative, as the subject remained in perfect health during the 10 days following.

CASE V.—B. F. M., Spaniard, nonimmune, arrived at Havana, October 6, 1901. At 4.45 p. m., October 15, he received a subcutaneous injection of 1.5 cc. of the same material that was used in Case IV. Result negative.

CASE VI.—S. O., Spaniard, nonimmune, arrived at Havana, October 7, 1901. At 4.50 p. m., October 15, he was given a sub-

cutaneous injection of 1.5 cc. of the same material that was used in Cases IV and V. No rise of temperature or other symptom of ill-health followed this injection.

We desire to invite attention to the fact that the four subjects whose protocols have been given above were young Spaniards who arrived at Havana at a time when yellow fever was not present in the city; that they were carried from the quarantine camp, at Tricornia, across the bay, direct to Columbia barracks, near Quemados, Cuba, where they

were kept for seven full days prior to inoculation; and that after inoculation they were kept under close daily observation for the further period of 10 days, during which time both temperature and pulse were recorded every third hour. Since under these circumstances each of the three nonimmunes (Cases IV, V and VI) received, without any disturbance to health, double the quantity of heated and partially

defibrinated blood that sufficed when unheated to cause an attack of yellow fever in Case III, it follows that the specific agent present in the blood in yellow fever is destroyed, or, at least, markedly attenuated, by a temperature of 55° C. maintained for 10 minutes.

(c) THE DILUTED AND FILTERED SERUM.

CASE VII.—P. H., American soldier, nonimmune, received at 11 a. m., October 15, 1901, a subcutaneous injection of 3 cc. of the serum filtrate, representing 1.5 cc. of the undiluted

serum 10½ hours after the blood had been drawn from Case II. He remained in good health until 3 p. m. October 19, an interval of four days and four hours, when his face appeared flushed and his eyes somewhat injected. His temperature at this time was 101° F., his pulse 80. He did not complain of headache or other pain. From this hour his temperature declined, until at 12 o'clock midnight it registered 98° F., pulse 72. October 20, 9 a. m., temperature 100.8° F., pulse 78. Face more suffused, and slight headache complained of. Fever continued on the twenty-first, with more marked flushing of the face and injection of the eyes. The height of the primary febrile paroxysm was reached at 6 p. m. October 21. Remission occurred at 9 a. m. October 22, when the temperature dropped to 98.8° F., pulse 64. This lasted for 24 hours, and was followed by a secondary febrile paroxysm of 42 hours' duration. On the twenty-third blood was oozing from the lower gums and the eyeballs were tinged with yellow. Albumin appeared in the urine on the fourth day. The patient was visited by the Board of Experts and the diagnosis of yellow fever confirmed. Examination of the dried blood for malarial parasites was negative. The patient recovered. (Chart IV).

CASE VIII.—A. W. C., American soldier, nonimmune, was also given at 11.05 a. m., October 15, 1901, a subcutaneous injection of 3 cc. of the diluted and filtered serum, being the equivalent of 1.5 cc. of the undiluted serum, 10½ hours after the blood had been drawn. He remained in his usual health until about noon, October 19, at which time he felt "out of sorts," and ate but little dinner. This was 4 days and 1 hour after the injection. During the afternoon he lay down and slept until 3 p. m., when he awoke with a severe headache and backache. His face was flushed. Temperature 103.6° F., pulse 102. At this hour his face and eyes were deeply congested, and from this time his symptoms were characteristic of the disease. On the twenty-third his eyes were quite yellow, and general jaundice followed later. No albumin was found in this patient's urine. He was seen by the Board of Experts and his illness pronounced a typical case of yellow fever. Careful examination of the dried blood for malarial parasites was negative. The patient made a good recovery. (Chart V.)

CASE IX.—J. R. B., American, nonimmune, at 2.30 p. m., October 15, 1901, was given a subcutaneous injection of 3 cc. of the diluted and filtered serum, equal to 1.5 cc. of the undiluted serum. Fourteen hours had elapsed since the blood had been drawn from Case II.

This injection was followed by no symptoms of physical disturbance, until 3 p. m., October 19, an interval of four days

bloodserum derived from Case II of this report, 2 developed an unmistakable attack of yellow fever, after a period of incubation of 98½ hours and 100 hours respectively, while in 1 case the result must be regarded as negative.

As already stated, the serum used for these inoculations had been slowly filtered through a new Berkefeld

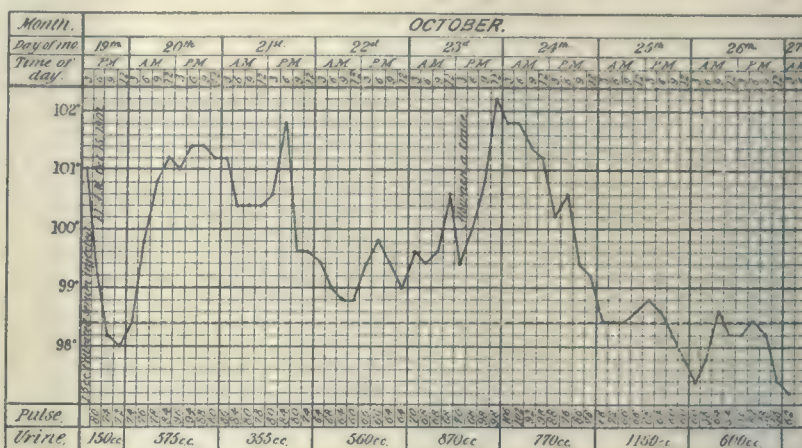


Chart IV.—Yellow fever, produced by injection of 1.5 cc. of filtered blood-serum. Incubation, 4 days, 4 hours.

laboratory-filter. As soon as possible thereafter the filter was resterilized by steam and thoroughly tested as to its effectiveness in preventing the passage of bacteria. For this purpose a recent bouillon culture of *Staphylococcus pyogenes aureus* was used, of which 50 cc. were passed through the filter. The filtrate thus obtained was transferred in quantities of 10 cc. to each of two flasks containing 200 cc. of sterile bouillon, which were incubated at 37° C. for 4 days and thereafter kept at room temperature for 10 days longer, at the end of which time no growth had occurred. It appears, therefore, that the filter used for the filtration of the blood-serum in Case II was to be relied upon for the delivery of a bacteria-free filtrate.

The production of yellow fever by the injection of blood-serum that had previously been passed through a filter capable of removing all test bacteria is, we think, a matter of extreme interest and importance. The occurrence of the disease under such circumstances, and within the usual period of incubation, might be explained in one of two ways, viz., first, upon the supposition that the serum filtrate contains a toxin of considerable potency; or, secondly, that the specific agent of yellow fever is of such minute size as to pass readily through the pores of a Berkefeld filter.

In favor of the supposition that in yellow fever an active toxin is present in the blood, may be cited the early and well marked jaundice; the free hemorrhage from the mucous membranes of the mouth and stomach, doubtless due to profound changes in capillary vessel-walls; the rapid progress of the disease to a fatal termination, the advanced fatty degeneration of the hepatic cells, as

well as the marked parenchymatous changes found in the kidneys. If present in the blood this toxin would in all likelihood be found in the serum filtrate obtained from the blood, and if injected in sufficient quantity, might induce an attack of yellow fever in a susceptible individual after the usual period of incubation. In this respect it would bear analogy to the pro-

and a half hour, when his temperature was 99.4° F., pulse 92. He complained of headache and flashes of heat with slight pain between the shoulders, symptoms which the subject stated were quite unusual to him. At 9 p. m., temperature 98.4° F., pulse 84. There was no further febrile disturbance and the day following the subject was in his usual good health.

We thus observe that of 3 nonimmune individuals who received subcutaneously an injection of filtered

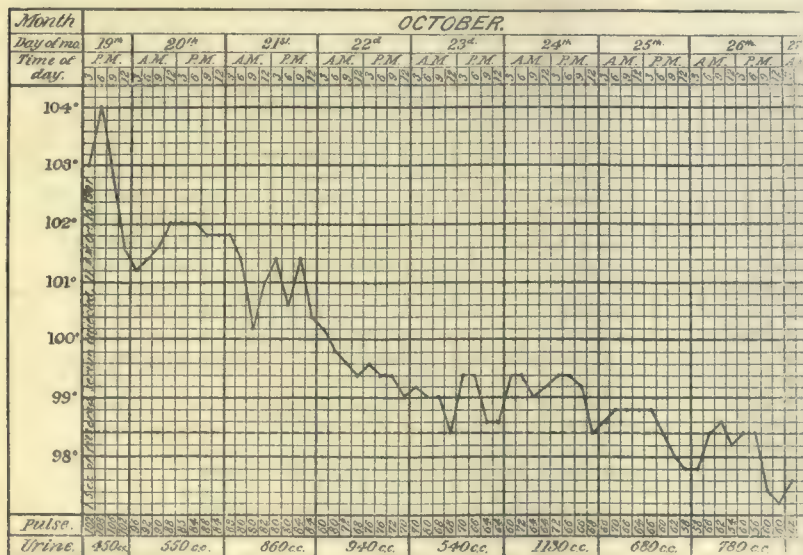


Chart V.—Yellow fever, produced by injection of 1.5 cc. of filtered blood-serum. Incubation, 4 days, 1 hour.

duction of tetanus in the human being, after the usual period of incubation of this disease by the subcutaneous injection of a very small quantity of tetanus toxin, as reported by Nicolas⁷ in 1893, and more recently by Bolton, Fisch and Walden.⁸

Against the view that a toxin is present in the serum filtrate, we invite attention to the innocuousness of the partially defibrinated blood when heated to 55° C. for 10 minutes, as shown by the negative results in Cases IV, V and VI. Here the toxin, which must have been present in just the same quantity as in the serum filtrate obtained from this blood, appears to have been completely destroyed by the temperature above mentioned. Now, although certain bacteria are destroyed by this temperature, as yet we know of no bacterial toxin that is rendered inert by such a low degree of heat continued for so short a time. The tetanus toxin, which has been found to be the most sensitive, thus far, requires, according to Kitasato, a temperature of 60° C. for 20 minutes, or 55° C. for 1½ hours in order to destroy its activity.⁹

As a further test and in order to determine whether the serum filtrate contained something more particulate than a soluble toxin, we availed ourselves of the opportunity of observing the effect that would follow the transference to a third individual, of blood drawn from

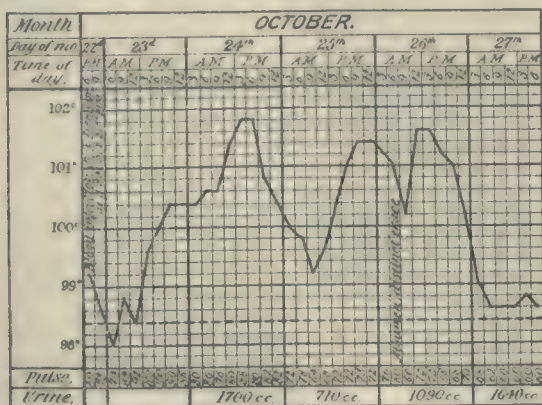


Chart VI.—Yellow fever, produced by injection of 1.5 cc. of blood. Incubation, 24 hours.

one of the patients whose attack had been occasioned by the injection of 1.5 cc. of serum filtrate (Case VII). If under these circumstances it would be found that the injection of a small quantity of blood was followed by an attack of yellow fever in a third individual, the evidence would point in the strongest manner to the presence of the specific agent of the disease in such blood, since we can hardly believe that a toxin which had undergone so great a dilution in the body of the second individual would still be capable of producing the disease.

CASE X.—October 22, 1901, 3 p. m., J. M. B., American, non-immune, who on October 15, 1901, at 2.30 p. m., had been injected with 1.5 cc. of serum filtrate with negative result (*vide* Case IX), and who still desired to have his immunity further tested, was, at the beginning of this, the eighth day after his former inoculation, given a subcutaneous injection of 1.5 cc. of blood drawn from the venous circulation of Case VII early in the fourth day of the disease. At the time of inoculation the subject's condition was quite normal. October 23, 3 p. m., after an incubation period of just 24 hours, he complained of frontal and slight basal headache and some pain between the shoulders. His temperature was 99.6° F., and pulse 100. At 6 p. m., temperature 100.4° pulse 100. Pain in the back quite severe. At 10.15 p. m. he suffered a slight chill. On the following morning the face was flushed and the eyes and gums injected; there was sharp frontal headache and some photophobia. The height of the primary paroxysm was reached at the end of 23 hours. Remission occurred at 9 a. m., October 25, and was followed by a second febrile paroxysm of 45 hours' duration. On the third day, during the secondary fever, the patient presented the typical picture of a mild case of yellow fever; the face was deeply flushed, eyes well injected and slightly yellow; there

was sharp headache, and epigastric tenderness and pain in the lower extremities. Heller's test showed albumin in the urine drawn on the fourth day. His fever subsided on the latter day and he made a prompt recovery. The case was seen by the Board of Experts and the diagnosis confirmed. (Chart VI.)

In considering this individual's attack, his infection must be attributed either to the injection of the serum filtrate derived from Case II, in which event the onset of his disease was postponed until the commencement of the ninth day after inoculation, or to the injection of blood obtained from Case VII, after a period of incubation of 24 hours.

In our own experience¹⁰ and that of Guitéras¹¹ of 22 cases of experimental yellow fever, following the bite of the mosquito, in which the period of incubation was definitely and accurately ascertained, the longest period was six days and one hour, and the shortest period two days and 13 hours. If we take the cases produced by the injection of blood, seven in number, exclusive of the case under consideration, the longest period was five days and two hours (Case III of this report) and the shortest 41 hours.

In view of these data, we believe we are justified in expressing the opinion that the source of infection in Case X must be attributed to the injection of blood drawn from Case VII, rather than to the injection of the filtered serum derived from the blood in Case II; and further, that the blood in Case VII contained the specific agent of yellow fever, which had, therefore, passed through the filter along with the filtrate with which this latter individual had been inoculated.

The important questions which naturally arise from the foregoing experiments must be left for future observations to determine.

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- ¹⁰Loc. cit.
- ¹¹Loc. cit.

OBSERVATIONS CONCERNING THE POSSIBLE INFECTIOUSNESS OF MEAT AND MILK FROM TUBERCULOUS ANIMALS.¹

BY

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The causative agent of tuberculosis is an organism of extreme dissemination and one which shows an adaptability to widely varying conditions of temperature and ailment.

As with the higher forms of life, influence of environment upon it is shown in modifications of form and temporary inhibition of vitality and reproductive activity. Yet the various families of this bacillus, whether they be piscine, avian, human or bovine, which have accustomed themselves to life under their own peculiar food and temperature conditions, may, through the careful direction of the bacteriologist, be made to participate in a grand reunion, where each thrives upon

¹Read by invitation before the Oregon State Medical Society, Portland, September 27.

the common nutriment, and none suffers from inclemency of temperature.

That the transplanting of this bacillus from one species of animal to another is attended with temporary inhibition of its activity, is a commonly known fact, and is most noticeable in the attempt at intertransmission of avian and mammalian forms of the disease, in which it is so marked, that although a tuberculous chicken will always be an extremely repulsive table article, the danger of actual contraction of tuberculosis from its consumption is probably nil. The claim that the flesh and milk of tuberculous cattle is equally innocuous, is likewise put forth quite frequently by the cattle-owning laity and occasionally by some physicians. Yet, of all the types of this organism, the bovine seems to have the greatest vitality, produces the most enormous lesions and affects the greatest number of individuals, finding its victims under all conditions of climate and food.

Although it has been asserted that range-cattle are free from tuberculosis, and that the open range life is curative for the disease, the abattoir inspection in this country has demonstrated that such cattle are in no wise exempt. My personal experience has shown me that cattle coming from particular ranges may be looked for with certainty to show a high percentage of tuberculosis when slaughtered. Dr. McClure, of Montana, reports the occurrence of fatal tuberculosis in that state among a herd of shorthorn cattle, at an altitude of 7,400 feet. The herd history is one of constant range life, stabling or domestication being unknown to any of them with the exception of a Jersey bull, which was brought into the herd six years ago and died two years later from respiratory troubles. When called to investigate the condition of the herd, Dr. McClure found many of them to be extensively tuberculous, undoubtedly consequent to this one diseased addition to the herd.

Such postmortem examinations as I have made on tuberculous range cattle here, have disclosed a dominance of lesions in the associated and appendant organs of the digestive tract, such as the retropharyngeal and mesenteric lymph glands, and the liver, with its corresponding lymphatics, but without any apparent enteric lesions. The preponderant volume of the lesions in the abdominal viscera, as well as their age, as indicated by the stages of caseation or calcification, have made it appear probable to me, that in the greater percent of these cases the bacilli must be taken in with the food. While the thoracic viscera is frequently involved in the tuberculous process, pulmonary lesions, particularly in some of the cases I have examined recently, appeared by their evident embolic character to indicate an infection secondary to the greatly preponderating hepatic lesions. Of the character and location of the alterations observed in the five postmortem examinations made by Dr. McClure on the Montana cattle, he says: "The anatomic parts involved were the post-pharyngeal, mediastinal, lumbar, axillary and mesenteric lymphatic glands. There were tuberculous patches on the liver, and, in one instance, tuberculosis of the meninges. The animals were all very much emaciated, and would have lived but a few months at the longest. The peculiar point in connection with the necropsy, was the remarkable freedom of the organs of the thoracic cavity from any tubercular lesions. In only one animal was found a small, calcified, well-encapsulated tubercular area in the lungs."

During the time that I was stationed in some of the California abattoirs I think that fully 1% of the range animals slaughtered there were tuberculous, and in certain herds the percentage ran very much higher. My remembrance of the lesions presented is also that they were mostly associated with the abdominal viscera. Within the last two years one section of this state (Oregon) has sent cattle having a pure range history to the abattoir which, on postmortem examination, have shown 16% affected with tuberculosis.

A very noticeable feature in tuberculous cattle from the open range country which reach the abattoir, is their quite thrifty condition while harboring enormous masses of tuberculous material. One steer, slaughtered in a San Francisco abattoir, had a heart which weighed 60 pounds and was simply a mass of coalescent tubercles. Very little unaltered heart-muscle was perceptible, yet this animal was in fair butchering condition, and though evidently on the decline was apparently not greatly inconvenienced by the presence of this enormous tuberculous mass, which of itself made a wheelbarrow load when removed to the tank. (I have observed one instance in a dairy cow, here in Oregon, in which the cardiac and pericardial tissues had undergone extensive tuberculous alterations, the whole mass weighing 20 pounds. This heart and the udder from the same cow were exhibited before the medical society of this city and are yet in the possession of the medical college here.)

Where the tubercle bacillus has not been introduced the disease will certainly not appear, and it is of course true that only in occasional sections of our vast range territory has this organism obtained a foothold. In our dairies, however, from the more frequent interchange of animals and the constant introduction of new stock, the disease has acquired a much wider distribution. I believe its presence amongst the dairy herds of this state to be proportionately less than it is in many of the eastern states. This, however, may not be actually the case, as there is a great tendency to have the older cows and such as are rendered useless to the dairyman by reason of extensive mastitis, slaughtered in those smaller abattoirs that are without the inconvenience of inspection. From such of these cattle as do come under my supervision, I would estimate the presence of tuberculosis in the dairies of this state as approximately 5%.

In this class of animals, which are kept under conditions of closer domestication than on the range, the pulmonary form of the disease predominates. In the most advanced and generalized cases, tuberculous mastitis is of frequent occurrence. In many instances, though the mammary parenchyma may be found perfectly normal, it is evident from the condition of the supramammary glands, which are more frequently the seat of tuberculous changes than are the mammas themselves, that an infection has occurred at some previous time. The frequency of udder infection is also brought prominently to the mind of the abattoir inspector through the fact that in dairy districts, where the milk is made up into butter and cheese and the by-products fed to hogs, these hogs, when brought to the slaughter-houses, are certain to show tuberculosis if the disease exists to any considerable extent among the cows from which the milk is obtained. Hogs fed upon offal at the small country slaughter-house are also frequently tuberculous, thus furnishing very interesting evidence of the character of the owner and the quality of the animals he prepares for market in his little, secluded abattoir. Unfortunately, most of the hogs so raised will be themselves slaughtered at the same place. It has happened in two very recent instances, however, that I have been able to trace this disease appearing in swine upon the slaughter floor to just such a source. Pork from a tuberculous hog should be considered the most suspicious of all meats; for tuberculosis, having once secured lodgment, runs a much more tumultuous course, and becomes more rapidly generalized in swine than in any other species of animal, and experiments have demonstrated that the expressed muscle juice of such hogs is often virulent.

Usually the most voluminous and evidently primary lesions, are in the glands of the throat, the mesenteric glands, the liver with its corresponding glands, and the sublumbar lymphatics. It is quite seldom that any lesions whatever are discoverable in the intestines, although the locality of the other lesions and the known presence of the bacillus in the food is certain proof that it was through this tube that they effected their

entrance into the body of the hog. Though pulmonary lesions are also nearly always extensive, their character and also their proportionate volume when compared with the corresponding lymph glands, mark them as hematogenic, secondary to the abdominal lesions.

As pointed out by Nocard and others, and as demonstrated by the abattoir inspection in the United States, France, Denmark, and Germany, tuberculo is in this animal is invariably resultant upon being fed the milk of tuberculous cows, or the viscera of such diseased animals. The danger to swine, calves, and to colts, of infection from milk is such that in Denmark, Germany, and in portions of our own country, the sterilization of by-products of the dairy is compulsory before they can be returned to the farmer for feeding. Besides such direct evidence as these facts afford, there is abundant experimental evidence that the bacilli are excreted in great numbers in the milk of cattle, both those suffering from actual tuberculous mastitis and even in such as present no clinical evidence of lesions of the mammas. Bang stated before the British Congress of tuberculosis that, of cows showing advanced tuberculosis but with healthy udders, 14% would excrete the bacilli in their milk. Ernst found that the milk from diseased cows with clinically healthy udders, was capable of producing the inoculation disease in 28% of his trials. Drs. Rabinowitch and Kempner in a compilation of the work of different investigators, find that in the many experiments thus represented, the percentage of virulent milk from tuberculous cows varies from 6% to 66%. From their own investigations they conclude that 66% of the tuberculous cows give virulent milk, and that milk may contain tubercle bacilli first, in beginning tuberculosis, without discoverable disease of the udder; and second, in latent tuberculosis, that can be detected only by the tuberculin reaction. Their conclusions are certainly substantiated by the experiences of the abattoir inspectors in this country, who frequently report finding tubercles in the supramammary lymph glands, with no discoverable accompanying lesion of the udder.

From the evidence thus presented, which is based on careful experimentation and actual inspection at the abattoir, it is evident that for the determination of the existence of this disease in animals furnishing our milk and butter, mere clinical examination is insufficient. The specific reaction of a tuberculous animal to injections of small quantities of tuberculin, makes this product, therefore, a very useful diagnostic agent and one which it is absolutely essential to employ in the light of the facts demonstrated by Rabinowitch and Kempner, of the virulence of milk, even in beginning and latent forms of this disease. Despite the contentions of certain agriculturists, the use of tuberculin in quantities sufficient for diagnosis, is attended with no immediate or after effect at all detrimental, other than a very transient diminution of milk secretion, which is more probably due to the unusual handling of the animal and the unavoidable slight breaking up of their regular routine of life during the administration of the test. Among the many thousands of tests reported there is no recorded instance of an exacerbation of the disease in cows when such disease was not clinically prominent before the test. But, on the other hand, there are numerous reports of an apparent inhibition of the process in many well authenticated cases. The general use of tuberculin in this country and in Europe shows that it is attended with decisive results for diagnosis. The reaction is marked and its significance certain to the point of infallibility. Personally I have made autopsies on 60 cattle that have reacted to this test, administered by others, and in all but one the lesions were easily discoverable. In this one case I was unable to find any macroscopically evident tubercles, but the posterior mediastinal gland was enlarged and the adjacent tissues were slightly edematous. Microscopic examination of this gland would undoubtedly have revealed the pres-

ence of the bacilli. The value of this agent for the detection of tuberculosis is so great that it is supported by all the really eminent pathologists of the world, and its use strongly advocated by all who believe in the intertransmissibility of bovine and human tuberculosis.

The present status of this question of the intercommunicability of these two forms of the affliction was aptly put by Professor McFadyean in his address to the British Congress of Tuberculosis when he said that "today the position of anyone who undertook to discuss the intercommunicability of human and bovine tuberculosis would be very different from what it would have been a week ago; for in the interval, the greatest living authority on tuberculosis, the world-renowned discoverer of the tubercle bacillus, has declared his conviction that human and bovine tuberculosis were two distinct diseases."

I consider that we are to be congratulated if the position has been altered, for tuberculosis discussions had come to be referred to as a threshing of old straw. Now, while much old straw may be threshed, the new zest and spirit infused into the operation may result in the finding of some new kernels of fact, or at least permit of a recognition of the significance of certain correlated facts already known but not properly associated.

Although Professor Koch's convictions represent only his individual interpretation of certain long-previously established scientific facts concerning the facultative biologic properties of this organism, his utterances are already hailed with joy and will be accepted as decisively final by the laity and all sanitary obstructionists. In our own country, Smith, Dinwiddie and Pearson have demonstrated the uniformly greater virulence of the tubercle bacillus from bovine sources for all species of animals on which inoculation or feeding experiments are possible, which include also cattle, pigs, horses, sheep and goats.

Milk feeding experiments, as well as the observations of abattoir inspectors, indicate that extensive and generalized tuberculosis may result from the ingestion of food carrying large numbers of the bacilli without producing apparent disease of the intestines.

Our conclusions as to the infectiousness of meat and milk for man must be deduced from our observation of their effects upon animals fed upon them. We have learned that milk from tuberculous cows contains great numbers of bacilli in a high degree pathogenic to swine, calves, and colts; that the muscle juice of tuberculous swine has been found to possess virulent properties. We also know that while the muscles of the bovine may only occasionally contain the tubercle organism in great numbers their corresponding lymph glands are often found in an advanced state of tuberculous alteration, and these lymph glands are integral parts of many of the choicest cuts of beef.

When we consider, therefore, that the bacillus contained in meat and milk is admittedly the most virulent for all experimental animals, it would appear poor sanitary policy to assume that they are utterly nonvirulent to the experimentally inaccessible human animal.

Finally, in the words of Dr. Woods Hutchinson,* "We should not tolerate for a moment the use as human food of either the meat or milk of animals suffering from any serious disease, whether infectious or not; nor can we afford to run any risk which is so clearly avoidable."

The Light Treatment in Vienna.—An institution in which light treatment will be a notable feature has been established in Vienna through the agency of Professor Lang and a number of physicians and philanthropists. It is modeled on the institution of Professor Finsen at Copenhagen. The Emperor, who is one of the founders, has donated 10,000 crowns toward its maintenance. The institution will be partly under the control of the municipality.

* Studies in Human and Comparative Pathology, p. 317.

AN OUTLINE OF THE CARE OF THE ACUTELY INSANE.¹

BY

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One of the special features at the Michigan Asylum in Kalamazoo is a building for female patients, accommodating 50, that is known as the Hospital. It was opened three years ago for the treatment of recent or so-called "acute" cases of insanity and was one of the first, if not the first of its kind on the continent. Its equipment embraces about everything of established value in the care of the insane and I might specify in particular its perfect location, comfortable and attractive interior, its carefully trained nurses, appliances for electro and hydrotherapy, also modern facilities for surgical work. It was clearly understood that no particular fad in the way of treatment was to be followed, and also that no procedure based on rational principles and giving promise of merit should be neglected. In other words, we set about to organize a department in which there might be full scope for scientific effort directed to the restoration of the insane, and unlimited opportunity for observation. It is largely upon our experience with this innovation in asylum methods that this paper is based, and while I know that in the way of treatment I have nothing strictly new to offer, still I feel that with such a large amount of clinical material at hand and a liberal armamentarium we could not have failed at least to establish the relative value of various remedial agents nor to formulate a general therapeutic policy. My principal hope, then, as to the value of this paper lies in the consciousness that it presents only that which has been thoroughly tried, and so is of established reliability, also that it may throw some needed light upon methods of asylum practice. The matter to be presented is arranged under two headings: I. Methods of Treatment; II. Results of Treatment. There are also some general considerations incident to both topics.

I. METHODS OF TREATMENT.

Let us first consider for a moment the disorder with which we have to deal. Insanity is a derangement of mental action due fundamentally to defective organization and as a rule requiring some exciting cause, usually referred to as stress. There is, to be sure, a small proportion of cases resulting from stress alone, either of a mental or physical character, but in the community from which we receive our patients it is so small that it may be disregarded. The exciting causes include all forms of mental strain, all abuse of somatic function and all forms of physical disease or injury. We must remember also that physical and mental disease are interactive, each one intensifying the other. For example, take the person with a naturally low power of digestion and a tendency to constipation, let him become subject to mental strain of great severity, and if he has any defect in his nervous organization he may become mentally unbalanced. With the onset of his mental symptoms, his dyspepsia, or whatever his gastric condition may be, and his constipation will be aggravated. As this grows worse it increases the intensity of his mental symptoms, his impaired nerve power reacts now more abnormally than ever upon his somatic processes, and so on indefinitely until the cell bodies of his nervous system become slowly poisoned by uneliminated toxins, or waste away for lack of pabulum.

Our problem we find then to be threefold: First, to

eliminate waste products; second, to limit so far as possible the output of energy, and third, to feed these depleted nerve cells.

Attempts at the solution of this problem may be made in various ways, but it is, of course, impossible to give here any exhaustive and detailed statement on such a subject as this, so I must confine myself to what is scarcely more than a mere enumeration of methods in use, with some hints as to their application.

In order to cover the subject as thoroughly and as acceptably as possible in the allotted time, I have sought some method of presentation that would permit condensation of material.

It is the common practice with this subject to attempt classification of the various forms of the disorder and discuss the treatment of each form separately. Now this is unnecessary and really not advisable, because it is usually misleading. We have as yet very few clearly defined forms of insanity and our ideas as to classification are still quite hazy. Our case of mania today may be one of melancholia tomorrow, and later we may find that each manifestation was but a particular stage of general paresis or of dementia præcox. Moreover, in no branch of practice do we treat disease forms; we treat the condition as we find it, regardless of the class in which it belongs.

I shall proceed first to the enumeration of methods, and then discuss their application in a few of the most common symptom groups as we find them in either asylum or in general practice. The following procedures should be considered, even though briefly:

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| 1. Rest and Exercise. | 5. Massage. |
| 2. Diet. | 6. Surgery. |
| 3. Hydrotherapy. | 7. Drugs. |
| 4. Electrotherapy. | |

Rest and Exercise.—For several years following Weir Mitchell's exploitation of the rest cure, it was thought the proper thing to take every nervous case and keep the patient in the house for a period of several weeks. The fad has invaded the province of psychiatry, and we find many authorities advocating the indiscriminate use of bed treatment. Now the rest cure has its place, but extremes are nearly always wrong, particularly with procedures that in the extreme are not strictly physiologic, and unlimited rest is certainly not physiologic. It is true that we place nearly every newly admitted patient in bed, but with many it is for a period of but a few days, and this not so much for rest as for the purpose of making the introduction of the patient into new surroundings as gradual as possible, allowing her only little by little to see new faces and to extend her acquaintance with persons and places. It has also the effect of impressing the new patient with the fact that she is in a hospital under medical care, and not in an institution of restraint under custodial care.

Rest is prescribed for depressed cases showing evidence of nerve exhaustion, and in general for all those cases in which it is clear there is a neurasthenic basis. At the same time it must be remembered that for scarcely any patient is *absolute* rest prescribed, and then not necessarily in bed or even in the house; outdoors by all means when the weather will permit, in a hammock, a wheelchair or a carriage, depending upon the case. Insane patients with pronounced physical impairment require bed treatment in the same, or greater, degree as they would were they sane.

We notice without exception that the flesh taken on with the absolute rest cure and milk diet is not stable, whereas the increase in weight due to modified rest with gradually increasing outdoor exercise is more permanent; the patient does not quickly lose again, but, on the contrary, continues to grow stronger and equal to increasing effort. For the patient remaining in bed longer than three weeks, massage must be regularly administered. Outdoor exercise

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is gradually introduced, the index of the patient's ability being, as a rule, the heart's action. She should be carefully watched from day to day and any evidence of insufficiency of heart power, such as palpitation, shortness of breath, dizziness, or rate above 90, should warn us that we are allowing the patient to do too much.

Exercise, I scarcely need say, is one of the most important factors in the restoration of the insane. It must be out of doors, employed regularly, graduated to the strength of the patient, and should have some *definite aim* in view, such as mild games, walks with a destination, and always under the supervision of an attendant. There is nothing like it to quicken all vital processes and so restore the worn out nervous system. Indeed, were I to be deprived of all methods of treatment but one for those patients able to be about, I should without hesitation choose this.

Massage.—In cases in which the rest cure is employed to the exclusion of exercise, massage must never be omitted. In fact, no one should be put upon the rest cure unless massage can accompany it. It is applicable in all depressed forms, particularly those with nervous exhaustion. Such patients have not sufficient vitality to take voluntary exercise without the expenditure of more nerve force than they can afford, hence the loss exceeds the gain. They must have exercise, however, to assist metabolism and hasten convalescence, so massage combined in some cases with faradism applied directly to the muscles, is the very thing indicated. Little by little as the patient shows returning strength in a sufficient degree the massage treatment may be shortened and given at greater intervals, the Swedish movements substituted, and finally outdoor exercise. It is scarcely necessary to say that none but those trained in this art should be allowed to administer it, and always under the close observation of the physician. We have come now to regard this feature of our training course as one of the most valuable, and every nurse is required to be proficient before she is awarded her diploma.

Diet.—The feeding in an acute case is an important feature of its management. Indeed, recovery sometimes depends simply upon the result of the race between tearing down and building up processes, for if assimilation can be kept to that point where waste is more than counterbalanced, the first step toward recovery is assured, because with gain in weight there is usually mental improvement. Such a result is obtained by super-feeding.

In the case marked by great prostration, deficient elimination, sordes on tongue and teeth, delirium, mild or grave, there must be careful feeding. Plain or malted milk, either hot or quite cold, never tepid, with egg albumen and broths, should constitute the diet. Administration at first should be both per stomach and per rectum at hour or two hour intervals. As strength returns and elimination improves, extend the diet list to embrace everything nutritious and appetizing.

It is sometimes surprising to see the amount of food a patient will take and digest. We have one in the wards now who has five or six meals daily, digests it all, and is hungry for each meal. Her activity, however, is still so great that she is not more than holding her own in weight.

Fruit should hold an important place in the dietary of every case and in all stages. An occasional day with no food but fruit will assist greatly in overcoming constipation and will restore digestive power.

The diet in general should have the normal proportion of food principles excepting that in some cases fat-forming stuffs ought to be slightly increased, and this, as a rule, can be done by increasing the amount of cream in the daily allowance of milk.

The case characterized by great elation expressed in noisiness and hyperactivity, of which we may take acute mania as a type, requires, as a rule, only that the feeding be at regular and frequent intervals and of large

amount. There are usually no difficulties in its administration, for the elated patient is hungry and has assimilative capacity in a corresponding degree. On the other hand, the patient with marked depression is almost always a difficult one to nourish. The delusions here are of such a form as to be sometimes quite insurmountable and you must resort to forced feeding. When the patient refuses to swallow, tube-feeding is in order, and must sometimes be maintained for several weeks. Now and then we find a case where one feeding suffices and the patient eats in spite of delusions, simply to avoid the tube. The only form of feeding-tube to use for the insane is a nasal tube, or an ordinary catheter with a hard rubber funnel attached. Three or four quarts of milk and six raw eggs daily is the average amount administered, the frequency of the feeding being determined by the character of the case. You find many who have idiosyncrasies as to diet, and some who have chronic defects in digestive power, all of which have to be met by special dietary prescriptions. There are some cases, usually of the depressed type, that fail in spite of all efforts, and with some of them we have found that analysis of the stomach contents reveals the trouble and so indicates the remedy. Before long the stomach test will be a routine procedure, as is the blood count, urinalysis, and other so-called special examinations now.

Hydrotherapy.—The growth and popularity of this measure in asylum practice, notably during the past five years, and especially for sedative purposes, has been very striking. A record made 12 years ago, giving the use of narcotics in the institution with which I am connected, shows that in the female department when there were about 300 cases under treatment, there was administered every night sedatives or hypnotics to the extent, on the average, of 110 doses. At the present time, with 710 patients in the female department, there are scarcely ever more than 10 sedative prescriptions filled for night use, and usually under five. Of all the procedures introduced in place of this practice, hydrotherapy is the most valuable and most generally employed. Its effects can be classed under three headings: 1. *Sedative*. 2. *Tonic*. 3. *Eliminative*. Of the forms in which it is employed, we find the most valuable to be:

1. **For Sedative Purposes.**—The prolonged tepid bath or prolonged tepid pack, two hours or even longer in each case. The 30-minute warm bath, temperature 100°; warm sponging with light effleurage, and in extreme cases the Russian bath. They are indicated in but two conditions, insomnia and psychomotor agitation, whether due to elation or depression.

2. **For Tonic Purposes.**—We use the 15-minute cold pack, the 5-minute cold spray following the 10-minute warm full bath or hot foot bath, alternate hot and cold fomentations to the spine, the salt glow and rapid cold sponging, followed by general superficial massage.

The tonic applications are indicated preeminently in all states of depression, whether due to pure melancholia, beginning dementia or that occurring in the course of general paresis. I might add here that the prolonged application of the hot and cold packs combined with potassium iodid is one of the most effective measures in the amelioration of the last named condition.

3. **For Elimination.**—The measures advised for the purposes of elimination are indicated only for the first two or three weeks of treatment, for, as a rule, by that time all the emunctories are in a normal or nearly normal condition. The warm bath, warm or tepid pack followed by rubbing with alcohol is prescribed for this purpose. The use of this class of hydrotherapeutic measures is not confined to any particular form of insanity.

Of all these procedures the most useful for general purposes is either the tepid or the warm wet sheet or blanket pack, followed by massage. It induces sleep in almost any kind of a sleepless case; it is a permissible form of restraint in cases in which motor restlessness or viol-

ence is a symptom, and, lastly, it is one of the most effective measures for increasing elimination by the skin. Its immediate effects are sedative, its ultimate effect is tonic. It is indicated in states of elation and in states of depression. In careful hands it is contraindicated in scarcely any case. Its application is easily learned and the materials required are usually obtainable even in the most squalid surroundings.

In this division of treatment belongs also the consideration of gastric lavage and simple enemas. We have used the former in a few cases and results indicate its usefulness, particularly in those cases in which digestive power is impaired by the general depressed condition. Enemas are given as routine treatment for the first two weeks in nearly all depressed cases and in a few of the other forms.

Surgery.—During the past few years considerable attention has been given to this feature of asylum practice. I refer particularly to gynecologic surgery. I think we may assume that in the bad period of this procedure many normal and useful pelvic viscera were sacrificed, and I am glad to say that at our institution the policy on this point has always been conservative. During the past three years, however, 50 or more operations of this character have been performed, and also an enormous amount of attention given in the form of what is generalized as local treatment. Our woman physician examines at least 95% of the women admitted, and of the number examined less than 10% have normal pelvic organs. Of the ones presenting abnormal conditions a certain proportion require no treatment, the abnormality not being accompanied by distress or by any detrimental influence upon the patient's mental health. In a great many cases, however, active treatment is urgently required, and of the 50 patients resident in the hospital there are always from 10 to 25 receiving such attention.

If at all possible, we seek to restore the patient to the normal mental state first, and then do whatever surgical work is necessary. Two or three weeks after the patient is out of bed and apparently recovered from the operation she is dismissed. The majority of operations thus far have been for the correction of misplaced uteri, lacerated cervixes and relaxed or lacerated outlets. There have been a few cases of simple curettage and a few for the relief of hemorrhoids.

Thus far the results we have obtained from local treatment and from surgical procedures incline us unhesitatingly to the endorsement of this measure. The only doubtful point to decide is just what patients will be benefited. I think it is safe to lay down the rule that surgical relief is indicated when we have an abnormal condition present that causes any distress whatever, not especially during the period of mental disturbance, for sometimes it is not noticed then, but particularly in the period of normal mental action. Every case presenting abnormality should receive local treatment when it can be accomplished without serious disturbance of the patient's mental comfort.

Electrotherapy.—The various forms of electricity have their use in insanity, but in a limited and well defined field. They are indicated in nearly all the depressed states, particularly when there has been nerve exhaustion, and in all cases characterized by insomnia, headache and other unpleasant cephalic sensations. The faradic current is of use in connection with massage for the tissue-building processes and for the stimulation of abdominal viscera. The galvanic has yielded good results applied to the head for the relief of pain. Just how much of the current traverses the brain though is impossible to say. With us the static form has first place for general application. It is easily administered, has more of a purely psychic effect than either of the other forms, and a much wider range of application. For sedative effects we use the crown breeze, and the breeze from a fine point up and down the spine. For tonic effects the spark to the spine, shoulder and hips. Head-

ache and insomnia are often relieved by this agent unaided. The treatment should never extend over 10 minutes, should always be very carefully begun, and extra precautions taken that no little accident occurs to frighten the patient or destroy confidence.

Drugtherapy.—As the years go by we find less use for drugs. In asylum practice especially I know there is but little medicine needed. You can no more affect a man's delusion by a drug than you can detach his shadow with a knife. No patient is treated solely with medicine. Many require none at all, and in the few cases used it is only to a limited extent and in connection with other means referred to above.

There will be found some use for hypnotics, motor depressants, general sedatives, general tonics, perhaps an alterative and, of course, special medication for purely physical conditions.

We give a fair and thorough trial to those new preparations having rational claims to our attention, but there have not been many additions that time has proven of value.

I shall mention only those drugs which we have found, after long experience, to be the most reliable and safe.

(1) *Hypnotics*.—In states of elation with insomnia and motor excitement, sulfonal is the only drug when hydrotherapy fails. It sometimes needs the addition of hyoscin hydrobromate, sometimes simply potassium bromid. The first dose should be 20 grains, dissolved in hot whisky sling and administered at 8 p.m. Repeat it if necessary at midnight. If hyoscin is used with it inject $\frac{1}{10}$ of a grain hypodermically one-half hour after the sulfonal is taken, and repeat it in an hour if sleep and quiet have not resulted. The hyoscin is indicated, as a rule, only in those cases offering resistance to the effects of sulfonal.

In depressed cases with insomnia, trional, chloral and paraldehyd are the only drugs deserving routine use. We are now trying dormiol, a new preparation of Merck's. It is not so unpleasant in taste as chloral and is apparently equally effective. In general practice, I think it might prove of permanent value. Of course, the cost is considerably more than that of other hypnotics, but it is claimed that there is no tendency to drug habit resulting from its use and no other unpleasant after-effects.

(2) *Motor Depressants*.—Of this class there are but one or two drugs worth considering, potassium bromid in doses of 15 to 30 grains, repeated at an hour or two hour intervals for mild cases of motor excitement, and hyoscin hydrobromate in doses of $\frac{1}{10}$ of a grain hypodermically for cases showing extremely violent tendencies, or such a degree of activity that other means fail. Should the first dose be not sufficient it can be repeated in half an hour, and even a third dose three-quarters of an hour afterward.

(3) *General Sedatives*.—Potassium and sodium bromid, very rarely opium in the form of codein or morphin, asafetida in one to three-grain doses, and occasionally the valerianates, comprise the list for this purpose, which is so infrequently drawn upon as to render its mention almost superfluous.

(4) *General Tonics*.—A vegetable tonic with a base of calisaya or of gentian and a simple form of iron, a preparation of hypophosphites or glycerophosphates, and in some cases a combination of maltine and cod liver oil, are all the aids to exercise and hydrotherapy that will be required. They are usually harmless, and can be prescribed for several weeks and then withdrawn gradually. Their administration should not be commenced, however, until the patient is on a general diet. You will doubtless agree with me that such things have no business in the patient's stomach during the period in which the diet has been limited to milk and broths.

Summary.—To summarize this section of the paper let us proceed with the application of these ideas to an

acute case just admitted. The patient is, as a rule, given a general bath by the nurses under the supervision of the woman physician, notes taken of external evidences of disease or injury, and then put to bed in a quiet room, seeing for the first two or three days only those having her in charge. During the first or second day, with most cases, calomel and soda in divided doses is given, being followed by a saline. Physical examinations, including urinalysis, blood count and sometimes stomach test, are made during the first week. The psychologic analysis extends over an indefinite period. During the first week, sometimes on the first day, the general plan of treatment is determined; whether complete, partial or no rest in bed is indicated; the amount of exercise that the patient can profitably take, and whether or not she will require some form of massage. If the case is one of elation with its attendant expression in activity and sleeplessness, the warm or tepid pack is prescribed for daily use. This failing, the hot bath or the prolonged hot pack is used, and if in extreme cases found after two or three trials insufficient, sulfonal, or sulfonal combined with bromid or hyoscin, as alluded to above, is used.

In cases of the depressed type with the usual anorexia, constipation and insomnia, the prolonged tepid bath is prescribed, followed by light superficial massage, especially to the head and face, efferent movements only being used. Simple enemas are prescribed every second day for the first two or three weeks, and sometimes abdominal massage. Static spark to the spine, beginning very mildly, and the crown breeze to the head. As a rule, rest is the treatment for the first few days or perhaps two or three weeks, then gradually increasing exercise. In this, as in all other cases, attention to the patient's diet forms the chief feature of her care, medicinal tonics or sedatives are prescribed as indicated.

The states of excitement, stupor, depression, katonias, etc., appearing in the early stages of the chronic psychoses are the most difficult and unsatisfactory ones with which we have to deal. Deterioration is usually rapid and but few cases are modified by treatment. The procedures outlined above, however, improve the mental condition at least temporarily and assist greatly in preserving the patient's physical integrity.

The patient's mental symptoms, that is, her hallucinations, illusions and delusions, may be disregarded, except in so far as they influence her conduct in a manner dangerous to her welfare or to the safety of others. When a patient arrives at the stage at which she begins to doubt her delusions and makes an effort to overcome her mental confusion, it is time enough to attempt to assist her overcoming their influence. Needless to say, the depressed case must be watched constantly for fear of suicide, and all means that might be used for this purpose are kept carefully out of reach. Occasionally restraint has to be used. Sometimes it will do to hold a patient; sometimes even the presence of a nurse in the room serves only to increase the violence of her efforts, and for such a one mechanic restraint is the most humane form. These cases we find, however, as we grow more experienced, occur very rarely.

It may sound paradoxical, but, nevertheless, is true, that a mental case requires little mental treatment. I am speaking now of the acute stage. The way to recovery is usually blocked to a serious extent by physical conditions only, and not by mental. Indeed, the one important difference of a strictly medical nature between general practice and practice among the insane lies in the fact that insane conditions compel the diagnostician to rely entirely upon his own sense organs for information as to diseased states and to be independent of the patient's subjective symptoms which are nearly always misleading; also that the therapist finds himself at his wits' end to carry out indicated lines of treatment against insane interference.

II. Results of Treatment.—Of the 319 cases, either admitted or finally assigned to the hospital during three

years, 108 were subsequently diagnosed incurable and transferred to the different wards of the asylum. Of the 211 remaining, 104 were discharged restored, 44 improved, and 13 died. There remain in the hospital 50 patients in various stages. The percentage of cases restored, you will note, is not based upon the total number of admissions, for a large number may be diagnosed "incurable" at sight, and all such are assigned to wards in the main building. It is the general rule to assign to the hospital only those cases referred to as the acutely insane.

By "acutely insane" we mean those coming to us in the early stages of the disorder. The term is not a good one because insanity is a condition characterized in a much higher degree than generally believed by recurrences and chronicity; as stated above, it is due to a primary defect and not to a disease. The strictly "acute" case of insanity, that is one in which the attack is of brief duration and in which there is never any serious recurrence, is a form rarely seen, especially in asylum practice. It is not hoped, then, that a large proportion of these patients discharged restored or improved will remain well. Such a prognosis is quite incompatible with a diagnosis of mental disorder due to a primary defect. During the past year almost 40% of the patients coming to the asylum had previously been under treatment here, and of the number never under treatment here many had had previous attacks with no asylum treatment or treatment elsewhere. So, of those who go away restored, many return, some are carried off by intercurrent disease, and others move from the district. The proportion that remains well throughout the natural term of life is not yet fully determined, but is a question of such importance as to invite early and full investigation.

Our aim with the class referred to as "acutely insane" is to terminate the initial attack as soon as possible, restore the physique to a disease-resisting plane and send the patient home equipped with explicit directions for maintaining it so. We prognosticate a remission of months, years or decades, depending upon the individual, his family history and his prospective environment.

THE INDICATIONS FOR PERINEAL SECTION IN STRICTURE.

BY

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Stricture of the deep urethra is so generally amenable to treatment by judiciously timed and skilfully conducted instrumentation that the range of application of the operation of perineal section in that condition would seem rather narrow. When viewed in the light of extended experience in genitourinary work, however, the operation is much more frequently required than is generally supposed. One of the principal arguments against perineal section, when weighed in the balance with palliative treatment of deep stricture by dilation, has been that, inasmuch as the operation of perineal section was not followed by a radical cure, there were no particular advantages to be derived from it. This, I think, is a mistake. The dictum of the older authors, that no method of treatment was ever productive of a permanent cure in stricture, should, I think, be modified.

With a thorough operation, involving division of all fibroid tissue, both on the floor and the roof of the canal, and, when necessary, the excision of encircling rings and nodules of fibroid tissue, the operation is a perfect success, as regards permanent cure, in a large proportion of cases, granting that the after-treatment is conducted intelligently. Apropos of the after-treatment, I have

stated elsewhere as my belief that in many instances strictures are tortured into a recurrence after perineal section by the too assiduous use of sounds.

The most imperative indication for perineal section is traumatic stricture. This condition has hitherto been the bugbear of the surgeon. The literature on this subject should be thoroughly revised and modified, in consonance with the results that have been obtained from urethral resection, with or without plastic operation. Early operation, particularly in traumatic stricture, is likely to be followed by permanently good results, and it is a matter of surprise to one who has had an experience in this line of work to note the extensive area of urethral mucous membrane that will be restored after excision of the adventitious tissue resulting from traumatism even at a period remote from the injury.

As a general proposition I believe it wise in every case of indubitable traumatic stricture, in which complete relief from symptoms cannot be obtained by the sound, to perform a thorough operation by perineal section, and if the adventitious tissue be at all extensive, to excise it. Irritable and resilient stricture in the bulbomembranous region frequently indicates perineal section. In many instances every attempt at instrumentation produces pain, severe spasm and perhaps intense vesical irritation. In some instances marked congestion of the stricture and the surrounding tissues exists, and instrumentation is followed by more or less severe hemorrhage. In quite a large proportion of cases, dilation of resilient and irritable stricture is followed by chills and perhaps fever. Under the foregoing circumstances, perineal section and the free division of the strictured band or bands, is our only recourse, and is far safer than treatment by dilation. Occasional cases arise in which dilation of a stricture is followed on each occasion by a greater or less degree of sepsis, or urinary fever. This is not always manifest at once, but shows after prolonged treatment by dilation, in the form of secondary abscesses in the prostate or kidney. In the majority of instances in which dilation is followed by any of the accidents enumerated, perineal section is the least dangerous of all methods of treatment and should be advised.

It is not necessary that the stricture should be extensive in order to demand perineal section. In my textbook "Diseases of the Genito-Urinary Organs," I have described a variety of stricture in which there exists a thin linear band of adventitious tissue at the bulbomembranous junction. This apparently yields to dilation, but the symptoms of vesical irritability and posterior urethritis or prostatitis continue, and after dilation, to a certain point, further attempts to enlarge the stricture are followed by urethral fever, or at least attended by considerable pain. Careful examination with flexible bulbs will show the rubber-like character of the thin linear band. Irritation is continuous, and the urethra behind the apparently slight obstruction is never thoroughly drained, but is the seat of mixed infection and the results of decomposition of residual urine. It is a difficult thing to convince the physician who may have charge of a case of this kind, and still more difficult to convince a patient, of the necessity of perineal section. This I fully realize, but an experience of more than 20 years has convinced me of the correctness of my position.

Strictures complicated by fistulas or severe cystitis demand perineal section. By this operation alone is it possible to thoroughly remove the obstruction and drain the infected deep urethra, prostate, and bladder. Deep stricture, complicated by retention of urine, should, as a rule, be treated conservatively *i. e.*, temporized with, and the retention relieved by instrumentation, the treatment best suited to the case under consideration being decided later. In some instances, however, as in hospital practice, and in patients coming from a distance, immediate perineal section is the safest procedure. The same is true of cases in which the patient does not have access to skilled attention during the after care of his

case. Impermeable stricture is a very exceptional condition. Surgically, impermeable stricture is by no means so infrequent as some would have us believe. When confronted with this state of affairs, perineal section without a guide may be necessary. Experience has taught me under these circumstances that when the urethra cannot be found in the perineum, except by tedious and extensive dissection, it is far better to make a suprapubic cystotomy and perform retrograde catheterization. By this procedure the urethra may be readily found and enlarged, as the exigencies of the case may demand. The surgeon who has had very little experience with perineal section may be called upon to operate in a case of acute retention in deep stricture, and if he finds that he cannot introduce an instrument *per vias naturales*, he would better enter the bladder from above and combine the perineal and suprapubic cystotomy, as already indicated.

REPORT OF A CASE OF PERNICIOUS ANEMIA.¹

BY

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AND

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of Denver, Col.,

CASE.—J. B. C., a white male, unmarried, aged 47. He was born in New York, and was a painter by occupation. He was admitted to the Arapahoe County Hospital, September 9, 1901, complaining of weakness. His father died at 57 of tuberculosis, and a brother at 47 of the same disease. There is no other history of tuberculosis, cancer, syphilis, or other hereditary disease.

The patient gives a history of hard whisky drinking for about 23 years. About one year ago he reformed, and has taken very little since—none at all for three months. He had gonorrhea ten years ago, but never had any other venereal disease. He never had malaria, typhoid fever, or painter's colic. He had no hemorrhage prior to admission. With the exception of three years, he had lived in Colorado continuously for the past 20 years. So far as he knows, he never suffered from intestinal parasites. Four years ago he was operated on for hemorrhoids by Dr. Leonard Freeman. From about 10 to 21 years of age he suffered frequent attacks of cholera morbus on the ingestion of fruit, but aside from this never had the slightest digestive disturbance until about two years ago, when his appetite began to fail, and he had occasional attacks of constipation. At intervals his appetite would return and remain good for some time, when it would again fail. At no time has he had nausea, vomiting, distress after eating, or pain in the stomach. About the time of the first failure of appetite he began to notice a trembling of the legs after climbing a ladder (probably due to beginning weakness), and a fine tremor of the right hand on lifting a vessel to the lips. Last winter he had frequent colds with marked cough and profuse expectoration, but there were no night-sweats nor spitting of blood. During the summer of 1901 he found his strength diminishing, and about July 1, noticed a yellow tinge of the skin. His appetite failed completely about this time. When admitted he weighed 130 pounds, his weight two years ago having been 147 pounds. The skin was slightly softer and smoother than would be expected in one of his occupation, and presented a lemon-yellow tinge, most marked on the palms. The scleras were pearly white with a bluish cast, and the conjunctivas, gums, and mucous membrane of the lips appeared bloodless. There was a slight edema about the ankles. The cutaneous capillaries of the thighs and legs were unduly prominent. He did not appear emaciated. His tongue was slightly larger than normal, not indented by the teeth, but had red edges and tip, and was white in the middle but was not coated. There was no lead line on the gums. The stomach appeared of normal size, and was not tender. No tumor mass nor enlarged glands were discovered. The liver, spleen, and abdomen were normal. The lungs and heart were negative except for a blowing systolic murmur, inconstant in occurrence, heard sometimes at the apex and at other times at the aortic orifice; this was undoubtedly hemic in origin. The pulse was full, but compressible. There was no arteriosclerosis. Dyspnea on exertion was present. There was no ataxia of gait or station. The trembling of the right hand on use was noticeable. The kneejerks were increased. Two small retinal hemorrhages were discovered in the right eye between the macula and optic disk, and both fundi were

¹ Read before the Denver and Arapahoe Medical Society, October 8, 1901.

slightly anemic, but Dr. Delehanty and Dr. Coover were unable to discover any other nervous or ocular symptoms. His temperature on admission was 100.2° and rose the next day to 102.4°, but after that it ran a practically normal course. He had been given a cathartic several days before admission, since which he had suffered from a moderate diarrhea. He had complete anorexia, and was so weak that he desired to remain in bed. About four days after admission he had a profuse hemorrhage from the bowels.

The first blood examination was made September 17, 1901, and showed the following: Red blood-corpuscles, 880,000; white blood-corpuscles, 4,000; hemoglobin, 40%; color index, 2.2. There was marked poikilocytosis, some cells measuring 10 to 14 microns in diameter. Stained sections showed nucleated reds and polychromatophilia.

Another examination on September 21 gave the following: Red blood-corpuscles, 1,760,000; white blood-corpuscles, 7,000; hemoglobin, 42%; color index, 1.2. The same condition of the cells as that found in the first examination was apparent.

A third examination was made September 27. The same striking increase in the red blood-corpuscles count that occurred in the interval between the first and second examinations was still apparent. The count was as follows: Red blood-corpuscles, 2,232,000; white blood-corpuscles, 8,000; hemoglobin, 42%; color index, .954. Irrespective of the count the condition of the cells was unchanged, though in addition some cells showed marked granular degeneration. A differential count of 1,000 white blood-corpuscles gave the following percentages: Polymorphonuclear, 82.3%; small mononuclear, 13.5%; large mononuclear, 2.2%; transitional, 1.1%; eosinophiles, .9%. While making the differential count notice was taken of the nucleated reds seen, resulting in a sum total of 58. The percentage was as follows: Megaloblasts, 52%; normoblasts, 38%; microblasts, 10%. Many of the as yet unnamed forms of nucleated reds were seen which were not counted.

Urine.—Color, light yellow; sp. gr., 1.024; reaction, acid; albumin, none; sugar, none; indol, present; phenol, none; sediment, very slight in amount, chiefly amorphous urates and uric acid crystals.

The gastric contents measured about 400 cc. and on standing separated into three distinct layers. The first, a large one of opaque straw-colored fluid; the second, a layer of mucus 3-5 mm. in thickness; the third, one of semi-digested food, 3 cm. in thickness. The following was noted on examination: Total acidity, 100 cc.-5; free HCl, none; lactic acid present but slightly; starch, absent; sugar, present; rennet, absent; pepsin, absent. Microscopically, the Opler-Boas bacillus and sarcinae were found. No yeast or starch. Undigested food stuff. A second examination made a few days later resulted as follows: The stomach contents measured 240 cc., 120 cc. of which was water found necessary to be introduced through the stomach tube when the contents were withdrawn. In the examination this water was allowed for, and the results obtained are based upon the undiluted gastric contents. Previous to the administration of the test meal the stomach was very thoroughly washed. Total acidity, 100 cc.-2; free HCl, none; lactic acid, very slight; starch, sugar, rennet and pepsin absent. Numerous bacteria were present, among them the Opler-Boas bacillus.

There is little doubt that this is a case of pernicious anemia accompanied by gastrointestinal derangement. Whether the anemia is due to deficient digestion is another question which can not be positively answered in the light of our present knowledge of the pathogenesis of the disease. The extremely low number of erythrocytes at the first count is probably partially explained by the hemorrhage a few days previous. The relatively low percentage of lymphocytes is unusual, but is no doubt to be explained by the fact that the man is now on a wave of improvement. Corroborative evidence is found in the diminished color-index, the presence of numerous normoblasts and the high percentage of polymorphonuclear leukocytes. The man's general condition is also much improved. His strength has increased so that he is up and about all day and his mucous membranes are regaining their normal color. He was given Fowler's solution in rapidly increasing doses to the physiologic limit and a regular diet with the addition of a glass of milk and two raw eggs between meals and at bed time. In spite of his anacidity he has suffered no inconvenience and so far as can be judged has digested his food properly. The wave of improvement is, unfortunately, to be regarded as only temporary.

If we do not lose sight of the patient, we intend to follow this preliminary report by a later note.

¹ NOTE.—January 7, 1902: A wave of regression has now set in, the blood-count on January 6 showing: Red corpuscles, 2,160,000; white corpuscles, 4,000; hemoglobin, 46%; color index, 106.

MEASUREMENTS OF CHATTANOOGA SCHOOL-CHILDREN.

BY

ARTHUR MACDONALD,

of Washington, D. C.,

Author of "Experimental Study of Children."

In another investigation¹ an account was given of the measurements of Washington school-children taken by me, and also a history of the measurements of school-children in this country and in Europe.

We shall add here a few further measurements of school-children of Chattanooga, Tenn. We regret the number is not larger.

We have given some conclusions especially as indicating a purely experimental stage of investigation. It might be asked, for instance, what relation could there be between color of eyes and weight and strength, etc. We cannot say, but if we had larger numbers, further subdivisions could be made and other factors, that might have influence, excluded until finally the relation, if real, could be determined.

To neglect every relation that *a priori* seems improbable, is not consistent with the history of investigation. For it has happened that some of the most unsuspected relations have turned out through further inquiry to be of great importance.

*Chattanooga School-Children.*²—In this study of the Chattanooga children is recorded one of the first, if not the first, measurement of school-children in the South.

Measurements were taken of weight, height, strength and sensibility to pain. The teachers reported also as to whether the pupil was bright, dull, or average in general, and as to the standing of the pupil in particular studies. In order that a fair estimate as to the ability of the pupil might be made, a pupil was marked average, whenever there was any doubt.

The date of birth, order of birth, and color of hair and eyes, were also noted. The children were divided into blondes, mediums and brunettes. If such characteristics should be related closely to any of the other data, it might in this way be ascertained.

Chattanooga School-Girls.—School-girls in Chattanooga are slightly taller and heavier for most ages than school-girls in Washington. (Tables 1 and 2).

TABLE 1.—WASHINGTON SCHOOL-GIRLS.³

No. of Pupils.	Nearest Age.	Av. Height, inches.	Av. Weight, lbs.	No. of Pupils.	Nearest Age.	Av. Height, inches.	Av. Weight, lbs.
754	8	47	49	883	14	60	93
883	9	49	54	655	15	62	100
939	10	51	58	450	16	62	105
931	11	53	64	323	17	63	110
876	12	56	73	151	18	63	111
960	13	58	78				

The summer-born are slightly less in height and strength, and have less sensibility to pain than the winter-born for most ages. (Tables 3 and 4.)

Mentally Considered (Table 5).—The first-born are slightly superior to the second-born. Those born in winter are superior to those born in summer.

There is no special difference between blondes and brunettes.

Chattanooga School-Boys.—The Chattanooga boys are superior in weight and height to the boys in Washington (Tables 6 and 7). This accords with the general impression that Southern men are taller than Northern men.

Those born in summer are very slightly inferior in weight, height and strength, to those born in winter

¹ "Experimental Study of Children," Reprint from Report of Commissioner of Education for 1897-98.

² Professor William E. Ashcroft and Superintendent Dr. A. T. Barrett kindly made the measurements.

³ See "Experimental Study of Children."

(Tables 8 and 9). This does not agree (as in the case of girls above, Tables 3 and 4) with Combe's results in Switzerland, who found children born in summer to be taller for their age. As the superiority of winter children in Chattanooga is very slight, it may be due either to the relatively small number measured or to difference of climate, it being severer in Switzerland during the winter than in Chattanooga.

Mentally Considered.—The first-born boys are slightly superior mentally to both the second-born and later-born (Table 10). Boas found the first-born to excel the later-born in both stature and weight. This coincides with results of most investigations, showing that superiority of body usually goes with superiority of mind. Thus the children of the nonlaboring (professional and

TABLE 2.—CHATTANOOGA SCHOOL-CHILDREN, WHITE GIRLS.

No. of Pupils.	Nearest Age.	Av. Height, inches.	Av. Weight, lbs.	Strength of		Sensibility to Pain.	
				r. hand kilogr.	l. hand	r. temp. grams.	l. temp. grams.
10	8	47		11	9		
21	9	50		13	11		
30	10	52		14	13	(5)	(5)
30	11	54	(11)	14	13	2540	2890
49	12	54	(30)	18	16	(14)	(14)
			77			2315	2415
43	13	58	92	20	18	(31)	(31)
44	14	61	100	21	19	2520	2590
35	15	62	101	23	21	(26)	(26)
13	16	62	101	23	20	2550	2445
						2687	2642
						2460	2463
						2653	2561

TABLE 3.—SUMMER-BORN.

No.	Age.	ft. in.	Av. Height, inches.	Av. Weight, lbs.	r. hand kilogr.	l. hand	r. temp. grams.	l. temp. grams.
4	8	3 9		10	8			
8	9	4 5		12	12			
13	10	4 4		14	13	(1)	(1)	
14	11	4 6	(4)	15	14	(4)	(4)	
			71			2400	8500	
27	12	4 9	(15)	17	15	(14)	(14)	
26	13	4 11	73	20	18	2675	2537	
23	14	5 2	91	21	19	(9)	(9)	
16	15	5 2	99	22	21	2266	2366	
8	16	5 2	100	24	20	2351	2329	
3	17	5 2	117	20	19	(8)	(8)	
						2362	2193	
						2611	2712	
						2306	2236	
						3110	3020	

TABLE 4.—WINTER-BORN.

No.	Age.	ft. in.	Av. Height, inches.	Av. Weight, lbs.	r. hand kilogr.	l. hand	r. temp. grams.	l. temp. grams.
6	8	4 1		12	10			
13	9	4 2		12	11			
15	10	4 5		14	12	2775	2725	
15	11	4 6	(7)	14	14	(9)	(9)	
22	12	4 9	82	19	17	2266	2366	
17	13	4 11	(6)	20	18	2351	2329	
21	14	5 1	82	21	19	(8)	(8)	
18	15	5 3	97	23	21	2362	2193	
5	16	5 3	105	24	20	2611	2712	
			103			2306	2236	
						3110	3020	

TABLE 5.—CHATTANOOGA PUBLIC SCHOOLS, GIRLS.

No.		Bright.	Average.	Dull.	No.		Bright.	Average.	Dull.
		a	s	a			a	s	a
89	First-born.....	28	65	7	135	Winter-born.....	34	60	6
59	Second-born.....	28	61	11	124	Blondes.....	27	62	11
127	Later-born.....	34	51	15	81	Medium.....	34	53	13
139	Summer-born.....	29	55	16	56	Brunettes.....	30	55	15

TABLE 6.—WASHINGTON BOYS¹ (WHITE).

No. of Pupils.	Nearest Age.	Av. Height, inches.	Av. Weight, lbs.	No. of Pupils.	Nearest Age.	Av. Height, inches.	Av. Weight, lbs.
787	8	48	51	926	13	57	79
878	9	50	56	784	14	59	88
930	10	52	61	528	15	62	101
862	11	53	66	345	16	64	114
986	12	55	73				

¹ See "Experimental Study of Children."

TABLE 7.—CHATTANOOGA SCHOOL-CHILDREN, WHITE BOYS.

No. of Pupils.	Nearest Age.	Av. Height, inches.	Av. Weight, lbs.	No. of Pupils.	Nearest Age.	Av. Height, inches.	Av. Weight, lbs.
10	8	49		47	13	57	(11)
17	9	15		35	14	60	(8)
28	10	52	(6)	16	15	63	(12)
39	11	54	69	12	16	63	95
			77				107
35	12	57	(8)				115
			79				

TABLE 8.—WINTER-BORN.

No. of Pupils.	Nearest Age.	Av. Height, ft. in.	Av. Weight, lbs.	Strength of		Sensibility to Pain.	
				r. hand kilogr.	l. hand	r. temp. grams.	l. temp. grams.
5	8	4 1		14	11		
4	9	4 2		14	12		
15	10	4 5	(5)	16	13	(5)	(5)
25	11	4 6	71	23	19	3090	3080
			(7)			(10)	(10)
22	12	4 8	77	21	20	2783	3072
23	13	4 10	(10)	24	20		
18	14	5 1	78	27	25	2581	2509
8	15	5 4	92	28	27	2659	2746
4	16	5 4	98	33	28	2443	2511
			106			2868	3162
			105			2575	2612

TABLE 9.—SUMMER-BORN.

No.	Age.	ft. in.	Av. Height, inches.	Av. Weight, lbs.	r. hand kilogr.	l. hand	r. temp. grams.	l. temp. grams.
5	8	4 1		14	13			
12	9	4 3		14	13	(1)	(1)	
13	10	4 4		15	17	2850	2700	
13	11	4 6	(6)	19	17	(1)	(1)	
			80			2733	2900	
12	12	4 10	(5)	19	17	2566	2894	
21	13	4 11	87	21	21	3064	3097	
17	14	5 2	92	24	23	2890	2950	
8	15	5 3	104	30	28	3016	3091	
8	16	5 3	108	34	33	2512	2415	

TABLE 10.—BOYS.

No.		Bright.	Average.	Dull.	No.		Bright.	Average.	Dull.
		a	s	a			a	s	a
65	First-born.....	33	50	17	124	Winter-born.....	37	44	19
59	Second-born.....	35	54	11	93	Blondes.....	33	53	9
165	Later-born.....	32	56	12	91	Medium.....	30	54	16
108	Summer-born.....	29	56	15	50	Brunettes.....	30	52	8

mercantile) classes of Washington not only show a higher percentage of mental ability, but are physically superior to those of the laboring classes.

Those born in winter are slightly superior mentally to those born in summer (Table 10).

Puberty and Sensibility to Pain.—Both boys and girls (Table 11) are slightly less sensitive to pain after puberty than before. It was found in the study of the Washington children¹ that they were more sensitive to locality and heat on the skin before puberty than after. Thus it seems probable that our senses in general are more acute before than after puberty. This accords with the general conclusion that sensibility to pain decreases with age.²

TABLE 11.—PUBERTY AND SENSIBILITY TO PAIN, CHATTANOOGA CHILDREN.

Puberty.	No. of Persons.	Sensibility to Pain.	
		Right Temp. Muscle Pressure, grams.	Left Temp. Muscle Pressure, grams.
Boys:—Before puberty.....	26	2820	2837
After puberty.....	105	2852	2881
Girls:—Before puberty.....	50	2480	2584
After puberty.....	117	2589	2543

¹ "Experimental Study of Children," page 1007.² "Experimental Study of Children," page 1113.

TABLE 12.—COLORED BOYS, CHATTANOOGA.

No.		Bright.	Average.	Dull.	No.		Bright.	Average.	Dull.
131	First-born.....	41	40	19	27	Black skin.....	33	34	19
69	Second-born.....	37	38	25	56	Brown skin.....	33	34	19
123	Later-born.....	37	36	7	156	Light brown skin.....	36	44	20
66	Summer-born.....	42	31	27	174	Yellow skin.....	33	46	21
193	Winter-born.....	34	45	21					

TABLE 13.—COLORED GIRLS, CHATTANOOGA.

127	First-born.....	33	51	16	45	Black Skin.....	40	44	16
88	Second-born.....	39	44	14	87	Brown Skin.....	41	45	14
199	Later-born.....	33	5	17	207	Dark Brown Skin.....	33	46	21
62	Summer-born.....	30	45	25	220	Yellow skin.....	35	54	11
239	Winter-born.....	31	53	16					

Colored Boys.—The first-born are slightly superior mentally to both the second and later-born (Table 12). There appears to be no relation between different degrees of color of skin and mental ability among the boys.

Colored Girls.—The second-born colored girls show a slightly greater mental ability than both the first-born and later-born (Table 13).

The summer-born show a slight superiority mentally to the winter-born (Table 13).

Those with light skin (light brown and yellow) show the lowest percentage of mental ability (Table 13). This is not what we would expect from general impressions. But general impressions are sometimes based on conspicuous exceptions.

The temple algometer used in the pain experiments was designed by me and consists of a brass cylinder with a steel rod running through one of the ends of the cylinder. This rod is attached to a spring, and there is a marker on a scale; this scale is graded from 0 to 4,000 grams. There is at one extremity a brass disc 15 millimeters in diameter; a piece of flannel is glued to its surface, so as to exclude the feeling of the metal when pressed against the skin, thus giving a pure pressure sensation. The whole instrument is 30 centimeters in length. In using this algometer it is held in the right hand near the beginning of the cylinders by the experimenter, who stands back of the subject and presses the disc against the right temporal muscle, and then he moves in front of the subject, where he can conveniently press the disc against the left temporal muscle.

So soon as the subject feels the pressure to be in the least disagreeable the amount of pressure is read by observing the marker on the scale. The subject sometimes hesitates to say just when the pressure becomes in the least disagreeable, but this is part of the experiment. The purpose is to approximate as near as possible the threshold of pain.

Measles in Alaska.—The great mortality among the natives of Western Alaska during the year of 1900 which has been variously attributed to grip, epidemic pneumonia, smallpox, etc., has been found to have been due to an epidemic of measles. The disease, which was epidemic in various fishing villages on the eastern coast of Siberia, is supposed to have been carried by infected natives on whaling vessels to the mainland of Alaska and the adjacent islands. The disease spread until it covered the whole territory occupied by the Eskimos and the Aleuts. At Nome a few cases appeared among the white population, but there was no mortality; on the other hand the natives succumbed readily to the pulmonary complications and sequels of the disease, the deathrate in the recorded cases reaching 50%. At Kuskowim the entire native population was affected, with a mortality rate of not less than 33%. The disease as observed among the Aleuts at Unalaska presented the ordinary clinical picture but a severe bronchial involvement marked the fatal cases, which reached 40% of the population. The lowest deathrate was on the small and isolated island of Akutan; here the entire population of 64 persons contracted the disease, with only 2 deaths, both children. A review of the statistics is interesting, as the extreme susceptibility of unprotected peoples to infectious diseases and the consequent depopulation is clearly demonstrated.

SPECIAL ARTICLE

THE PRIVATE MEDICAL COLLEGE.

BY

JOHN MADDEN, M.D.,

of Milwaukee, Wis.

There are two fundamental propositions which cannot be forgotten nor ignored, and which must be recognized by those who have to do with the education of doctors of medicine and who have the interests of the medical profession at heart. These propositions are: First, the responsibilities of the physician and surgeon, which are heavier and more vital than those which rest upon the shoulders of anyone engaged in any other calling, and therefore a physician's preparation for his work may mean life or death to the one who employs him. Second, it is the duty of every school which assumes the heavy responsibility of giving a medical education to see that the ignorance of none of its graduates shall ever be a menace to individual or public safety.

There should be no private medical colleges. The Federal Government should create a Department of Public Health, and the supervision of medical education should be one of the duties of this department. We are well aware that federal control of medical education will be objected to on the ground that the practice of medicine, like the practice of law or the functions of the clergyman, is a matter of private concern, and that there is no more reason why the government should assume control of medical education than that it should regulate the education of lawyers and ministers of the Gospel. A moment's thought, however, will show that these cases are not parallel. The federal and state authorities have assumed the right to prevent the spread of disease; they establish quarantines, even at the point of the bayonet; they enforce compulsory vaccination laws, sometimes against the vehement or even forcible protests of citizens; they cause the isolation of individuals who by reason of having contagious diseases are sources of danger to the community; and they allow no one to have on his premises decaying organic matter, open sewers or cesspools; nor do they permit the sale of putrefying meats and vegetables, nor foods containing harmful adulterants. Why should the federal and state authorities be so diligent in protecting life and health from such dangers and never lift its hand against the school which is turning out every year scores of young men whose ignorance is a constant menace to life and health? The ill-prepared lawyer or minister can do comparatively little harm, but the ill-prepared physician, because of the public's lack of technical knowledge which would enable it to judge of his ability, may be as great an evil in a community as an epidemic, and still go undetected and unrestrained. Certainly there is just as much reason for the government interfering on behalf of the public when individual life and health are threatened by the failure of a medical college to do its duty, as there is for protecting them from a plague-infected ship, a smallpox patient, contaminated water, or putrefying meats containing deadly ptomaines.

The Association of American Medical Colleges has adopted rules prescribing the educational requirements of students who apply for admission to any of the colleges belonging to the Association; but these requirements are so general in their character that they allow the greatest possible amount of elasticity, so much, indeed, that the purposes for which they were adopted are easily defeated. For instance Section II, Article 2, requires that the candidate's knowledge of arithmetic shall be tested by "such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion;" and Article 3 prescribes that the candidate shall be given "in algebra, such questions as shall bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations." In physics, Article 4 requires that the student shall be asked, "such questions as will discover his understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics." Now any one who can understand an English sentence can see at once that these educational requirements amount to nothing. They amount to

nothing because they furnish no standard of the requirements and therefore do not provide for that one essential of every examination—a test of the student's mental culture—a student must meet before he can be admitted to the study of medicine. Suppose these questions do "bring out" the student's knowledge of algebra and physics and suppose this knowledge only shows his entire lack of mastery of these subjects, what then? By giving the questions the medical faculty has fulfilled the requirements of the Association, and now there is nothing which denies the right of the college to accept a candidate though his ignorance of these subjects be monumental. The requirements in Latin are equally absurd. The student is to be examined "upon such elementary work as he may offer, showing a familiarity usually attained by one year of study; for example, the reading of the first 15 chapters of Caesar's Commentaries and the translation into Latin of easy English sentences involving the same vocabulary." We would say to the gentlemen who framed these requirements that the average student's attainments in Latin, at the end of a year's study are generally confined to a slight knowledge of Latin grammar; and a very limited Latin vocabulary.

Section II also declares that "In place of this examination, or any part of it, colleges, members of this association, are at liberty to recognize the official certificates of reputable literary and scientific colleges, academies, high schools and normal schools and also the medical student's certificate issued by any state examining board covering the work of the foregoing entrance examination."

Who is to judge of the reputability of the literary schools, colleges, academies, and the like, certificates of graduation from which give the student immunity from the annoyance of an entrance examination? The authorities of each college which belongs to the Association.

Now, it is easy to see that the primary and most mischievous weakness in our entire system of medical education is just at this point. What is there in these requirements which will prevent the unfit from entering the medical college? Nothing but the integrity and high sense of personal responsibility on the part of the private medical college proprietors, an integrity and responsibility which too often must give way, as we shall later explain, to commercial necessity. How may this evil be cured? Simply by taking the entrance examinations out of the hands of the college authorities. Medical men should have nothing to do with them. The average medical college professor, in colleges of the highest character, is unfit to make these educational tests. No matter how thorough his own preliminary training may have been in the science of numbers, in affected quadratics, in mechanics, or in the ancient languages, all of these subjects are now covered with the dust of a score or more of years, if indeed they are not buried beyond the possibility of a resurrection. And what "Admirable Crichton" have we among us who can speak and write in the pregnant language of Caesar? If our greatest universities do not contain medical men fit for holding these examinations, what shall we say of the professors in some of our private colleges whose selection for the positions they hold has not been determined by an educational test? There should be a uniform system for examining candidates for entrance to medical colleges. The examiners of these candidates should be laymen, preferably teachers in our high schools or universities of the subjects in which the candidates are examined, and the examinations should be conducted with the same degree of thoroughness, and the standard in every case be just as high as though the candidate were passing an examination for admission into the state university or some other institution of higher education. The present method, too, of accepting students upon their records made in other schools is extremely faulty. Here, as well as in entrance examinations, the medical college faculty is the sole judge of the quality of the training which the schools have given to their candidates who bring diplomas. The rules give the medical college authorities "liberty to recognize the official certificates" of all schools which they choose to consider reputable. This power should be taken away at once from the medical colleges; and the question of any school's reputability should be submitted to the same men who are entrusted with the examination of candidates for admission.

Under federal control these examinations and inspection of preparatory schools could be provided for as a part of the local sanitary machinery of the city in which the medical college is situated; or, better still, each state could delegate this function to its university authorities or rather such provision could be made a part of the federal law assuming control of medical education.

The Association, however, has undoubtedly accomplished some good. An important service was rendered the whole profession when it made obligatory upon its members the lengthening of the course of medical instruction to at least four years of six months each; and, no doubt, influences are at work, emanating from those who are striving for thorough preparation and thorough medical education, which are productive of some good toward the elevation of medical education standards all along the line. So long, however, as the Association fails to enforce any standard of requirement from students entering medical colleges, so long as each medical faculty is permitted to be the judge of the qualifications of its candidates for admission, and so long as state medical boards are not allowed to interfere with the qualifications of its own graduates, medical education will fail of the adequate control that would render the average medical graduate a safe member of society.

No medical college has any valid reason for its existence unless it can show two things: First, that it is thoroughly equipped to give a complete medical education of the most advanced type; second, that its graduates present evidence, in their careers as physicians, that they do possess the liberal general education of a scientific man and the thorough technical training of the modern physician. Now, whatsoever be the motive which causes any company of physicians and surgeons to establish a private medical college, that motive is not a thing which concerns the public so long as the college fulfils its duty toward the profession and the public in giving a thorough medical training to young men fitted to receive it. To accomplish this there must be at hand sufficient money for buildings and thoroughly equipped laboratories, and men of high integrity skilled in the art of imparting knowledge.

The sum of \$150,000 is the least amount of capital which will suffice to erect proper buildings and furnish them with necessary apparatus for practical work in the teaching of medicine, and leave a small margin of capital for running expenses until such time as the school will become self-supporting. Twice \$150,000 would be none too much to guarantee the success of a medical school of the higher order. Apparatus for laboratory equipment is easily purchased; but the getting together of a corps of well-prepared teachers means years of conscientious labor on the part of an able executive officer who should head a medical faculty. Teachers cannot be had for money merely. The getting of a faculty of any kind, so that the efforts of each teacher shall command the sympathy and cooperation of every other teacher, the entire teaching corps making up a harmonious unit, is a matter of selective judgment of the very highest order and result which, under the most favorable circumstances, it takes years to accomplish. Such, indeed, is the method of development in our greatest universities.

The character of a school determines the character of the students which are attracted to it. Earnest young men of a high order of integrity and a keen sense of the responsibilities which they assume as physicians, will inevitably gravitate toward an institution of this kind. Those who desire to get an education rather than a diploma, who seek to prepare themselves for their life work rather than for the legal privilege of beginning it, will find themselves at home in such a place; but the shallow, the weak, the ignorant, the unfit, those who seek the privilege to practise medicine only, will shun it as they would a pestilence. Under normal circumstances, too, the attendance of a new medical college of this kind will not be large. Students of the best kind, those who must ultimately furnish nearly the entire patronage of the school, prefer to go to the colleges which have already a well-established reputation of a high order, while the least desirable student will not attend it at all.

Under federal control, each medical college could be a department of some great university, and there is no reason why

medical education could not reach this high plane of thoroughness and dignity; but with the private medical college as a factor in medical education it is quite impossible.

Let us consider the character of, and the work actually done by, the average medical school owned by private individuals and chartered by the state to educate men for the medical profession.

The school usually originates in the following way: An association of physicians and surgeons is formed of such members of the profession as are willing to risk a few hundred dollars in the venture, a charter is obtained from the state, and a building rented in which to give lectures and for laboratory work. Generally the nucleus of such an institution is a private hospital with possibly a score of beds for the treatment of general diseases. In some instances the entire capital risked in the venture at the beginning is a very small sum, insufficient to even poorly equip a single department of a laboratory. It is generally understood by each member who contributes money for the establishment of the "college" that he shall have a certain "chair" in the teaching force, that he shall be "professor" of "medicine and clinical medicine," "surgery and clinical surgery," "ophthalmology and otology," or something else; but he shall be a professor nevertheless. When the principal chairs have thus been filled by men who have contributed their money the surrounding territory is searched for ambitious young men for assistants to the various chairs. Nor does this embryo institution hesitate to assume the appendages of hoary age; so an "emeritus" professor or two head the long list of professors and their assistants in the very first prospectus issued. It probably does not occur to these enthusiastic founders of new institutions that an "emeritus" professor is one "who has been honorably discharged or relieved from his duties as professor after many years of distinguished service."

I have no inclination nor any desire to belittle or sneer at, or in any other way to disparage, the medical college of such small beginnings, born of such humble surroundings. Honest, honorable and able men have been teachers in them. Graduates have gone out from them to busy, useful, honorable and successful careers, and some medical colleges of such small beginnings have made for themselves reputations for thoroughness and honesty of purpose of which their graduates might well feel proud. Forty or more years ago, when two terms of four months each of didactic lectures with some bedside clinical teaching and a few weeks in the dissecting room constituted a medical education, such schools could fulfil the functions of a medical college reasonably well; and even now, when the determination to do thorough work is predominant, when they make the best possible use of their limited resources, the results are not altogether bad. Unfortunately, however, the policy of these struggling institutions is not always shaped by a determination to graduate only men of good average attainments. The promoters cannot afford to lose money. The school's income must be increased in some other way than by contributions of the physician proprietors. There is only one way to do this and that is by increasing the number of students, and just so soon as artificial means are employed to increase the school's clientele, abuses creep in which frequently work complete demoralization. In its struggle for students things are done by some of these institutions which would probably surprise those who do not know of them. In the first place the entrance examination, unimportant as the rules of the medical college association make it, is practically abolished and there is substituted a system of "credentials," which may mean much or nothing, as showing the student's preliminary training. Sometimes the credentials submitted are certificates of graduation from well-known colleges or high schools, certificates of matriculation in some college or university, a district school teacher's certificate; or the credentials may be nothing more than a copy of the student's standing when he left the ward school, a certificate of graduation from some "business college," or even a statement from some enterprising publishing house showing that some one, presumably the bearer, "took a course of reading" under its direction. But some of these schools go even a step further than this in evading the intention of the college association rules or the state medical laws. Students are permitted to pay their fees without

any kind of examination or credentials, with the understanding that if the professors find them "capable of carrying on the work" they shall be admitted as accredited students, with the same rights and privileges and the same certainty of graduation as the university graduate. Under this credential and probation method it is safe to say that at least 75% of the matriculates should never have seen the inside of a medical college. Efforts to swell their attendance, however, are not confined to removing that bugbear of the ignorant student—an honest and thorough examination; but prospective students of medicine are interviewed personally by the members of the faculty or their agents. For this purpose long trips are made to bring in single students. A single case which came under my observation will illustrate these efforts better than a mere telling of them.

A rather shabbily dressed, middle-aged man came to me some time ago and told the following story: "Doctor, I come to you for advice. I don't know whether I'd better study medicine or not. Things haint just like I 'lowed I'd find 'em; not like I was told they'd be. I don't seem to get the hang of the work, and don't think I can ever make it go." "How old are you?" "Me? Oh, I'm nearly 43; no, I mean nearly 44." "Why can't you 'make things go?'" "Oh, I dunno. It's a long time since I went to school and it don't come easy to study. It don't come easy to study the things they study here." "What have you been doing? What is your business?" "My business? I keep a little store—grocery. Have kep' one a long time, but it's hard work. I have to get up at 4 o'clock in summer and do heavy liftin', and I haint very well. I thought I could be a doctor and wouldn't have to work so hard. Of course, I don't ever expect to be a great doctor; but I thought I could get enough to practise down there, and wouldn't have to do such hard work." "Have you an abundance of means?" "What did you say?" "Have you a good deal of money? Have you any you can afford to lose?" "Oh, no" (laughing), "I haint got much to lose. I've got about \$3,000, but that will all be gone when I graduate, for I must support my wife and little girl. I don't like the idea of starting out with nothing again; not unless I could make money fast doctoring. They (the college authorities) think I can get along all right, but I don't like to risk it. What do you think I'd better do?"

Further questioning showed that he had been interviewed at his home, and advised to take this important step by some one working in the interests of the college. The advice which he solicited was given with pleasure, and this man, so picturesquely unfit for the profession of "doctoring" was advised not to "risk it," and it is hoped he is fulfilling his duties as a useful member of society in the capacity of a grocer, a thing which he could not do as a doctor.

To cite other cases in which the medical college association's rules failed to keep out the unprepared is not necessary. Many of them can easily be found, and this undesirable state of affairs will continue just so long as the spirit of commercialism rules, just so long as the medical college is primarily for making money and reputation for its promoters, rather than for upholding the dignity and usefulness of the medical profession by accepting only those who are prepared for the study of medicine. Still another offence must be laid at the door of this class of school. By holding out inducements of various kinds to prospective medical students, by making both entrance and exit easy, thousands are led to take up the work of the physician and surgeon instead of seeking other occupations for which they are more fit, and in which their reward must be much greater. Already overcrowded, already yielding a smaller reward than the same efforts would command in almost any other calling, such schools are filling the medical ranks with a horde of competing, struggling, generally poverty-stricken young men who, in attempting to practise medicine lead lives of miserable anxiety; while, in the industrial ranks from which they are generally recruited they might at least earn a modest, life-sustaining competence. When we speak of the medical college student ranks being recruited largely from men, young and middle aged, heretofore engaged in some form of manual labor, we speak with a definite knowledge on that subject. Cigarmakers, barbers, coachmen, carpenters, and janitors, have all been seized with a desire for the honorable occupation of curing bodily ills, or a less laudable desire, as in the case of our honest grocer, of escaping the drudgery which their former occupation entailed.

Every year we try to shield the public from the quack, from the advertiser of cures for incurable diseases, from the nostrum vendor, from the osteopath with his fictitious disloca-

tions of nondislocatable organs, from the faith-curiat, the Christian scientist, the x-ray specialist, and all that horde of human vultures which prey upon the unfortunate sick, rob them, perhaps of the little hoard needed to smooth the way to the grave; but let us set our own house in order. Let us make it impossible for any medical college to evade the regulations of a uniform system of medical education, such a system as shall be a guarantee that every medical graduate is an educated scientist, thoroughly instructed in biology and the laws of health and disease. Let us have such a system of training as shall make every student leaving a medical school carry with him an abiding sense of personal responsibility every time he takes a knife in his hand to make an incision in the body of the one who is so completely and unreservedly in his hands for better or worse. Shall we not, indeed, try to set on foot such influences as shall greatly reduce the number of medical colleges, consolidate them, make each and every one of them a department of some university, establish uniform and efficient requirements for both entrance and graduation, delegating, in fact, the whole matter to a medical education bureau of a department of public health to be established under federal authority? Not until something of this kind is accomplished will medical education be what it ought to be from a sanitary standpoint alone.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

February 15, 1902. [Vol. xxxviii, No. 7.]

1. The Problems of Serum-Therapy. JOSEPH MCFARLAND.
2. The Prevention of Pelvic Disease During and After Labor. J. F. BALDWIN.
3. Prevention of Pelvic Inflammatory Diseases After Marriage. RUFUS B. HALL.
4. The Prevention of Pelvic Disease Before and During Puberty. W. H. HUMISTON.
5. Isolation of Bacillus Typhosus from Unusual Localizations—Cholecystitis, Meningitis and a Five Months' Fetus. O. MCDANIEL.
6. Cold Weather Accountable for Turbidity of the Urine. L. NAPOLEON BOSTON.
7. On the Treatment of Obesity. HEINRICH STERN.
8. The Modern Subjection of Science and Education to Propaganda. WILLIAM T. SEDGEWICK.

1.—The Problems of Serum therapy.—Advancing knowledge increases the evidence that immune serums operate chemically. Antitoxins have been developed for different vegetable and animal poisons, and for arsenic and also antagonists to the action of such principles as rennet. In rare cases normal serum exhibits the same activity as that specially immunized. The "lateral chain" theory of Ehrlich gives the most satisfactory explanation of the formation of antitoxins. The separation of toxin and antitoxin when mixed under proper conditions is probably impossible. Time and heat are essential. Filtration experiments also prove a chemic combination. Test-tube experiments with ricin and antiricin, with rennet and antirennene, with tetanolysin and immune serum, and others, are among the best proofs that the reaction does not occur through some indirect action of the body cells. In addition to the "immune body" another substance called "addiment," complimentary to it, is described, and much depends on the order in which the factors to the reaction are brought together, the former operating only in the presence of the latter. Improvement after injections of normal serums is explained by assuming that it supplies a deficiency in this complementary substance. The introduction of any kind of cellular tissue into the body increases the ability of the blood to destroy that kind of tissue. The possibility of attacking cancer by means of comminuted epithelium at once appeals to us. [H.M.]

2.—Prevention of Pelvic Disease During and After Labor.—The secretions of the upper vagina are sterile. Infection is carried up from the vulva by the examining finger of the physician and sometimes by that of patient herself. Statistics show that, except in hospitals, puerperal mortality and morbidity are no less than formerly. Neither antepartum nor postpartum douches are recommended in normal cases, the cleansing being limited to the vulva and its region, with strict antisepsis in gonorrheal cases. Physicians who care for their own horses and whose hands are rough, and cannot be made

sterile, should wear gloves. For the removal of retained tissue a sterilized finger is the safest and surest. An overlooked perineal laceration is a point for infection and should be repaired immediately as the materials for doing so are in every house. Rupture of the uterus is less frequent since instrumental interference has increased, but a large proportion of lacerations of cervix, vagina and perineum are due to hasty and injudicious use of forceps to save the time of the physician. A normal labor should never be interfered with. [H.M.]

3.—Prevention of Pelvic Inflammatory Disease After Marriage.—The chief causes of pelvic inflammations are gonorrhea and septic infection following abortion. Sexual physiology and hygiene should be taught in all high schools. Many women are ignorant of the dangers of induced abortion. Lacerations of the cervix and perineum should be repaired a few months after delivery to prevent the endometritis and salpingitis that follows subinvolution. Every woman should be carefully examined within four months after delivery. [H.M.]

5.—Bacillus Typhosus from Unusual Localizations.—In the case of cholecystitis the symptoms of gallbladder involvement were marked early in the illness. This and the absence of symptoms of intestinal typhoid suggests the possibility of its being a case of primary cholecystitis unaccompanied by intestinal lesions. Cultures from aspirated fluid showed an unmixed growth. The case of meningitis reported also exhibited unmixed infection. Four microorganisms were found in the organs of the fetus, one of which presented all the characteristics of Bacillus typhosus, except that it formed gas in media containing dextrose. This and the other organs are still under observation. [H.M.]

7.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 493.

Medical Record.

February 15, 1902. [Vol. 61, No. 7.]

1. Tumors of the Central Nervous System—Remarks on Noteworthy Cases. JOSEPH COLLINS.
2. Latent and Masked Malarial Fevers. CHARLES F. CRAIG.
3. Autointoxication and Disease from a Practitioner's Standpoint. BEVERLEY ROBINSON.
4. Diabetes Mellitus. Etiology and Pathogenesis. CHARLES E. NAM-MACK.

1.—Tumors of the Central Nervous System.—Joseph Collins states that these tumors still constitute a forlorn chapter in therapeutics, medical treatment being of little value except in the gummatous variety, and it is generally agreed that but about 5% are amenable to surgical treatment. Judged from the author's experience the percentage is even less than this. Surgical treatment of brain tumors has not been so successful as surgeons a few years ago hoped it would be, owing to several reasons; their frequent malignancy, their extension usually by infiltration, their frequent location at inaccessible points, and the frequent inability to locate them definitely. Unfortunately, in not a few cases it is found at necropsy that focal symptoms are entirely misleading. There are vast regions of the brain that have no special or definitely allotted function, and it is the trend of one school of psychologists to deny that different parts of the brain are concerned uniquely with different functions. The author asserts that this school is steadily gaining adherents. Careful study of tumors in the so-called silent regions is bound to give most valuable aid in settling some of the questions that are baffling the localizers and the psychologists. The chief part of this valuable article is devoted to the study of five of the author's cases, each of which is very instructive and interesting. (1) Angiosarcoma of the pons; (2) syphiloma of the anterior pole of the left hemisphere; (3) sarcoma of the cerebellum in a child; (4) sarcoma of the right lateral ventricle; and (5) osteosarcoma of long duration. [A.B.C.]

2.—Latent and Masked Malarial Fevers.—Malarial fevers will be more prevalent for the next few years from the return of infected soldiers. The estivoautumnal fevers are protean in their symptomatology, prone to become pernicious, and diagnosis can be made often only by blood examination, as the disease may be present without symptoms (latent) or masked by complicating disease. A study of 195 cases of

malaria discovered in routine blood examinations of returned soldiers is presented. Tertian infections are said to be most common in the Philippines, but 150 of these proved to be estivoautumnal. While in the tertian fever pigmented forms were generally present, in the estivoautumnal the hyalin ring forms were the most common. These may be overlooked by the inexperienced. Observation tends to the belief that crescentic forms are not so common as is thought in human blood. Analysis of clinical diagnosis shows the greatest number of masked and latent cases in patients with alimentary diseases and next with pulmonary tuberculosis. The marked debility of many cases of dysentery is probably due to the unrecognized malaria. Treatment by quinin in all the apparently tuberculous cases resulted in cure, also in many of the dysenteric cases. Cases of estivoautumnal fever have occurred in the neighborhood of San Francisco, and have probably been imported by infected individuals from the Philippines. Post-mortem findings are briefly given. The importance of blood examination in all diseases originating in the tropics or in malarious districts is emphasized. [H.M.]

3.—Autointoxication and Disease.—Too much emphasis is laid by the neurologist upon intestinal autointoxication as a cause of neurasthenia; it is only an element. The "wear and tear" of modern life is mainly responsible, but a vicious circle is formed, the gastrointestinal conditions causing intoxication of the nervous system and the depressed nerves reacting on the digestive tract. The antiseptics recommended as nonirritating are beechwood creasote with essence of pepsin or bismuth subnitrite or wood charcoal. When lowered nerve tone is primarily causative phosphoric acid gives better results. General tonics, static electricity, purgatives and massage are advised with intestinal lavage in only selected cases. The food question is an individual one. If gastropnoia, dilated stomach, displaced liver, kidneys, etc., are the result of malnutrition, unhealthful surroundings and hereditary taints, which cannot be corrected, it is useless to operate. [H.M.]

4.—Diabetes Mellitus.—Glycosuria is caused not only by the ingestion of sugar, but also by ether inhalations, amylin, trite, mercury, hydrocyanic acid, sulfuric acid, alcohol, strychnin, glycerin, nitrobenzol, phosphorus poisoning, acute yellow atrophy, portal thrombosis, and many of the infectious diseases. True diabetes mellitus seems to be increasing under the factors of our strenuous life; heredity, however, plays an important part, especially in cases developing in childhood. Occupations requiring excessive mental application and nervous strain furnish the most cases. Emotional excitement, dietary indiscretions, and tobacco may cause it. Gout and glycosuria are almost convertible conditions and likely to pass into diabetes mellitus. The latter is more frequent in the obese. It has been associated with lesions of the pancreas, but these may exist without diabetes, and diabetes without the lesions. Some cases seem to be caused by trophic nervous disturbances. Phloridzin poisoning determines a form of glycosuria which is dependent on disease of the kidneys. [H.M.]

New York Medical Journal.

February 8, 1902. [Vol. LXXV, No. 6.]

1. Age of First Menstruation on the North American Continent. GEORGE J. ENGELMANN. (Concluded.)
2. The President's Address. MANNING SIMONS.
3. Closure of the Abdominal Incision, with Remarks upon the Cause and Prevention of Ventral Hernia. I. S. STONE.
4. Gastrostomy and Retrograde Dilation in Impermeable Benign Traumatic Stricture of the Esophagus and Internal Esophagotomy by the Abbe Saw-string Method. HUGH M. TAYLOR.
5. What Shall we Do with the Tuberculous? ANTONIO FANONI.
6. The Management of the Tendency of the Upper Fragment to Tilt Forward in Fractures of the Upper Third of the Femur. A Question of Priority. NEWTON M. SHAFFER.

1.—See AMERICAN MEDICINE, Vol. I, No. 10, p. 431.

2.—See AMERICAN MEDICINE, Vol. II, No. 22, p. 847.

3.—See AMERICAN MEDICINE, Vol. II, No. 22, p. 846.

4.—Gastrostomy and Retrograde Dilation.—Taylor reports a case of impermeable benign traumatic stricture of the esophagus in a boy of 6, who had swallowed concentrated lye. For months unsuccessful efforts had been made to stretch the stricture with bougies through the mouth. A gastrostomy was

performed and the stricture forcibly dilated by shoving a whalebone bougie from above and guiding it by the finger below. The esophagus was obliterated for an inch about one inch above the orifice. Finally, partly as a result of the sawing by means of a silk thread drawn through by the bougie and by using a dangerous amount of force in passing bougies the tract was sufficiently opened. The method of performing gastrostomy was that used by E. J. Senn, the basis of action of which is the formation from the walls of the stomach of a circular valve-like structure near the surface, which readily permits the introduction of food, yet aims to prevent the escape of fluid at all times. Incessant leaking gave trouble at first, but this was finally overcome by using an infant's umbilical hernia truss of elastic rubber. For several days the child was fed through the gastric fistula with the purpose of giving the esophagus a rest. It was then found that he could swallow fluids readily, and from that time convalescence was uninterrupted. [C.A.O.]

5.—Tuberculosis.—Fanoni recommends the following measures for the abatement of the pandemic of tuberculosis: (1) Marriages of the tuberculous should be avoided. (2) Children of tuberculous individuals should be so brought up in a manner to strengthen their systems against the invasion of the tubercle bacillus. (3) The public should be educated to realize the fact that tuberculosis is curable in its initial stages—*i. e.*, when mixed infection has not yet taken place. (4) An early diagnosis is the secret of cure. (5) Every case of pulmonary tuberculosis should be reported to the local health authorities so soon as the diagnosis is made. (6) Every tuberculous individual should be isolated until cured or until the disease terminates fatally. [C.A.O.]

Medical News.

February 15, 1902. [Vol. 80, No. 7.]

1. Address to the Graduates of the Training School for Nurses of the Colored Home and Hospital. T. GAILLARD THOMAS.
2. Heredity. J. W. KIERNAN.
3. The Limitations of Medical Therapeutics. FRANK BILLINGS.
4. A History of the Army Post Exchange or Canteen. DUNNING S. WILSON.
5. The Röntgen Method in the Diagnosis of Renal and Ureteral Calculi. CHARLES LESTER LEONARD.
6. Retinal Lesions of Chronic Interstitial Nephritis. EDWARD JACKSON.
7. Exostosis of Femur Due to Traumatism. W. R. TOWNSEND.

2.—See AMERICAN MEDICINE, Vol. III, No. 7, p. 280.

5.—See AMERICAN MEDICINE, Vol. I, No. 12, p. 533.

6.—Retinal Lesions of Chronic Interstitial Nephritis.—

As the bloodvessels of the eye participate in the general vascular changes it is important for the general physician to study ophthalmoscopic appearances. One of the earliest symptoms of vascular change is a dirty or brick-red discoloration of the disc and it may antedate albumin in the urine. Irregularities of caliber differing from those in normal vessels may be seen. Sacculated dilations are more common on veins than arteries, and are sometimes mistaken for hemorrhages. Usually there is general shrinkage, although some parts remain dilated. Tortuosity as an anomaly is likely to be confined to the plane of the retina, while pathologic tortuosity, as in this disease, shows greater variation of depth. The color of the vessels varies. Dilated veins look dark, anemia and opacity of the walls causes pallor and sometimes fatty degeneration gives a brilliant white hue. Hemorrhages are flame-shaped or rounded and the time of absorption is variable. Patches of retinal edema and fatty degeneration are described. Large masses of exudate indicate marked toxemia. Retinal lesions appear when the balance of blood-pressure and matter to be eliminated has been lost. The difference in life probability, shown by hospital statistics and those of private practice, indicate the proper management of these cases. [H.M.]

7.—Exostosis Due to Traumatism.—Townsend reports that a young man of 25 in playing football in February, 1901, sustained a contusion of the right thigh just above the knee. An immediate effusion into the kneejoint followed. After three weeks in a plaster cast the effusion and synovitis had subsided, but the cast was continued for an additional three weeks, and when removed the joint appeared normal in every way except flexion was limited to about 30°. Just above the joint on the

anterior surface there was found a hard mass four inches long, and apparently attached to the femur. A diagnosis lay between an exostosis, a sarcoma, and a myositis ossificans. Operation was performed two months after the accident. The mass was found to spring from the periosteum and not from the bone. A microscopic examination showed it to be an exostosis. It is interesting as showing that an exostosis may arise from trauma. [A.B.C.]

Philadelphia Medical Journal.

February 15, 1902. [Vol. ix, No. 7.]

1. A Case of Osteitis Deformans. J. C. WILSON.
2. A New and Improved Method of Closing Vesicovaginal Fistulas, with Report of a Case. A. LAPHORN SMITH.
3. What Constitutes Septic Poisoning in Accident Policies? G. W. H. KEMPER.
4. The Progress of Knowledge Concerning Venom and Antivenene. A Synoptic Review of the Literature of the Past 15 Years. JOSEPH MCFARLAND. (Continued.)
5. The Surgery of the Spine. SAMUEL LLOYD. (Continued.)

1.—Osteitis Deformans.—Wilson details the eleventh case of the disease reported on this continent. The pathology, predisposing influences, association with other diseases, symptomatology and diagnosis are fully discussed. The article is illustrated with photographs and skiagrams. The treatment of this disease has been without avail. [F.C.H.]

2.—A New Method of Closing Vesicovaginal Fistulas, with Report of a Case.—Smith first sutures the muscular walls of the bladder, great care being exercised not to penetrate the cavity of the bladder nor even to touch the vesical mucosa. By his method, the suture just referred to and the suture closing the vaginal mucosa are not on the same line. The line of suture in the bladder is thus strengthened in front by at least one-half inch of solid vaginal wall instead of a line of sutures. He emphasizes the importance of leaving in the bladder a *catheter à demeure*, which should be used in every case in which an operation has been done upon the bladder wall, as it removes all tension and places the bladder at rest as long as it remains therein. [F.C.H.]

3.—“Septic Poisoning” in Accident Policies.—Kemper concludes as follows: The surgeon who is insured and receives a disabling wound unfitting him for practising his profession, is entitled to an indemnity whether he contracts septic poisoning or not; a surgeon while operating may become infected through an old injury, or a new wound (the effects are the same in either instance), then there is no valid reason why a policy should not indemnify alike in both instances; and, if a surgeon cannot recover indemnity from an infection received through a sore or an abrasion, then he gains nothing from a clause or rider attached to his general policy, in other words, the term “septic poisoning” in an accident policy is simply an aid to secure policy holders. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Condition of the Blood in Scarlet Fever.—In an instructed and carefully prepared article, Mackie¹ details the results of his examination of the blood in twenty-five cases of scarlet fever. In all the cases he found a moderate oligocythemia (3,500,000 to 4,000,000 erythrocytes to the millimeter), a proportionate oligochromemia, and a pathologic leukocytosis. In general his results correspond with those of previous observers—Hayem (*St. Petersburger Med. Wochenschrift*, i, 914, 1892), Kolschethoff (*St. Petersburger Med. Wochenschrift*, i, 1892), Felsenthal (*Archiv für Kinderheilkunde*, 80, 1892), Zappert (*Zeitschrift für klinische Medizin*, 292, 1893), van der Berg (*Archiv für Kinderheilkunde*, xxv, 321, 1899), etc. The most interesting of the blood changes, of course, is the leukocytosis, which serves not alone for purposes of differential diagnosis (serving to distinguish scarlatina from measles), but also for purposes of prognosis. In most of Mackie's cases the leukocytosis began about twenty-four hours after the appearance of the rash, and,

although it varied in different cases from the third to the tenth day, it reached a maximum after the subsidence of the general symptoms. Mild cases showed a maximum leukocytosis about the fourth day after appearance of the rash, therefore, generally not less than twenty-four hours after its complete disappearance. This is in accordance with the experience of other observers, especially Limbeck and Cabot; but Cabot curiously says that the increase in the leukocytes may be noticed so soon as six days before the rash appears. This statement certainly admits of modification, as, were it true, it would mean that in some cases the leukocytes increase before the child has been exposed to infection. Mackie believes that the leukocytosis bears no direct relation to the temperature, but that it varies rather with the severity of the throat lesion, and to a less extent with that of the rash; van der Berg, on the other hand, believes that the leukocytosis bears no relation to either the temperature, rash, or the angina. In the event of septic complications, the duration and severity of the leukocytosis depends upon the duration and intensity of the complication. In one of Mackie's cases with severe angina there were 95,300 leukocytes to a cubic millimeter of blood. Excessive leukocytosis or a sudden increase of a previously moderate leukocytosis appears to be a valuable sign of certain complications, more particularly of deep-seated suppuration or of obscure middle ear disease, either of which may not reveal itself by any well marked clinical signs or increase of temperature. Thus if a moderate leukocytosis of 20,000 or 30,000 should suddenly increase to 40,000 or 60,000 it might serve as an indication for operation upon cervical glands clinically enlarged, but revealing no other indications of suppuration. Generally a well marked leukocytosis at the crisis is a favorable sign, as in pneumonia, it seems to bear some relation to questions of natural and acquired immunity and the occurrence of the crisis. Again, analogous with the conditions in pneumonia, deficiency or absence, or lessening of leukocytosis in a clinically severe case of scarlet fever is a bad prognostic sign. This was well illustrated in one of Mackie's fatal cases in which, as the disease became more severe, the leukocytosis lessened. The obvious inference is that, as from the degree of leukocytosis, we may in some measure judge of the severity and probable termination of the case, frequent examinations of the blood are very desirable. The importance of this is further evident from the results of the experimental investigations of Everard, Demoor, and Massart (*Annales de l'Institut Pasteur*, February, 1893, p. 165), who found, as the result of experimental inoculation of guineapigs with varying doses of pathogenic microorganisms that, while there occurs primarily a fall in the number of leukocytes in the blood, a leukocytosis follows in all those animals that eventually recover. As would be expected, the increase in the number of leukocytes affects especially the polymorphonuclear neutrophiles, but the disproportionate increase in the eosinophiles observed in some cases (Mackie, 5 to 6%; Kanthack, 15%) is interesting. Increase in the percentage of the lymphocytes has also been noted in a few cases, but again a relatively high erythrocyte count has been observed. This is attributed by van der Berg, not to thickening of the blood through water abstraction, but to a periodic increase in the formation of the red cells.

Specifics in Medicine.—Andrew D. Smith¹ speaks strongly in favor of specifics and suggests that their number might be increased with advantage. If bacteriologists and physicians were to join hands new triumphs might be added. He related a number of instances in which the use of specifics had been of service. In the discussion which followed, Dr. Van Gieson took a decided stand in favor of antitoxin being administered in cases of diphtheria. The best time to make

¹ Lancet, August 24, 1901.

¹ Medical Association of the Greater City of New York, meeting held February 10, 1902.

use of antitoxin was at the beginning. In ultraconservatism he had for some time refused to use this specific after its introduction, but after careful investigation he had been convinced that it was the best remedy they had in cases of diphtheria. Some physicians hesitated to administer it until they had made certain that the case was one of diphtheria. Even in case of doubt no harm could be done by giving antitoxin and a life might be saved. Given any time within 24 hours it was invaluable; administered the second day it still was efficacious; the third day its effects were not so apparent, but even on the fourth day it might be tried. [S.B.]

Antilactosum.—Schütze¹ has produced in the blood of goats properties antitoxic to the lactosum of Bordet. By injecting goats' milk into rabbits' he was able to secure a serum which would coagulate milk, this being introduced into the circulation of a goat gave rise to an antibody capable of checking the coagulating power of lactosum. [C.S.D.]

1.—Acute acid hemorrhagic necrosis of the pancreas and its relation to the climacterium is the term which Rovzanek² applies to the disease commonly known as hemorrhagic pancreatitis. He believes that the necrosis is the indirect result of the penetration of the gastric juice through the duct of Wirsung or Santorini into the head of the pancreas. Here the HCl causes a rapid coagulation of the parenchymatous albumin. As a consequence there follows hyperemia, and finally hemorrhagic infiltration of the parenchyma so affected. Naturally the remaining parenchyma undergoes atrophic disturbance resulting in liquefaction necrosis. A necrosis of the surrounding fat also occurs. Finally, should the process become chronic, what is commonly known as gangrene of the pancreas ensues. After reporting a case of the disease in a woman of 53, Rovzanek states that in the majority of cases it occurs in women during their climacterium, and gives as a cause for this, the increased peristaltic and antiperistaltic movements of the stomach and intestine, which, during this period, may result in forcing the gastric juice into the pancreatic duct. Furthermore, according to Kretschy and Fleischer, the secretion of the gastric juice is directly influenced by the function of the sexual organs, and hence a change in all probability occurs during involution of the uterus, possibly a hyperacidity as in Rovzanek's case. The necrosis may also be explained from a purely somatic standpoint, *i. e.*, that during involution of the sexual system a corresponding atrophy and consequent functional disturbance occurs in the other organs of the body, resulting in a lessened resistance on their part to what under normal conditions might be harmless mechanic or chemie insults. [H.H.C.]

Mode of Formation of Erythrocytes.—Jolly³ has shown that in the young of lower vertebrates the appearance of true red blood-corpuscles is preceded by the formation of a great number of small spherical cells destitute of hemoglobin, and which are gradually transformed to erythrocytes. [C.S.D.]

Occupation Neuritis of the Brachial Plexus.—In a number of carpenters and tanners, and in one watchmaker, all over 40 years of age, Hoefelmayr⁴ found a condition that he considers an occupation neuritis of the brachial plexus. In all of the patients there was inability to rotate the right arm inward, to carry it across the back, or to bring it so far forward as to be able to button the trousers. The muscles concerned in these various movements are the latissimus, dorsi, and deltoid. There were tender points along the course of the nerves. The electric tests showed an increased excitability for the faradic current. Treatment consisted in rest, heat, and galvanism. Heat was applied in the form of bread poultices and mud baths. The pains were relieved by quinin hydrochlorate and phenacetin. The duration of the disease was long; from eight to nine weeks. [D.R.]

The Pathogenesis of Chronic Ulcer of the Stomach.—W. van Yzeren⁵ discusses at length the peristaltic movements of the stomach, the tone of the stomach, the pressure within the stomach, the influence of the vagus on the stomach (excitation

and section of the nerve), the consequences of vagotomy below the diaphragm, the anatomy of ulcer of the stomach produced by vagotomy in rabbit, the time, place, number, manifestations, healing, prophylaxis, and genesis of ulcer of the stomach that develop after vagotomy, and the genesis of ulcer of the stomach in man. He points out the marked resemblance in the manifestations of ulcer of the stomach in vagotomized animals and in the human subject—resemblances in anatomic appearances, number, situation of the ulcers, chronicity or intermittence, gastric cramp and intermission in the symptoms, the presence of perchlorhydria and the rare occurrence of hyperacidity, the immediate cessation of the symptoms and the rapid cure of the ulcer following gastroenterostomy and pyloroplasty, etc. From these he concludes that the genesis of ulcer of the stomach in vagotomized animals and of most cases of ulcer in the human subject is the same—that is, that the ulcers are produced by muscular cramps. In most cases the muscular cramps cannot be diagnosed. It is best recognized by palpating a hard pylorus. In case spasm of the superjacent muscles of the abdominal wall interferes, the spasm of the stomach may be recognized by intermittent retention of the gastric contents. It is stated that whether or not disturbances of the vagus be found in human subjects suffering with chronic round ulcer of the stomach, it is certain that in most cases the ulcer arises in consequence of the muscular spasm, and that this spasm is the cause of the nonhealing of the ulcer. To relieve the spasm and to cure the ulcer, he recommends a new operation—extramucous division of the pylorus. [A.O.J.K.]

Adrenal Diabetes.—In a series of experiments on dogs, rabbits and cats, Zuelzer¹ has confirmed the results of Blum in producing glycosuria in various animals by the subcutaneous injection of adrenal solution. Zuelzer states that the condition cannot be classified as belonging to the toxic glycosurias such as are sometimes produced by the exhibition of amyl nitrite, curare, strychnin and the caffeine preparations, since the latter conditions are only possible in animals previously fed upon a diet rich in carbohydrates, while in the case of adrenal glycosuria the condition may be produced in animals subsisting on a diet entirely free from carbohydrates, or even in fasting animals. Furthermore, Zuelzer succeeded in demonstrating that adrenal glycosuria is not due to any renal lesion, but rather to a genuine hyperglycemia or abnormal quantity of sugar in the blood. With regard to the exact processes involved in the genesis of the condition Zuelzer is unable to give any reliable data. [H.H.C.]

Regarding the Origin of Tumors, Tuberculosis, and Other Diseases of the Organs as the Result of the Action of Contusions (Exclusive of Fractures, Luxations, Hernia and Traumatic Neurosis).—There is very little new in this article, Jordan² merely concluding that, as regards carcinoma, the influence of trauma is minimal. In the case of sarcoma no definite statements can be made. With respect to local forms of tuberculosis, particularly joint tuberculosis, the possibility always remains that the trauma merely served to excite a latent tuberculosis. Whether the injury is capable of producing a *locus minoris resistentie* favoring the subsequent development of tuberculosis is still *sub judice*; osteomyelitis, however, may be a sequel of traumatism. The question as to whether, in a given case, appendicitis was produced by trauma, must be answered in the affirmative if it can be proved that the right iliac fossa was injured, and that, in a healthy individual, the symptoms of the disease developed immediately afterward. [D.R.]

The Specificity of Bacteria.—Klemm³ is of the opinion that there is no obligate specificity among bacteria, that their specificity is entirely facultative, and that to the actions of various bacterial groups there are correspondingly characteristic reactions in the tissues. [D.R.]

Urobilin in Ascitic Fluid.—In the ascitic fluid removed during life from a patient with hemorrhagic nephritis, Stich⁴ found urobilin. [D.R.]

¹ La Semaine Médicale, December 18, 1901.

² Prager medicinische Wochenschrift, vol. xxv, Nos. 38-45.

³ La Semaine Médicale, December 25, 1901.

⁴ Münchener medicinische Wochenschrift, November 5, 1901.

⁵ Zeitschrift für klinische Medizin, xliii, 181-224, 1901.

¹ Berliner klinische Wochenschrift, December 2, 1901.

² Münchener medicinische Wochenschrift, October 29, 1901.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The Excretion of Chloroform from the Respiratory Organs.—It is frequently stated by writers on anesthesia and anesthetics that chloroform or ether is excreted from the body through the respiratory tract. The odor of these drugs on the breath of course gives the evidence of this fact, but we are not aware that any systematic studies have been made to determine any facts with regard to the amount excreted in relation to the amount of anesthetic used, the duration of anesthesia, etc.

Büdinger (*Wiener klinische Wochenschrift*, August 1, 1901), has investigated this question with twenty patients and while the results from such a small number of patients cannot be considered conclusive the facts stated are of interest and show the possibilities of further study along these lines. In determining the excretion of chloroform he had the patients who had been anesthetized blow through a jar containing a small amount of water twice or three times for an hour at a time for several days. To determine the presence of chloroform he used the isocyanphenyl test, which he states is delicate enough so that one cm. of chloroform gives a very positive reaction if diluted with ten liters of water. He does not consider that the time at which no chloroform can be detected by any means indicates the real limit of time at which the chloroform is excreted, but it did show with certainty in these cases that a very perceptible amount of chloroform was present in the breath for twenty-four hours or more in every case. In some cases the length of time was very much longer. In five cases the chloroform was detected on the third day, in two cases on the fourth day and in one case on the fifth day after the anesthesia. The duration of the anesthesia and the amount of chloroform seem to have no very perceptible relation to the length of time during which it was excreted. In considering the causes for the retention of the chloroform in the system he lays stress upon the presence of mucus in the respiratory tracts. Patients who complain for a long time of a disagreeable taste of chloroform are more likely to be such as are suffering from chronic pharyngitis and in the cases in which the drug was detected a long time after anesthesia the patients were all suffering from such catarrh. In four cases he found it possible to demonstrate chloroform in the sputum from sixteen to forty-eight hours longer than in the expired air. It is perfectly clear that so long as the mucus of the respiratory tract contains chloroform that it will be present in the expired air, but the mucus no doubt has a decided influence in retaining the drug. To test this matter artificially chloroform was passed through glasses containing water and sputum mixed in various quantities and it was found that the chloroform could be demonstrated very much longer in those which contained considerable quantities of sputum. The thicker and more tenacious the sputum the longer chloroform could be demonstrated. The difference between the pure water and water mixed with sputum was in some cases several days. The narcotic is also retained in the system in the blood and is excreted from the respiratory tract.

The significance of the retention of chloroform in the respiratory tract is very considerable if we consider the after-effects of the anesthetic. No doubt much of the nausea and vomiting which follow an anesthesia are due to the effect of the drug which is retained in the mucus and causes constant irritation of the gastrointestinal tract. When we consider the large surface which is exposed to the action of the drug it is not surprising that the after-effects are so great as they are.

Büdinger's results show the importance of getting the mucous membrane in healthy condition and cleansing it as far as possible from all adherent mucus and

secretion before administering an anesthetic. His conclusion that the duration of the anesthetic and the quantity used have little to do with the period of excretion is in harmony with what we know of the action of anesthetics in producing inflammatory conditions of the lung and respiratory tract. Severe bronchitis or pneumonia quite as often follows a short operation for appendicitis or hernia as an extensive excision of the breast or other operation lasting for several hours.

The work that has been carried out by Büdinger with chloroform might well be undertaken on a series of cases to test the effects of ether. The after-effects of ether on the respiratory tract are even more important. The ether pneumonias, the inflammations of the kidney and other untoward effects of the administration of ether may be due fully as much to the continued action of considerable quantities of ether which are retained in the mucus spread out all through the respiratory tract as to the action of the drug during the anesthesia.

History of Operations Practised for Cancer of the Breast.—Banks¹ gives a general review of the subject, and shows that many of the so-called new methods and procedures are not new, but often based on the work of the older surgeons. The article is interesting from a historic standpoint as well as from a surgical one. [A.B.C.]

Excision of Bone for Deformity.—Newbolt² reports the case of a girl of 11, in which the right leg was 2½ inches shorter than the left from arrested growth, causing lateral curvature of the spine, etc. There were 15° of flexion deformity in the left hip and a little less in the right. The deformity of the right was corrected by sawing through the femur above the condyles and putting on extension. Two months later bone to the amount of 1½ inches was removed from the left femur, the ends wired together, the periosteum sewed over the wire and the separated muscles sutured. Five months later there was a difference of only ½ inch between the two legs. The full amount of bone was not removed in the fear that the knee-joint would be weakened, and it was thought there would be some absorption of the newly-joined ends if she was allowed to go about early. The result so far is very satisfactory. The operation is applicable to many cases in which one leg is shorter than the other, such as old fracture, hip disease, etc. [H.M.]

The Treatment of Gastrocolic Fistula.—Labhardt³ reports four cases of gastrocolic fistula, due to perforation of a gastric carcinoma into the transverse colon. In the two cases operated upon, gastrojejunostomy was performed with very satisfactory results in so far as the comfort of the patients was concerned. In the diagnosis of the condition, Labhardt lays especial stress, not only on the fecal vomiting, but also on the diarrhetic character of the stools—a feature due to the pouring out of the fluid stomach contents directly into the colon without intervention of the small intestine. With regard to treatment, Labhardt recommends in cases susceptible to such treatment, a preliminary jejunostomy under local anesthesia, followed later by a radical operation (colocolostomy with removal of the diseased section of colon). In cases, however, in which the small intestine still partially performs its functions, but in which the patients suffer from fecal vomiting to a considerable degree, a simple colocolostomy is indicated. [H.H.C.]

Sarcoma of Ectopic Testicle.—Kajiser⁴ reports this case occurring in a man of 48. The existence of a pelvic tumor, of which the patient had no idea, it having caused him no inconvenience whatever was discovered by a physician, whom the patient had consulted for pain in the back, throat, etc. The scrotum contained only the right testicle; the left could nowhere be felt. Laparotomy was performed and a free tumor, the size of a child's head, was found with a long, broad pedicle, emerging from the neighborhood of the left internal inguinal ring. The tumor was surrounded by a thick, vascular capsule; the pedicle was also provided with enormous vessels. The weight of the tumor was 1,050 gm. [A.E.E.]

¹ British Medical Journal, January 4, 1902.

² Liverpool Medico-Chirurgical Journal, September, 1901.

³ Münchener medicinische Wochenschrift, October 15, 1901.

⁴ Hygieia, November, 1901.

A New Method of Gastrostomy.—Depage¹ states that his results in the use of all of the methods of gastrostomy now in vogue have been unsatisfactory. In the past he has used by



preference the method of Ssebanejew-Frank and has even published an article setting forth its advantages. But later experience has shown him that the funnel which is created in the abdominal wall tends to close after a certain length of time and there is also a tendency to leakage of the gastric juice with irritation of the skin of the abdominal wall. None of the methods thus far in use he believes obviate these disadvantages. He reports the case of one patient who was very much reduced by carcinomatous stricture of the upper part of the esophagus which did not permit the passage of any solid nourishment. A vertical incision 8 cm. long was made a little to the left

of the median line. The stomach was drawn up and sutured to the parietal peritoneum of the abdominal wall. A flap was then cut in the anterior wall of the stomach with its base upward. This flap was turned up and the opening in the stomach was closed by a continuous suture, first of the mucosa and then of the serous coat. Each of these sutures continued along up the flap transforming it into a long tube. The tube thus formed was fixed in the superior angle of the abdominal wound near the ensiform cartilage and the abdominal wound was then closed. This operation he considers an ideal one as the canal thus formed does not tend to close and the gastric juice does not leak. The only disadvantage is in the length of the time required to perform it. In this case the operation lasted half an hour, but with experience he believes that it would be possible to perform it in 15 minutes. [M.B.T.]

Recovery After Abdominal Operations.—T. B. Grimsdale² describes the technic of rendering operative dressings, etc., sterile, and compares the results obtained when antiseptics were used for all purposes, with those in which their use had been confined to cleansing the skin. Mean temperature and pulse charts are given. After operation with antiseptics the pulse leaps up 14 beats a minute, after asepsis 7 beats. The temperature shows a corresponding rise after asepsis and none after antiseptics, indicating more shock in the latter. In the list given the pulse was over 100 per minute, 47 times in the antiseptic series and only 14 times in the aseptic series during the first week. This means nearly $\frac{1}{2}$ day extra heart work a week for the antiseptic series. The comfort of the patient has been decidedly improved, the pain reduced almost to nil, and there is practically no flatulence. [H.M.]

The Treatment of Congenital Torticollis by Incision of the Sternocleidomastoid, with Subsequent Redressment Bandage.—In order to prevent undue contraction of the cicatricial connective tissue in joining the cut ends of the sternocleidomastoid muscle after dissection for the correction of congenital torticollis, Schanz³ recommends a cotton batting bandage of considerable thickness and tightness around the neck, the wadding being placed between chin and thorax, with the head in forced extension. The resulting separation of the muscle stumps lengthens the connecting cicatricial strands and prevents a recurrence of the trouble. [H.H.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Criminal Abortion.—The subject of criminal abortion has been treated by two writers during the past few weeks, Stuver¹ and Balloch,² and these articles suggest a train of thought which is important though unpleasant to dwell upon. Many years ago Parvin said "There are and there can be no data by which the absolute or relative frequency of abortion can be ascertained; for many cases occur without the subjects knowing it, and many other abortions are selfproduced or performed by professional abortionists and therefore kept secret; in only exceptional instances, when a fatal result follows, do medical men or the public know of them." Engelmann, in a thoughtful article upon the increasing sterility of the American woman, finds that one miscarriage occurs to 2.8 labors at term, and believes that the frequency of miscarriage is evidently greater in this country than in Europe. Statistics have fallen into disrepute by being made to apply to things which cannot be definitely ascertained. From the very nature of the circumstances attending abortion, it is impossible for us to estimate with any degree of positiveness how frequently it occurs or is produced. However, so far as we are able to ascertain, its frequency is so appalling as to demand thorough discussion and forcible condemnation. Last year Dr. Duff, of Pittsburg, in discussing the subject, said "We are fast becoming a nation of accidents. Fathers and mothers should be prepared physically and mentally for the production of their offspring, and there should not be accidental results." Too often the young wife enters the sacred bonds with the distinct understanding that she desires no offspring because of the inconvenience it would give her, and when the methods of preventing conception fail, intentional abortion becomes the next resort. Balloch urges that we as physicians are more intimately conversant with this crime and its effects than anyone else, and it should be our duty to insist at all times and seasons upon the actual physical harm which may and does result from its practice. Women should be made to understand that it is vastly more harmful and dangerous to have an abortion than to bear a child, and that while the mortality from one is practically none, the other causes many deaths and untold misery every year. The legislator, the clergyman and the statesman, all who have at heart the growth of our country in power and wealth, should view with concern any limitation of its population, and should consider whatever tends to reduce the birthrate of a country as a political crime. That this may not seem an unwarranted statement, it may be well to cite the alarm and agitation in France over this very question which is now engaging the attention of her most advanced thinkers. England, too, will have to face the same problem, as is shown by the following figures, based on her last census: There are now 500 fewer births daily in the United Kingdom than there were 20 years ago. During the five years from 1894 to 1898 there were 5,750,000 births in the United Kingdom, whereas had the birthrate been the same as in the five years from 1874 to 1878 the number of births would have been over a million more, viz., 6,780,000. Since 1874-1878 the decline in the English birthrate has been greater than that of France. Taking England and Wales, the loss since 1874-1878 has been 17%, while in France it has been only 10%. Although criminal abortion is only one factor in a lessened birthrate, yet it is clearly a demonstrable one, and the criminal abortionist is an actively vicious Malthusian whose labors should be thwarted by the strong arm of the law. However unsatisfactory any warfare against this vice may be, and however discouraging physicians may find teaching the laity upon this subject, nevertheless, as protectors of

¹ Journal de Chirurgie et Annales de la Société Belge de Chirurgie, November and December, 1901.

² Liverpool Medical-Chirurgical Journal, September, 1901.

³ Münchener medizinische Wochenschrift, October 15, 1901.

¹ Medical News, January 25.

² American Journal of Obstetrics, February, 1902.

health, as champions of virtue, and as defenders of the unborn, it is clearly our duty to sound the battle-cry of a crusade against criminal abortion and abortionists.

Treatment of Dysmenorrhea.—Theilhaber¹ believes that only in a minority of cases is there an anatomic cause for dysmenorrhea. Submucous myoma may evoke painful uterine contractions at the menses, since it is mostly at that time that the uterus strives to expel any foreign body. Uterine contractions are always present in menstruation, but usually they are painless, often becoming painful in the presence of perimetritis. In more than three-fourths of the cases of menstrual colic either myoma or perimetritis is the cause, not through anatomic, but functional disturbance. The pain is due to spasmodic contractions of the cross-shaped muscle fibers of the inner os uteri, and tetanic contractions of the sphincter of the internal orifice. If general treatment fails to relieve the condition, he recommends that the efficiency of the sphincter be restored by a resection of the internal orifice. In like manner, a natural cure of dysmenorrhea sometimes occurs when during delivery a laceration of the internal os uteri takes place and the dysmenorrhea does not reappear. Theilhaber has employed the resection of the sphincter in 22 cases with satisfactory results. [W.K.]

A Rare Case of Exfoliative Vaginitis.—G. Gelhorn² reports a case of this condition caused by irritant suppositories used by the patient to relieve menorrhagia. Each membrane represented a complete cast of the vagina. There were 9 produced in 6 weeks' treatment. Histologic examination showed they were composed entirely of vaginal epithelium. The vagina remained healthy as soon as the irritant treatment was stopped. [J.W.H.]

Hematometra in the Atresic Horn of a Duplex Uterus—Abel³ reports the case in a woman of 26, who since her fourteenth year had been chlorotic and languid, with pain in the abdomen and sense of pressure. Menses began at 18, slight but increasing in frequency and painfulness, until able to endure no more she sought the Berlin hospital for relief. She was operated upon by Abel by the vaginal route, and there was removed a hematometra in the atresic horn of a duplex uterus; also the right ovary and tube with a hematosalpinx at its outer extremity. The left ovary, tube and healthy half of the double uterus were retained. The patient had an uneventful recovery and during the 18 months since the operation has menstruated regularly without pain and has felt completely well. [W.K.]

Pregnancy in Accessory Horn of Uterus.—Krönig⁴ thinks the diagnosis of pregnancy in an accessory horn of the uterus is, in most cases, impossible, since we possess no sufficient means by which to differentiate it from tubal pregnancy. Hence the opening of the abdomen usually gives the first certain diagnosis. The therapy then depends upon the size of the connection between the pregnant horn and the uterus. If this is small it can be ligated and the fetal sac removed. If the connection is broader, semi-amputation is proper. If the pregnancy is far advanced, the sac may be sutured to the abdominal wound, opened, and the cavity tamponned. In rare cases the connection between the accessory horn and the uterus is a tube of sufficient size and distensibility to permit delivery through it of a two-months' fetus, and Krönig reports a case of this kind. It had been diagnosed as tubal pregnancy with a fetus either living or just dead. The abdomen was opened, and contained about 250 cc. of dark fluid blood. The tubes were normal, but joined to the uterus by a tube the size of the index finger was a thin-walled, bluish glimmering sac of the size of a fist. As he feared that amputation of this would weaken the uterine wall and become a complication in future pregnancies, he closed the abdomen temporarily, and, by means of a sound and Hegar's dilators passing through the uterus, dilated the connecting tube so that he could with his index finger reach into the sac, which was filled with old dark blood and placental pieces, but no fetus was found. After the removal of these, the sac collapsed and hemorrhage ceased. The abdomen was then

sponged out and the wound closed in the usual manner. The patient left the hospital on the nineteenth day after the operation. Although there was a collection of blood in the abdomen as in tubal pregnancy, he could find no trace of rupture in the shining wall of the fetal sac, so that either the rupture had been closed with fibrin or the blood had come into the abdomen through the open pavilion of the tube. The advantage of the method followed in this case was that the uterine wall was not weakened by amputation of the horn, the interperitoneal surgery was reduced to the minimum amount, and the putrefying mass was not removed through the peritoneal cavity; but there remained the danger of subsequent pregnancy in the same horn, and Krönig regretted that in order to prevent this he had not sterilized the left tube. [W.K.]

Diagnosis and Treatment of Metritis.—Campbell¹ discusses its differentiation from pregnancy, carcinoma, incomplete abortion, fibroids, salpingitis, cystitis, and proctitis. Reflex disturbances caused by it may mimic other diseases. The management of abortions is often responsible for it. No man's finger is long enough to clean out an aborting uterus. A sharp flushing curet should be used. In general treatment douches should be used more energetically at 100° to 120° for 20 minutes twice daily; tampons should be applied daily; local bleeding is often indicated every second day: intrauterine antiseptics and caustics are important. Curetting is the best treatment. Long-handled dilators like Duncan's are recommended, and perforation is avoided by careful use of the sound. Varieties requiring modified treatment are considered. The transformation from endometritis to cancer has been followed step by step at successive curettings. [H.M.]

The Cause of Fetal Death in Premature Loosening of the Placenta.—Schultze² by placing a placenta just separated from the uterus in a basin of warm water with the uterine surface above, and filling the open vein of the excised cord with warm fluid by means of a syringe, demonstrates that pressure on the fetal vessels may be raised very greatly without a drop of the fluid flowing from the uterine surface of the placenta. So one can separate the cotyledons of the placenta without any blood escaping from the distended vessels. But if a cotyledon is cut only slightly with a knife, the blood gushes forth. Thus he proves that the loosening of the placenta from the uterine wall causes no injury to the fetal vessels; that, therefore, upon the premature separation of the placenta the fetus loses no blood and does not die of anemia. Its pallid appearance is through death from asphyxiation while its internal organs are still filled with blood. If, through contraction of the uterus, the placenta is thrown into the maternal abdominal cavity, the child cannot lose a drop of blood. [W.K.]

Enuresis in Females.—As a valuable remedy for enuresis Parnell³ suggests the application, by means of a probe armed with cotton wool, of a solution of silver nitrate to the urethral canal, a treatment which he has found very efficacious in some cases of pure incontinence. The older the patient the better is the chance of success. [W.K.]

Hypertrophy of Both Breasts at Puberty.—E. Pflanz⁴ reports a case of mammary hypertrophy occurring in a young woman at the age of 16. At the time of the first menses, when she was 14, the breasts began to grow rapidly, and in two years had reached the enormous size which they still retained at 30. They are respectively 48 and 46 cm. in circumference, and from their great weight hang down to the line of the umbilicus, and are firm and elastic. Their symmetrical form and consistency, but abnormal development to their present size at the age of puberty, make this seem a true instance of diffuse puberty hypertrophy, a hyperplasia of the substance of the gland in which adipose tissue plays no part; as a diet which caused a reduction in flesh and in the weight of the body produced no change in the size or consistency of the mammas. It is of etiologic interest that the brother of the patient had a very strongly developed mamma, analogous to a case reported by Engländer, in which the mother of the patient had a one-sided mammary hypertrophy. [W.K.]

¹ Centralblatt für Gynäkologie, December 7, 1901.

² American Journal of Obstetrics, September, 1901.

³ Berliner klinische Wochenschrift, December 23, 1901.

⁴ Centralblatt für Gynäkologie, January 11, 1902.

¹ The Medical Press and Circular, September 25, 1901.

² Centralblatt für Gynäkologie, December 7, 1901.

³ British Medical Journal, January 11, 1902.

⁴ Centralblatt für Gynäkologie, January 11, 1902.

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

The Precordial Coil.—A convenient device for the local application of heat or cold to the head, precordium and abdomen is known as the ice coil. The temperature can be maintained at a constant level by means of a continuous flow of water at any desired temperature, and the annoyance to the patient of renewing the compress at short intervals is thus entirely obviated. The materials required are about 40 feet of red or black rubber tubing, No. 20, and a piece of rubber sheeting large enough to extend several inches in every direction beyond the coil when finished, say $\frac{1}{2}$ yard square. Instead of the sheeting, six strips of tape, $\frac{1}{2}$ inch wide and 16 inches long, may be used. The tubing is coiled into a circle 12 inches in diameter for a head or precordial coil, or into an oval with a transverse diameter of 11 inches and a longitudinal diameter of 14 inches for an abdominal coil; about 6 feet of tubing being left free for a supply pipe to convey the water by siphonage from a vessel placed above the head of the bed, and another piece of about four feet at the other extremity to carry off the water into a pail. The coil is then sewed fast to the piece of rubber sheeting, or to the strips of tape extending from the center to the circumference after the pattern of a spider web. As a cooling application to the head and to relieve headache, particularly in the case of fever patients when the continuous action of cold is desirable, the head coil is much more convenient than the ordinary ice bag. There is no wetting of the pillow or disturbing the patient to replenish the ice bag.

The precordial coil should not be applied directly to the skin; a moistened piece of linen should be interposed, and the whole covered with a dry cloth. The temperature of the water for a cold application should be at most 40° F., although it is advisable to begin with a higher temperature, say 65° F., and reduce it rapidly. At first the coil should not be applied longer than from 10 to 15 minutes at a time; but as the patient becomes accustomed to the procedure, the time may be extended to from one to two hours. The effect of the cold precordial cord is said to rival the action of digitalis and alcohol, and its employment, instead of medicinal stimulants, to support the heart in typhoid and other infectious fevers has been warmly recommended. The accelerated pulse is slowed, arrhythmia is corrected, and the arterial tension is increased. It is indicated in valvular disease of not too severe degree, in ordinary cases of myocarditis, and in conditions of functional disturbance of the cardiac rhythm. The temperature of the water and the length of the applications, as in all hydrotherapeutic procedures, must be accurately adapted to the needs of the case and to the patient's powers of resistance.

In cases of advanced myocardial degeneration the usual reaction fails to set in; the action of the heart, instead of being strengthened, becomes more rapid and irregular, and cyanosis may develop; hence the precordial coil may be used incidentally as an aid to diagnosis in determining the degree of cardiac vigor remaining. The effect of heat—water at 100° F.—is also to strengthen the heart and reduce the number of contractions.

The Treatment of Aneurysms of Large Vessels.—W. W. Keen (*American Journal of the Medical Sciences*, September, 1900) shows that the danger of ligating large vessels in hemorrhage or in disease of the arterial wall, has been from secondary hemorrhage. The establishment of the collateral circulation would appear to be most difficult, but even after ligation of the abdominal aorta the collateral circulation is established with remarkable ease. A patient of Keen's lived 48 days after ligation of the aorta with four strands of soft silk passed from left to right, between the vena cava and behind

the aorta just below the diaphragm. There was no disturbance of sensation or motion in the lower extremities, and on the following day the femoral artery was found to be pulsating slowly. Hemorrhage took place at the point where the upper ligature was applied, it having cut through the arterial wall. Out of 13 patients operated upon, 3 lived long enough for the collateral circulation to be established. In ligating large arteries, Gunn recommends that the ligature be comparatively large, and that just enough compression be applied to the vessel to extinguish pulsation distal to the ligature, but not sufficient to interfere with the nutrition of the vessel wall. He hoped in this way to obtain an adhesive inflammation which would sustain the high vascular pressure at this point, and thus prevent a secondary hemorrhage. [L.F.A.]

Potassium Bicarbonate in the Treatment of Pernicious Anemia.—Dennstedt and Rumpf (*Therapeutische Monatshefte*, Vol. xv, No. 5, May, 1901) base the rationale of this treatment on the following: In a case of grave pernicious anemia it was found that the blood showed a high percentage of water and sodium chlorid, with a low percentage of solids and an extreme reduction of potassium and iron. They also found that the liver contained four to five times more iron than normal, while the iron percentage of the spleen was increased three to fourfold, an observation which was confirmed by Quincke and others. The percentage of potassium in the liver was above the average, while in other organs it was lower. The muscles, unfortunately, were not analyzed. This great reduction in the percentage of potassium can, perhaps, be explained by the destruction of the red corpuscles alone, but it is also possible that the potassium contained in the red corpuscles is absorbed by some toxic substance which thus brings about the death of the corpuscles. These considerations led to the employment of organic salts of potassium in the treatment of pernicious anemia. Rumpf reports four cases. One patient was cured and remained well for three years; two others were improved, and a fourth is still under treatment. Three other cases are reported, which terminated fatally, one by intestinal hemorrhage, the other two from some unknown cause after the patients had returned to their homes. In the successful case the hemoglobin was reduced to 20%, and the blood-count showed 1,200,000 red blood-cells with marked poikilocytosis and nucleated blood-corpuscles. The patient was expected to die at any moment. After the infusion of a 1% solution of potassium bicarbonate a marked improvement was noted. At the end of five weeks, during which potassium salts were administered internally, the hemoglobin had risen to 40% and the number of red corpuscles to 3,290,000. The patient was discharged cured and has remained well for the past three years. It is suggested that pernicious anemia may in some cases represent an acute disease, the cause of which is only temporarily active, and that after the subsidence of the exciting cause the regeneration of the blood is hampered by the lack of organic salts of potassium. [R.M.G.]

Sidonal or Piperazin Quinate in the Treatment of Gout.—Bardet (*Bulletin Général de Thérapeutique*, April 15, 1901) has obtained good results from the daily administration of from 45 to 75 grains of sidonal, piperazin quinate, in the treatment of gout or gouty rheumatism. The remedy was continued for more than a month after the painful phenomena of the disease had disappeared. Analysis of the urine in three cases thus treated showed that the quantity of uric acid excreted was diminished from the beginning. [L.F.A.]

Treatment of Bronchial Hemorrhages by Gelatin Solutions.—Spillman (*Bulletin Général de Thérapeutique*, March 23, 1901) gives a record of three cases of bronchiectasis with frequent hemorrhages cured by injections of gelatin solution. One patient, on account of the great loss of blood, had fallen into a state of profound cachexia, but was able to resume his occupation, and had no hemoptysis from the beginning of treatment. Demange employs a 5% sterilized gelatin serum (physiologic saline solution), and injects $\frac{1}{2}$ ounces every two days. This dose is perfectly well borne. He recommends that the patient remain in bed and confine himself to a light diet, preferably milk, in order to favor the action of the gelatin. [L.F.A.]

Electric Treatment of Carcinoma of the Skin.—There are three varieties: carcinoma tuberosum, carcinoma lenticulare, and carcinoma melanodes. The electric treatment should be either by electrolysis or by the galvanocautery. When the former is employed, the needle connected with the negative pole is driven into the tumor horizontally, close to its base, and held there until disintegration takes place. This procedure is repeated until every part of the tumor has been subjected to the action of the electrolytic current. The disintegrated mass is not to be disturbed, as before long it will separate itself and leave a granulating surface. The galvanocautery is more rapid in its action, and the surface left behind is suitably dressed antiseptically. This method is employed preferably in pigmented carcinoma, frequently arising from moles and warts, for the reason that deeper destruction is possible, and this is necessary on account of the great proneness to recurrence that exists. In any case great vigilance must be exercised in addition to thoroughness in treatment. When glandular involvement exists the ordinary principles of thorough surgery apply. Epithelioma is, as a rule, best treated with the knife. But in certain superficial cases better results may be obtained by curetting and then touching the denuded surface with the galvanocautery. This method seals the mouths of the arteries, is not followed by pain, and if properly executed, results in a complete cure of the trouble. — Ohmann-Dumesnil in "The System of Physiologic Therapeutics," Vol. II.

Antiseptic Varnish as a Substitute for Collodion.—Nicaise (*La Médecine Moderne*, July 17, 1901) employs:

Thymol	22 grains
Balsam of tolu	75 grains
Powdered gum-lac	2 ounces
Alcohol 90%	1½ ounces
Ether	3 ounces

[L.F.A.]

Cure of Cracked Nipples.—*Montréal Médical*, September, 1901, states that rapid cure follows the application of the following solution to cracked nipples night and morning:

Guttapercha	20 grains
Pure chloroform	sufficient to dissolve.

[L.F.A.]

The Treatment of Habitual Constipation.—The course of treatment as pursued by Hugo Schmeidl (*Therapeutische Monatshefte*, vol. xv, No. 6, June, 1901) at Marienbad is as follows: The patient drinks 300 cc. of cold Ferdinandsbrunn water daily before breakfast. The action on intestinal peristalsis is produced by the low temperature of the water, and the abundance of carbonic acid and salines; the solution consisting chiefly of a mixture of sodium sulfate, bicarbonate and chlorate, the effect being enhanced by the empty condition of the stomach. As the amount of sodium sulfate (1 to 1.5 grams) contained in this amount of water is utterly inadequate to produce a free evacuation of the bowel, the effect cannot be ascribed to this agent alone, and the author insists that under no circumstances must the dose of the water be increased. In a week, at the latest, if the water is taken regularly, a satisfactory evacuation will take place every day after breakfast. When the patient has had a regular daily evacuation for a week, the quantity is reduced to 200 cc. During the last week of the period, which lasts four weeks, a glass of ordinary cold spring water is taken on an empty stomach every other day instead of the daily dose of 200 cc. of mineral water; this is continued for some time after the end of the treatment and the intestine will continue to respond to stimulus. Trousseau's advice to visit the closet every day at the same hour is reiterated. The patient is advised, however, to respond to any desire to defecate which he may feel through the day and not to put off evacuation any longer than necessary. In the regulation of the diet due regard is to be paid to the patient's individual taste and his social condition. The general rule is to prescribe an abundant mixed diet in which the vegetable foods predominate. Patients often aggravate their condition under the mistaken idea that they are suffering from gastric disease. Being troubled with a feeling of fulness after eating, loss of appetite, eructations, and bad taste in the mouth, they attribute these symptoms to gastric irritation and confine themselves exclusively to a digestible and easily assimilable diet, which of course only

tends to increase the constipation. The alkaline and saline spring water is perfectly compatible with a great variety of foods, including raw fruit, so that this objection cannot be urged against its use. In the diet prescribed for constipation those substances should be represented which are generally known as dietetic laxatives, because it has been found that they stimulate peristalsis either by mechanic action or by virtue of the organic acids, sodium chlorid, sugar, or carbonic acid which they contain, or by setting up fermentative processes in the intestine. The temperature of the ingested food is also of some moment. These different effects are often combined in the same substance, thus in cold lemonade there is the action of organic acid, of cold, of sugar as such, and of its fermentation products, etc. The list of dietetic laxatives includes, among others, cold water, especially when taken early on an empty stomach; buttermilk; sour milk; coffee; lemonade; honey; fruit (fresh, stewed, dessicated, or in the form of preserves or butter), especially fruit rich in sugar, such as grapes, and watery fruits, such as melons, peaches, juicy apples, plums; cabbage; kale; lettuce; rye bread; graham bread; salty foods, such as sardines, herring, pickled meats; and very sweet farinaceous foods. On the other hand, the following articles, being dietetic astringents, are to be avoided: tea, claret, huckleberries, clear soups with rice or barley; cocoa, chocolate, wheat bread, and unsweetened farinaceous foods. The treatment should also include certain hydropathic procedures that tend to increase peristalsis, cold douche on the abdomen, short cold sitz-bath and a wet abdominal application in the evening. The best of these procedures the author considers the cold Fächerdouche or the Scotch douche applied to the abdomen, preceded by a half bath at 77° F. lasting five minutes. In addition certain gymnastic exercises are recommended. The daily regime is, therefore, as follows: On rising, gymnastic exercises followed by the cold drink, after which the patient takes an hour's walk. This time may include, if desired, the hydropathic procedure. After breakfast, which should contain some physiologic laxatives, an attempt is made to evacuate the bowel. In the course of the day the patients are encouraged to take active exercise. In the afternoon another turn at gymnastic exercise. The menu for the midday and evening meal must conform to a constipation diet. The diet and gymnastic exercises are to be continued for some time after the course of treatment. [R.M.G.]

Mercury Cacodylate in the Treatment of Syphilis.—*Montréal Médical*, September, 1901, reports excellent results from daily intramuscular injections of the following solution in the treatment of syphilis:

Mercury biniodid	½ grain
Sodium cacodylate	½ grain
Sodium iodid	½ grain
Distilled water	16 minims.

To be carefully sterilized in an autoclave. Pain is not caused by this treatment. Out of 48 cases so treated there was only one in which syphilids existed, which was not benefited. The only untoward effects produced were: One case of pigmentation of the skin at the point of injection; one of diarrhea; two of stomatitis; and one of hemoptysis in a tuberculous patient having lung cavities. [L.F.A.]

The Treatment of Gonorrhea with Protargol.—Jesionek¹ believes that the great discrepancy in the reports of results obtained by the use of protargol in gonorrhea is due for the most part to carelessness in the preparation of the solutions. Both physician and apothecary should see that protargol solutions are made cold and from fresh material. Under these conditions the results are more favorable than by the use of any other medication. Jesionek emphasizes the facts that in the beginning of treatment injections cannot be made often enough and that after active symptoms have disappeared the injections should be continued for some time. In the first stages he uses a 1% solution. There is very little irritation and it would seem that the penetration of protargol solutions into the deeper layers of the mucosa is in indirect proportion to the concentration of the solutions. In the more chronic forms of the disease he uses solutions of from 2% to 2% strength. [H.H.C.]

¹ Münchener medicinische Wochenschrift, November 5, 1901.

NERVOUS AND MENTAL DISEASES.

J. K. MITCHELL.

F. SAVARY PEARCE.

Classification of Nervous Diseases.—Classification, if not made a mere fetich, and worshipped to the exclusion of more important gods, has its values, especially in teaching—and serves, too, to clear one's mind, sometimes by a negative action of agreement, sometimes by a positive one of disagreement. Chataloff,¹ of Moscow, thinks Möbius' plan was not exact, especially in the latter's placing in one class disorders of the blood and traumatic disorders affecting the integrity of the nervous tissues and local vessels. He proposes basing his subdivisions upon anomalies of structure and nutritive disturbances. The obvious criticism is that there are but few nervous diseases with only one cause, and that a lowering of nutrition is certainly one cause of a vast majority of diseases which in view of their known pathology we must call organic. Chataloff agrees, however, with Möbius, that an ingenious classifier can readily get round this difficulty by putting such disorders in under several heads, or by making proper subdivisions of the diseases themselves. For example, neurasthenia is 'hereditary,' 'toxic,' 'anemic,' or a 'traumatic neurosis.' One result of this is that neurasthenia appears in every column of his classified table. These difficulties aside the classification is an interesting one even if sometimes over-refined.

The general heads are Diseases of Structure and Diseases of Nutrition. Under structural are:

1. Hereditary, (a) anatomic, (for example, birth-palsy); (b) molecular, (for example, Thomsen's disease).
2. Acquired, (a) anatomic. (e. g. trauma and climatic effects); (b) molecular, (e. g. concussion and hysteria).

Under the second heading of Nutritive Disorders we find

1. Qualificative, (a) anatomic, (e. g. encephalitis); (b) molecular, (e. g. hydrophobia and neurasthenia).
2. Quantitative, (e. g. vertigo, neuralgia).

The scheme is interesting, but the plan too subtle—and a classification which can only classify by putting *all* the disorders difficult of exact placing into *all* the classes is wanting somewhere.

Prognosis in Relation to Disease of the Nervous System.—The matter of prognosis does not receive perhaps the attention its importance deserves when we look especially towards the patient's side of the problem. In nervous and mental diseases there is in the profession a greater degree of pessimism in foretelling the results of a given case than obtains in general medicine. This comes no doubt from the fact that in neurology we are confronted with more insidious and slowly progressive diseases, such as the scleroses, where the scientific study is beautifully interesting and in which the ultimate clinical result is apt to be overshadowed by the expectancy of advancing pathologic processes. The Bradshaw lecture on "Prognosis in Relation to Disease of the Nervous System," delivered before the Royal College of Physicians of London, November 5, 1901, by Judson M. Bury, M.D., London, F.R.C.P., tends to clear up much of the ambiguity of this important subject.

We must acknowledge the difficulty of prophesying results since our knowledge of the various poisons or attacking agents is limited; thus a cerebral blood clot may produce loss of functions, but from the symptoms presented it will be difficult to determine whether the obstruction be temporary or permanent. A person may promptly recover from concussion of the brain, and yet insidious symptoms begin to develop at a remote period

from the accident, thus indicating damage to cortical cells; "while in other cases they point to brain tumor." Dr. Bury speaks of atrophy as consequent upon irritation of sensory nerve fibers such as the atrophy about a joint, especially in the extensor muscles, which may become more widespread and finally institute a chronic anterior poliomyelitis. We can confirm this almost dubitable statement. He speaks of the nervous diseases produced by absence of secretion of the ductless glands, like cretinism and myxedema, and believes that absence of the parathyroid secretion has something to do with the origin of exophthalmic goiter. Other diseases are undoubtedly magnified by chemic changes within the blood. We know a great deal regarding the course of diseases produced by alcohol, lead, arsenic and other poisons. The nervous sequelae of specific infectious diseases we attribute to effects of toxin, as the writer says: "by analogy rather than by actual demonstration." We are pleased to see his reference to the likelihood of diseases such as myelitis, infantile paralysis and disseminated sclerosis and "many other nervous affections" being set up by poisons derived from the products of over-fatigue or of abnormal digestion in the alimentary canal. Dr. Bury also speaks of selective action and the immunity created by poisons, and emphasizes the fact that immunity occurs only from poisons of bacterial origin with the exception of opium and tobacco and we may add, possibly, arsenic. The selective action of a poison is shown in relation to prognosis by the tendency of the syphilitic poison to prefer vascular structures.

Absorption of exudates does occur more frequently than supposed, as in inflammatory products in the brain resulting from influenza, or in the cord in cases of myelitis of unknown toxic origin. There is liability of diseases of the specific origin to recur, as, for example, hemiplegias, and it behooves us to stimulate the general medical man to urge most thorough treatment in the beginning of specific diseases, a point from the neglect of which the reviewers have often seen dire results.

We should like to emphasize the fact that a slowly growing tumor in certain regions of the brain may reach a large size without giving rise to much disturbance of function; moreover, its development may be arrested, all the symptoms produced by it may pass away, and occasionally a partial recovery be established. This is in great contrast to the instances in which the patient dies with symptoms of Landry's paralysis, or of myasthenia gravis, and no changes whatever are found in the nervous system.

The situation of a lesion is often more important in prognosis, therefore, than the nature or size of the lesion itself; thus a lesion in the bulbar neurons will be most quickly fatal. If a lesion is nonprogressing, restoration of function will depend upon "recovery of nervous tissue which is only partially damaged, or the taking up by adjacent or distant structures of the functions that are lost." Bury quotes Dr. Mott as stating that nerve-cells or fibers in the brain or cord when completely destroyed can never be replaced by new cells or fibers. He also quotes Marinesco and Lugaro with regard to the pathologic significance of lesions in different parts of a nerve-cell, the former stating that lesions of the chromatic part are the first to appear where the harmful action does not act suddenly and with such energy as to paralyze function, and that these can be recovered from, provided other parts of the cells have not suffered serious damage.

Lugaro, in discussing the nature of the lesion, further states that the "study of subacute intoxication has shown us that while the primary lesions of the nerve-cells have common features, there are not wanting in them particular characters by which we can more or less completely distinguish one intoxication from another." Nissl believes that the chronic intoxications give rise to remarkable uniformity of lesions, and Bury believes this fact in turn is due to the circumstance that the said

¹Revue Neurologique, December 15, 1901.

intoxications are complicated by autotoxic actions resulting from secondary disturbance of metabolism.

In prognosis in relation to symptoms we have to consider changes set up remote from the site of lesions. These manifestations are known to us as symptoms which depend on part of the pathologic process alone. As Bury points out further, the complexity is increased "by the fact that symptoms vary in different persons quite apart from the severity, distribution and nature of lesion." This is exemplified in the case of pain, as of neuralgia, aneurysms or cancer, or in the varying amounts of pain in cerebral tumor;—thus morbid anatomy will not always explain why paralysis is profound in one person and less in another, or the different degrees of muscular spasm seen in affections of the upper neuron. The lecturer gives interesting examples "of want of correlation of symptoms and morbid anatomy" in a case of glioma of the cord. It must also be remembered as Dr. Bury, quoting Hughlings Jackson, emphasizes, "that symptoms are due as much to normal physiologic activity imperfectly applied as to the actual loss of function occasioned by the lesion."

This again suggests theorizing as to the essential substance of nerve force, and that perhaps electricity may be this essential something which regulates psychomotor phenomena, etc. The author gives examples of exaggerated symptoms, viz., of deformities of the feet in infantile paralysis being partly due to contraction of the normal, unopposed muscles or the exaggerated movements of ataxic patients depending to some extent on lowered tonus of the muscles; also of muscular atrophy following articular inflammation; or of wasting occasionally occurring in a hemiplegic limb, "probably from inhibition of function of nerve cells. Furthermore, we may observe, symptoms may represent both active and passive or arrested phases of disease." Of two cases of birth palsy, one may have remained stationary for many years, while the second may have had convulsive attacks and sequent deterioration; in the latter type of case, of course, prognosis is always worse. The reviewers would suggest that the variation in prognosis depends upon the heredity of the disorder and greatly upon the native degree of resistance of any special subject affected. The prognosis in Napoleon's case was, therefore, good.

Only by study of variation in symptoms of cases from day to day can we get anything like definite decision in prognosis.

Assuming that poisons are the most common causes of disease of the nervous system, prognosis will depend upon the possibility of successful elimination through treatment. Unfortunately we are often unaware of the nature of the poison suspected, and "our methods of elimination, however, are still too crude for the purpose"; thus all known methods of treatment—massage, baths, purgatives, alteratives and hygiene may fail in some cases of peripheral neuritis, of neurasthenia or of early myelitis. The power of counteracting the effects of poisons through remedial measures will help in prognosis of the case. In prognosis we must further know more about "sensory impulses in maintaining the proper nutrition of motor neurons," which probably explains the beneficial effects of "massage, passive movements and galvanism as stimulants to the regeneration of damaged tissue."

Colored Hearing.—Since Goethe studied the theory of colors in 1810 the curious psychic phenomenon which consists in the appearance upon the mental visual field of a colored image suggested by a sound has received a good deal of attention from the philosophic students—and lately some from physicians. It does not appear possible to maintain that this queer symptom—if there may be a symptom where there is no disease—belongs only to hysterics or to persons of fantastic or fanciful minds. Probably individuals who possess this accidental faculty are of the class of those in whom the visual memory

or the power of visualizing is very strong. A few instances have been published of the occurrence of this trait in several members of one family, but none so remarkable as that lately published by Dr. Laiguel-Levastine,¹ who has studied 11 persons in one family, of whom nine had the colored hearing, a parent, four children and four grandchildren.

Some nouns, both concrete and abstract, suggest color; others associate color with certain vowel or consonant or combined sounds. As an example, one case may be cited briefly. The subject is a physician in good health. Even noise as distinguished from sounds properly so-called produces luminous images. A bit of music listened to with closed eyes has an effect like a kaleidoscope, colors brighten, disappear, increase, decrease, change to every shade, according to the notes of the music.

The vowel-sounds are accompanied by a colored image, different for each vowel and always the same. A is white, E yellow, I sparkling "like liquid mercury," O red, U dull black, OU black becoming deep blue, é golden yellow, è straw-color, EU gray. To get the sensation of color it is necessary to articulate the word. The sight of words is not accompanied by a colored image. It is never the case that a reversal of this association occurs, so that the appearance of a light is accompanied by an acoustic image, but in one other field of sensation a color relation is perceived, certain smells producing a color effect, for example, mint is white.

Diet in Epilepsy.—The salt-free diet proposed by Toulouse and Richet recently has been tried with extraordinary success by Dr. Schaefer in Engel's clinic in Berlin.² The diet was, as suggested by Richet and modified by Balint, 1½ liters of milk, 40 to 50 grams of butter, 3 eggs, 300 to 400 grams of bread and fruit. No table-salt is allowed, but 3 grams of a bromide salt are added to the food.

On this diet three patients between 30 and 34 years old, all of whom had suffered with epilepsy from youth, and had considerable consequent mental impairment, were placed for about six weeks. There was at first a slow and afterward a rapid lessening in number of fits and a very striking general improvement in mind and body. The statement is made that after the first few days all the patients were wholly free from attacks. Six weeks is a rather short time to make sure of so large a matter in, but it is interesting and valuable, if the improvement should persist as the diet is a possible one and the dose of bromide moderate.

Professional Neuritis.³—Wm. Barak⁴ says professional neuritis, although having been well studied from point of view of hygiene, has not yet been studied in its ensemble; for by this study only in its entirety can the proper rules and precautions, that are necessary to evade as much as possible the results of the wear and tear of work, and the worry and misery resultant, be deduced. The forms of professional palsies are manifold. According as we advance in the study of clinical forms of nervous diseases and see their multiplicity and extreme variability particular cases detach themselves more and more from the homogeneity of the mass. In the first rank of etiology is predisposition. The palsies are most common between 21 to 35 years and in the male sex, in those working at trades of precision in prolonged constrained positions. In sum, there is no profession in which a person can be nervously affected in which there cannot be found a perfect relation between his daily occupation and the particular nervous affection with which he is afflicted.

On the Frequency and Significance of the Transverse Striae of the Finger Nails in the Normal, the Criminal and the Insane Subject.—Treves⁵ says striae upon the nails are explained by the hypothesis of an attenuating histogenic activity depending upon causes which bring about frequent variations of psychomotor activity. Insane subjects are, there-

¹ Revue Neurologique, December 15, 1901.

² Neurol. Centralbl., January 1, 1902.

³ Gazette des Hôpitaux, November 7, 1901.

⁴ Th. de Paris, 1901.

⁵ Journal of Mental Pathology, December, 1901, January, 1902.

fore, more liable to the phenomenon, although sufferers from other morbid affections are frequently affected, and it is at times found in normal persons. This should be remembered from the medicolegal aspect. Striae are more marked on the thumb than on the fingers and are usually on the same level in all the fingers. Regeneration of the toe nails takes from 8 to 24 months, while those of the fingers require but 2 to 7 months. Hence the finger striae serve as a better index to morbid changes. The number, position and depth of the striae indicate to some degree the number, times and duration of the perturbances. Interesting tables are given. Normal men showed striae in 16%, criminals 51.7%, epilepsy 53.8%, secondary dementia 60.4%. Among females they were found in the normal in 12%, in criminals in 42.8%, in circular insanity 77.7% and in secondary dementia in 48.2%. Striae are more frequent in the periodic insanities.

Cigaret Inebriety.—French¹ decries the use of tobacco. Special distinguishing features of cigaret-smoking are its extensive use among growing boys, the fact that being a "little cigar" it is smoked almost constantly, and on account of its mildness that it is apt to be inhaled. The writer denies that adulteration with drugs is common. He claims that if a parent uses tobacco to excess without apparent injury, still any progeny will show ill effects in lack of vigor and endurance.

Insanity and the Poisons.—MacLean² re-states the truth that man is the product of heredity and environment. This applies to body but no less to the mind. The human brain is the organ of rational mind. Both depend on the character of the nerve cell, which may be high or low as a mental instrument. Environment is a rather extraneous influence upon the brain cell or brain mass. The efficiency of the brain will depend upon the natural constitution of the cell and the influences of its environment. Poisons may be brought into the system from without. Iodoform may cause irritability and mental disquiet and finally a nerve storm, with later hallucinations. So with other such poisons, as lead, which also tends to induce sclerotic changes and sequent malnutrition. Cocain, opium and alcohol produce moral depravity. Darwin states that the family of drunkards do not extend beyond the fourth generation. One-tenth to one-third of the insane are due to alcohol. Syphilitic insanity is also due to deleterious effect of a poison introduced into the system. Society is not awake to this, yet 80% to 90% of paresis is due to syphilis. Mental disturbances are more frequent than is supposed even in the florid stage. Syphilitic arteritis is a far-reaching malady, through obliteration of lumen of vessels. Furious delirium, short-lived, followed by coma, delusional insanity, various forms of paresis with incomplete palsies, dementia not attended by paresis but by epileptic attacks, and epilepsy are the most frequent mental disturbances caused by syphilis of the brain. Of autogenetic poisons those developed along the alimentary canal are certainly causative of insanity, as are the toxins the result of Bright's disease, diabetes, putrefactions, defective metabolism through alteration or deficiency of glandular actions, etc. The forms of psychoses resultant from autointoxications are hallucinatory—confusional and confusional-maniacal.

A Case of Myasthenia Gravis.—Haldor Sneve³ reports this very interesting syndrome in a farmer, aged 25. There was absolutely no history of nervous or mental heredity, nor was there history of trauma. Masturbated from 17 to 23. Patient was a nondrinker, and did not use tobacco. In February, 1899, noticed weakness of hands, with paraesthesia, weakness of arms and slightly of lower limbs; a stiffness and drooping of lower lip, at times dysphagia and diplopia. General condition was one of languor and weakness. Remissions and variation of above symptoms frequent. Even talking tired him. No pronounced sensory symptoms. Profuse sweating; reflexes at knees, wrists and elbows normal; no Romberg; no Babinski; heart normal; kidneys normal; eyegrounds and vision normal; large lymphocytes increased to 14.2%, while small lymphocytes decreased to 8.3%; no lymphocytosis, however. A second blood-count made the differential count more

nearly normal. Hysteria was excluded. Literature is reviewed, including Wilks' case, in 1877, and followed by those of Erb and Oppenheim, where no changes were found at necropsy. "Myasthenic reaction" (a great transient loss of faradic response) was described by Jolly in 1895. The reporter regards an exhaustion of the motor cortex of the brain as the best theory in explanation of the myasthenia gravis complex. Cause of death is usually respiratory failure.

Some Phases of Epilepsy and the Epileptic Constitution.—Keene¹ makes an interesting physiologic study of epilepsy, and gives reference to examples of afflicted notable men in history. It is because of our vague understanding of consciousness that the aura, precursory symptoms of psychic nature and of the special senses are not also better known. The pathology of epilepsy is little known, in spite of experiments of Brown-Séquard and others on lower animals. It is an explosion of nerve force followed by certain somatic and psychic manifestations; it is a self-existent memory of disordered reflex—a neurosis. Hereditary epileptic constitution exists. Petit mal and psychic epilepsy are most important medicolegally, *e. g.*, in explanation of purposive action followed by motiveless murder, etc.

A Case of Hemiplegia Associated with Complete Hemianesthesia and Unilateral Muscular Atrophy on the Paralyzed Side.—Robert Reuling² says Todd, in 1856, first called attention to muscular atrophy in intracranial lesions. Quincke, in 1893, collected 40 cases. The reporter's case developed muscular atrophy three weeks after paralysis occurred. The patient was colored, single, aged 30; semiconscious when admitted to hospital; right hemiplegia. Mother had had apoplexy. No history of neurosis in family. Patient had no complete unconsciousness at any time. Vertigo marked. No convulsion; no aphasia. Pupils and visual fields normal. Ocular muscles normal, as was hearing and taste. Upper paralyzed extremity flaccid; lower, lead-pipe contracture. Advanced muscular atrophy of both of these extremities three weeks after admission. No fibrillary tremors. Electrical examination not possible. There was complete anesthesia to pain, temperature and touch, and absence of muscle and stereognostic sense on the paralyzed side, ending abruptly at median body-line. Hyperesthesia of right cornea. Cause assigned, small hemorrhage, thrombosis, or embolism. Hysterical complication is not positively excluded. He refers to the broken paths of the sensory fibers in the brain, and that near the cortex they diverge widely, and that the subthamic portion of internal capsule is chiefly sensory, and that some sensory impulses pass up the lateral tracts. Reuling believes the lesion in his case is in internal capsule.

Extension and its Application in the Treatment of Nervous Maladies.³—P. Kouindjy goes over this much neglected therapeutic procedure in a comprehensive paper. He speaks of its having been almost abandoned, although the method is of considerable value. He decries the lack of thoroughness when extension is used at all. Motehoutkowski first described its use in 1883, but Charcot was the first to urge the use of extension in 1889, and found it of especial value in treatment of tabes. After an experience of three years in Professor Raymond's clinic the writer concludes that suspension is in the first rank for treatment of chronic nervous diseases in general and for tabes in particular. It especially relieves the fulgurant pains, bladder symptoms and the motor incoordination to a marked degree. Erb also upholds its use, and claims extension is not psychic in effect, but physisic. Many other neuropathologists uphold this view. He refers to others who consider suspension as useless or illusory, as Dr. Bernheim and Prof. von Leyden. The writer also advises its use in arthritis deformans and in compression myelitis. [The reviewers have seen many curative results from prolonged extension in Pott's disease pressure paraplegia at the Infirmary for Nervous Disease, Philadelphia and in private.] The mode of action of extension is by producing in cord disease a hyperemia and bettered circulation. Gilles de la Tour-

¹ Quarterly Journal of Inebriety, January, 1902.

² St. Paul Medical Journal, February, 1902.

³ St. Paul Medical Journal, January, 1902.

¹ The Providence Medical Journal, January, 1902.

² Maryland Medical Journal, January, 1902.

³ Arch. de Neurologie, January, 1902.

ette in 1890 recorded 100 cases of tabes treated by suspension. Of these 20% to 25% were much bettered, 30% to 35% were slightly improved, and in 35% to 40% it was uncertain as to any benefit derived. He gives a number of good cuts representing methods of suspension and extension upon an inclined plane, the latter being of particular advantage in cases of tabes complicated by cardiac disturbance. The paper is to be continued in the next number of the *Archive*. [We trust this contribution of Kouindjy's will tend to reawaken the application of a method of ameliorating symptoms of tabes—a method in our experience that has been tried and not found wanting.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended February 14, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
District of Columbia:	Washington.....Jan. 25-Feb. 1.....	2	
California:	Los Angeles.....Jan. 25-Feb. 1.....	7	
	San Diego.....Jan. 25.....	1	
	San Francisco.....Jan. 26-Feb. 2.....	9	
Illinois:	Belleville.....Feb. 1-8.....	4	
	Chicago.....Feb. 1-8.....	2	
	Danville.....Feb. 1-8.....	2	
	Freeport.....Feb. 1-8.....	1	
	Galesburg.....Feb. 1-8.....	1	
Indiana:	Evansville.....Jan. 25-Feb. 8.....	13	
	Indianapolis.....Feb. 1-8.....	23	
Iowa:	Clinton.....Feb. 1-8.....	3	
	Ottumwa.....Dec. 28-Feb. 1.....	73	
Kansas:	Wichita.....Feb. 1-8.....	1	
Kentucky:	Covington.....Feb. 2-9.....	3	
	Lexington.....Feb. 1-8.....	3	
Louisiana:	New Orleans.....Feb. 1-8.....	3	
Maryland:	Baltimore.....Feb. 1-8.....	8	
Massachusetts:	Boston.....Feb. 1-8.....	54	7
	Brockton.....Feb. 1-8.....	1	
	Cambridge.....Feb. 1-8.....	4	
	Everett.....Jan. 25-Feb. 8.....	4	
	Fall River.....Feb. 1-8.....	1	
	Holyoke.....Feb. 1-8.....	1	
	Lowell.....Feb. 1-8.....	4	
	Malden.....Feb. 1-8.....	1	
	New Bedford.....Feb. 1-8.....	1	
	Newburyport.....Jan. 25-Feb. 8.....	3	
	Somerville.....Feb. 1-8.....	1	
Michigan:	Bay City.....Jan. 25-Feb. 8.....	12	
	Detroit.....Feb. 1-8.....	6	
	Ludington.....Feb. 1-8.....	2	
Minnesota:	Minneapolis.....Jan. 25-Feb. 1.....	18	
Montana:	Butte.....Jan. 24-Feb. 2.....	1	
Nebraska:	Omaha.....Feb. 1-8.....	45	
New Hampshire:	Nashua.....Feb. 1-8.....	3	
New Jersey:	Camden.....Feb. 1-8.....	8	1
	Jersey City.....Feb. 2-9.....	15	
	Newark.....Feb. 1-8.....	33	7
New York:	Binghamton.....Feb. 1-8.....	1	
	New York.....Feb. 1-8.....	61	10
Ohio:	Cincinnati.....Jan. 31-Feb. 7.....	12	
	Cleveland.....Feb. 1-8.....	5	
	Dayton.....Feb. 1-8.....	3	
	Hamilton.....Feb. 1-8.....	3	
	Toledo.....Feb. 1-8.....	2	
Pennsylvania:	Allegheny City.....Feb. 1-8.....	1	
	Norristown.....Feb. 1-8.....	1	
	Philadelphia.....Feb. 1-8.....	110	20
	Pittsburg.....Feb. 1-8.....	1	
	Providence.....Feb. 1-8.....	1	
Rhode Island:	Charleston.....Feb. 1-8.....	3	
South Carolina:	Greenville.....Jan. 25-Feb. 8.....	4	
South Dakota:	Sioux Falls.....Feb. 1-8.....	2	
Tennessee:	Memphis.....Feb. 1-8.....	15	
	Nashville.....Feb. 1-8.....	1	
Texas:	Houston.....Feb. 1-8.....	32	2
Washington:	Tacoma.....Jan. 24-Feb. 2.....	20	
Wisconsin:	Fond du Lac.....Feb. 1-8.....	3	
	Green Bay.....Feb. 2-9.....	19	1
	Milwaukee.....Feb. 1-8.....	7	

SMALLPOX—FOREIGN.

Austria:	Budapest.....Jan. 15-21.....	11	
	Prague.....Jan. 11-18.....	11	
Belgium:	Antwerp.....Jan. 11-25.....	6	1
Brazil:	Rio de Janeiro.....Dec. 21-Jan. 12.....	94	91
Canada:	Halifax.....Jan. 25-Feb. 8.....	3	
	Quebec.....Jan. 25-Feb. 8.....	80	3
	Winnipeg.....Jan. 25-Feb. 1.....	10	
Colombia:	Cartagena.....Jan. 26.....	2	
Great Britain:	Liverpool.....Jan. 19-25.....	8	
Italy:	Naples.....Jan. 18-25.....	9	
	Rome.....Dec. 16-21.....	1	
Russia:	Moscow.....Jan. 4-18.....	15	6
	Odessa.....Jan. 11-25.....	13	3
	St. Petersburg.....Jan. 12-25.....	12	3
	Warsaw.....Jan. 4-11.....	2	
Spain:	Corunna.....Jan. 18-25.....	1	
Uruguay:	Montevideo.....Dec. 28-Jan. 4.....	77	4

YELLOW FEVER.

Brazil:	Rio de Janeiro.....Dec. 21-Jan. 12.....	15	
Mexico:	Vera Cruz.....Jan. 25-Feb. 1.....	1	1

CHOLERA.

Java:	Batavia.....Dec. 7-14.....	3	
Straits Settlements:	Singapore.....Dec. 21-28.....	1	

PLAGUE—INSULAR.

Hawaii:	Honolulu.....Jan. 23-24.....	2	
	Kauai, Elelee.....Jan. 22-26.....	3	

PLAGUE—FOREIGN.

Brazil:	Rio de Janeiro.....Jan. 4-12.....	8	
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Changes in the Medical Corps of the U. S. Army for the week ended February 15, 1902:

REILLY, First Lieutenant J. J., assistant surgeon, is granted leave for 20 days.

MAY, J. V., contract surgeon, Madison Barracks, will proceed to Fort Slocum to accompany a detachment of recruits to San Francisco, Cal.

CALVERT, First Lieutenant W. J., assistant surgeon, will proceed from Fort McHenry to Cleveland, Ohio, and there report to the commanding officer of the second battalion, Fifteenth United States Infantry, accompany the battalion as medical officer to San Francisco and then return to his station.

SLAYTER, Captain JOHN T. H., assistant surgeon, having tendered his resignation, is honorably discharged to take effect February 7, 1902.

LYON, Captain PALMER H., assistant surgeon, is relieved from temporary duty at Fort Hamilton, to take effect upon the arrival at that post of Captain Irving W. Rand, assistant surgeon, and will then proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

BROWN, Colonel JUSTUS M., assistant surgeon-general, will repair to Washington, D. C., and report to the surgeon-general of the Army on business pertaining to the medical department, and upon the completion of this duty will return to his proper station in New York City.

The following named contract surgeons will proceed from the places designated to San Francisco, Cal., and report for transportation to the Philippine Islands, where they will report for assignment to duty: Harry Greenberg, from Milwaukee, Wis.; Hubert Grieger, from South Milwaukee, Wis.

PEASE, FRANK D., contract surgeon, now at Los Angeles, Cal., will proceed to Fort Mackenzie for duty, to relieve Contract Surgeon Frederick A. Hodson, who will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, and upon arrival at Manila will report for assignment to duty.

McHENRY, Captain GEORGE A., assistant surgeon, will proceed to Hamilton Barracks, Matanzas, Cuba, for duty.

TAYLOR, Major BLAIR D., surgeon, granted leave December 20, is extended 10 days.

REILLY, First Lieutenant JOHN J., assistant surgeon, now at Fordham, N. Y., is relieved from further duty in the division of the Philippines, and upon the expiration of the leave granted him January 28, will report at Fort Slocum for duty.

TURNER, SAMUEL S., contract surgeon, is relieved from duty at Fort Sheridan, to take effect about February 28, and will then proceed to Fort Yates for duty, to relieve Contract Surgeon Arthur W. McArthur, who will proceed to his home, Chillicothe, Mo., for annulment of contract.

SIMONTON, A. H., contract surgeon, is granted leave for two months, to take effect from February 8.

Orders of January 28 are so amended as to direct Contract Surgeon James B. Ferguson upon his relief from duty at Fort Yellowstone, to proceed to Fort Sheridan for duty.

Changes in the Medical Corps of the U. S. Navy for the week ended February 15, 1902:

SPRATLING, L. W., surgeon, order to the Naval Hospital, Portsmouth, N. H., revoked; ordered to continue on waiting orders—February 7.

ARMSTRONG, E. V., passed assistant surgeon, detached from recruiting duty, February 17, and ordered to the Olympia—February 11.

PAGE, J. E., passed assistant surgeon, ordered to report at Seattle, Wash., March 1, for temporary recruiting duty—February 11.

RIXEY, Rear Admiral P. M., commissioned surgeon-general of the Navy and chief of the Bureau of Medicine and Surgery, with the rank of Rear Admiral from February 10—February 12.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended February 13, 1902:

BLUE, RUPERT, passed assistant surgeon, to proceed to Des Moines, Iowa, for special temporary duty—February 10.

SPRAGUE, E. K., passed assistant surgeon, to assume command of the service at Detroit, Michigan, relieving Surgeon J. J. Kinyoun—February 13.

THOMAS, A. R., passed assistant surgeon, to proceed to Liverpool, England, for special temporary duty—February 7.

SWEETING, C. B., acting assistant surgeon, Bureau letter of January 16, granting Acting Assistant Surgeon Sweeting leave of absence for five days from January 23, amended so that said leave shall be effective from February 16—February 10.

BROWN, F. L., pharmacist, granted leave of absence for 10 days from February 16—February 7.

American Medicine

FOUNDED, OWNED, AND CONTROLLED BY THE MEDICAL PROFESSION OF AMERICA

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Chicago's Work Against Smallpox.—An instance of especially commendable effort is the work being done by the Chicago Board of Health, under the direction of Dr. Arthur Reynolds. In an area of some 600,000 square miles, of which Chicago is nearly the geographic center, the number of cases of smallpox increased in January nearly 300% over the number reported for the same period last year. Convinced that the disease is still spreading unchecked, that it is not being fought intelligently or adequately, and that its continuance seriously threatens not only the public health but the material interests of this vast area by the possibility of "shotgun quarantines" sooner or later and consequent costly and vexatious interference with travel and traffic, Health Commissioner Reynolds called a conference with the representatives of the leading railways centering in Chicago and urged their cooperation with the department in a concerted effort to stamp out the pestilence. Ready assent was given, the necessary men and means were assured. The plan contemplated wholesale vaccination and revaccination in every infected locality; the provision and maintenance of suitable isolation hospitals where necessary; thorough disinfection of smallpox premises and belongings; strict inspection of all persons offering to travel from infected localities and refusal to carry those who do not comply with the requirements. This is the measure relied on to control the objectors, "conscientious" or otherwise, and is one fully within the power of the railways to enforce. Special attention will be paid to the condition of employes in manufacturing establishments—particularly those of textile fabrics—and the railways will set the example by still more rigorously making recent vaccination a condition of further employment. Competent vaccinators and supplies of pure, tested vaccine lymph will be furnished gratis in all proper cases. Three-fourths of all the reported cases of smallpox in the United States at the present time are in the territory surrounding and tributary to Chicago and in a population of only about one-third the total population of the country. During the corresponding period last year the proportion was almost exactly reversed—30% in Chicago territory and 70% in the rest of the country. Obviously, the campaign against smallpox was begun none too soon, and the wisdom of appealing to the railway companies as the interest most directly concerned, from a financial

standpoint, and as the most effective working agency, is already demonstrated. They have taken hold of the work in a thoroughly business-like manner and it is not too much to expect that the epidemic will be practically under control within a month.

The state or city as a manufacturer of antitoxin, vaccine, etc., in competition with its own citizens, is such an un-American proceeding that only temporarily and under very exceptional circumstances can it be justified. The fact that in one city the lives of a dozen or more children were sacrificed in carrying out the plan has well served to call the attention of the country to possible dangers. The Board of Health of St. Louis has wisely resolved to go out of the antitoxin business. We think that other cities should act in the same way, although so far there may have been no such instances in their cases of actual deaths due to blundering or politics. The truth is, that by every principle of liberty and justice the private manufacturers who pay taxes to the state should not be subjected to competition by the state or city itself entering upon the manufacture of identical products. To do so without compensation to these manufacturers outrages every sense of public right. It might be, and even tomorrow it may be, justifiable for the state to do so, if the private manufacturers are proved to be criminally negligent. It may also be justifiable in the case of free distribution by the city or state of antitoxin or vaccine to the poor only, provided, however, that it is demonstrated that the cost to the public of self-manufactured products are cheaper and better than those that might be purchased from the private manufacturers. The duty of health boards is not to manufacture such biologic preparations, but to see that those who do manufacture them do their work well, that they do not create for themselves a monopoly, etc. Another duty of these boards is to furnish every possible protection to the deserving poor by free distribution of such prime necessities of life as vaccine, etc., but not to enter upon the pauperization and socialization of the whole community by indiscriminate and wholesale gifts. In matters of the public health let us have no "dabbling in municipal socialism." The experiments of municipal manufacture and trading in serums, vaccine, etc., has been demonstrated morbidly dangerous. No demonstration was needed to show that it is inher-

ently unjust, and likely to end in quick political corruption.

The Bonypath "Immunes" by Spanish Fly Instead of Vaccine.—The current number of the *Journal of Osteopathy* contains a highly humorous article by the inventor and chief teacher of this curious faith. It will be remembered that its fundamental tenet has been that disease, somehow or other, probably other, is due to misbehavior of the bones. The name seems to imply this, and the eschewing of all other pathology, and of other methods of treatment, except massage, has confirmed the common understanding. Without warning or setting the world right, it now appears that there has been a revolutionary advance in the osteopathic philosophy of disease. There are diseases, we gather, not caused by the total depravity of bones, and not curable by massage. One of these is smallpox. When Dr. Still, now the President of the American School of Osteopathy, was still in the darkness of "the old school," and still practising in association with his father, who at that time was "also a disciple of the old school," he was day and night in an agony of fear lest he should have smallpox. But despite exposures he did not get it. Something had "immuned" him, although it was not vaccination. His mother told him he had been "immuned" by the fly blisters she had put on his hip for white swelling while he was still a boy. Many pieces of bone had "come out of the superior crest of the ileum during the process;" the strange language does not permit us to judge whether the "crest of the ileum" behaved in this way because of the fly blisters or because of the white swelling. Professor Still thinks his mother was right—she was evidently the real discoverer of the "new school"—and that "cantharidin will immune," and that "it is about time for the sons and daughters of America to take up the subject of prevention and see how their skill will compare with that of Jenner of England." The first product of this Distillation is as follows:

"The possession of the human body by an infectious germ can only immune by germicidal possession. The first active occupant of the body by an infectious fever will drive off others and hold possession of the body until its power is spent and the excretory system has renovated the body."

Acting upon his instructions, the graduates of the American School of Osteopathy, Dr. Still asserts, have reported "thousands upon thousands of cases" in which cantharidin had been used, as a blister, and not one contracted the disease.

Dr. Still's English is as strabismic as his "philosophy," and we may, therefore, have failed in reporting him correctly. To illustrate the strange self-contradictoriness of the article we must quote the following sentences from it:

"I would not antagonize the popular belief in the efficacy of vaccination."

"I do not wish in the least to antagonize the efforts of Jenner. I believe they were good," etc.

"I have no use for vaccination at all, nor any faith in it since witnessing its slaughterous work. It slayed our armies in the sixties," etc.

"A law prohibiting the practice of vaccination with heavy penalties," is advised.

"I will not dispute or try to criticize so great a man as Jenner."

"This so-called preventive has in thousands of thousands of cases proved worse than the disease smallpox itself."

If our readers think we have wasted too much space upon such ignorant tomfoolery as this, we can only answer that many states have made the believers in such "science," legal practitioners of medicine, and that, if possible, even more nonsensical nonsense than this is the "philosophy" of millions. Moreover, Dr. Still in his article gives us warning of the inevitable progress of such minds and such "philosophy" by saying:

"I also believe that the philosophy that I present can and will be found just as protective against measles, diphtheria, scarlet fever, leprosy and syphilis as against smallpox and other infectious contagions."

And in this Dr. Still states the truth. It is we who err when we are indifferent to the power and cruelty of the delusions of popular ignorance.

The Study of Epilepsy at Craig Colony.—Dr. Spratling's reports of the work at Craig Colony are always of interest. According to the last there are now 743 patients at the colony, a gain of 131 in the last year. The average daily number was 675.89, the deathrate less than 5%, the maintenance cost per capita \$164.42. The causes of epilepsy in 1,070 cases (660 males, 410 females) was:

Inherited Causes	Males	Females	Total	Per cent. Males	Per cent. Females	Total Per cent.
Epilepsy.....	105	73	178	15	17	16
Alcohol.....	111	51	162	16	12	15
Insanity.....	49	42	91	7	10	8
Tuberculosis.....	101	50	151	15	12	14
Unknown.....	29	15	44	4	3	4
None.....	276	168	444	41	40	41

Although such a colony can never become self-supporting, the advisability of labor both for the sake of economy and for the good of the patient is recognized and urged, and the results are most gratifying. The numbers of occupations and of those working are constantly being increased. In the school work, despite the manifest handicaps, progress in inculcating principles, and in giving the pupils a common school education, is being attained. It is emphasized that as three-fourths of all cases develop in early life, treatment is of avail when instituted early. But the colony receives the patients, for the most part, when the disease has been of long standing. Only about 1.5% had had epilepsy for less than one year when received. The family physician has thus a greater opportunity of treating the disease successfully. The results and methods of treatment will be epitomized elsewhere. A hint as to the duty of the lawmakers to prevent the increase of disease by the nostrum venders is indirectly conveyed by the following paragraph:

"Many epileptics in their eagerness to find relief from the disease, try all sorts of patent and quack nostrums, and in doing so run great risk of suffering evils more destructive than epilepsy. True, many of these quack remedies, so glowingly set forth in the public prints, do possess the power of suppressing the attacks for a time; but it is suppression only, not cure,

and from repeated observations on the effects of such nostrums we have noted that the patients are always worse afterward. Some of them are poisonous in unskilled hands, and I have known death to result from their use. Others, though they temporarily suppress the fits, destroy the mind."

"For \$50 and study evenings for a few weeks," a circular before us says, one can acquire an honorable and lucrative profession." The profession is that of osteopathy, and "a mail course," regardless of education and capacity, is to yield 500% on the investment. All the alluring arts of the "get-rich-quick" circularizer are used to inveigle the poor dupes to purchase the mail-course.

"With the knowledge thus gained, a lucrative living is assured, for the demand for treatment by osteopathy is out of all proportion to the number of graduates in this new and wonderful science. Every osteopathic physician in the country is making money and has more patients than he can handle. If you are not satisfied with your present position or occupation, could you turn to any more promising way of making a lucrative, honorable and independent living? You need not be a slave to any man a moment longer. If you desire to rise above your present condition, you can do so. We hold the key. We have given it to others and can give it to you. A small outlay and a little honest study in the evenings for a few weeks will enable you to be your own master. There is no better paying profession on the face of the globe today than osteopathy. Four patients a month will yield you \$100 per month, and these patients can be treated in your own home in a few minutes in the evenings—thus enabling you to continue your present occupation until you have worked up a large practice and people demand your services throughout the hours of the day."

And yet this "school" is "incorporated under the laws, etc.," and the obtaining money under false pretenses is a crime!

Criticism of scientific language has recently been indulged in by a writer in *Science*, and others have had their fling at our "sesquipedalian jargon," and our "sonorous Greek-Latin compounds." However true the complaint may be as to some writers, the fun is really inept and cheap, especially when it is said that the use of strange technical terms conduces to inexact thinking and vagueness of expression. It is precisely the reverse of this. Only by these terms can inexact thinking and vagueness of expression be avoided. One of the chief functions of the scientist is to differentiate what has previously been held as homogeneous, and the differences perceived must be named in order to be brought to the minds of others and to delimit the phase that has been established. Another use of such terms is the saving of time and expense in speaking, writing, and printing circumlocutions. "Gastroduodenostomy," or "aniso-metropia" are not perhaps so pleasant in sound as "Worship Mumbo Jumbo in the Mountains of the Moon," but the object of exact science is not the making of music. A contemporary heads a recent editorial *Hepatopancreatic Cholecanatomy*—and even that cacophonous compound may be defended. The only phase of criticism which obtains against the "words of learned length and thundering sound," is when they are used to "amaze the gaping rustics ranged around." In the plebification of scientific knowledge they must of course be avoided, but the endeavor to do so is always perilous, often calamitous,

and always results in the haziness of concept and inexact thinking falsely deplored by the critic as due to their use. It seems to be a fact that the criticism of technical terms comes from those who do not understand them and who are incapable of acquiring an understanding of them by reason either of inherent inability or of acquired indolence.

Making Suicide Fashionable.—A correspondent in a recent number of *The Spectator* says that suicide under legal and medical control was advocated by the late Alfred Nobel. He offered Minister Crispi, of Italy, to create at his own expense at Milan and Rome establishments where anybody who desired it could be painlessly suffocated by a gas he had invented. The cost of each house would have been £10,000, plus the salary of a government official to register deceases, and of a doctor. Mr. Nobel was prepared to give a first-class dinner, washed down with good wine, at a fixed hour to the guests. After dinner, when cigars had been handed round, the smoking-room was to have been instantaneously filled with the deadly gas. The bodies were to be cremated in the morning at the expense of the institution. Mr. Nobel held that means should be taken to prevent the increase of the pauper, criminal, and diseased members of society. The answer of honorable men to this would be:

"When all the blandishments of life are gone,
The coward sneaks to death, the brave lives on."

It is said that a bill was lately introduced in the Saxon Parliament permitting doctors to put patients to death at their own request when recovery was hopeless. There are three answers to this stupid and immoral suggestion: The first is that physicians do not wish such power placed in their hands; the second, that they would not use it if empowered to do so; the third, that no sane and conscious patient would ever make the request.

Abolish the Coroner's Office.—In the press and letters from correspondents we notice occasional proofs that the proposal to abolish the coroner's office does not meet with entire acquiescence. The absurdity of the retention of this "medieval relic" in our civilization has often been shown, and those who advocate it should look into the matter carefully before opposing progress. As Dr. S. W. Abbott, of Boston, has said, the fundamental objection against the "relic" is that at present the office combines in one person two incongruous functions. The first duty of the coroner is to determine the cause of death, and for this a physician is required. The responsibility for death must also be fixed, and for this a lawyer is often required. Men expert in both sciences cannot be found in every town of the country. The coroner's jury is also a bunglesome and expensive method of reaching the truth which a single expert could educe much better. In case of homicide a jury in a court of law must also decide the responsibility of the accused, hence the first, or coroner's, jury is unnecessary. Medical experts should be appointed to replace the coroner and his jury, and their report should go to designated legal authorities for further investigation. In Massachusetts the coroner's office was abolished 25 years

ago, and since then over 35,000 cases of deaths have been investigated inexpensively, thoroughly, and satisfactorily. Scandals and absurdities attend the execution of the law wherever the office is retained. It was not long ago that a coroner's jury reported the following verdict: "This man died of stone in the kidney, which stone he swallowed when lying on a gravel path in a state of drunkenness."

"The only place authorized by Prof. Koch in America," is the way a "sanatorium" is advertised in the daily papers of an Eastern city. The "lymph" is to be had for \$2 a bottle, or "for \$10 we will send Professor Koch's lymph inhalation apparatus and treatment to your house," etc. At the "Institute" a woman paid \$100 for treatment, "by Prof. Koch," or his "brother," and afterward wrote to the Imperial Institute for Infectious Diseases at Berlin requesting information regarding the so-called American Branch. The following reply was received:

Königl. Institut
für
Infektionskrankheiten.

Berlin N. 39, Nordufer-
Föhrerstr. den 13. December,
1901.

Tagebuch—1656.

Im Auftrage des Herrn Geheimen Medicinalrath Professor Doctor Robert Koch beehre ich mich Ihnen auf das an ihn gerichtete gefällige Schreiben vom 1. d. Mts. die ergebenste Mittheilung zu machen, dass Herr Professor Doctor Koch mit keiner der Schwindelfirmen "Koch Lung Cure" oder ähnlichen in Verbindung steht, auch mit einem dieser Schwindler-Inhaber verwandt oder bekannt ist.

(Signed) G. A. POHNERT,
Secretair.

Translation.

In reply to your kind letter of December 1, addressed to Professor Koch, I am commissioned to say that Professor Koch has no connection with the Koch lung cure swindlers or with any such institutions, and that he does not know and is not related to any of the rascals.

Overcrowding in Hospitals for the Insane.—

The increase of insanity, and the pressing questions of economy are illustrated in the recent report of the New York State Charities Aid Association. The total number of insane persons in state hospitals and private asylums on October 1, 1901, is given as 24,354, an increase of 576 over the previous year. In the state hospitals alone the number was 22,654, an increase of 566 over 1900.

At the present rate of annual increase there will be in 1903, 600 patients in the state hospitals in excess of their certified capacity, and in 1905, 1,100. In the next four years the state must provide for 3,100 additional patients. With all of the large hospitals already overcrowded, the problem is becoming most serious. There are only two ways of meeting it. The first is by mammoth institutions in which economy is secured by means of three-story buildings and massing a large number of patients together. This is not in the interests of the patients. The second method is by local receiving hospitals, thus securing such care of the cases in acute or incipient stages as would relieve the large state institutions and would prevent the curable patients from becoming permanent wards of the state. This is the plan advocated by Dr. Peterson, of New York; by it the larger institutions would also be relieved of the care of between 500 and 1,000 cases. The conditions in New York are essen-

tially those confronting the authorities in most of the other states.

The support of special scientific journals is a professional and patriotic duty. There are a number of such journals in our country, which are devoted to the best scientific medical progress, but which have the greatest difficulty in living. The spirit of scientific altruism burns high in Germany, and there are there many splendid periodicals that are enabled to live by the devotion of unselfish workers and subscribers. Thus is German science honored and promoted. We are in our country now making heroic endeavors to put upon a paying basis a few special periodicals to publish the results of original research; necessarily, these can have but a limited circulation, and yet upon them must depend much of our national and scientific reputation. Such, for example, is the *American Journal of Anatomy*, published by an editorial board of representative American anatomists. An endowment fund is needed to meet the deficit of the *Journal*. It is necessary also to obtain the support of medical schools and medical libraries. All subscriptions, including a portion of the endowment fund, will be put into each volume of the *Journal*, with no profits to anyone except the subscribers. No. 2, of Vol. I, has just appeared, and does credit to American scholarship and research.

Taxing posters is a method of abating the nuisance of hideous signs and advertisements, which should secure the unqualified sympathy of physicians. It has been successfully done in France and Belgium, and a recent decision of the New York Supreme Court gives legal sanction to the principle that a city may by ordinance limit the size of posted advertisements. This is admittedly equivalent to a declaration that some advertisements may be a public nuisance. A bill has been introduced in the New York State Legislature by Mr. Landon, taxing all posted advertisements, except at the place where the business is conducted, one cent for every two square feet. This is a ridiculously small tax, but perhaps the beginning of the reform should be by establishing the principle, and then different states may make the rates so that the punishment shall more adequately fit the crime. For there could scarcely be a greater offence to good morals and good taste than the hideous advertisements which disfigure our landscapes and disgrace our streets. There is every reason morally and medically why the nostrum manufacturers should not possess themselves of every barn and field along our railways and roads.

An Educational Pamphlet for Eddyites.—We are as a profession so amazed at the incomprehensible absurdity of such trumpery as eddyism that we are likely to ignore it or to fail in adapting our arguments against it to the state of mind of those suffering from the disease. Rev. Andrew F. Underhill, of Yonkers, N. Y. (through Edwin S. Gorham, publisher, Fourth avenue and Twenty-second street, New York), has published the substance of two of his sermons in pamphlet form, entitled, "Valid Objections to So-called Christian

Science." Practitioners of medicine have often been at a loss for something to hand to such of their patients as have not lost all trace of reason in their intoxication with this delusion, and to such we commend Mr. Underhill's excellent little work. That Christian Science is neither Christian nor scientific, and that its ethical, physical and hygienic results are pernicious, is demonstrated with unusual clearness and in a manner to bring conviction to those not insane upon the subject.

Virchow, in the current number of his *Archiv*, addresses a letter of thanks to his friends for their celebration of his eightieth birthday, on October 13, 1901. He received no less than 800 telegrams, besides many delegates and addresses; in one casket from the medical societies of Austria there were eighty special addresses. From all Europe, from England, Australia, Japan and America came testimonials showing the recognition of this great man's work upon the part not only of physicians but of those in many other departments of science. The children of his street even organized fêtes for him. He is too old, he says, to promise work worthy as a return for such gifts, but the splendid old worker in humanity's cause adds: "I shall not weary of work so long as my strength shall last. Trust the people and work for them, and you will not fail of reward, although the breaking up of many systems, the disappearance of many men, the complete transformation of public life, bring home to us the thought of our own evanescence. That is my confession of faith, and with this I hope to be guided so long as I live."

"Sick and in Prison and Ye Visited Me."—In these days of selfishness it is enheartening to know that the emotions of one noble heart were, for a lifetime, all given to the relief of the sufferings of the poor and miserable. While cruel fashion and the search for amusement ruled the lives of a million of her sisters, the "Tombs Angel," Mrs. Rebecca S. Foster, of New York, carried on her saintly life of devotion to the needs of the unfortunates of crime and disease. Men gave her thousands of dollars every year to spend as she willed, and without accounting. When this money had done its work, she gave whatever of her own she could, even in emergencies of her own clothing. And in her giving she was wise not to encourage the continuance of dependence and wrongdoing, but not so unwise as to wound even in cases of doubt. Moreover, she never "preached" to the wayward whom she helped, and her silent kindness doubtless made many reform who would have been urged to deeper degradation by any assumption of superiority. Strong men wept at her funeral, and these, her eulogists, were not ashamed of their tears. If there were more like her to lighten the hand of fate heavy upon the erring and the sick, there would be less crime, and surely less misery among the wretched poor and sick.

Virchow's Pathologic Museum.—Virchow's pride is the pathologic museum which he has established. It is open to the public on Sundays from 12 to 2, and at this time Virchow and his assistants are always present

to give instruction and demonstrations. In addition to these two hours each week, during which all sorts and conditions of men can avail themselves of the privilege of seeing the collection, hours have been arranged during which the museum is open exclusively for the scientific world. It is remarkable, not only that Virchow should himself devote two hours on Sunday to giving demonstrations and instruction in pathology to the general public, but also that the public should find interest in visits to the museum, and in the more or less scientific instruction there given. It is a suggestive commentary upon the general state of culture in Berlin. Karl Emil Franzos was not far wrong when he recently stated that the tone of culture among the general public is higher in Berlin than in any other large city in the world.

The cost of typhoid to Philadelphia is thus estimated by the engineer in charge of the construction of the filtration works of Philadelphia:

"I shall roughly estimate the financial loss to this city during the year 1900 from typhoid fever alone. The report of the Bureau of Health states the number of deaths from typhoid fever to be 449. Placing a valuation of \$5,000 on each life, we have a loss to the city of \$2,245,000. Other losses as follows: Burial expenses of 449 people, at \$40, \$17,960; 3,227 cases of typhoid fever requiring medical attention, at \$30 a case, \$96,810, and 83,340 days lost from employment, at \$2 a day, \$166,680, brings the grand total of \$2,021,160 loss from the ravages of one disease for a single year. If this sum were to be expended as interest on a sinking fund at 5% for 30 years, it would give to the people of this city a sum of \$134,300,000 to expend in preventing typhoid fever alone."

EDITORIAL ECHOES

Political Influence of Physicians.—There are enough physicians in every state to control medical legislation if they will only act together. Thackeray says that any woman without an actual hump can marry any man she pleases; man's safety is that women are like the beasts of the field; they do not know their own strength. The same might be said of the physicians of the country; they have not appreciated their own power. If quackery thrives and gains recognition and privilege under the law it is the fault of an inactive and unorganized medical profession.—[*Journal American Medical Association*.]

The Control of Venereal Disease.—We are, however inclined to agree with our contemporary, *AMERICAN MEDICINE*, when it says that these measures [the recommendations of the committee of fifteen as to the control of prostitution] are at best but "Reformed by Rosewater." What, after all, is most needed, is to grapple with syphilis and gonorrhea themselves, as diseases which demand expert study and prevention by the means used in other branches of medical practice. Why not pass laws, it is suggested, similar to those in force for other infectious diseases, which are a far slier menace to the public health. According to this view venereal disease should be reported to the properly constituted medical board, with the same punctiliousness that smallpox or diphtheria are reported, and the victims of the disease watched with the same scrupulous care. Some such plan as this, with the lock-hospital which should be its accompaniment, must go hand in hand with the educational reforms upon which the New York Committee lays special stress.—[*Boston Med. and Sur. Jour.*]

BOOK REVIEWS

Surgical Applied Anatomy. By SIR FREDERICK TREVES, K.C.V.O., C.B., F.R.C.S., Sergeant, Surgeon to H. M., the King, Surgeon in Ordinary to H. R. H., the Duke of Cornwall and York, Consulting Surgeon to the London Hospital, late Lecturer on Anatomy at the London Hospital. New edition revised by the author with the assistance of ARTHUR KEITH, M.D., F.R.C.S., Lecturer and Senior Demonstrator of Anatomy at the London Hospital. Illustrated with 80 engravings. Philadelphia: Lea Brothers & Co.

This book has for a long time ranked as one of the most popular of the well known series of little red-covered medical manuals. It contains in brief compass a vast amount of very useful and practical information about anatomy in a very readable form. In glancing over the book we see that the general form and scope has been retained, but many important additions have been made. For example, in discussing the skull and cranial contents a number of important additions have been made with regard to brain topography. The peritoneal fossas which are sometimes the cause of strangulation of intestine are described. The relation of adduction and tilting of the pelvis to measurements in injuries and disease in the region of the hipjoint is well brought out; also the effect of abduction in flat foot. These are only a few of quite numerous important additions which have been made to this little manual and which will add greatly to its usefulness. Although it contains by no means all of the anatomy which the student and practitioner should know, it does contain some very practical medical and surgical anatomy nearly all of which should be well known. The additions are numerous and important enough so that those who have owned and read the previous edition will be glad to refresh their memory on practical anatomy and pick up these additional interesting and important anatomic facts by buying the present edition.

Rough Notes on Remedies. By WILLIAM MURRAY, M.D., F.R.C.P., London, Newcastle on Tyne. Fourth Edition. London: H. K. Lewis; Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street, 1901. Printed in England. 16 mo., pp. 176.

The fact that this book has reached the fourth edition shows that it is of practical value to physicians and that the necessity for a critical review is past. Without attempting systematically to take up either all the agents of the *materia medica*, or all the diseases to which men are subject, the author from a wide and discriminating experience selects a number of procedures of practical value, such as the use of arsenic in diabetes and of belladonna in cases of renal calculi, etc., and thoroughly explains them. To this edition he has added notes upon Rothbury as a health resort.

Uterine Fibromyomata: Their Pathology, Diagnosis and Treatment. By E. STANMORE BISHOP, F.R.C.S., Eng., President Manchester Clinical Society; Fellow of the British Gynecologic Society. With 49 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street, 1901. Price, \$3.50.

Bishop contributes a work which deserves high commendation and a place in the library of every gynecologist. In a book of over 300 pages the pathology, diagnosis and treatment of these neoplasms are thoroughly discussed. From recent observations it is apparent that we shall have to modify our opinions in regard to the benignity of fibromyomatous growths since dangerous forms of degeneration occur with sufficient frequency to be always dreaded. Virchow has observed several cases in which there has been a transformation of myofibromatous tissue into that of sarcoma, and recently Cullen has stated that in the laboratory of Johns Hopkins Hospital, in the examination of over 600 cases three were found in which the centers of myomata contained sarcomatous tissue. And even though these dangerous degenerations be avoided, the anemia from continual hemorrhage exposes the woman to fatal results from the diseases and accidents of daily life. In regard to treatment the author devotes a chapter to the role of electricity, and wisely advocates its employment only so long as its use does not blind patient and surgeon to the actual dangers of delay in cases

which ultimately require operation. The various methods in which surgical treatment may be applied are divided into three main classes: (a) Methods which decrease the nutrition of the tumor; (b) methods which remove the tumor alone; (c) methods which remove the uterus and tumor. We agree with the author that the first class is rarely completely successful. "Like all half-hearted attempts to deal with fibroids, it is far more risky than more radical measures." The reviews of the various operations for myomectomy and hysterectomy are well written and illustrated. The author concludes with a chapter on final results and after-effects of operations, a subject which is much neglected and little written upon in these days of refined technic and brilliant surgery; yet after all, for what purpose, if the patient is not benefitted by either conservative or sacrificial operation? And that procedure must be chosen which will give ultimate comfort and safety. The author has carefully presented each method; the operator must select and adapt to the individual case. We can recommend this book as one of the best written upon this division of gynecic surgery. It represents study and experience in its preparation. It is wisely conservative, yet carefully radical.

Fractures.—By CARL BECK, M.D., Visiting Surgeon to St. Mark's Hospital and to the New York German Poliklinik; formerly Professor of Surgery, New York School of Clinical Medicine; Consulting Surgeon Sheltering Guardian Society Orphan Asylum. With an appendix on the Practical Use of the Röntgen Rays. pp. 335, 178 illustrations. Philadelphia, W. B. Saunders & Co.

This book might better be entitled *The x-rays in the diagnosis and treatment of fractures*, for while the entire subject of fractures is treated more or less fully, especial stress is laid upon the importance of the use of the x-rays in diagnosis, and hints are given as to the ways in which these improved methods of diagnosis may aid in the treatment of fractures. Many cases are reported by way of illustration from the writer's wide experience in this line of work. His ideas as regards treatment are sound and up-to-date for the most part. The ambulatory treatment is favored, the use of massage is very briefly dismissed, wiring is not advocated for ordinary cases, the author stating that "by our recent means of making a positive diagnosis possible in all cases, it is usually just as easy to obtain a perfect result by simple bloodless reduction and thorough immobilization." The discussion of the treatment of compound fractures is quite satisfactory. The stress laid on the importance of perfect operative technic with advice to use rubber gloves in such cases, and to avoid handling the wound are, we believe, all in the line with the best ideas as regards progressive surgery. An appendix contains a brief description of the apparatus used for x-ray work, and gives some information as to the best ways of using such apparatus. The use of the x-rays in medical diagnosis, particularly in diseases of the chest is also discussed. While the book is by no means a complete treatise on fractures, and is hardly likely to take the place of our standard works on this subject, it contains much of sufficient interest to make it of considerable value to surgeons and general practitioners.

Imperative Surgery for the General Practitioner and Specialist and the Recent Graduate, by HOWARD LILIENTHAL, M.D., Attending Surgeon to Mount Sinai Hospital, New York City. pp. 412, with numerous original illustrations from photographs and drawings. New York and London, Macmillan Company. Philadelphia, John Wanamaker, price \$4.00.

The writer tells us that he has written this book for the general practitioner who rarely operates, the specialist who seldom operates, and the recent graduate who, though conversant with such subjects from books and lectures, has seen little surgery at close range. The book deals only with the diagnosis and treatment of conditions which demand immediate operative measures. It presupposes the absence of the surgeon and the impossibility or inexpediency of removing the patient or waiting for expert assistants. Of course many of the operations which might in certain rare cases come in this category could hardly be generally considered imperative emergency operations. Operations such as suture of the patella, gastrotomy, operations for osteomyelitis of the jaw, cholecystotomy and

many of the other operations might perhaps be generally considered as not properly belonging to this class. The book is divided into 21 chapters, the first five chapters taking up general matter, such as the treatment of wounds, preparation of dwelling rooms for operation, and the management of general infections. Special chapters are devoted to regional surgery of the neck, extremities, thorax, and in the section on abdominal surgery, entire chapters are devoted to intestinal obstruction, appendicitis, suppurations of the liver and gallbladder, strangulated hernia and acute peritonitis. The rectum, anus, genito-urinary system, female generative organs, the eye and ear, also come up for discussion. There is comparatively little that is new or original in the book, but the descriptions of the methods of operating, and especially the detail and clearness with which such matters are treated will prove helpful to those who have not been able to learn the tricks and details of surgery by working under competent men. There are few general practitioners who could not learn much that would be worth the trouble of reading most of these chapters, and even in such small matters as opening boils, some very good points are mentioned. The general appearance of the book is attractive and up to the generally high standard of the publishing house from which it appears. Illustrations taken from drawings instead of from photographs would, in some cases, have given a clearer idea of the points which it is desired to bring out. There are some illustrations of curets, bone-cutting forceps, aspirating syringes, etc., which seem to be superfluous, as even the youngest medical student is supposed to be familiar with such common instruments. As some of these instruments are represented with wooden or hard rubber handles it is doubtful if they add specially to the value of the book. On the whole the author has well accomplished the task which he has set for himself, and the book will prove a valuable addition to the library of the recent graduate, and the practitioner who is occasionally called upon to do surgical work. It also contains many suggestions that might be adopted with profit even by experienced surgeons.

A Manual of Venereal and Sexual Diseases.—By WM. A. HACKETT, M.B., Ph.G., M.C.P.S. (Ont.), Professor of Dermatology and Venereal Diseases, Michigan College of Medicine and Surgery, and N. E. ARONSTAM, M.D., Ph.G., Assistant in Chemistry and Clinical Dermatology, Michigan College of Medicine and Surgery. G. P. Engelhard & Co., Chicago. Pp. 12 to 202. Price, \$1.00.

The first part of this little volume treats of gonorrhea and its complications, the second of the venereal ulcer and its complications, the third of syphilis, and the fourth of the functional disorders of the male generative organs, together with the most important sexual psychopathies. The authors have discarded all theoretic knowledge pertaining to these subjects and have given in a brief and concise manner the practical side of these branches. All modern appliances used in the treatment of venereal diseases have been amply discussed and the methods adopted for the treatment of the various maladies are those recommended by up-to-date syphilographers.

The Four Epochs of a Woman's Life.—A Study in Hygiene. By ANNA M. GALBRAITH, M.D., author of "Hygiene and Physical Culture for Women;" Fellow of the New York Academy of Medicine, etc. With an introductory note by JOHN H. MUSSER, M.D., Professor of Clinical Medicine, University of Pennsylvania. 12mo volume of 200 pages. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$1.25 net.

This little volume is written for the purpose of familiarizing womankind with the laws which have to do with her sexual health. It is difficult to decide just how valuable to the laity are books dealing with medicine. Far be it from us to decry any attempt to educate the people in hygiene and preventive medicine; but we must realize fully that a little learning is sometimes very dangerous, and often handbooks of medicine become dangerous instruments in the hands of the laity and lead them to depend upon their own meager and hastily-acquired knowledge as to the significance of certain symptoms in conditions in which delay is dangerous and skilled counsel should be sought. The author has treated a difficult subject with tact, wisdom and dignity.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox in the United States as officially reported from December 28, 1901, to February 14, 1902, amounted to 15,754 cases with 347 deaths. The grand total for the same period in 1901 was 5,256 cases with 61 deaths. From December 28, 1901, to February 21, 1902, the smallpox cases amounted to 17,017 with 417 deaths, against 7,392 cases with 79 deaths during the same period of 1901.

Yellow Fever.—The fact that not a case of yellow fever has occurred in Havana since September 28, 1901, is noteworthy as confirming the statement that the disease has been rooted out of the city after more than a century of uninterrupted existence. The mosquito work, however, will be continued throughout the winter. Those engaged in this work in the city are called the "Stegomyia brigade," and those working in the suburbs are known as the "Anopheles brigade," this mosquito being generally found in the suburban districts.

Health of Philippine Army.—Lieutenant-Colonel B. F. Pope, chief surgeon of the Philippine Division, reports a decrease in the percentage of sickness for the month ended December 15. The command numbered 39,040 men, there were 2,437 cases of sickness (6.21%) and 77 deaths. Of the deaths, 11 were due to wounds received in action, and 16 to drowning. A decrease is shown for typhoid and malarial cases, but this is offset by an increase of intestinal and gastric diseases. Although bubonic plague has reappeared in Manila, no cases are reported in the army.

Surgical Operations in the Navy.—Acting Secretary Darling, of the Navy Department, has decided that when a minor operation has been adjudged necessary to restore a man to health and duty and he refuses to have it performed, he may be court-martialed and punished. He declines, however, to lay down any general rule applicable to those operations resulting in deformity or endangering life, but in such cases he advises the exercise of persuasion and diplomacy to obtain the patient's consent. This decision applies only to enlisted men, as no ruling was made respecting officers.

EASTERN STATES.

Harvard Medical School.—According to a recent statement of two members of the Harvard faculty only \$294,000 remains to be raised of the sum stipulated by Mr. Rockefeller as necessary before his proffered gift of \$1,000,000 becomes available. The \$765,000 which was needed when Mr. Rockefeller's gift was announced has been reduced by the donation of \$100,000 from James Stillman, of New York, for the endowment of a new professorship in comparative anatomy, \$75,000 contributed by members of the faculty and other gifts large and small—the names of the donors of which have not been published.

Smoke Nuisance.—A petition which was introduced at the last session of the Massachusetts State Legislature represents the need of legislation to abate the smoke nuisance in Boston and vicinity and asks that it be enacted that the emission of dark or dense gray smoke from any building within a radius of 10 miles of the State House, unless a permit has been obtained allowing it, shall be punishable by a fine of not more than \$100 for each week during any part of which the nuisance exists. The boards of health in the cities and towns within the limit mentioned shall be charged with the enforcement of this law and make rules and regulations respecting the use and consumption of fuel, the firing of furnaces, etc., in the buildings under their jurisdiction. Permits for the production and emission of smoke may be granted annually by the boards of health provided that sufficient cause is shown that the smoke must exist. The permit shall name the person, firm or corporation to whom it is granted and shall definitely and clearly define the location and limits of the premises to which it applies. It must be signed by the chairman or secretary of the board and recorded with the clerk of the city or town in which it is given. Notice of application for permits shall be given to those occupying adjoining properties and notices shall also be posted in the neighborhood. If within 10 days after such notice is made the owner of any building within 1 mile of the premises described in the permit gives written notice to the board authorized to grant the permit that he objects, then the permit shall not be issued unless after a public hearing it is decided that no just cause for objection exists. It is requested that the measure become operative January 1, 1903.

NEW YORK.

Pure Milk.—The directors of the Five States Milk Producers' Association at a meeting held recently at Binghamton, N. Y., declared their willingness to cooperate in all efforts to prevent the sale of impure milk in New York City. They hold that the present methods of distributing milk are responsible for most of the evils complained of, and are as objectionable to

the producer as to the consumer. They, therefore, invite correspondence and cooperation with health officers and all others interested in obtaining a pure milk supply.

Tuberculous Cattle.—A herd of 40 cattle affected with tuberculosis and belonging to the Mount Lebanon Shakers has been ordered to be killed by a veterinarian of the State Department of Agriculture.

The antispitting crusade has been revived in New York City by the president of the Board of Health, who has issued orders to his staff to arrest all persons found committing the nuisance. Since the issuance of the order two men have been arrested and fined.

Pathologic Institute.—Dr. Adolf Meyer has reappointed Dr. P. H. Levine as head of the chemical department, and Dr. Brooks as associate in bacteriology. Both were connected with the institute under Dr. Ira von Gieson, whom Dr. Meyer succeeds. Further appointments will be made from a list of eligible candidates when furnished by the Civil Service Commission.

Gas Under State Control.—Assemblyman McCulloch has introduced a bill placing all companies furnishing illuminating or fuel gas for sale under the supervision of the Board of Health of the State of New York. Such corporations are to report semiannually as to the amount of gas made in cubic feet, amount sold, amount consumed in works or offices, amount unaccounted for, length and average diameter of mains in use, gas unaccounted for per mile of main and percentage of gas unaccounted for to total output. Each report must show how all claims for damages resulting from the leakage of gas in distribution have been adjusted. The State Board of Health must transmit to the mayors of cities and the Boards of Health in towns copies of the report of the corporations operating in such city or town, and accompany such reports by any suggestion necessary for the welfare of the public and the better protection of life and health. In the event of a false report the Attorney-General has power to proceed to a permanent injunction to restrain the offending corporation from further prosecution of its business.

PHILADELPHIA, PENNSYLVANIA, ETC.

Smallpox Hospital.—A loan of \$5,000 has been authorized by the City Councils of Chester for the purpose of securing a building for smallpox cases of which there are 24 under quarantine.

Hospitals for Pittsburg.—A gift of \$50,000 from Mr. Carnegie is announced, for the erection of a hospital in Pittsburg to give first aid to injured workmen. The bill before Congress to establish a marine-hospital station there has been favorably reported.

The General Hospital of Paterson, N. J., which was built up by an association of ladies from a little frame structure on an obscure street of 30 years ago to a large brick building, has been resigned by them to a board of 40 directors composed of business men. The ladies will retain their interest as an advisory board.

New quarantine regulations have become effective in Philadelphia; they provide for the removal of all new smallpox cases to the Municipal Hospital, fumigation of the infected house, and the vaccination of all the inmates before quarantine is raised. All houses now under quarantine (about 300) will be fumigated for the third time, and in the event of other regulations having been complied with, the quarantine will be lifted.

An evening office for medical treatment at moderate prices for the poorer classes, it is announced, will be opened soon in the central part of Philadelphia, under the management of Drs. Gertrude Walker, Kate Baldwin and Alice Norton. This place has the support of the 1,300 members of the Pennsylvania Association of Women Workers and many well known physicians and has for its aim the establishment of a middle point between the physician's office and the free clinic to reach a self-respecting class which will not receive treatment at the hospital clinics and who have not the means to employ a specialist.

Changes in Hospital Staffs.—The resignation of Dr. S. Weir Mitchell as senior of the Orthopedic Hospital Staff has been accepted by the Board of Managers. Dr. Mitchell instituted the Department of Nervous Diseases about 30 years ago and has been closely associated with the hospital ever since. This department inaugurated the first distinct clinic of nervous diseases in the country and it gradually became a prominent feature of the institution. Dr. J. K. Mitchell, who was on the staff of assistant physicians, has been elected to fill the vacancy caused by his father's withdrawal. Dr. J. Madison Taylor's resignation as chief of the staff of assistant physicians was also accepted. The resignation of Dr. D. D. Stewart, Professor of Diseases of the Stomach and Intestines at the Polyclinic Hospital, was accepted by the Board of Trustees and Dr. Joseph Sailer has been elected to succeed him.

SOUTHERN STATES.

Employment of Orderlies.—Dr. D. Percy Hickling asks that six orderlies be provided for the Washington Asylum Hospital. This part of the hospital work has thus far been unprovided for, the convalescent patients performing the duties.

Pharmacy Bill.—The Maryland Pharmaceutical Association appeared in a body before the committee on hygiene of the House of Delegates at Annapolis recently to obtain a hearing in favor of the pharmacy bill now pending, which provides that the compounding of medicines shall be confined to an educated, trained, skilled body of men.

Inspection of Meat.—A bill providing that all meat shall be inspected will be introduced into the Maryland Legislature by Dr. Pentz, of Baltimore. It imposes a fine of \$1 a pound for the delivery of uninspected meat. The persons appointed to inspect the animals will receive 10 cents for each beef and two cents for each hog, sheep, or calf examined.

Medical Reciprocity.—A bill recommended by some of the leading physicians of Cecil county, Maryland, has been introduced in the House, aiming to establish reciprocal relations with other states which have boards of medical examiners similar to the one in Maryland, and to allow physicians who have passed before such a board in another state to practise in Maryland without further examination, provided that the other state allows the same privileges to physicians who have passed the Maryland board examination.

For draining New Orleans an elaborate system of drainage has been devised which, by an outlay of \$12,500,000, will convert one of our most unsanitary cities, now dependent upon gutters and old-fashioned paddle-wheel pumps for drainage, and which every rainstorm leaves under water, into a model of sanitation. New Orleans is built on a plain which is 18 feet below the level of the Mississippi river at high water, and to drain it will necessitate digging lateral canals parallel with the river in the lowest portion of the city. These and the main canal will be in reality tunnels under the city streets. The streets will be supported on steel arches and brick and steel concrete walls. A central power house with the enormous capacity of 10,500 horse power will operate the system, pumping the drainage into the Bayou Bienvenue, an arm of the gulf below the city. Beside this central power house there will be three subsidiary stations, which will lift the water from one to another canal, and so on to the end.

WESTERN STATES.

Football.—Among the Michigan colleges a concerted movement is reported to prohibit football as physically injurious.

Cincinnati Obstetrical Society.—The following officers have been elected: President, Julia W. Carpenter; Vice-President, William Gillespie; Secretary, Magnus Tate; Corresponding Secretary, E. S. McKee; Treasurer, C. D. Palmer.

Chicago Academy of Medicine.—At its annual meeting, February 14, 1902, Drs. W. L. Baum, W. A. Evans, J. C. Kiernan, H. H. Moyer and E. B. Talbot were elected Directors. Dr. W. L. Baum was elected President of the Directors, and Dr. J. C. Kiernan, Secretary, who thereby becomes Secretary and Treasurer of the Academy.

The St. Louis Board of Health, after an investigation as to the death of 13 children from tetanus after they had been treated by antidiaphoretic serum, has dismissed from its employ Dr. Armond Ravold, the consulting city bacteriologist, on the charge of allowing impure serum to be distributed when its character was known to him. His assistant was dismissed at the same time.

Banquet in Honor of Dr. Gregory.—The medical profession of St. Louis, under the auspices of the St. Louis Medical Society, will give a testimonial banquet to Dr. E. H. Gregory, who for 50 years has been an active teacher of medicine, probably longer than any other man living. The banquet will be held at the Planters' House the early part of April. A large number of guests will be invited, including all the ex-presidents of the American Medical Association, out of compliment to Dr. Gregory, who was president of the Association in 1887. A committee composed of Drs. F. J. Lutz, N. B. Carson, J. P. Bryson, C. H. Hughes, W. B. Outten and H. W. Loeb has the matter in charge.

CANADA.

McGill University.—Dr. Thomas G. Roddick has been elected dean of the Faculty of Medicine in place of Dr. Craik, who resigned the position recently.

Consulting Board of Health.—Inasmuch as the Hygienic Committee of Montreal is composed of members of the City Council who are not versed in hygiene it has been proposed that a consulting health board made up of four physicians and a practical plumber be appointed. It is thought this might have a controlling effect upon the yearly mortality.

FOREIGN NEWS AND NOTES

GREAT BRITAIN.

A female house surgeon. Miss Elizabeth McElney, M.B., Ch.B., Edin., has been appointed to the Tiverton (Devon) Infirmary. In May, June and October, 1900, and in January, 1901, the committee had advertised for a house surgeon at a yearly salary of £80. The first advertisement met no answer; the second had one answer, from a lady; the third had three answers, all from ladies. In answer to the fourth, there were seven applications, four from gentlemen, three from ladies. Each gentleman in succession was appointed by the committee, and each one either refused the appointment or failed to carry out his agreement, except one, who came and was discharged the next day. The committee having failed in all this time to procure a house surgeon, appointed a lady.

CONTINENTAL EUROPE.

Title Conferred.—The Emperor of Germany has conferred the title of "Privy Councillor" on Professor Ernst v. Bergmann. This entitles him to be called His Excellency, and is regarded as a great honor, which has only been held previously by two physicians, v. Esmerich and v. Langenbeck.

Destruction of Rats.—The Health Department of the German empire, of which Dr. Koehler is president, and to which some of the most distinguished German scientists are attached, is considering the extermination of rats in that country as far as practicable, and Dr. Robert Koch has been commissioned to devise the tactics of this crusade, which will be begun in the seaports. It has the object of lessening the danger of contagious diseases.

Female Nurses.—At a meeting of distinguished German clinicians, hospital surgeons and physicians, held in Berlin in December, to discuss questions connected with the nursing of the sick, and especially whether female nurses should be permitted in the male wards, the consensus of opinion was in favor of the female nurses, as there was no doubt of the improvement in the male wards under the influence of the sisters, but that the clause in the contract of the great German hospitals with the chief nursing orders to the effect that the sisters should not be called upon to lend aid repugnant to their moral sense, should be a recognized principle for the future, and should be adhered to conscientiously.

International Congress for the relief of the blind will be held in Brussels, August 6 to 10, 1902, at the Palais des Academies. An invitation is extended to the United States to be officially represented. The membership fee is 10 francs, or \$1.93, and women will be admitted to participation. The questions to be discussed are: Trades and professions by which the blind support themselves; expert aids in workshops of the blind; advantages and disadvantages of boarding schools and day schools for the workshops of adults; admission into schools and workshops of persons afflicted with only partial blindness; stenography for the blind; recreation for schools of the blind; causes of blindness in populous centers and methods of struggling against such causes.

OBITUARIES.

Levi Cooper Lane, an eminent surgeon and practitioner of San Francisco, Cal., February 18, aged 69. Dr. Lane was a graduate of Jefferson Medical College of Philadelphia, and attended several schools and hospital courses in Europe. He was a member of the Royal Chirurgical Society of Great Britain and of other societies at home and abroad. The Cooper Medical College and the Lane Hospital owe their existence to him, and his whole life was a continuous effort for a wider horizon in his profession, and for the alleviation of the ills and woes of humanity.

Louis Lewis, a well-known surgeon of Philadelphia, February 19, aged 63. Dr. Lewis was a native of England, and a graduate of the University of London and the Royal College of Surgeons. He served for a short time as a surgeon in the British Army, and for a successful operation on a member of Queen Victoria's household, was rewarded with a commission signed in his presence and delivered to him personally. He came to Philadelphia in 1883.

George W. Seip, of Erie, Pa., February 21. He was a graduate of Jefferson Medical College in 1862, and prominent as a surgeon in the eastern part of the state, and in later years eminent as a specialist in ear and eye diseases in western Pennsylvania.

Julius Wolff, a celebrated osteologist and orthopedist of the University of Berlin, February 19.

Richard Maurice Burke, an expert in insanity, of London, Canada, February 20, aged 65.

Jesse Myer, of Kingston, New York, February 18, aged 80.

Richard C. Mackall, of Elkton, Md., February 17, aged 80.

William Walters, of Lynn, Mass., February 18, aged 58.

Malpern Albert, of New York, February 18, aged 70.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

SMALLPOX AND VACCINATION.¹

BY

EDWARD P. O'DEND'HAL, M.D.,
of Norfolk, Va.

From April, 1900, to April, 1901, I treated at Caney Island Hospital, 441 cases of smallpox; the majority being confluent in type.

The principal consideration, which affects the prognosis of the disease, is vaccination.

"In recently vaccinated patients, when there is positive proof that the vaccination was genuine, and not spurious, it always protects against smallpox."

"When immunity is partially lost by lapse of time, the attack is milder and there is a lower deathrate."

The following cases treated in vaccinated and unvaccinated subjects readily show the vast difference:—

VACCINATED.			UNVACCINATED.		
(Character of marks being both good and indifferent.)					
Cases	Deaths	Mortality	Cases	Deaths	Mortality
96	2	2.08%	345	49	14.2%

ATROPIN IN OBSTRUCTION (?) OF THE BOWELS.

BY

I. L. VAN ZANDT, M.D.,
of Ft. Worth, Texas.

Dr. Boardman Reed in AMERICAN MEDICINE, December 21, takes issue with me on the rationale of the effect of atropin on the bowel. He says "It is a well understood fact that the predominant action of atropin upon the peristalsis in such cases, is that of an antispasmodic. It relaxes spasm, and the difficulty in producing evacuations in the cases under consideration is doubtless due to spastic contraction of the intestinal muscular apparatus."

In an address made before the Tarrant County (Texas) Medical Association in 1873, I learned that belladonna was a stimulant to the sympathetic system.

When I saw a patient suffering with the algid form of pernicious malarial fever, with cold, clammy, blue skin, and an almost imperceptible and very rapid pulse, with sighing respiration, uncontrollable vomiting, and serosanguineous discharges from the bowel, brought to a state of apparent health in a few hours, the change beginning a few minutes after a hypodermic of atropin (Merek's Archives, April, 1901). I believed this was stimulation, not relaxation. To a patient suffering from an attack of dysentery, I gave one-half grain of opium (antispasmodic) every two or three hours, and some days gave a quarter grain extract of belladonna three times a day, and soon found a large amount of scybala expelled. This I conclude was stimulation, not relaxation.

The means by which the oculist attempts to prevent or remedy a synechia is an active not a passive dilation of the pupil, and the pupil is *pulled* open, not allowed to fall open.

Carpenter taught that the radiating fibers of the iris were controlled by the sympathetic. Flint says the cervical sympathetic supplies the radiating fibers, and that if this is cut the pupil contracts, if stimulated it dilates. Wilcox says, "When the third nerve" (controlling the circular fibers) "is cut the pupil dilates and if, after this atropin dropped into the eye, it dilates still further." Biddle says it dilates by paralysis of the third nerve and stimulation of the sympathetic. Potter says the same. So also Bartholow. Murrell says, "It has been said that belladonna increases the contractile power of involuntary muscular

¹ Extract from paper read at recent meeting of the Norfolk Medical Society.

tissue." Shoemaker says, "In small doses it (belladonna) strengthens the muscular coat of the bowel."

In view of these personal observations and the opinions of the authors quoted, I am forced to doubt the "fact that the predominant action of atropin upon the peristalsis in such cases is that of an antispasmodic." As to the latter part of the doctor's article I would only say I was not intending to discuss constipation in general, but only so-called cases of "obstruction."

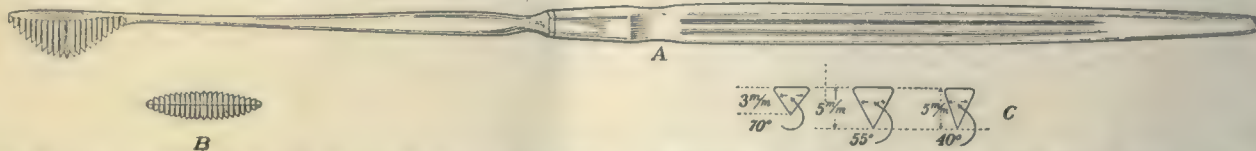
A NEW INSTRUMENT FOR REMOVING REDUNDANT TISSUE IN OPERATIONS ON THE NASAL SEPTUM.

BY

GEORGE FETTEROLF, A.B., M.D.,

Laryngologist to the Methodist Episcopal Hospital, Philadelphia;
Fellow of the American Laryngological, Rhinological and
Otolological Society; Assistant Demonstrator of
Anatomy, University of Pennsylvania.

I have had such disappointing results in certain septum operations that I was led to the belief that failure to secure the desired degree of success was due to the fact that the redundant tissue was not gotten rid of. In order to secure the ready removal of the septal excess, which is always present or there would be no deviation, the instrument herewith figured was



devised. Its purpose is to cut a V-shaped groove in the septum (sometimes one is necessary, sometimes more), and thus get rid of all of the points of resistance tending to throw the septum back to its original position.

The instrument may be called a saw-file, as it comprises the elements of both a saw and a file. The edge is curved and consists of a series of teeth, half of which cut when the instrument is pushed and the other half when it is pulled. These teeth are prolonged up the sides, which are curved on the flat, and which consist really of a series of planes, the distal half cutting when the instrument is pushed and the proximal half when it is pulled similarly to the edge. The back is smooth and flat with rounded edges.

As the amount of tissue requiring removal varies in different cases the instrument is made in three sizes, the cutting sides meeting at an angle of 40°, 55° and 70°, respectively. In the first two the distance between the back and the tip of the most prominent tooth is 5 mm. The one of widest angle is required where the duration is greatest, and to facilitate its introduction into the narrowed nostril the distance between the back and the most prominent tooth is reduced to 3 mm.

The accompanying cut will readily illustrate the text. A represents a side view of the instrument as it lies on the wall. B is a face view, architecturally speaking, a plan of the cutting part and shows very clearly the arrangement of the teeth; and C is an elevation or cross section of the three different forms, showing the angles at which the faces meet and the distance from the most prominent tooth to the back. The instrument was made for me by Mr. Joseph C. Ferguson, Jr., of Philadelphia, Pa.

ANOTHER EVIDENCE OF THE FALLACY OF STATISTICS.

BY

G. FRANK LYDSTON, M.D.,

of Chicago, Ill.

In AMERICAN MEDICINE for February 1, 1902, appears an editorial comment on Dr. Stern's excellent article on Alcoholism and Crime, in which Germany is shown to consume alcoholics to a far greater degree than does America. In this editorial you quote a German employer of many skilled workmen as saying that "the cheapness of German beer is one of the chief causes of the failure of Germany to keep up with other

nations in the race for commercial supremacy. The brains and bodies of the workmen are sodden with beer day and night." You advance the query, "Is it possible that to this cause (the moderate consumption of alcoholics) may be largely ascribed the marvelous success of America in the industrial leadership of the world?" In your next editorial you quote and tacitly endorse Münsterberg's book on American Traits as stating that "Germany's productive scholarship has attained the power to mould the thoughts of the world, while America's has so far not done so to any considerable extent." Münsterberg asks the question, "Why are German universities such fertile ground that in them the smallest talent comes to flower, and American universities such sterile ground that often the finest energies are destined to wither?" Now, I am not disposed to quarrel with Münsterberg or your editorial columns, but the question of Germany vs. America as regards the influence of alcoholics is left in a rather amusing position, involving several contradictions.

So far as I can gather from your editorials, beer-sodden brains are bad for commercial pursuits but excellent for scholarly pursuits and scientific thought. The plea that the working man is more subject to alcoholic influences will hardly do. From time immemorial the German student has been an enthusiastic exponent of the science and art of drinking deeply and exhaustingly of brain-soddening beer. The "beer duel" is

distinctly a German university institution. Even now the university faculties are endeavoring to suppress the time-honored drunkenness of the German scholar by special pleas and coercive influences, largely along rational lines. The story of the traducers of General Grant, who told Abraham Lincoln that the General was a drunkard, comes to mind. "Old Abe" asked what brand of whiskey Grant was in the habit of drinking. Said he, "I want to send a jug of it to each of my other generals." Reasoning from the facts as set forth in your editorial columns, would it not be well for the German working man and business man to swear off forever, and for the American student to procure some university beer? A *reductio ad absurdum*, I will admit, but logical enough if one is to accept as facts the statement presented in the editorial columns of the issue of AMERICAN MEDICINE above quoted.

So far as the excessive consumption of alcohol is concerned no thinking man can deny its demoralizing effects upon any nation. To my mind, however, there is but one way to repress it, viz., by educational influence. A knowledge of the evils of drug habits of all kinds should be part of the child's education. An appeal should be made to his selfish interests. He should be taught that his best interests lie in the direction of a sound body and a sound mind, and taught to abhor all influences which tend to impair them. The dangers of alcohol should be taught in common with all other things which bear directly upon the physical welfare of the human race. A course in at least the rudiments of personal hygiene should be compulsory in our schools. The endeavor to impress upon the youthful mind the blessings of temperance without educating the youth to an understanding of the practical value of sobriety is illogical and deservedly unsuccessful. The evils of alcohol should not alone be taught. Excesses of all kinds should be presented in their bearing upon the health, strength and longevity of the human race.

The fact that the German scholar has accomplished much in the face of the great prevalence of alcoholic excess in German universities is no argument in favor of drinking bouts. The average of German scholarship has risen superior to the evil. That this average would be higher under a temperance régime is probable. Yet it is possible that the world owes something to alcohol, after all. Instances have been known where the stimulus of alcohol has apparently brought latent genius to the fore. The influence of alcohol on the psychology of the degenerate is, however, a broad and unsettled subject.

ORIGINAL ARTICLES

REMARKS ON THE DIAGNOSIS OF PANCREATIC DISEASE.¹

BY

WILLIAM SYDNEY THAYER, M.D.,

of Baltimore, Md.,

Associate Professor of Medicine in the Johns Hopkins University.

It is not wholly encouraging to reflect upon the slight extent of our diagnostic abilities with regard to disease of the pancreas, to realize how limited are our resources for the detection of other than the most advanced and fatal stages of pathological change in what is perhaps the most important of our digestive organs.

And yet the reasons for this condition are plain. Changes in the position, size, motility and secretory ability of the stomach are readily appreciable by simple methods of physical examination. In like manner many affections of the liver are easily recognizable. Interferences with its circulation produce demonstrable changes in other organs supplied by the portal system, while undue retention of its secretion becomes immediately evident with the development of jaundice. Enlargements, circulatory disturbances and malpositions of the spleen are easily detected by palpation and often, indeed, by inspection.

The pancreas, however, is so far removed from the surface of the body and so hidden by surrounding organs from the inquiring eye and the exploring hand that any moderate change in its size or consistency is wholly inappreciable. The points at which the ducts of the pancreas open are such as to render it beyond our power to study changes in the amount and character of the pancreatic secretion. While retention of bile is immediately recognized by jaundice, retention of the pancreatic juice may be suspected only when grave sequels such as acute pancreatitis develop.

The studies of recent years concerning the physiology and pathology of the pancreas have brought us valuable clinical assistance, yet today we possess no diagnostic sign of pancreatic disease.

In the few remarks that I shall make this afternoon, I propose to consider briefly:

1. What criteria do we possess for recognizing gross anatomical changes in the pancreas?
2. What means have we for appreciating disturbances of function of the pancreas?
3. The diagnostic features of the more important changes in the pancreas.

1. *What criteria do we possess for recognizing gross anatomical changes in the pancreas?*

The pancreas, situated behind the stomach and colon and extending from the duodenum to the hilus of the spleen, lies for the most part to the left of the median line across the epigastrium. The head, embraced by the descending part of the duodenum, lies just to the right of the median line in the closest connection with the common bile-duct. In the normal individual the pancreas is impalpable. In thin subjects, however, with separated recti, it may be possible to feel the body of the gland indistinctly. Enlargements of the pancreas due to inflammatory changes are rarely, if ever, palpable, owing to the tenderness and the consequent tenseness of the abdominal wall. Suppurative pancreatitis, however, is followed often by abscess of the omental bursa. This results in a tumor which has certain important characteristics. It is deeply situated behind the stomach and colon. It is immobile and does not descend with respiration. It fills the left hypochondrium and extends across the epigastrium; it differs from a renal tumor

mainly in its immobility and in the fact that it does not extend back into the flank.

2. *What means have we of appreciating disturbance of function of the pancreas?*

The digestive powers of the pancreatic juice are extremely varied. It possesses a digestive ferment for albuminoids, a fat-splitting and emulsifying ferment, an amylolytic ferment, as well as a ferment capable of coagulating milk. Perhaps the most specific of its powers is the fat-splitting action. This function is shared by the secretion of no other organ in the body, though a considerable amount of fat-splitting may be accomplished by intestinal bacteria.

Observations of recent years have shown that the pancreas possesses another extremely important function in addition to its digestive powers. The classical observations of von Mering and Minkowsky,¹ followed by those of Lépine,² Hédon³ and others, have shown that the pancreas exerts an important influence upon the metabolism of sugar in the organism. Complete extirpation of the gland is always followed by rapidly fatal diabetes. Very large portions of the gland may be removed without apparent effect. If, however, but a very small fragment of the organ be left in the body, transient or alimentary glycosuria follows. (Minkowsky.⁴) If after complete removal of the pancreas bits of the organ be transplanted subcutaneously no diabetes occurs so long as the transplanted fragment remains in good condition. Atrophic changes in the transplanted bit of the gland result in the reappearance of the diabetes (Minkowsky⁵ and Hédon⁶) It is probable that this remarkable influence of the pancreas on the œconomy is due to an internal secretion, but what this may be and what are its relations to the œconomy are as yet unknown. The recent observations of Opie,⁷ and Ssobolew,⁸ however, render it extremely probable that its point of origin is in the lymphoid islands of Langerhans.

From these circumstances it may be easily seen that in cases in which the symptoms suggest disease of the pancreas, the presence of glycosuria would be an important corroborative symptom. Indeed, the existence of diabetes itself is extremely suggestive of pancreatic disease. In eight out of 16 cases of diabetes which have come to necropsy at the Johns Hopkins Hospital, Dr. Opie has discovered pancreatic changes, the one constant lesion being hyaline degeneration of the islands of Langerhans.

The possible diagnostic importance of alimentary glycosuria as an indication of pancreatic disease is suggested by the observations of Minkowsky⁹ and Wille.¹⁰ The former showed that in instances of partial extirpation of the pancreas alimentary glycosuria occurred in cases in which, on a meat diet, sugar was completely absent. The clinical observations of Wille are also important although the pathological reports are unfortunately incomplete. This author made observations upon 800 patients, examining the urine in each instance after the administration by the mouth of 100 grammes of grape-sugar. The experiment was repeated in the positive cases. In 17 of these instances there was alimentary glycosuria. Of the 800 patients 77 came to autopsy. Of these 15 patients had shown alimentary glycosuria during life. In all of these cases marked pancreatic changes were found. Disease of the pancreas, though in a much lesser degree, however, was found in other cases in which alimentary glycosuria did not occur. Unfortunately, an adequate description of the nature of the changes is not given, no attention having been paid to the islands of Langerhans.

¹ Arch. f. Exp. Path., 1889, xxvi, 371.

² Lyon Méd., 1889, lxi, 308.

³ Arch. de méd. exp., 1891, lli, 44, 341, 520.

⁴ Centrabl. f. klin. Med., 1890, xi, 31.

⁵ Verhandl. d. xi Cong. f. Inn. Med., Wiesbaden, 1892, 89.

⁶ Arch. de physiol. norm. et path. 1892, 58., iv, 617.

⁷ J. Exp. M., N. Y., 1901, v, 897; Do. p. 527.

⁸ Centrabl. f. allg. Path. u. path. Anat., 1900, xi, 202.

⁹ L. c.

¹⁰ Deutsch. Arch. f. klin. Med., 1899, lxi, 546.

¹ Read before the New York State Medical Society, at Albany, on January 29, 1902.

The experimental observation that a very large part of the pancreas may be destroyed without the subsequent development of glycosuria is supported by the histories of many cases of acute pancreatitis, notably those reported by Chiari,¹ in which the greater part of the organ was discharged *per ani* without serious results. Whether, in such cases, temporary or alimentary glycosuria would occur must remain for further observations to settle. It is, however, on the other hand, true that a very considerable proportion of cases of fatal diabetes show no demonstrable lesion of the pancreas.

Experimental suppression of the pancreatic juice results in a material interference with the absorption of fat, and in some instances an excess of undigested fat may be clinically demonstrable in the stools even to the naked eye. But the presence of fat, excepting in very large quantities, may be found under other circumstances than pancreatic disease (jaundice, diarrhoea), while in many instances of far advanced destruction of the pancreas the examination of the stools by ordinary methods has revealed little that is striking. More elaborate analysis of the dejections tends to show that in addition to the presence of an increased quantity of fat, the diminution of the fat splitting process as well as the presence of a relatively small proportion of soaps in comparison to the fatty acids and neutral fats are conditions pointing to insufficiency of the pancreatic secretion.

Oser² sums up the matter by saying: "We may positively assume only that disturbed digestion of fat may be an important symptom in pancreatic disease. The increased presence of fat in the stool is of itself, however, no reason for the assumption of a pancreatic disease. If there be no icterus and no disease of the intestine; if an increased peristaltic action, with rapid passage of the feces through the intestine, be not the cause of the insufficient digestion of fat, then suspicion of pancreatic disease is certainly justified."

Interference with the digestion of albuminoids is also characteristic, though not diagnostic, of extensive pancreatic disease. The presence in the stools of an unusual number of undigested muscle fibres is suggestive. Sahli's³ glutoid capsule test may prove of value in determining the albumin digesting powers of the pancreatic juice.

It is of course self-evident that in many cases of acute disease the diet of the patient is such as to interfere with the possibility of making certain of these observations. Time alone will determine their diagnostic value in other instances.

Oser⁴ asserts that he has observed in a number of cases of pancreatic disturbance that a large part of the nourishment passes directly through the intestinal canal without being properly digested. "The constant loss of weight, despite ample diet, in association with abundant pasty or solid dejecta, a quantity which appears to exceed even that of the nourishment taken by the mouth—this is a striking symptom which demands the especial attention of the physician."

(3) *The diagnostic features of the more important changes of the pancreas.*

Acute Pancreatitis.—Acute pancreatitis, as has been demonstrated by a number of observers, usually arises as a result of the entrance through the duct of irritating substances, chemical or bacterial. Opie⁵ has recently called attention to the extremely common association of pancreatitis and cholelithiasis, and has demonstrated experimentally and clinically the method of origin of the disease under these circumstances. A remarkable demonstration of this method of origin is afforded by Halsted's

recent case.¹ In a smaller number of instances the condition has followed direct injury to the pancreas, as in a recent case of Selberg,² in which the disease followed a kick in the epigastrium by a horse.

With regard to the diagnosis of acute pancreatitis, there is little to add to the masterly expositions of Fitz,³ who opened the path for the clinical appreciation of diseases of the pancreas. The patient is usually of adult life or middle age, corpulent, and in a considerable proportion of instances, of alcoholic habits. The history of attacks of biliary colic is not infrequent.

The clinical picture of acute pancreatitis is so characteristic that it should be much more commonly recognized. The day has passed when the diagnosis of acute pancreatitis should be regarded as a good guess. The symptoms begin, as a rule, with sudden intense epigastric pain; this may be referred to a point exactly in the median line, sometimes slightly to one or the other side, often indefinitely localized in the epigastrium. The abdomen, especially in the epigastric region, is distended, rigid and tender; in some instances the pain may be aggravated by pressure over the lower left ribs, which is communicated directly through the spleen to the tail of the pancreas. The pain is commonly of an agonizing character, resisting even large doses of morphia and sometimes necessitating the use of chloroform. There is vomiting of mucus, frequently bile stained. Constipation is generally present, though diarrhoea may follow. The temperature is but little, if at all elevated; the pulse is usually accelerated, greatly, just before death. Cyanosis may be a striking symptom. In a large proportion of cases these symptoms are associated with profound prostration, and rapidly succeeded by collapse and death within three or four days.

At first the symptoms may be confounded with an attack of biliary colic which may, indeed, as in one of my own cases, usher in the symptoms. Especially significant is the character of the pain which is more intense and constant than that of gallstones. Its intensity, its diffuse epigastric character, with occasional localization on the left side, the profound collapse, so commonly present, should, however, suggest the true condition.

Often a diagnosis of intestinal obstruction has been made, but the epigastric localization of the pain, its peculiar intensity, the absence in the great majority of instances of stercoraceous vomiting, the sudden and profound collapse should direct the mind of the clinician in the right direction. Especially important is the fact that in these instances the abdominal tenderness and distention are commonly localized in the epigastrium, and that distended intestinal coils and peristalsis are never observable.

The distinction from a perforative peritonitis is more difficult, but here also the suddenness and intensity of the symptoms, especially of the pain, the early collapse and the absence of previous history of gastric or duodenal ulcer are important points. In instances of perforation of the gall bladder following cholecystitis the symptoms are in most instances localized in the right side. The possibility of mesenteric infarction should also be considered, and the differential diagnosis may be difficult. The position and intensity of the pain and tenderness may here be valuable points of distinction, together with the absence of those conditions commonly associated with mesenteric embolism or thrombosis (cardiac disease—arterio-sclerosis). It is rarely, if ever, possible to feel the inflamed pancreas owing to the tenderness and consequent tenseness of the abdominal walls.

While this is the common picture of acute pancreatitis, yet milder attacks may occur in which a diagnosis may be difficult or impossible. In any severe attack of epigastric pain the nature of which is not clear, pancrea-

¹ Wiener med. Wchnschr., 1880, xxx, 139, 142, 164.

² Die pathognostischen Symptome der Pankreaserkrankungen. Die Deutsche Klinik, &c., Berlin, 1901, 151.

³ Deutsche Med. Wchnschr., 1897, xxiii, 6; Correspondenzbl. f. Schweiz. Aerzte, 1898, xxviii, 289, 329; Deutsches Archiv. f. klin. Med., 1898, lxi, 445; Fromme, Muenchen. med. Wchnschr., 1901, lxxviii, 591.

⁴ Oser, Op. cit.

⁵ Amer. Journ. Med. Sci., 1901, cxxi, 27; Johns Hopkins Hosp. Bull., 1901, xii, 182.

¹ The Johns Hopkins Hosp. Bull., 1901, xii, 179.

² Berl. klin. Wchnschr., 1901, xxxviii, 923.

³ Boston Med. and Surg. Jour., 1889, cxx, 181, 205, 229.

titis should be considered, especially if the pain be located to the left of the median line. If the possibility of acute pancreatitis be borne in mind errors in diagnosis will be less frequent.

The continuance of these symptoms generally in a rather milder form, for days or weeks with the appearance of fever should suggest the development of suppurative, necrotic or gangrenous changes. In such cases as this careful study of the urine and feces may reveal evidence of disturbance of pancreatic digestion (fatty stools, glycosuria, fragments of the pancreas in the dejecta, evidence of imperfect digestion of albuminoids).

While suppurative pancreatitis is usually a sequel of acute hemorrhagic inflammation, yet the onset may be more gradual and indefinite, associated with a continued or irregular fever, perhaps with chills, with epigastric tenderness and rigidity. These may be the only symptoms for a considerable period of time, palpable tumor being often absent. Later, with the development of parapancreatic abscess, the detection of a deep mass in the pancreatic region renders the diagnosis much easier.

How far the symptoms may be masked when the abscess of the pancreas is small is shown by a case which came under my observation while I was a house physician in the Massachusetts General Hospital. A localized abscess of the pancreas at the juncture of the head and tail caused by pressure, the complete obstruction of the common bile-duct, resulting in a clinical picture suggesting carcinoma of the head of the pancreas or of the common duct. There was moderate hepatic enlargement and great distention of the gall bladder which was easily palpable. Death resulted from cholemia.¹

The successful results of operation with drainage in instances of suppurative pancreatitis have been so frequent as to render its detection of great clinical importance.

It has been said previously in this paper that the retention of pancreatic secretion result in no symptom analogous to the jaundice which reveals the existence of biliary obstruction. Opie,² however, has recently made a suggestion which may permit us to modify this statement. The disseminated fat necroses so commonly associated with acute pancreatitis have been shown to depend upon the action of the fat-splitting ferment of the pancreatic juice.³ While limited fat necrosis between the lobules of the pancreas may follow the escape of small quantities of steapsin such as may occur under a variety of circumstances, the more widespread lesions are only seen in association with acute pancreatitis. The extent of these fat necroses is in some instances so great that it would be remarkable if some of the fat-splitting ferment did not enter the circulation. If this be the case may it not be demonstrable in the blood and in the urine?

In a case occurring several months ago at the Johns Hopkins Hospital in which a diagnosis of acute pancreatitis was made by Dr. McCrae, and confirmed at operation and at necropsy, Dr. Opie, in a small quantity of urine obtained post mortem made the following test for the presence of the fat-splitting ferment. The technique was that proposed by Professor Cassell and Mr. Loevenhardt and depends upon the decomposition by the ferment of carefully purified ethyl butyrate with the resulting formation of butyric acid. The urine was neutralized by potassium dioxide and divided into two parts to one of which was added a few drops of ethyl butyrate together with a small quantity of litmus solution. The second part, used as a control, was boiled in order to

destroy the ferment if present and ethyl-butyrate and litmus were added. Both specimens were kept for 24 hours at 37° C. At the end of this time the unboiled specimen had acquired a well marked acid reaction, while the control specimen showed little if any, change. Unfortunately the quantity of urine was so small that the test could not be repeated. Opie's observation and suggestion appear to me to be of very great clinical importance and well worthy the careful attention of clinicians. If it be possible to demonstrate the presence of a fat-splitting ferment in the urine of acute pancreatitis we shall have our first diagnostic sign of pancreatic disease.

Five cases of acute pancreatitis have occurred in the Johns Hopkins Hospital, three instances of acute hemorrhagic pancreatitis, two of suppurative pancreatitis. The first case was that mentioned in Osler's textbook in which the patient was brought in as an instance of intestinal obstruction and immediately placed upon the operating table, laparotomy revealing the true diagnosis. In the other four cases a correct diagnosis was made in three instances; once by Dr. Bloodgood, once by Dr. McCrae and once by myself. Both cases of suppurative pancreatitis presented palpable tumors greatly facilitating the diagnosis.

Pancreatic Hemorrhage.—The diagnosis of those instances of explosive hemorrhage (pancreatic apoplexy) occurring in the absence of acute pancreatitis is based mainly upon the sudden onset of acute pain in the pancreatic region, with vomiting, followed almost immediately by collapse and death. The symptoms differ from those of acute pancreatitis only in their greater acuteness and in their more rapid course.

Chronic Pancreatitis.—Opie, in an article shortly to appear in the *American Journal of the Medical Sciences*, reports observations upon 29 instances of chronic interstitial pancreatitis which have come to necropsy at the Johns Hopkins Hospital. The commonest cause of the disease appears to be obstruction of the duct by pancreatic calculi, biliary calculi in the terminal portion of the common duct, or carcinoma of the head or body of the gland. Ascending infection may result from lesions of the bile-passages or duodenum. Persistent vomiting may favor an ascending infection of the duct with resultant sclerotic changes. Chronic interstitial pancreatitis is not infrequently associated with cirrhosis of the liver, and is apparently dependent upon the same general causes. In the pancreatitis associated with duct obstruction and ascending infection the lesion is interlobular, invading the lobules only secondarily and sparing the islands of Langerhans. Diabetes results only when the disease is far advanced. In that form of chronic pancreatitis occurring with hepatic cirrhosis and in that observed in haemochromatosis the process is interacinar and invades the islands of Langerhans. With extensive disease of these structures diabetes appears to be the rule. A positive diagnosis of chronic interstitial pancreatitis is rarely possible. It is, however, strongly to be suspected in cases of diabetes developing in the course of well-marked cirrhosis of the liver or haemochromatosis, especially if examination of the feces suggests insufficiency of the pancreatic juice.

Pancreatic Lithiasis.—The diagnosis of pancreatic calculi is rarely to be made during life. Most cases are associated with grave chronic interstitial changes in the pancreas resulting often in diabetes. The sensations of epigastric pressure or pain mentioned in a number of these cases present little that is characteristic and, as Körte⁴ has pointed out, may in many instances be due rather to secondary inflammatory conditions of the pancreas than to the movement of stones.

In but few instances has a correct clinical diagnosis of pancreatic calculi been recorded. In Lancereaux's⁵ case attacks of epigastric colic were followed by diabetes.

¹ Die chirurgischen Krankheiten und die Verletzungen des Pankreas. 8^o Stuttgart, 1898.

² Bull. Acad. de méd., Par., 1888, 2 s., xix, 601.

³ Fltz, Trans. Assoc. Am. Phys., 1890, v, 102.

⁴ Remarks before the Johns Hopkins Hospital Medical Society, to appear shortly in the Johns Hopkins Hospital Bulletin.

⁵ Langerhans, Arch. f. path. Anat. (&c.), Berl., 1890, exxii, 252; Festschr. Rudolf Virchow, 1891; Hildebrand, Centralbl. f. Chir., 1895, xx, 297; Dettmer, Experimenteller Beitrag zur Lehre von den bei Pancreatitis Hämorrhagica beobachteten Fettgewebesknoten und Blutungen. Inaug., Diss., Göttingen, 1895; Flexner, I. Exp. M., N. Y., 1897, ii, 419.

In Lichtheim's¹ case the patient suffered for a period of six years with severe attacks of epigastric pain, vomiting and fever, associated with constipation. Seven years later diabetes developed, resulting in death within a year. After the onset of diabetes the patient suffered with diarrhoea, the stools containing numerous fat crystals and an unusually large number of well preserved muscle fibres. In the case of Minnich² and Holzmann³ the patient, aged 68, had previously suffered from severe attacks of gall stone colic. Subsequently he became subject to attacks of intense pain in the epigastrium and left hypochondrium. This began with a deep, pressing, girdling sensation in the epigastrium and at the left costal margin, which caused the patient to take deep breaths, to press upon the part with his hands, and to move to and fro in the room. The pain increased in severity, but became localized under the left costal margin inside of the mamillary line. At the height of the attack the pain radiated around to the spine and up under the left shoulder blade. As the attack passed off it became again localized in a single spot. The stools showed no fat crystals and no gall stones, but characteristic small round gray concretions were found on various occasions, the largest as large as a cherry-stone. Microscopically, these stones were amorphous, while analysis showed them to consist mainly of carbonate and phosphate of lime. The case later developed intermittent glycosuria. Leichtenstern⁴ has also observed a case in which, after attacks closely resembling biliary colic, but without jaundice, calculi consisting mainly of carbonate and phosphate of lime were passed in the stools.

The diagnosis of pancreatic colic can be positively made only in association with the passage of stones. The attacks are closely similar to those of biliary colic, and may be associated with chills and fever. The limitation of the pain more particularly to the left side may be helpful in doubtful cases.

Two instances of pancreatic lithiasis have come to necropsy at the Johns Hopkins Hospital. In both of these there were grave sclerotic changes in the pancreas, and in one mild diabetes was present. In neither case were there symptoms justifying an ante-mortem diagnosis. Both cases have been reported by Opie.⁵

Tumors of the Pancreas. 1. *Cysts*.—Cysts form the largest tumors arising from the pancreas. The larger cysts, those which are clinically recognizable, have been shown by Lazarus⁶ to be, as a rule, true proliferating glandular cystomata, though large cysts following injury occasionally occur. The smaller retention cysts and those following degeneration, softening, auto-digestion and hæmorrhage are rarely palpable. There is little in the history of these cases that is characteristic. Clinically, the cyst appears as a large retroperitoneal tumor, presenting, as a rule, in the epigastric and umbilical regions, particularly upon the left side, and extending out from the costal margin well past the median line. The largest of these tumors fill the greater part of the abdomen. They must be differentiated from cystic renal tumors, hydatid cysts of the liver, mesenteric cysts, retroperitoneal sarcomata and large abdominal aneurysms. From renal tumors they are usually distinguishable by their immobility and in the fact that they do not reach back into the flank. From hydatid cysts they differ mainly in their deep position. The differentiation from retroperitoneal sarcomata is based mainly upon the fact that the latter are solid, while cystic tumors in this region are in the majority of instances pancreatic. Puncture of the cyst and examination of the fluid may be of diagnostic value, though at

the present day an exploratory laparotomy is advisable. The presence of bloody fluid or of any of the pancreatic ferments is suggestive of pancreatic origin.

Three large pancreatic cysts have occurred in the Johns Hopkins Hospital within the last 12 years. In two of these the correct diagnosis was made before operation.

Malignant Growths of the Pancreas.—Secondary involvement of the pancreas is rarely recognizable during life. The diagnosis of primary cancer of the pancreas often presents considerable difficulty. Large tumors, while they may occur, are unusual. Out of 10 instances of cancer of the pancreas occurring in the Johns Hopkins Hospital in which a positive diagnosis was made post mortem or at operation, in only three was a palpable tumor present. The differentiation of a large palpable solid tumor of the pancreas from retroperitoneal sarcoma may be extremely difficult. The presence of glycosuria or of evidence of deficiency of the pancreatic secretion would be strongly suggestive of pancreatic involvement. The commonest seat of cancer of the pancreas is in the head, which results in the early involvement or compression of the common bile-duct. The usual symptoms of cancer of the pancreas are those of a complete obstructive jaundice with great distention of the gall bladder and rapid emaciation. These symptoms were present in seven of our 10 cases. Extensive metastases in the liver are unusual. In none of our cases were liver metastases demonstrable *intra vitam*. The condition is to be differentiated from primary cancer of the bile-ducts, involvement of the glands at the hilus of the liver and obstructive jaundice from impacted stone. A positive differential diagnosis between primary cancer of the ducts and cancer of the head of the pancreas is often impossible. The great dilation of the gall bladder which is frequently visible and palpable serves to distinguish the condition from impacted gall stone, where the gall bladder is rarely greatly distended. The symptoms are more suggestive if glycosuria, fatty stools or other evidence of retained pancreatic secretion are demonstrable.

CONCLUSIONS.

In conclusion, it may be said that while we possess as yet no diagnostic symptom of pancreatic disease, unless indeed, further observation should confirm the possibility of the demonstration in acute pancreatitis, of the fat-splitting ferment in the urine, yet clinical and pathological experience have taught us certain combinations of symptoms which justify a diagnosis in various forms of pancreatic disease.

Acute pancreatitis should be recognized in many instances. The importance of an early recognition of those cases which go on to extensive necrosis and to suppurative parapancreatitis is easily appreciable.

Chronic interstitial pancreatitis is to be suspected under the following conditions:

- (1) Instances in which glycosuria develops in an individual with chronic cholelithiasis.
- (2) In cases of glycosuria in association with cirrhosis of the liver.
- (3) In glycosuria in the course of hæmochromatosis.
- (4) In glycosuria following attacks suggestive of pancreatic colic.

Pancreatic lithiasis is recognizable only when calculi are found in the stools.

Cysts of the pancreas are usually to be recognized on account of their location.

Primary cancer of the pancreas is often latent. The presence of obstructive jaundice with distended gall-bladder and rapidly developing cachexia, in association with little or no hepatic enlargement, is suggestive of this affection.

Fatty stools—in the absence of diarrhoea or jaundice—together with indications of interference with the digestion of albuminoids, are valuable confirmatory evidence of deficiency or absence of the pancreatic secretion.

¹ Berl. klin. Wehnschr., 1894, xxxi, 185.

² Berl. klin. Wehnschr., 1894, xxxi, 187.

³ Muenchen, med. Wehnschr., 1894, xli, 389.

⁴ Handbuch Spec. Therapie, von Penzoldt abd Stintzing, 1896, Bd. v, 953.

⁵ J. Exp. M., N. Y., 1901, v, 397, 527.

⁶ Zeitschr. f. Heilkunde, 1901, xxii, (N. F., ii), H. vi, 165 and H. x, 216.

A CASE OF VERY PERSISTENT LARYNGEAL STENOSIS.¹

BY

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The following case of laryngeal stenosis, or what may, perhaps, better be called laryngeal stridor, seems sufficiently unusual, and of a nature obscure enough to warrant placing it upon record:

Lilly S., aged 20 months, white, began about February 15 to suffer from difficulty in respiration. She was attended by the family physician, who, after some time, pronounced the disease laryngeal diphtheria and sent her to the Municipal Hospital on March 12, 1901. Here, according to information received, she had no exudate visible in the throat or larynx, the nares showed no evidence of diphtheria, and two cultures, on the second and ninth day of her stay, were negative. Her voice was husky, almost inaudible, and the respiration was slightly embarrassed. Her laryngeal symptoms improved, but had not entirely disappeared at her discharge after 12 days. Then respiration gradually grew worse again, and she was brought to the Children's Hospital about seven weeks after the beginning of the illness.

April 5.—On admission she was suffering from severe dyspnea, which was always present although varying in intensity. With respiration at its worst the child was decidedly cyanosed and had an anxious expression. At its best she would sit up and handle toys, yet even then there was free playing of all the accessory muscles of respiration.

On April 6 the following note was made: Her breathing is slightly better, although still very labored with both inspiration and expiration. There is extreme retraction of the epigastrium, together with sinking in of the sternum and bulging of the cartilages attending each inspiration. The child's head is extremely rachitic, but there is no beading of the ribs or enlargement of the wrists. The color is fairly good. Chvostek's facialis symptom is absent.

Dr. Walter J. Freeman, laryngologist to the hospital, made a laryngoscopic examination on this date and reported that the chords were reddened and swollen, and that the condition appeared to be one of subacute laryngitis with thickening. There was no membrane visible, and no reason to suspect papilloma or paralysis.

Up to April 9 the dyspnea continued unabated in spite of the constant employment of vapor and the administration of strong sedatives. On this day the condition was so threatening that intubation was performed by Dr. J. H. Jopson. This gave immediate relief; yet the distortion of the chest by the dyspnea had been so marked that it was not until the next day that the depression of the sternum disappeared.

The patient wore the tube until April 19. She coughed it up on a number of occasions, after each of which dyspnea and cyanosis always returned, necessitating its prompt replacement. On the nineteenth the tube was removed during two hours and then replaced. On the twenty-seventh it was removed permanently. On the twenty-ninth the breathing was only slightly affected and the child was sent home.

May 4 the child was seen in the dispensary. She had been doing well, having stridor only when coughing or swallowing.

May 5 she was entered again in the wards, suffering from pneumonia. From this she recovered, and during the attack there was little affection of the larynx.

May 20 there was only a very husky voice present, but no stridor. Chvostek's and Trousseau's symptoms were absent.

The previous family and personal history add to the interest of the case. Repeated questionings did not shake the mother's statement that about August or September, 1900, the child suffered in a similar way for about four weeks, the stridor being persistent, although not nearly so severe as in this last attack. Further, that she is one of several children in the family, and that five others suffered at times during infancy, "when cutting teeth," from symptoms of troublesome stenosis, lasting for perhaps a couple of weeks at a time. The affection in all of them was different from ordinary croup in that it persisted uninterruptedly both night and day. The sound of the cough was often like the noise made by a "rooster."

The interest of this case centers, of course, in the diagnosis. Pressure on the trachea or bronchi by large tuberculous bronchial lymph nodes might readily have

caused persistent stridor. So, also, probably, could pressure by an enlarged thymus gland; but in neither case could intubation have given complete relief, followed, on each occasion that the tube was coughed up, by return of the dyspnea. This fact places the stenosis clearly in the larynx. Pressure of enlarged lymph nodes upon a branch of the pneumogastric nerve has been assigned as a cause of reflex laryngeal spasm, or, in some cases of laryngeal paralysis; but, as Marfan points out, it is difficult to see why a unilateral pressure such as this is likely to be, should cause a bilateral disease. Moreover, the occurrence of two attacks in the child's history and the recovery from each, excludes this condition.

Of all the affections of the larynx the one most prominently suggesting itself when the child was admitted to the hospital was, of course, diphtheria. But the absence of any bacterial growth in the cultures, the fact that the laryngeal examination in neither hospital showed any membrane, and, more than all, the history of the attack, excluded the disease.

An abductor paralysis after a precedent diphtheria was equally impossible for the same reasons. Papilloma of the larynx would scarcely have produced dyspnea so severe and so persistent as this case exhibited, unless the mass had been so large that the laryngeal examination would have readily exhibited it. In such an event also such marked improvement could scarcely have taken place. Edema of the larynx can hardly be seriously considered in the absence of any disease producing it, and in view of the fact that examination of the larynx showed nothing of the sort discoverable. Laryngismus stridulus, in the ordinary sense of the term, can be readily excluded. The chief diagnostic characteristic of this disease, upon which writers seem to agree with great uniformity, is the occurrence of brief, severe laryngeal spasms with intervals more or less long of complete absence of laryngeal symptoms. This was completely absent in the case now reported.

Finally, we have to consider acute laryngitis with spasmodic symptoms, such as is exemplified in many cases of false croup. As well known, there often lasts in this disease for a day or two a slight tendency to persistent stridulous respiration. Why this should be present in some cases and absent in others seems to depend upon the innate tendency of the individual child. We have also the well-known cases of acute laryngitis consecutive to measles, in which there is persistent, severe stenosis of the larynx, accompanied by fever, often requiring intubation, and not infrequently fatal. In the case under consideration we certainly had present on the first examination an intense congestion of the mucous membrane of the larynx. It seems very probable that in this case there was also a specially marked personal and family tendency to laryngeal spasm, such as is often seen in many families in which croup occurs. The family history accounts in part for the neurosis. Still more does the remarkable development of rachitis as shown by the shape of the child's head, although the other bony evidences of it were not marked.

In fine, then, we probably have to do in this case with an acute or subacute laryngitis with which was associated a remarkable personal and family tendency to laryngeal spasm, allied to laryngismus stridulus, and depending in part, like it, upon rickets, but differing in its tendency to persistence.

The diagnosis is, however, only provisional and open to question.

Against Sweat-shops.—The Consumers' League, whose object is the abolition of sweat-shops, has nearly 1,000 members living in Philadelphia. The organization is rapidly increasing in numbers, and is represented in many states. All members are pledged to wear only such clothing as are made in sanitary factories, such clothing being recognized by a label which the organization gives to manufacturers whose methods they have approved.

¹ Read before the American Pediatric Society, Niagara Falls, N. Y., May 27, 28, 29, 1901.

THE TREATMENT OF ACUTE GENERAL PERITONITIS.

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Considering peritonitis from the clinical point of view I would divide it into acute general peritonitis and circumscribed peritonitis. Acute general peritonitis is called by some writers acute diffuse peritonitis or acute septic peritonitis, and circumscribed peritonitis is in like manner called localized peritonitis. Circumscribed peritonitis is variously named according to location, as pelvic, diaphragmatic, appendicular, or by reason of a focal point in some one of the viscera, as a visceral peritonitis of the organ involved.

By acute general peritonitis is meant a rapidly spreading inflammation of the visceral and parietal peritoneum due to bacterial infection. It is characterized clinically by the severity of its symptoms, the rapidity of its course, and the gravity of its prognosis. Circumscribed peritonitis is less rapid in its course, its clinical picture is less severe, and its prognosis less grave. It arises from infection by the same bacteria that cause general peritonitis, but in this form the inflammatory area is quickly walled off from the general peritoneal cavity by plastic exudation, and is thus converted into an extraperitoneal inflammatory process. Here the limiting walls may be one or more coils of intestine, or some other viscus, bound to each other and to the parietal walls, enclosing a cavity in which hematoma may occur, or a cyst develop, or pus form. If pus gathers and the abscess is not evacuated, it may increase till rupture takes place externally, or into a hollow viscus, or into the peritoneal cavity with consequent acute general peritonitis.

A brief discussion of the etiology is next essential to a judicial view of the treatment of acute general peritonitis. In the male, beyond doubt, a vast majority of cases are due to appendicitis. In my experience this is also true in the female. Infection reaching the peritoneum from the uterus, tubes, and ovaries, generally produce a circumscribed peritonitis localized in the pelvis. Traumatic perforations of the peritoneal cavity and rupture of viscera come next, and then, according to Treves and others, we may group several causes of peritoneal infection as follows: Obstruction of the bowels, perforation of typhoid, gastric and tuberculous ulcers, cholelithiasis, nephrolithiasis, rupture of visceral and other abscesses and fat necrosis. The frequency with which acute general peritonitis develops from any one of these causes is variously stated by different authorities.

We still employ some terms formerly very generally used to indicate the various avenues just enumerated by which the infection reaches the peritoneum, such as traumatic, perforative, metastatic, and puerperal general peritonitis. Occasionally the term idiopathic peritonitis is still used when the point of entrance can not be determined.

But in bacteriology we find the key to a classification upon which in years to come we can hope to build a rational prognosis and treatment for acute general peritonitis. To speak of this disease as due to streptococcus, staphylococcus, colon bacillus, gonococcus, pneumococcus, tubercle bacillus, or other bacterial infection simplifies both prognosis and treatment from the theoretic point of view. Practically the clinician's difficulty arises in diagnosing the nature of the bacterial agent in these cases early enough to make a prognosis and to determine the line of treatment to pursue. From the standpoint of the postmortem examiner and the bacteriologist there is no question of the deadly nature of

streptococcus and staphylococcus infection of the peritoneum, nor of the comparatively mild course of gonococcus, colon bacillus, and tubercle bacillus infection of the same sac in many cases. All writers are also agreed that the polyinfection resulting from perforative lesions of the hollow viscera give rise to the most fatal forms of acute general peritonitis.

It may therefore be stated that it is our inability to make a clinical examination in cases of acute general peritonitis to determine the bacterial element in the infection that cripples both prognosis and treatment. After opening the abdomen in a given case the operator cannot be certain of the primary infecting bacterium, nor of the various bacteria present in the polyinfections. The bacteriologist devotes the labor of several hours extending over a period of several days to secure exact data from the cultures taken from the exudate in any case of acute general peritonitis.

Under the surgeon's hands the pathologic picture in a case of acute general peritonitis varies with each organism, not by reason of the peculiar and distinguishing manifestations of its action, but because of the amount of the infecting agent, its virulence, its association with other bacteria, the susceptibility of the patient and the anatomic peculiarity of the region of the abdomen in which the focus of the disease exists. In explanation of the last clause of the foregoing sentence it may be said that a given amount of an infecting agent in the pelvis, in the iliac fossa, in the fossas outside the ascending and descending colon and in the region of the gallbladder, is more certain to be dealt with by the formation of adhesions and localizing lymph barriers than in the umbilical region among the moving coils of small intestines.

Senn says that pure streptococcus infection of the peritoneum is often so rapidly fatal from septic absorption that death occurs before gross pathologic lesions have time to form in the peritoneum, the lymph spaces and subserous lymphatics being the avenues by which toxins reach the circulation. A thin purulent secretion may be present when the infection is less virulent and the progress slower. In staphylococcus invasion, Senn says the tendency to localization is more marked, with the development of copious fibrinous exudate and thick yellow pus; in colon bacillus and gonococcus infection, pus may or may not be present with fibrinous exudate; in tubercle bacillus infection the strong tendency is to chronicity with fibrinous exudate and ascites.

But in many, if not in most, cases of peritonitis a mixed infection or a secondary infection masks the phenomena due to the presence of the primary bacterium, and the clinician is thus handicapped in his effort to determine the bacterial etiologic factor. Levy and Klemperer in their classic work on Clinical Bacteriology, edition of 1900, state: "The many bacteriologic investigations that have been carried out in the study of peritonitis have thus far not yielded practically available results; the results of bacteriologic examinations of the peritonitic exudate cannot be employed without reservation as a certain guide for diagnostic purposes, nor have these results yet acquired noteworthy significance from a prognostic or a therapeutic point of view."

In summing up the foregoing discussion of the etiology of acute general peritonitis we find that bacteriology gives us the ideal classification for the forms of the disease, but unfortunately the clinician cannot yet apply this classification in practice, to determine prognosis and treatment. Our treatment in consequence must be halting and ineffectual based on expectant lines, unless by radical procedures effectual in the most severe infections of the peritoneum, we can also attack successfully the less severe infections without danger.

Beyond doubt the profession leans overwhelmingly to the surgical treatment of acute general peritonitis. It is natural that this should be so. As we have seen, the avenue of entrance of bacteria in the vast majority of cases allows of virulent polyinfection, and in the less serious infections, diagnosis of the bacterial agent is prac-

tically impossible, and the uncertainty is made more obscure by the possibility of mixed and secondary infections.

We may now sum up the question of diagnosis in a few words before taking up the discussion of treatment. The clinical picture of acute general peritonitis when fully developed is almost unmistakable. But in the early stages of the disease it may be said that while the history of the case may lead us to suspect it, the diagnosis is difficult and at times impossible. We find in appendicitis and bowel obstruction, the advanced stages of acute general peritonitis in patients acutely sick for only a few hours, and who presented no notable signs or symptoms of the invasion of the general peritoneal cavity. It may be said, however, that in this class of cases if we operate early to cope with the primary disease leading to the peritonitis, and are prepared to attack the consequent peritonitis after removing its cause, the prognosis is good.

If we open the abdomen with comparative safety in cases requiring operation for other than inflammatory conditions, why should we hesitate to operate with the view of cleansing an infected peritoneum in a case of acute general peritonitis, the indication for removal of a septic cause being also present?

The extremists in conservatism still urge the opium treatment of acute general peritonitis according to the teachings of Alonzo Clark. Recovery may follow its use in the subacute and chronic forms of general peritonitis due to mild infections by the gonococcus, pneumococcus, colon or tubercle bacillus. It can be argued that such patients will recover without opium as well as without operation. Recoveries may also be claimed for the saline cathartic treatment in the same class of cases. But no professional man would expect more than 1% of recoveries under either of these modes of treatment in virulent peritoneal polyinfection following perforative appendicitis, perforating gastric or intestinal ulcers, or traumatism with rupture of intestine.

In my early surgical experience I saw corrosive sublimate solutions used in the treatment of acute general peritonitis as an irrigating fluid for the peritoneal cavity. Later we used weak carbolyzed solutions, boric acid solutions, solutions of peroxid of hydrogen, sterile water, and finally normal salt solutions. Formerly I spent time in wiping off fibrinous exudate on the intestine with gauze compresses wet in normal salt solution, and the abdomen was drained with iodoform gauze, sterile gauze or with rubber or glass tubes. In the past 3 years I have become more and more convinced of the value of sterile normal salt solution in the treatment of acute general peritonitis.

The solution is heated to a temperature of 110° F., which can be easily tested because it can be readily borne by the hand. Large quantities are used to flush every accessible portion of the peritoneal cavity. I use from 4 quarts in early or beginning cases, to 16 or 20 quarts in late cases, and I spend from 5 to 15 minutes in the procedure. With the patient in a critical condition this is sometimes a test of the operator's patience and courage. After the irrigation, as much of the salt solution is left in the peritoneal cavity, as it will hold without undue distention. The salt solution is introduced through a perforated aluminum tube, 1 inch in circumference and 12 inches long, slightly curved toward the tip and with a blunt rounded end. This tube can be pushed to the bottom of the pelvis, into the left iliac fossa, here and there all through the abdomen among the intestinal coils over to the spleen, and behind the cecum and up to and behind the liver. In many cases, especially when the incision is a short one, the abdomen is so distended by the solution that occasionally an intestinal coil is forcibly floated out through the abdominal incision with the escaping water, and the patient's respiration and pulse may be embarrassed temporarily. At first the water comes away turbid, then clearer and clearer, until it is clear. Now and again a sudden turbidity shows the opening of some well or cistern of septic exudate in some pocket of the peritoneum, usually among the coils of the small intestine or in the left iliac fossa. Fibrinous flakes on the intestine become thin and pale and many exudative spots disappear. Brawny and cyanosed fringes of omentum develop redness of returning circulation, and the dusky lack-luster peritoneum of inflamed intestine becomes red and glistening with the hyperemia of repair.

Here and there an ecchymotic spot beneath the peritoneal coat on the bowel shows that a vessel wall, too weak to stand arterial pressure, has ruptured and a minute or a fair sized subserous hemorrhage has occurred. In my experience they are not notably significant of disaster. Such patients go on the table with a pulse of 100 to 104, temperature 100° to 103°, or occasionally subnormal, respirations 38 to 60. They often leave the operating-room with better, slower pulse, lower temperature, and lessened respirations after salt solution irrigation.

It is argued by some that flushing the peritoneal cavity in acute general peritonitis tends to spread the infecting agent. The force of this reasoning does not appeal to me. The natural current of the serous peritoneal exudate is toward the diaphragm, and, therefore, the septic agent when present is naturally spread. Murcatello demonstrated absorption of carmin particles by their presence in the posterior mediastinal lymphatics seven minutes after their introduction into the peritoneum in animals. Moreover the uninjured peritoneum is known to dispose of a certain amount of bacteria and their toxins. To flush out an excess of both in an embarrassed peritoneal cavity, leaving in their place an innocent fluid, which stimulates peritoneal absorption as well as elimination of toxins by the kidneys is a positive gain locally and generally to the unfortunate sufferer from peritoneal infection.

In treating cases of appendicitis, I make it a rule to irrigate if pus or seropurulent exudate is found upon exploring the pelvis by sinking a tube to the pelvic floor and sucking up the exudate in the pelvis. Especially do I urge that this be done when beginning gangrene or threatening perforation gives rise to the early inflammatory appearance of acute general peritonitis. In some patients operated upon quite early I have been surprised to find seropurulent fluid in large amount in the pelvic basin. When this infected culture medium is not washed out, a serious menace to recovery is left behind, and beyond doubt is the cause of some deaths in cases in which a favorable outcome could really be expected in the light of other pathologic conditions present.

In draining the abdomen after irrigation for acute general peritonitis, I find Price's aluminum tubes are most advantageous in the pelvis, and gauze wicks in the iliac fossa, behind the cecum and among the intestinal coils. The wicks may be from 4 to 8 inches long, half to one inch in diameter. That the wicks do drain when the peritoneal cavity has been well irrigated and some salt solution has been left in the cavity has been proven many times by the copious wetting of dressings and bedding in these cases under my observation.

In these patients the abdominal incision should be left as open as is consistent with retaining the abdominal contents. Silk-worm gut sutures to the peritoneum approximating the upper and lower edges of the incision are best, and gauze compresses may be tucked loosely into the gaping wound to hold back the intestines till adhesions can form. Adhesive strips to secure the dressing may be passed well around the body, and with a many-tailed bandage will aid in preventing extrusion of gut in vomiting if it occurs later. After the conclusion of the operative work I dilate the anal sphincter to make the later escape of flatus as easy as possible. It is beneficial and does not interfere with the retention of the salt solution enemas.

In the postoperative treatment of acute general peritonitis I use strychnin hypodermically in severe cases in one-thirtieth grain doses every 2 hours for a few doses, then every 3, 4 or 6 hours. Salt solution is given in all cases per rectum in 6 or 8 ounce quantities every 4, 6 or 8 hours, regulating the interval by the patient's ability to retain the fluid. It allays thirst and is positively an aid to the embarrassed circulation of the peritoneum, and notably of the kidneys. Catheterization may be necessary, and in severe cases the urine is quite certain to be scanty and to show albumin and casts. Morphine should be used in quarter or half grain doses hypodermically, if the patient is restless, hiccupping, delirious, in great pain, or the respirations go above 25 to the minute. It may be increased to control these manifestations, and should be gradually decreased as the

evidences of a rallying peritoneum and clearing excretory organs increase. The advantages to be derived from morphin are found in its quieting effect on the pain of respiratory movements, and in its slowing and deepening effect on respiration. It is argued that the force and motion of the diaphragm are thus increased, which materially assists in the absorption of fluids from the peritoneal cavity by mechanically stimulating the peritoneal current toward the diaphragm.

Whisky may be given so soon as it can be borne by the stomach. In regard to cathartics, I find flatus and feces passing within 2 or 3 days after operation as a rule, from the salt solution enema. On the third, fourth or fifth day calomel can be given in hourly half-grain doses, with 5 grains of sodium bicarbonate for 10 or 12 doses. Rochelle salts or compound jalap powder may follow this, and a turpentine and glycerin enema may be given later to aid in freely moving the bowels. Nourishment by mouth is absolutely forbidden for 3 to 6 days after operation. Cracked ice or seltzer water in teaspoonful doses is allowed from time to time to relieve dryness of the mouth. Nourishment by meat broths is cautiously begun on the third day after operation, or later. Milk is badly borne as a rule, and is not given till the second week of convalescence.

In support of the treatment here advocated for acute general peritonitis, I am able to report 16 cases operated upon in which seropurulent fluid was free in the peritoneal cavity and fibrinous exudate was more or less generally present on the parietal and visceral peritoneum, notably among the intestinal coils.

These cases were all due to appendicitis, and occurred since November, 1899. Four of the patients died. The attending physicians in these cases were Stockton, Rochester, Carlton, Jewett, Burleson, Bentz in two cases, Jacob Miller, Himmelsbach and Barr, Lattin, Colton, Edward Koehler in three cases, Shepherd, Jacob Krauss and Irving Potter. It is not asserted that all of these patients were in the last stages of acute general peritonitis when operated upon. Some were taken earlier than others, but all were considered to be virulent types of infection, and were drained after irrigation. Ten patients upon whom I operated with copious irrigation without drainage, are not included in this report. In these cases limiting adhesions had not closed off the general peritoneal cavity from the focus of infection and seropurulent pelvic exudate was present. Perforation of the appendix had not occurred, but patches of more or less marked gangrene were found. I considered these cases mild types of peritoneal infection. Clinically speaking, they were cases of early beginning peritonitis. All of these patients recovered.

Many authorities express most pessimistic opinions of operations for acute general peritonitis. Abbe quotes Treves, Richardson, Weir, von Winiwarter, Regnier and Delorme as practically asserting that all patients die. Other operators not having in mind the type of appendicitis here discussed report results too surprisingly successful to be possible. Some of this discrepancy in statistics is doubtless due to the classes of cases with which the operators have to deal. In my own records of 7 laparotomies for bowel obstruction, in all of which the evidences of acute general peritonitis were more or less developed, 4 deaths occurred. Of the fatal cases, 1 was a case of intussusception, 2 were malignant stricture of the sigmoid, and the fourth was band obstruction of the ileum, in all of which operation was delayed, from 4 days to a week. One case of volvulus, 1 of band constriction of the ileum occurring 6 months after operation for acute general peritonitis due to appendicitis, and 1 of cicatricial stenosis of the small intestine, all operated upon within 2 days after complete obstruction developed made good recoveries.

High mortality in this class of cases is to be ascribed largely to late operation which notably increases adynamia of the involved intestine with stercoræmia and consequent overwhelming damage to the resisting and rallying power of the peritoneum. In acute general peritonitis following any primary condition which may lead to the secondary infection of the peritoneum, the prognosis is most dubious, if not hopeless, when meteorism

from adynamia of the small intestine is extreme. In this class of cases I believe puncture of the intestine to evacuate intestinal fluid contents and flatus, with the subsequent injection of 2 or 3 ounces of a saturated solution of Epsom salts, should be practised. This procedure is recommended by McCosh. In my hands it was not practised in any of my successful cases.

Abbe discusses the prognosis in acute general peritonitis with judicial clearness. He concludes that "It has been demonstrated that logically and statistically the earlier the operation * * * the better the prognosis." And he further says that "the burden of responsibility for fatal issues in so many cases lies not with the surgeon so much as with those who withhold from him the opportunity to render the prompt aid which is the only chance."

In this connection I want to say that seemingly moribund patients will rally surprisingly when the peritoneum is freed of the distending volume of seropurulent exudate so often seen in these cases, and I am inclined to give patients the benefit of a surgical attempt at saving life even in seemingly hopeless cases. I have several times despaired of patients so operated upon, and my hopeless prognosis was concurred in by several professional bystanders, and on two occasions notably, the patients rallied and after the first 2 or 3 precarious days made good recoveries.

One of Abbe's statements regarding the treatment of acute general peritonitis I cannot accept. He asserts that when casts appear in the urine it is proof enough that the system is already overwhelmed, the kidneys and other glands are choked, and operation is hopeless. Carpenter asserts that passive renal congestion in patients whose vital powers are much depressed is sufficient to produce albumin and casts. Small wonder that in the active renal congestion caused by toxin elimination the serous leakage should be pronounced, and here is the explanation of the beneficial renal flushing derived from salt solution. In a case of beginning acute general peritonitis following gangrenous appendicitis complicated by pregnancy in the fourth month, after irrigation treatment, recovery was complicated by acute nephritis of 2 weeks' duration, albumin and casts being abundant in the urine. Nevertheless the patient's recovery was complete and she was delivered at term 5 months later. Dr. Irving Potter, who referred the case to me, was unable to state whether the urine was normal or not before operation.

In conclusion, it may be pointed out that several questions have not been discussed which relate directly to the treatment of acute general peritonitis, such as choice of incision, and the procedure adapted to the various primary lesions from which it arises; nor the questions dealing with postoperative complications. But it is not my object to discuss the surgical treatment of any one of these primary diseases or their complications. I wish to emphasize in this paper the surgical procedures I believe we should follow in the treatment of the necessarily fatal disease which acute general peritonitis as a rule proves itself to be when not treated by either irrigation or drainage or by the combination of these measures.

Tablet Unveiled.—At the Philadelphia Lying-In Charity and Nurse Training School a handsome tile and marble tablet in memory of Dr. Charles Meigs Wilson has been erected by the 14 nurses who studied under him when he was head physician of the school. It bears the inscription: Erected by his nurses in loving memory of Dr. Charles Meigs Wilson, who departed this life December 29, 1901.

Illegal Practice.—For practising medicine without a license, Victor B. Hall, of Philadelphia, is held in \$800 bail to answer a charge of illegal practice. Under the name of "vita physician" he undertook to cure a woman of certain maladies. She was to abstain from all medicines and live on a diet of baked barley, figs and milk obtained from a black cow. When she died he wrote a death certificate which led to his apprehension.

A PRELIMINARY STATEMENT OF THE ALKALINITY OF THE BLOOD IN INFECTIONS AND THE INFUSION OF SALTS DERIVED FROM HORSE'S BLOOD-ASH AS A THERAPEUTIC MEASURE.*

BY

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Within the last few years the literature upon the use of saline infusions has become voluminous. This, I think, shows a tendency to attack disease at its very foundation. Ten years ago, on thinking over the causes of infectious diseases in man, I was impelled to compare the human species with lower animals and search for a cause for the frequency of numerous dreaded diseases in man as compared with the small proportion or entire absence of such in lower beings. The germ theories of various affections had already been advanced, and the mode of intoxication with the resulting symptoms were being explained. There was not, however, at that time, nor is there now, any explanation of possible chemie changes in the composition of the body juices which would permit the growth of offending bacteria. The unnatural habits and surroundings of human beings, compared with the same conditions in lower animals, are said to exert a predisposing influence in lowering cellular vitality—a mere physiologic term—and thus the reduced resistance to infection thus induced is said to account for the entrance of germs into the body. Nevertheless, this hypothesis does not explain what change—chemie, physiologic or electric—is really at the bottom of germ invasion.

The fact that infection of the horse, dog or cat, for instance, is so rare as compared with man, led me to think that the composition of their blood and body-juices might explain this and reveal that these fluids probably contained something "strong" in their composition which enabled them to withstand infection. On making a comparative study of the blood of various species some years ago, the material available at the time led me to believe that the greater resistant "strength" of lower animals probably lay in the increased alkalinity of the blood. This theory still remains unsettled, some authors giving a higher degree of alkalinity and others a lower for the same species; or a higher degree in one of the classes of animals above mentioned, and a lower in another as compared to man. It was also claimed that in the infectious diseases, the alkalinity of the blood was lowered.

Based on the premises that the higher degree of alkalinity in lower animals is the causative factor of their immunity and that in the infections the alkalinity is reduced, it appeared logical to conclude that, if the alkalinity of the blood be increased either to correspond to that of normal human blood, or even stronger, as in lower animals, by the introduction of alkaline solutions, the growth of bacteria would be checked and thus the infection overcome.

In the treatment of a case of tetanus occurring in a boy who was under my care in 1894 and who was transported to the New York Post-Graduate Hospital for proper nursing, I suggested to the attending surgeon excision of the tissue infected with the bacilli, and venesection to rid the blood of part of the toxic products, as well as to relieve congestion of the central nervous system. This was to be followed by infusion of a saline solution of sodium chlorid and sodium bicarbonate on the ground that the alkalinity of the blood would thereby be increased and the further production of tetanus bacilli arrested. This plan was carried out only to the extent of the operation (the removal of tissue);

but the rest of the suggestion was considered too extravagant.

As to the hypothesis that the lowering of alkalinity could be recognized as a causative factor in infections, it was only a few months later that von Fodor's article helped to confirm this view and stimulated me to further research.

Von Fodor¹ claimed that the organism of rabbits injected with an alkali manifested a greater bactericidal action toward anthrax and that life was preserved longer than in those not so treated. He stated that for the first 10 hours there was an increase and after 24 hours a rapid decrease of the alkalinity in the infected animals amounting to from 16% to 26% of the original. In those in which the alkalinity was greater life was prolonged. In immunized rabbits the decrease was very slight, while in those not immunized it was very marked. In summing up, he states that if the infection was fatal the alkalinity was reduced greatly, while if recovery took place the alkalinity was only decreased to a slight extent, and in some cases had risen even above normal.

The question of alkalinity in infections is, however, still unsettled. Investigators, led on the one side by Loewy with his method of titrating laked blood, claim that instead of a reduction the degree ranges as in health, or is found to be even higher. Orlowski,² on the other hand, attributes the variation to the number of red blood-corpuscles. He states that "one can judge the accumulation of acid salts in the blood and the consequent autointoxication only when the alkalinity is diminished with a normal proportion of red cells."

Burmin³ found a reduction of alkalinity in cirrhosis of the liver, tuberculosis, chronic nephritis, malaria, chronic rheumatism, anemia, diabetes, etc.; and although most authors claim an increase in chlorosis, in his seven cases it was diminished, but increased with the hemoglobin and erythrocytes on administration of iron.

Rubinstein,⁴ in his experiments on quantitative and qualitative changes of the blood in carcinoma, states that the alkalinity declines in most cases; he regards it as the result of perverse morphologic change. Drago⁵ states that leukocytes manifest phagocytic properties toward bacteria the same as toward foreign bodies, but that the plasma, by means of its chemie properties, also acts bactericidally. This can be attributed either to the presence of alkali or to absence of assimilable material for the bacteria; or, lastly, certain pre-formed or newly-formed substances are present which inhibit bacterial growth. Calabrese,⁶ after numerous experiments, draws the following conclusion: "The alkalinity increases with the resistance of the body to infection. As soon as the body becomes immunized it opposes the virus or poison by a gradually increased alkalinity." He concludes that the alkalinity is the most efficient and constant factor that the immunized organism possesses to protect itself from the injurious effects of bacteria and to arrest their action.

It should also be noted that a relation exists between alkalinity and bacterial growth on culture media, excessively alkaline media impeding or preventing the growth of bacteria. There is also a possible explanation of the incubation period of infection, if we assume that virulent bacteria of any kind can enter the system, reducing the alkalinity as they multiply, either by converting available alkali as assimilable material or by the neutralizing action of their toxins. If the degree of alkalinity be great enough, no propagation will take place; or if the body itself reacts sufficiently, by increasing its alkalinity, infection will be averted; but if the quantity present is not sufficiently high, or the body does not react, the reduction of alkalinity continues and a medium will be prepared for the multiplication of the invading microorganisms with their accompanying harmful effects. In this way, not only the incubation period, but immunity itself enjoyed, by the colored races, or even among the white race, or in lower

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beings as compared to man, could be explained; one body having the capacity to annihilate the invading germ by its alkali production, the other making an effort which is not sufficiently lasting to overcome it. While at the laboratories of the New York Post-Graduate Medical School, under Professor H. T. Brooks, the study of the chemistry of the blood, particularly the composition of its salts, led me to attempt the production of an artificial serum, which compared with an analysis of the blood-salts derived from the blood-ash. This was to serve to increase the alkalinity of the blood when infused intravenously.

In an analysis of this kind, of which there are but few recorded,⁷ there is much speculation as to the probable combinations of acids and bases forming the salts extracted from the ashes, the blood having been subjected to the process of evaporation and incineration, and the results differing materially from the original combination and proportions as found in the circulating blood. The acid salts become neutralized or basic, carbon dioxide being lost or combining with bases and free acids appearing where they had existed only in organic albumin combination. Nevertheless, the combination of salts as derived from blood-ash, must be infinitely more accurate than any that could be prepared by a combination of salts, according to analyses heretofore made of such salts, with all their fallacies, and will be found to act in an entirely different manner. Furthermore, a solution of various chemie preparations, or a mixture of the salts as suggested, to take the place of blood serum, in which the salts are held in perfect solution, is a very poor substitute after all; for in the alembic of nature there are undoubtedly combinations produced which we, with the crudeness of our present knowledge, are unable to discern or to imitate.

When such a solution was introduced subcutaneously in rabbits, it produced a severe local reaction, causing the tissues to become edematous and the hair to fall out over the injected area. The life of the anthrax-rabbits was, nevertheless, prolonged. When infused intravenously, instant death frequently occurred, probably due to overdilatation of the heart.

This led to the use of a solution of salts derived from the blood-ash by evaporation and incineration. For this purpose the blood of the horse served in two ways: First, on account of being easily obtainable, and second, on account of the immunity of the animal to so many infections. As this process was found to be very tedious and my experimental work having been transferred to the Hygienic Institute of Berlin, I considered it more practical at that time (1896-1897) to have it put up by a large manufacturing chemical house in Germany. They stated that 90 kilos of fresh horse's blood were required to yield 200 grams of the salts made according to instructions given. First the ash from which I had derived soluble salts, and later the salts themselves were furnished me. The salts were obtained from the ash left on incinerating the horse's blood, by extraction, filtration and subsequent evaporation. On testing various strengths of these salts in solution, the isotonic coefficient was found to range from 0.5 to 0.55 in health, and 0.44 to 0.58 in affections like anemia, chlorosis, tuberculosis, nephritis. Below this point hemoglobin transfused out of the corpuscle wall and the solution became diffusely colored, and above this point it remained clear above, and the corpuscles, which remained intact, settled below. (This is Hamburger's test⁸ for the isotonic coefficient of blood in respect to salt solutions.) Too great a strength of solution would cause crenation of the corpuscles, but this would not be reached with less than a 2% solution. Heinz⁹ found that on injecting strong salt solutions into frogs, the red corpuscles became irregular in contour and the hemoglobin balled up. The stroma became granular, dead albumin. The action on warm-blooded animals was similar. There were nervous manifestations, and thrombosis of the lungs, kidney, and stomach vessels, followed by

death. Novi¹⁰ states that convulsions occur if the solution is double that of the normal.

By infusing 350 cc. of the solution of the salts of horse's blood into a patient suffering with diabetes complicated by pulmonary tuberculosis, and in whom a comatose condition was imminent, I found that no harmful effects were experienced, but that the glucose was present in the urine afterward as before.

Klikowicz¹¹ states that first the salts abstract water from the tissues, water entering the blood and salts the tissues; then through progressive excretion of the salts through the kidneys they enter the blood once more.

Since then in Dr. Lambert's service at the New York Hospital, 400 cc. of the same strength (0.7%) solution was infused into a patient with puerperal septicemia, with a beneficial result. The temperature was lowered within a few hours, and this marked the beginning of recovery.

In a patient with cerebrospinal meningitis to whom was given an initial dose of 500 cc., followed by a second dose the next morning, beneficial results which continued until recovery were noticed almost immediately after infusion.

Another patient with cerebrospinal meningitis, at the New York Hospital, received 400 cc. of a 1% solution on the fifth day of the disease while in a state of stupor. On the seventh and ninth days 500 cc. and 250 cc. respectively were administered. The general condition was improved with the first dose, the restlessness relieved and food taken better; the disease ran its course, however, terminating fatally on the eleventh day of illness.

After citing these few cases the question naturally arises: Were not the beneficial effects due to dilution of toxin by the immense amount of fluid introduced, or removed by the lavage effect which must necessarily result; or were they actually due to the alkali present in the fluid used and especially to the proper combination as found in the salts of the horse's blood; or is it possible that some unknown factor which has thus far eluded our chemie test brings about the neutralization of toxin, and, if this be so, how should our attention be directed?

Wassermann¹² believes that the natural resistance to disease is due to the presence of complements (alexins), ferment-like substances which possess the power of destroying bacteria.

If it is determined that a solution of combined salts produces this action, may not the cause for it be found in the delicate combination of these salts; or, after these have become thoroughly understood and the active principle still not found, may not the substance be isolated as a salt derivative?

The few experiments made can as yet lay no claim to therapeutic value, but they point to the fact that we are getting at the very foundation of disease and that the trend of thought is to seek for the conditions which permit germ existence, now that we know they are the cause of disease. In connection with these experiments there are many questions which must be solved and will be of general interest, as, for instance, the amount to which alkalinity is increased after infusion; the reaction and chemie changes in the excretions (urine); the change in isotonic coefficient; whether the increased alkalinity is a causative factor *per se* in the production of beneficial results, and whether there is an increase or diminution in the number of red and white cells. This will be of utmost interest to show whether the increased alkalinity will preserve the blood-corpuscles intact, thus counteracting the destructive effects of the toxin or lowered alkalinity, or whatever cause, besides decreased nutrition, is operative in the disintegration of the erythrocytes in the infections. We must then try to discover whether it is of any importance in relation to immunity.

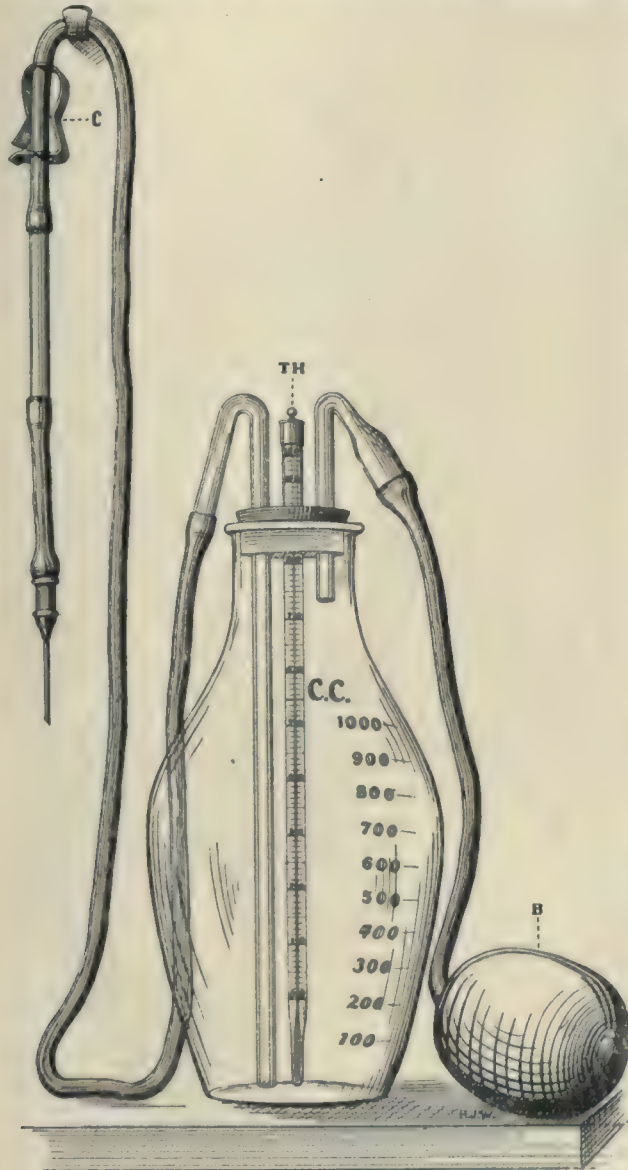
The preparation of salts of horse's blood is being made in the form of tablets, each tablet containing one

gram of the pure salts. These are put up aseptically in bottles containing ten tablets each.

Analysis of these salts shows the following:

Silica (SiO_2)	0.20
Alumina (Al_2O_3)	0.10
Iron oxid (Fe_2O_3)	0.09
Chlorin (Cl_2)	27.06
Calcium oxid (CaO)	0.05
Magnesium oxid (MgO)	0.08
Carbonic acid (CO_2)	6.79
Sulfuric acid (SO_3)	4.49
Phosphoric acid (P_2O_5)	8.93
Soda (Na_2O)	26.86
Potash (K_2O)	25.41

The pure salts are readily soluble in distilled water, and the tablets can be added to the water, according to



the strength of the solution desired. The solution must be perfectly clear. If boiled in a glass bottle or apparatus for purposes of sterilization, fine crystals will form, and if left in such glass utensils, these crystals will multiply and eventually produce a sediment. This crystalline deposit is due to the formation of silicates, caused by the action of the alkaline solution on the glass. It is for this reason that the salts are being prepared in tablet form ready to be added to the distilled water before using and not be kept in stock solution. The apparatus (see Fig.), consisting of a graduated bottle, shaped for convenient holding has a perforated stopper into which is fixed a 220°F . (105°C .) thermometer; a short inlet and long out-

let tube of glass. To the outlet tube is attached rubber tubing provided with a convenient stop-clamp and a short, pointed infusion needle. To the inlet tube can be attached a rubber bulb, by means of which pressure can be exerted. Mere tilting of the bottle will permit the flow of the solution, and while one hand is used to insert the needle, the other is free to regulate the flow.

Subcutaneous injections are painful and might possibly alter the composition of the solution. In applying this treatment, 500 cc. to 1,000 cc. of a 0.7% to 1% solution can be infused, preferably in the median cephalic or basilic vein. Cocain is used for the cross incision over the vein, which is made to bulge by compression above, and a thick short-pointed needle introduced after all the air is expelled from the tube. There is an advantage in placing a probe or other blunt instrument under the vein before introducing the needle. There is no necessity for ligation before or after. The thermometer in the flask denotes the temperature during all the time the fluid is flowing. If begun at 120°F . the temperature of the solution gradually falls, but this can be avoided by wrapping the flask with hot cloths or placing it in a pail of warm water.

The pulse must be a criterion as to whether venesection should be performed previous to an infusion. This is commendable in all cases in which great toxicity exists and the pulse is full. With a feeble pulse and heart action, these grow firmer, and in no instance have any deleterious effects been noticed. In severe intoxication or full pulse with strong heart action, I consider the elimination of a large quantity of toxins an important adjunct to the new method. Such an infusion should cause the elimination of toxic substances by lavage of the cells irritated and paralyzed by the poison; it stimulates the heart, respiration and nervous system; it raises the arterial tension, favors diuresis, diaphoresis and excretions in general. The double action of diluent and neutralizer should be microbicide and antitoxic. In diseased renal conditions, anasarca has been reported, also edema of the lungs from diseased heart.

In using the salts of the horse's blood, we employ that part which has proved to be harmless and avoid other constituents of the serum which have proved to be toxic to the human system. I refer to untoward symptoms such as rashes, headaches, and albuminurias produced by large serum injections. If the action, as noted in the cases above, has not been misconstrued, the effects should be equal in other infectious conditions, such as typhoid, scarlet fever, pneumonia, dysentery, peritonitis, perityphlitis, tuberculous affections, smallpox, severe rheumatisms, yellow fever, and also in carbon monoxid poisoning, uremia, diabetic coma, ptomain poisoning, extensive burns and similar conditions.

For the work thus far accomplished, I wish to express my gratitude to Dr. Washburn, of Guy's Hospital, London; to Professor Winternitz, of the Berlin Hygienic Institute; to Dr. B. H. Buxton, of Cornell University, and Professor H. T. Brooks, of the New York Post-Graduate Medical School, for the kindness they have shown me and for assistance rendered in their respective laboratories. Also to Dr. F. Hartley for the encouragement he has given me by introducing the treatment into the New York Hospital; to Dr. Lambert, upon whose cases it was tried, and to Dr. Patterson of the House staff.

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RESPIRATORY GYMNASTICS: EMPHYSEMA AND ATELECTASIS: LUNG REFLEX: THE HEART IN DISEASES OF THE LUNGS.

BY

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Atelectasis is not the only evidence of ill-developed lungs, for its antithesis is nearly as frequent. This paradox deserves explanation. While atelectatic patches are limited to the upper, emphysema is limited to the lower chest and lung borders. Recalling elementary facts in the physiology of respiration, we know that as the lungs expand with each inspiration, their position changes somewhat in relation to the thoracic wall. The roots, the posterior borders and the apices remain nearly stationary, whereas, the anterior parts move downward and inward, so that their inner borders in front approach one another. Now the air entering the lungs follows the direction of least resistance, hence, the lower anterior lung region, all thing being equal, receives a larger amount of air than other pulmonary areas.

Over the lung like any other organ containing air, percussion yields a clear sound, and is called pulmonary resonance. If we percuss the chest during forced expiration, we will find that the resonance is supplanted by dullness, and even by flatness, depending upon the capacity of the individual to expel the amount of reserve air during expiration. One characteristic sign of vesicular pulmonary emphysema is a similarity of the percussion note of the lungs during inspiration and expiration. Observation has taught me, that the same phenomenon, viz., unchanged percussion tone during inspiration and forced expiration, is an early symptom of the pretuberculous stage of tuberculosis. We must assume then, that in individuals predisposed to tuberculosis and in those who already have the disease, the lungs are practically in an emphysematous condition, viz.: dilation of the air vesicles with disappearance or loss of tone of the elastic fibers. It is the latter condition which prevails, as I have assured myself by repeated histologic examinations. It is most probable that individuals who have tuberculosis, or who are predisposed to the disease, which is practically what we mean when reference is made to the pretuberculous stage, show a most palpable defect in the act of expiration. Accompanying this unaltered percussion note, we have a dislocation downward of the lung borders and a diminution and even obliteration of the cardiac and splenic areas of absolute dullness: conditions which obtain in emphysema. Since the use of the Röntgen rays in thoracic examinations, all observers are agreed that limited respiratory excursions of the lungs is a characteristic sign of tuberculosis, yet, to my knowledge, no explanation has been adduced in explanation of this limitation in the movements of respiration; the lungs in tuberculosis are in a permanent inspiratory position, and show little or no respiratory change. The following tables show a comparison between normal individuals and those already suffering from tuberculosis or showing a predisposition thereto in relation to lung mobility after forced inspiration and lung resonance. Five cases have been selected at random for each group from a large number of persons examined. All measurements were made in the right middle axillary line.

NORMAL INDIVIDUALS.

Case.	Position of Lung Border.	Lung Mobility.	Lung Resonance.
1	Lower border, 7th rib.	6 cm.	Dull after forced expiration.
2	Upper border, 7th rib.	5 cm.	Dull after forced expiration.
3	Upper border, 7th rib.	4½ cm.	Flat after forced expiration.
4	Upper border, 8th rib.	5 cm.	Dull after expiration.
5	Lower border, 7th rib.	6 cm.	Flat after forced expiration.

ABNORMAL INDIVIDUALS.

Case.	Position of Lung Border.	Lung Mobility.	Resonance.
1. Tuberculosis, first stage.	Lower border, 9th rib.	¾ cm.	Pulmonary percussion sound the same during expiration as during inspiration.
2. Patient from a tuberculous family. Has chronic cough.	Upper border, 10th rib.	1½ cm.	No difference in percussion sound.
3. Tuberculous family history. Lungs poorly developed.	Upper border, 11th rib.	½ cm.	No difference.
4. Incipient tuberculosis.	Upper border, 9th rib.	2½ cm.	Slight dullness.
5. Patient has characteristic tuberculous physiognomy.	Lower border, 10th rib.	1 cm.	No difference.

The following conclusions may be formulated: 1. In health, the percussion note of the lungs is resonant during inspiration, and dull or even flat during forced expiration. 2. In emphysema, the percussion note is unchanged during the two phases of respiration. 3. This unchanged percussion note, heretofore recognized in pulmonary vesicular emphysema is pathognomonic of lungs predisposed to tuberculosis, and of lungs already affected. 4. Associated with the unchanged percussion sound, there is an extension of the lung borders manifested by downward dislocation of the lung and diminution often to the extent of obliteration of the cardiac and splenic areas of absolute dullness. 5. Unchanged percussion resonance is indicative of deficient expiratory force of the pulmonary substance, and constitutes one of the earliest trustworthy signs of the so-called pretuberculous stage of tuberculosis.

The Lung Reflex.—Another interesting phenomenon is what I have denominated the “lung reflex.”¹ It illustrates the important fact that the respiratory area may be influenced indirectly by stimuli acting on the vagi. Elsewhere² I have shown the value of the lung reflex in diagnosis. Here I will only consider its relation to lung development. In a contribution by Moccucci,³ the suggestion was made that when ether was sprayed over the left half of the abdomen, marked reduction in volume of the spleen was observed in 12 cases. In repeating the experiments, I likewise noticed a decided reduction in the area of splenic dullness in all individuals on whom this method was tried, irrespective of the fact whether enlargement of the spleen existed or not. Investigations convinced me that this diminution in the area of splenic dullness was not real, but only apparent. When the ether spray was directed over the region of the heart, the percussional area of that organ was reduced at once; in fact, the superficial area of cardiac dullness could be obliterated by the maneuver. Similarly, when the spray was directed over the hepatic region the superficial area of dullness of that organ could be reduced at once. When the spray was directed over the border of the lungs posteriorly, the lung borders could be made to descend from two to four inches, dependent on certain conditions. It was further ascertained that dislocation of the lung borders by forced inspiration never approached the dilation of the lungs produced by the cutaneous application of the ether spray. Further experiments demonstrated in brief the fact, that the application of any cutaneous irritant, whether the latter be mechanic, chemic, or electric, would always induce acute dilation of the lungs. Even in emphysematous individuals the application of a cutaneous irritant still further augmented the existing lung dilation. The question naturally arose, by what means could we establish the fact that the application of any cutaneous irritant would cause acute dilation of the lungs, a condition which, it may be mentioned parenthetically, is only of a few minutes’ duration? Such a hypothesis was made tenable by the aid of conventional physical signs and the use of the fluoroscope. These aids show that

when the skin is irritated by means of cold, by friction, or by a strong faradic current, lung dilation will ensue. The degree of lung dilation is dependent upon the character of the irritant and the severity of its application. The response of the lung to dilation is always greatest in that part of the lung contiguous to the source of cutaneous irritation. Lung dilation may be recognized by the following physical signs: 1. Diminished respiratory excursions of the lung borders. 2. Extension of the pulmonary percussion note and obliteration of the cardiac and splenic areas of dulness. 3. Hyperresonance of the lungs. 4. Obliteration of the apex beat. Auscultation is of no value as a physical sign, inasmuch as the artificial dilation does not last longer than three minutes after the source of cutaneous irritation has been removed. Lung dilation spreads from the source of cutaneous irritation involving primarily circumscribed parts. In lungs showing diminished resonance, the latter could always be increased by cutaneous irritation over the part percussed. The x-rays show how the brightness of the lungs is increased by cutaneous irritation. By gradually applying the irritant to different parts of the skin of the thorax, one may note that eventually the entire lung may be made to yield a more intense luminosity. This increased luminosity, however, does not last longer than three minutes in the average person, after which time the lungs resume their normal appearance.

In a number of measurements made during the study of the lung reflex after cutaneous irritation, I found the average dislocation of the lower border of the lung as follows:

Right sternal line	3½ cm.
Right parasternal line	3¼ cm.
Right mammillary line	4 cm.
Right axillary line	6 cm.

In another communication I demonstrated that acute dilation of the lungs can be invoked in healthy persons by irritation of the nasal mucosa and conversely that this condition can be dissipated after removal of the source of irritation. The pulmonary neurosis of dilation can be obtained by firmly compressing cotton in both nasal cavities. The degree of lung dilation with its concomitant phenomena will naturally vary according to circumstances which modify other reflex acts. After the introduction of the cotton, a few moments elapse before percussional results are noted. One will then observe superresonance and immobilization of the lung borders and diminution of the areas of hepatic and cardiac dulness, in the latter instance, even to obliteration. Irritation of one nasal cavity with cotton does not yield manifest results. If the mucosa of both nasal cavities has been thoroughly cocaineized before the introduction of the cotton, no lung dilation ensues. I have frequently encountered in my clientèle, individuals presenting the symptomatic picture of pulmonary vesicular emphysema in whom was associated, some abnormality of the nose. The anomaly was a simple coryza, spurs, deflection of the septum, hypertrophic rhinitis or polypi. At any rate, after eradication of the nasal anomaly, the symptoms of pulmonary dilation disappeared. The form of emphysema here cited is in reality an acute lung dilation, an eradicable condition dissociated with the anatomico-pathologic conditions conventionally allied with emphysema. The typical clinical picture of acute lung dilation could nearly always be made to disappear by aid of the cocaine test, which constitutes in this form of pulmonary neurosis a diagnostic aid of unquestioned value. After application of a solution of cocaine to the nasal mucosa, the lung borders will recede and the lung resonance and normal vesicular respiration are restored. In patients suffering from asthma of presumable nasal origin, impaction of cotton in one or both nasal cavities may induce a typical asthmatic paroxysm. This fact is of undoubted diagnostic value. I maintain that the phe-

nomena of lung dilation can be provoked at any point in the extensive course of distribution of the pneumogastric nerves, and that the stimuli may act indirectly on the vagi through the terminal fibers of the trigeminus, or, as he has already shown, by irritation of the cutaneous sensory nerves, contiguous to the lungs.

It is necessary to hypothesize the existence of two distinct functions of the vagus nerve, or, at any rate, different fibers, with two distinct functions: fibers which can dilate (bronchodilator nerves) and fibers which contract (bronchoconstrictor nerves) the lungs upon application of the appropriate stimuli. In the action of these two sets of nerve fibers, the vasoconstrictor and vasodilator nerves of the vasomotor system may be cited as analogous.

The Heart Reflex.—This reflex is obtained by irritating the skin in the precordia, contraction of the myocardium resulting. This phenomenon I have called the heart reflex. I have considered elsewhere the value of the heart reflex in diagnosis.⁴

At this time, this reflex interests us as a means of promoting and maintaining cardiac vigor, for I believe, as shown in other communications,⁵ that the real factor involved in balneotherapeutics and mechanotherapeutics (Schott) is dependent not on the baths and exercises as such, but to the cutaneous irritation provoked by these maneuvers.

The Heart in Diseases of the Lungs, Especially in Tuberculosis.

I am firm in the conviction that the heart is an important factor to be considered in phthisiotherapy. In our intense struggle for specific remedies in tuberculosis of the lungs we have been unwise in disregarding this important organ. The consensus of opinion in phthisiotherapy now, is to make the organism resistant to the desperate white plague, and unless we make the heart equal to the burden cast on it by tuberculous lung invasion, it is difficult to conceive how we can ever gain mastery over pulmonary tuberculosis. Of late, I have given especial attention to the behavior of the heart in the pretuberculous and the tuberculous stages, and I have been astounded with the results of my observations. In most of my cases, it would appear as if the heart bore the brunt of the trouble, and not the lungs.

In brief, treatment directed toward the maintenance of cardiac vigor by the rigorous employment of the Schott methods of baths and exercises, wrought a phenomenal improvement in my tuberculous cases which had heretofore been impossible with other methods of treatment. It is the right heart which succumbs in tuberculosis, manifested by enfeebled heart tones and dilation of the right chambers. However effective the treatment of tuberculosis may be by means of forced nutrition and continuous open-air treatment, the vascular nutrition of the lungs must suffer if the vigor of the heart is not maintained.

It was Brehmer, I believe, who first vigorously defended the theory, that the so-called tuberculous habitus was particularly characterized by a too voluminous



Fig. 1.—Shows a combination of atelectatic zones (E E E) with lung emphysema. A represents the normal upper border of hepatic absolute dulness, whereas B represents the position of the lower lung border in the individual. C is the normal area of absolute cardiac dulness, whereas in this person it is indicated by the limited patch (D). The individual in question has incipient tuberculosis and a few tubercle bacilli have been demonstrated in his sputum.

lung associated with a very small heart. In his enthusiasm in support of his theory, Brehmer maintained that the disposition to and the cause of tuberculosis was a small, weak heart. The selection of the site for his sanatorium at Görbersdorf was influenced by his theory. Residents of high altitudes, he argued, enjoyed immunity from tuberculosis because a high altitude, owing to the diminished air-pressure, increased the action of the heart, eventually inducing hypertrophy of that organ, which in itself excludes tuberculosis. Space forbids me to pursue further the brilliant ratiocination of Brehmer; suffice it to say, that, like the proponents of all theories, he has pushed his views to extremes; yet, withal, there is a tithe of truth lurking in his doctrine. Clinicians are bound to recognize the heart as an important element in tuberculosis, and to pay to it the tribute which cardiotherapy demands.

The Heart in Asthma.—I believe that Kingscote in his recent work⁶ has measurably advanced our knowledge of the etiology of asthma. For some time I have carried out similar investigations, and am thus able to confirm many of his observations. While I am not convinced that a dilated heart is the essential cause of asthma in the majority of instances, yet I contend that a dilated heart is operative in predisposing to an asthmatic paroxysm and augmenting its severity. Giving expression to a conservative statement, I have no hesitancy in saying, that since inaugurating the treatment of asthma by the Schott method, which has for its object the invigoration of the heart, my results have been better than by other methods of treatment.

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SUGGESTIONS TO ANESTHETIZERS.

BY

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The art of giving an anesthetic well is not difficult of attainment, but it is one to which, unfortunately, comparatively little attention is given by the average physician. Because of its great importance and the seeming inability of at least certain younger members of the profession to administer an anesthetic so as to reduce the danger attending it to a minimum, I venture to submit a few practical suggestions.

However trite it may appear, the *first* requisite is that the anesthetizer should give the condition of the patient his undivided attention.

Second, the anesthetic, at the beginning, should be given slowly. This is safer and far more pleasant to the patient. Much of the struggling that characterizes the beginning of the second stage may be obviated if the ether (or chloroform) is administered slowly and diluted with plenty of air during the first stage. Indeed, in very many cases, the patient passes gradually from the stage of excitement to the stage of complete unconsciousness with hardly a struggle. After unconsciousness is reached it is imperative to get the patient "well under" the anesthetic. Ether should then be poured into the mask liberally, and the air completely excluded until deep narcosis is reached. If chloroform is used, it may be dropped on more freely, but air in abundance should be inhaled with it in all stages of anesthesia. It will be found that after the patient is in this condition of deep unconsciousness, very little of the anesthetic is required to maintain it. This deep narcotic, or operating stage, is recognized by loss of muscular rigidity and abolition

of reflexes, conveniently tested by the conjunctival reflex.

A *third* and most important matter for consideration is the management of the patient's lower jaw. From the first it should be kept well forward, making it impossible for the patient to "swallow his tongue." The mouth gag, tongue forceps and suture through the tongue may well be relegated to the history of barbarism. Not infrequently does it happen that one's patient suffers more on account of a tongue, bruised and lacerated by these instruments of torture, than from the immediate effects of the operation. A practical method of keeping the jaw forward is to place the thumb of the left hand on the bridge of the nose at its root and with the palm applied to the patient's cheek, the middle or ring finger presses from behind forward upon the posterior surface of the angle of the jaw, and as relaxation of the muscles occurs with approaching narcosis, the lower teeth are hooked under or rather in front of the upper. At the same time the patient's head is turned on the right side, thus removing the influence of gravity on the relaxed jaw and thereby the strain on the anesthetizer's hand, which is not inconsiderable in a long operation, is relieved. The fore or middle finger of the left hand is left free to palpate the facial artery as it crosses the inferior border of the jaw and the right hand is free to handle the mask and anesthetic. The hands may be reversed at any time. This forward position of the patient's jaw is instituted at the earliest possible moment that the relaxing muscles will allow, and is never for an instant allowed to be modified. If the jaw is allowed to momentarily slip back, the breathing changes instantly and becomes stertorous and embarrassed and when returned to the former position it becomes noiseless and evidently free and untrammelled. A trustworthy indication of the onset of the operating stage is shown when the jaw slowly yields and will allow itself to be thus manipulated. The absence of the conjunctival reflex may also be taken as an indication that complete narcosis is at hand, but it is often unnecessary except when muscular rigidity in the initial stage is slight or absent. This muscular rigidity, as shown to the anesthetizer by the unyielding jaw, is nearly always present in ether anesthesia, but its absence is not infrequently noted in anesthesia by chloroform.

Two procedures which I have often observed I would especially deprecate,—the covering of the patient's eyes with a napkin, or piece of gauze, and the binding of his arms. The first takes away from the anesthetizer the chief signals as to the patient's condition, and the second precludes the possibility of instantaneous artificial respiration.

Fourth.—The question of the exact time at which the greatest danger is to be apprehended is one that deserves most serious consideration. It has not been sufficiently emphasized that the time above all others for watchfulness is that moment or two when, at the end of the stage of excitement, with the muscles rigid and the skin blue from temporarily inhibited respiration, the patient, exhausted from struggling, passes into the complete narcotic stage. These critical moments are nearly always characterized by deep breaths and at this time most frequently the fatal dose of the anesthetic is inhaled. Especially is this true of chloroform. When the patient ceases to struggle and begins to relax and to draw deep breaths, chloroform especially should either be withdrawn altogether or administered most cautiously in very small amounts, and diluted with an immense amount of air.

Fifth.—What shall the anesthetizer watch when the patient is in deep narcosis in order to know his condition? It seems to me that the rate, rhythm and character of the respiration, whether abdominal or thoracic, should occupy the first place in one's mind; the other features of pulse, eye and color being held in subconsciousness. A change in the heart condition so slight

that it cannot be appreciated by the finger palpating an artery can be recognized by the change in the character of the respiration, because of the altered circulatory condition in the respiratory center. Any change then in the respiration, which normally in deep narcosis should be noiseless, regular and abdominal should demand urgent investigation. If the respiration becomes noisy and inspiration is evidently obstructed, it will be found most commonly that the jaw has slipped back, but if it loses its abdominal type and becomes increasingly shallow, or above all "snappy" in character, the thoracic and cervical muscles participating and the lower jaw dropping convulsively with each inspiration, the patient is in imminent danger. The anesthetic should then of course be immediately withdrawn and the head lowered. Large doses of strychnia should be given hypodermically, and artificial respiration practised if it becomes necessary.

Sixth.—A most important and vexing question to the tyro is, how shall we know if the patient, apparently under complete anesthesia, is receiving just enough of the anesthetic? We cannot wait for him to struggle, nor can we delay until we obtain information from the conjunctival reflex or from the pupil, which is usually, but not always, contracted in deep anesthesia. The so-called "secondary dilation" of the pupil may mean impending danger from too much, or awakening of the patient from too little, anesthetic. The most valuable sign of beginning awakening of the patient is the rolling of the eyeballs from side to side. This in my experience always happens just as the patient is passing the border line between deepest narcosis and its lesser degrees, and precedes by some moments other evidences of returning consciousness. This lateral rotation of the eyeballs is slow and hesitating in character and occurs at intervals of a few seconds. It is a signal to the anesthetizer that a few drops more of the anesthetic from time to time will prolong almost indefinitely the proper operating condition.

To recapitulate:

1. Give the patient your undivided attention.
2. Give the anesthetic slowly.
3. Keep the patient's lower jaw forward.
4. Give the anesthetic most cautiously (especially chloroform) when the stage of unconsciousness is at hand.
5. During deep anesthesia watch particularly the respiration, but also the pulse, eye and color.
6. The rolling of the eyeballs from side to side is the first and most easily observed indication of returning consciousness.

SOME REMARKS ON THE USE OF ADRENALIN AS AN ADDITION TO SOLUTIONS FOR LOCAL ANESTHESIA.

BY

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There is no discovery that has contributed more to the advances that have been made in the field of minor surgery than that of the anesthetic properties of cocaine by Koller in 1884. The era of painless operations under local anesthesia dates from the time of Koller's first publication. Corning, Réclus, Oberst, Braun, Hackenbruch, Schleich and others, elaborated the methods by which this agent is to be used, and thus contributed much to the development of the subject.

The chemist, cognizant of the poisonous properties and the instability of cocaine, sought for less poisonous and more stable substances, and thus eucain, nirvanin, and other drugs were discovered. Both eucain and nirvanin are very stable products, and can be boiled several times without loss of strength or a chemie change.

Eucain is three times, and nirvanin about ten times, less poisonous than cocaine. The surgeon, on the other hand, has elaborated upon the possibilities of local anesthesia with very dilute solutions of these agents. Schleich published the first scientific study of what he aptly called the "infiltration method," and to him belongs the credit of having been the first to demonstrate the wide range of possibilities with this method of anesthesia. His method, however, has been modified by Hofmeister, Hackenbruch, Braun and others. Hofmeister suggested that whenever possible the constrictor should be applied before the injection, so as to make the parts fairly bloodless and to lessen the possibility of pain from the forcible displacement of blood by the injected solution. Hackenbruch recommended his so-called method of "circular anesthesia" in painful inflammatory affections. Because of its stability and its lower toxicity Braun suggested that eucain should be used instead of cocaine in the Schleich solutions.

In the course of operations that are done under local or infiltration anesthesia, considerable time is used in sponging off the blood, no matter how small the hemorrhage may be. This is true of all operative procedures, in the incision of abscesses, furuncles and the like, the removal of small newgrowths, or in major operations. The oozing of blood necessitates frequent sponging of the wound, and to the patient this is painful in proportion to the force required. The blood obscures the field of operation and lessens the rapidity with which the work can be done. A sebaceous cyst of the scalp could be excised much more quickly if no bleeding occurred. Major operations could be done much more quickly and painlessly under local or infiltration anesthesia if little or no sponging of the wound was required.

I would like to call the attention of the profession to the value of adrenalin as an addition to solutions for local or infiltration anesthesia. Adrenalin, the discovery of Dr. Takamine, of New York City, is described as an "almost nonpoisonous crystalline substance, the active bloodpressure-raising principle of the suprarenal gland. It is a light, white, microcrystalline substance, readily soluble in hot water. It is a powerful astringent, a fraction of one drop of an aqueous solution of adrenalin or one of its salts, in the strength of 1 to 10,000, blanches the normal conjunctiva within 30 to 60 seconds."¹

Adrenalin chlorid solutions are now on the market. "They are already much used by the laryngologists and rhinologists as a hemostatic application, for the relief of nasal congestion, as a diagnostic aid, and for the continuous treatment of acute inflammatory affections of the accessory sinuses of the nose."²

If one drop of the 1-1,000 solution of adrenalin chlorid is injected under the normal skin a slight burning sensation is felt, but no anesthesia occurs. Within one minute an area of skin about two inches in diameter becomes blanched and almost bloodless and remains so for from 6 to 12 hours. The same effect will be observed if a 1-5,000, a 1-10,000, or a 1-15,000 solution is used, but with these weaker solutions the blanching of the tissues appears only after a few minutes and disappears after about 8 to 6 hours. After the blanching of the skin has disappeared the tissues apparently return to their normal condition. The injections of the adrenalin solutions were made under the normal skin of the normal forearm a considerable number of times, but no deleterious effects, such as sloughing or secondary ecchymoses, were ever observed. In the course of these investigations eucain and cocaine solutions containing adrenalin chlorid in the proportions of 1 to 5,000 to 1 to 20,000 were injected under the skin of the forearm. It was found that the anesthetic properties of the eucain and the cocaine were perfectly preserved, while the adrenalin caused the same anemia and blanching of the tis-

¹ Emil Mayer, "Clinical Experience with Adrenalin," *Philadelphia Medical Journal*, April 27, 1901.

² Mayer, loc. cit.

sues that had been observed after injections of the pure adrenalin solutions. The blanching of the tissues extended for from one to two inches beyond the area infiltrated and remained for the same number of hours as when the plain adrenalin chlorid solutions were used. During the past four months I have made it a practice to add adrenalin chlorid in the proportion of 1 to 5,000 to 1 to 20,000 to the solutions of eucain or cocain used for local anesthesia, and I have used these solutions in a number of minor operations such as the incision of abscesses and furuncles, and the excision of sebaceous cysts, nevi, small enlarged lymphatic glands and the like. The amount of bleeding that occurred was remarkably small; it was often so slight that it was unnecessary to sponge off the wound a single time.

Only the larger bloodvessels bleed when they are cut across, the smaller vessels are so tightly contracted by the adrenalin that no blood can escape from them, and therefore no oozing occurs. As I have mentined above, the adrenalin interferes in no way with the anesthesia of the infiltrated area. In none of the patients operated upon did even the smallest secondary hemorrhage occur, nor was there any bleeding observed under the skin or at the site of the operation when the first dressings were removed. On purely theoretic grounds I had expected that some secondary bleeding might at times take place; for with the relaxation of the bloodvessels 6 to 12 hours after the injection of the solution I thought that some bleeding from the larger of the smaller vessels would occur. This, however, was never noted, although I must draw attention to the fact that the patients thus far operated upon are relatively few in number, and in all of them it was possible to make firm compression of the wound with bandages. What would be the result in the larger and deeper wounds that must be made in major operations, such as herniotomies and the like, cannot as yet be stated. I have not had the opportunity to test the adrenalin cocain or adrenalin eucain solutions in such patients, as a fitting case has not yet presented itself. Clinical experience must teach us whether adrenalin may be used in major operations under local or infiltration anesthesia or not, but experimentation along this line must be circumspect and guarded. In one case, the removal of a small sebaceous cyst from the scalp, a small slough formed in the wound after the operation, but I think it is more than doubtful whether the adrenalin contributed to or was the cause of it. In more than 30 other clean operations the primary union was in no manner interfered with nor delayed. The experience that I have had up to the present time, however, will not allow me to state finally that the addition of this minute quantity of this very powerful astringent may not, in rare cases, have some effect upon the healing of wounds.

The experiences with adrenalin recorded above have convinced me that the addition of adrenalin chlorid in the proportion of 1 to 5,000 to 1 to 20,000 solutions, for local anesthesia has a distinct value in minor operative surgery in that it almost entirely does away with the oozing of blood from the wound. As adrenalin is a cardiac stimulant it has the additional advantage that it will counteract the depressing effect of the eucain or cocain, and because it keeps the local bloodvessels firmly contracted for a number of hours, it will prevent the congestion, and hence the pain which is so apt to follow soon after the anesthetic effects of the eucain or cocain have worn off. Adrenalin chlorid can be obtained in a sterile condition in the form of a 1 to 1,000 solution. Of this solution the required amount should be added to a sterile solution of eucain, cocain or Schleich mixture just before it is to be used. The best results can be obtained with solutions which contain 1 to 5,000 to 1 to 10,000 of adrenalin chlorid. If the quantity of injected solution has to be a large one, it will be advisable to use a 1 to 15,000 to 1 to 20,000 solution. A more detailed account of these investigations will be published at some future date.

THE WORLD'S LATEST LITERATURE

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1. An Experimental and Clinical Research Into Cocain and Eucain. GEORGE W. CRILE.
2. Cancer of the Penis. HENRY H. MORTON.
3. Median Perineal Prostatectomy: Total Removal of the Prostate Gland. Six cases. ALEXANDER HUGH FERGUSON.
4. Fracture of the Metacarpal Bones and Oblique Fracture, Simple or Compound, of the Forearm. W. W. GRANT.
5. The Question of Spinal Braces in Lateral Curvature. A. B. JUDSON.
6. The Report of a Typhoid Fever Epidemic at the Iowa State Agricultural College. W. E. HARRIMAN.
7. The Identification of Criminals Through the Fundus of the Eye. M. F. WEYMAN.

1.—Cocain and Eucain.—While general anesthesia prevents appreciation of pain and voluntary motion it does not prevent impulses from mechanic, thermal or electric stimulation which affect respiration, heart and vasomotor action, and culminate in shock. Cocain and eucain suspend the functional activity of protoplasm without forming chemic combination or causing destruction of substance or properties. All afferent and efferent impulses are blocked by injections in either nerve trunks or spinal cord, and when applied to the medulla or floor of the fourth ventricle there is general anesthesia and loss of voluntary action and suspension of respiration. Cocain is a little more prompt than eucain. Intravenous injections cause rise in blood-pressure, increase in heart's action with a disproportionate rise in the splanchnic area. In overwhelming doses all pressures sink to the line of the abscissa. They partially or wholly suspend the inhibitory function of the vagi. In sub-arachnoid injections in the lumbar region there is immediate fall in pressure. The fluid ascends as readily in the vertical as in the horizontal position. The operator has but little control over the extent of the anesthesia. Mortality is 50 times greater than with chloroform. The clinical applications are illustrated by reports of amputations without shock. Applications in pharynx and larynx prevent reflex inhibition of respiration and the heart. The use of cocain is not practical in inhibitions for diphtheric stenosis. A preliminary hypodermic of atropin will prevent death from reflex inhibition. [H.M.]

2.—Cancer of the Penis.—Age and uncleanness accompanying phimosis are the chief predisposing causes. The glands in the groin are involved early. The microscope may be used to confirm suspicion. This disease is fatal in a year or two without operation. Amputation of the free portion is much less serious than of the entire penis. In the latter separation of the corpora cavernosa from the rami of the pubes by a periosteal elevator is a matter of considerable difficulty followed by hemorrhage hard to control. Morton prefers to burn through the crura with a Paquelin cautery close to their attachments to the bone. The cautery can also be used to stop bleeding from the dorsal vessels of the penis under the symphysis. The testicles may be left or removed. The original lymphatic glands should be removed. [H.M.]

3.—See AMERICAN MEDICINE, Vol. II, No. 22, p. 847.

4.—See AMERICAN MEDICINE, Vol. III, No. 2, p. 52.

5.—Spinal Braces in Lateral Curvature.—Deformity is not generally conspicuous and we are usually satisfied with palliative rather than radical results. Cuts of an imitation of the spine show that rotation of the spine is unaffected by its flexion or extension. Application of posterior pressure is demanded by the mechanics of the deformity, which furnish no warrant for the use of a brace making lateral pressure at the ribs. Such a brace may promote comfort and conceal asymmetry, but if applied with force will add to the deformity. As the ribs spring from the posterior section of the column, pressure on them will push the spinal processes still further toward the convexity and thus increase the rotation. [H.M.]

7.—Identification Through the Fundus of the Eye.—Absolute identification can be obtained by accurate drawings of the papilla and a surrounding area two papillary diameters in width, so great is the multiplicity of the anatomic relations of the vascular twigs. The points to be considered are the method, point and angle of division, the angle of the vessels with the primary meridians, their relative size and course, distance of one division point from another, and the distance of all points between venous and arterial branches. [H.M.]

Boston Medical and Surgical Journal.

February 13, 1902. [Vol. CXLVI, No. 7.]

1. Surgery of the Gallbladder and Ducts. JOHN W. KEEFE (Continued).
2. Faulty Uterine Growth. DANIEL H. CRAIG.
3. Treatment of Inversion of Uterus. E. W. CUSHING.
4. Variola, or Smallpox. JOSEPH E. DUXBURY.

2.—Faulty Uterine Growth.—D. H. Craig divides faulty growth of the uterus into 2 classes—inhibition, or absence of growth, and tardy or delayed growth. In the former the distinguishing characteristic is the length of the cervical canal which exceeds the length of the cavity of the body; and in this so-called fetal uterus the prognosis is doubtful and treatment of little value. In the second class the two cavities are equal length or the body is slightly longer. Here treatment seems to be of value and the prognosis is hopeful. Most cases of this class observed by Craig have been in girls of slight frame and low stature with a marked look of childishness and who generally have had a quiet, sedentary and particularly studious childhood. The girl of about 17 gives a history of either never having had the slightest menstrual menses or having very scanty, abortive catamenia at widely-separated and irregular intervals. Such a history only needs physical confirmation, in which the principal factor must be the uterine probe to test the comparative length of cervix and body of the uterus. As to treatment, require an active out-of-door life, horseback riding if practicable, all forms of gymnastics, Swedish movements, etc. Use iron, because of its well-known action in determining an increased amount of blood to the pelvis; Bland's mixture is preferred in combination with extract of nux vomica and extract of cascara. For local treatment he advises intracervical application of impure carbolic acid, negative galvanism, and faradism; and these are to be supplemented by prescribing for the patient's home use 2-quart very hot douches each night. In obstinate cases dissection may be practised and has proved almost invariably useful. After the uterus has begun to grow it of course will sag as the ligaments strengthen more slowly, a marked tendency to retroversion exists and a pessary becomes the only practical method of giving the needed support. By the above treatment Craig has obtained most gratifying results, and patients have gained uteri which gave every evidence of being normal. [W.K.]

3.—Inversion of the Uterus.—For obstinate cases of inversion of the uterus in which surgery is necessary, Cushing prefers the method of Thomas modified by the use of the Trendelenburg position. It then becomes the operation of election, being easier, safer, cleaner, more surgical and satisfactory than any other. He reports the case of a woman of 25, suffering from inversion 14 months after the delivery of the first child. The abdomen was opened, the patient put in the Trendelenburg position, the intestines covered with pads, the uterus lifted up by gentle traction on the broad and round ligaments; then, after 20 minutes of slow dilation and traction with aid from pressure through the vagina, the organ was all reduced, except the fundus. He then feared he would have to use the knife, but suddenly out came the fundus at which moment the peritoneal surface of the fundus was torn sufficiently to require a catgut suture. As the uterus was now without support, the fundus was stitched to the abdominal peritoneum, and the abdomen closed. Convalescence was satisfactory. [W.K.]

February 20, 1902. [Vol. CXLVI, No. 8.]

1. The Significance, Pathologic and Clinic of Abdominal Pain. MAURICE H. RICHARDSON. (Continued.)
2. The Treatment of Eclampsia by the Method of Professor W. Stroganoff. F. S. NEWELL.
3. Surgery of the Gallbladder and Ducts. JOHN W. KEEFE.
4. On the Value of Modern Methods of Diagnosis and Treatment in Gastrointestinal Diseases. RICHARD F. CHASE.

2.—See leading editorial under Gynecology and Obstetrics.

3.—Surgery of the Gallbladder and Ducts.—Keefe insists upon the importance of careful examination and taking of the history in case of suspected gallstone or biliary disease. The character of the pain is one of the most important signs of the presence of gallstones. The pain of gallstone colic is not always cramp-like, and does not always manifest itself with extraordinary violence. Biliary colic is now believed to be due to cholecystitis rather than to the passage of stone, and in chronic cases an impacted stone in the common duct is not

necessarily accompanied by jaundice or a distended gallbladder. If stones are in the gallbladder, pain is apt to be felt in the right hypochondrium radiating into breast and back; if in the common duct, the pain is more often felt in the epigastrium. The amount of fever often determines the intensity of the inflammatory process. A serous cholecystitis may cause but slight discomfort, an acute inflammation of the gallbladder may cause intense pain, especially if the surrounding peritoneum participates in the inflammatory process. Early operation will more frequently be resorted to when medical practitioners become more familiar with an accurate diagnosis of diseases of the biliary passages and the remarkable results obtained in gallbladder surgery. In no field of capital surgery may a careful operator obtain such brilliant results. The author cites eight cases operated upon by himself, and gives an additional six operated upon since the paper was read, with recovery in every case. [A.B.C.]

4.—Value of Modern Methods in Gastrointestinal Diseases.—Lack of appreciation of the value of these methods in diagnosis and treatment is due to lack of familiarity with them. By the older methods diagnosis is simply guess work. Two cases are reported showing that similar subjective symptoms are due to dissimilar gastric conditions, one exhibiting a low acidity and the other an abnormally high one. Laboratory tests are absolutely necessary to rational treatment. [H.M.]

Medical Record.

February 22, 1902. [Vol. 61, No. 8.]

1. Gonorrheal Infection of the Prostate. JOHN VAN DER POEL.
2. An Eight-Years' experience in the Radical Cure of Movable Retroversion of the Uterus by Alexander's Operation. LE ROY BROWN.
3. Intermittent Claudication (Intermittent Limping), Due to Obliterating Arteritis. CHARLES L. DANA.
4. Unilateral Right-Sided Venous Thrombosis, Associated with Cardiac Disease: Autopsy. JOHN WINTERS BRANNAN.
5. The Management of Critical Cases of Ruptured Extrauterine Pregnancy, with the Report of a Case of Combined Intra- and Extrauterine Pregnancy. J. W. ELLIOTT.
6. A Preliminary Note on the Prevention of Nausea and Vomiting Following Ether Anesthesia. RALPH J. HESS.

2.—Alexander's Operation for Retroversion of the Uterus.—The chief use for this operation, according to Le Roy Brown, is in the correction of backward displacement of a uterus that is free of adhesions, that can be easily replaced in its normal position, and shows no tendency to return to malposition while the patient remains quiet on her side on the examining table. Having studied the after-history of 230 cases thus treated, he is convinced that, in his hands, no other operation for a like condition will yield the same constant anatomic result and give as satisfactory clinical relief. In multiparous women a retroversion is usually associated with laceration of the cervix, tear in the floor of the vagina and a resulting endometritis. These should be treated at the same time, the order of operation being curettage, repair of cervix, Alexander's operation, and repair of the vaginal floor. Brown details the technic of Alexander's operation, emphasizing the point that the genitocrural nerve must not be injured nor included in the sutures which are afterward placed. To accomplish this the nerve is isolated and temporarily held apart by the loop of a ligature. In the 230 cases under consideration the anatomic, surgical and clinical results were almost invariably good and the cure permanent, only one case being known in which the uterus resumed its backward position. In this case the ligaments were anchored with chromicized catgut. As the time which this will remain intact is uncertain he has never used it since this experience. Inguinal hernia, which sometimes occurs after Alexander's operation, is usually due to some fault in the operation, either at the internal abdominal ring or at the external ring. [W.K.]

3.—Intermittent Claudication (Limping) Due to Obliterating Arteritis.—Dana reports the case, which occurred in a woman of 78, whose previous health had been unusually good. Six years ago there was a slight attack of right hemiplegia, from which she made, apparently, a complete recovery in a few months. The present attack came on rather suddenly and was characterized by a sensation of coldness in the left foot, some pain, stiffness, weakness, some swelling and disturbance of sensation; she was able to walk a little. One month later, when

these symptoms had partially cleared up, the left arm suffered from the same condition. There were no facial, pupillary nor tongue disturbances. No radial pulse nor that of the dorsalis pedis and the posterior tibial arteries could be detected. The diagnosis was a stoppage of the large arteries of the extremities, either by thrombosis or spasm or both. The patient remained in a depressed condition for several days after the arm was attacked and died. The author is of opinion that this case belongs to that type of cases described by Charcot, Erb and others as intermittent claudication. [A.B.C.]

4.—Unilateral Venous Thrombosis.—Brannan reports that a woman of 40 was admitted to the hospital who showed marked dyspnea, and the lips, ear-lobes and nose were cyanotic. There was general edema of the entire body. The right arm and shoulder, the right side of the neck and the right side of the body, front and back, as far down as the umbilicus, was greatly swollen and edematous. The right breast was greatly swollen, and there was considerable fluid in the right pleural cavity. The heart was enlarged, and at the apex was heard a soft, blowing, systolic murmur, transmitted into the axilla. Three pints of straw-colored fluid were aspirated from the right pleural cavity. Some days later the patient died, and necropsy revealed a white and red thrombus in the right subclavian and right axillary veins and in their small branches. The right brachial vein contained a dark red clot. The right auricle of the heart contained a pink clot. The tricuspid, aortic and mitral valves were the seat of an acute endarteritis, showing many small red beadlike vegetations. A microscopic examination showed the thrombus to be unorganized, and it had doubtless arisen from the cardiac condition. No bacteriologic examination was made. [A.B.C.]

5.—Management of Critical Cases of Ruptured Extra-uterine Pregnancy.—Eliot's observations are based on an experience of 20 cases of extrauterine pregnancy, all of which recovered after operation; he thinks that in critical cases, in which the patient is in a condition of collapse with feeble respiration and rapid and almost imperceptible pulse, it is better not to operate at once, but to wait and give a course of stimulants, using coffee, brandy, salt solution under the breasts or by the rectum, and small doses of morphia. When the patient has rallied, as she usually does, then the operation should be done quickly and accurately without excessive handling. Scoop out enough of the clotted blood to enable the uterus to be found; ligate the uterine end of the tube first, then the other end and remove the part between. He never washes out the abdominal cavity or tries to clean out the clots, because the blood in the abdomen is just what the patient needs, and the manipulation required to remove it takes time and produces shock. It also requires more apparatus and adds to the danger of errors in aseptic technic. He always closes the abdomen without drainage. [W.K.]

6.—Prevention of Nausea and Vomiting Following Ether Anesthesia.—Ralph J. Hess carried on sufficient experimentation to convince him that nausea and vomiting following ether anesthesia was due to absorbed ether being excreted by the glands and mucosa of the stomach and thus causing an acute gastritis. In pursuance of this conviction he sought to institute a treatment which would accelerate the excretion of ether, prevent its irritant action on the stomach, and reduce the quantity of ether used to a minimum. He prefers to use nitrous oxid followed by ether, thus greatly reducing the amount of ether used. It is desirous to have fluid in the stomach to dilute the excreted ether and a free drink of water is given before the anesthetic is administered, and another as soon as consciousness is regained. The author reports a series of cases in support of his method and concludes as follows: Postanesthesia vomiting is a source of danger and great discomfort to the patient and is preventable. It is due to excretion of ether into the stomach, with resulting acute gastritis. Drugs are of no avail in prevention or treatment. The present preanesthetic preparation of the patient is faulty, in that fluids are usually entirely prohibited or limited, whereas they should be pushed to aid in the elimination of ether. The amount of ether used should be as small as possible, and the strength of ether vapor should not cause bronchial irrita-

tion with excess of mucus. The combination of nitrous oxid and ether gives the best results. Give one to two glasses of water just before beginning the anesthetic. [A.B.C.]

9.—See AMERICAN MEDICINE, Vol. iii, No. 7, p. 257.

New York Medical Journal.

February 15, 1902. [VOL. LXXV, No. 7.]

1. The Management of Cerebral Hemorrhage, and Its Abortive Treatment. WILLIAM BROWNING.
2. The X-ray in the Diagnosis, and Wiring in the Treatment of Fractures. CHARLES GRAEF.
3. Soaps of Lime and Magnesia in Urine. GEORGE E. PFAHLER.
4. Age of First Menstruation on the North American Continent. GEORGE J. ENGELMANN. (Concluded.)
5. Treatment of Lobar Pneumonia. CHARLES E. NAMMACK.
6. The Active Principle of the Suprarenal Gland in Genitourinary Work. CHARLES CHASSAIGNAC.
7. How to See the Stomach Curvatures With Our Naked Eyes, Without the Aid of Intra-gastric Instruments or Inflation. MARK I. KNAPP.
8. The Eye, Ear, and Throat Sequels of Typhoid Fever. L. D. BROSE.

1.—Cerebral Hemorrhage.—In discussing the prophylaxis of cerebral hemorrhage Browning says that persons of advanced years or those giving evidence of senility should avoid all excessive strains, mental as well as physical. He says of the idiopathic cases, that the trouble arises from individuals not curbing their activities as their physical powers wane. In the treatment of an attack the use of powerful, quickly-acting muscular and vasodepressants is advocated. Gelsemium, aconite and veratrum are the best. Gelsemium is used by the author beginning with a dose of from $\frac{1}{10}$ to $\frac{1}{8}$ of a grain and continued in $\frac{1}{20}$ of a grain doses. Initial doses often need to be large, or else rapidly repeated until the physiologic effect is produced. When possible the patient should be cared for at the place where seized. Two cases are reported in which violation of this rule brought a return of a hemorrhage which had just been checked. If a purgative is necessary calomel can be given most safely. When compelled to use sedatives give bromid or a coal-tar product, but never any opiate. In about a week, or sometimes sooner, we may assume that the rent has become permanently obstructed and the patient may be allowed to sit up. In the chronic stage the chief benefit is derived from cultivating in the patient the use of whatever power remains. [C.A.O.]

2.—Fracture of the Olecranon.—Graef reports a case of fracture of the olecranon in which the diagnosis was confirmed by the x-rays. Stout silver wire was used to hold the fragments in apposition and the junction strengthened by tendon sutures. At the end of the fourth week passive motion and massage was practised and a satisfactory recovery followed. [C.A.O.]

3.—Soaps of Lime and Magnesia in Urine.—Pfahler has found these crystals in the feebly acid urine of three patients. The first case was that of acute mania. The urine was obtained by catheter during an outbreak. It was examined repeatedly afterward, but never during an outbreak, and failed to show the sediment. The second case was that of abscess of the liver, and the third that of cocaine poisoning. The specimen showing these crystals was the first obtained after the profound toxic symptoms. They were not found in subsequent specimens. They occur as colorless, highly refractive crystals, which in form resemble tyrosin, but which possess distinctive characters of their own. They are larger and the individual spicules are more tapering than those of tyrosin. They are soluble in acetic and hydrochloric acids, in ammonia, and slowly in water and in decomposing urine. [C.A.O.]

4.—See AMERICAN MEDICINE, Vol. I, No. 10, p. 431.

5.—Treatment of Lobar Pneumonia.—Nammack states that every case of lobar pneumonia is a law unto itself, differing according to time, place, sex, age, temperament, previous health, habits, and degree of infection. He divides patients into three groups; those whose infection is so mild that they require only good care and not drugs; cases so malignant and with toxemia so overwhelming that all measures will fail to cure them; and a third group, which is capable of cure under skilful, watchful therapy. His practice is to order $\frac{1}{30}$ of a grain of strychnin and $\frac{1}{10}$ of a grain of nitroglycerin in a teaspoonful of wine of pepsin of the National Formulary, every two hours, with milk six ounces and apollinaris water two ounces, on the

alternate hour, and plain cold water in the intervals, *ad libitum*. When these remedies fail, whisky is ordered in half ounce doses, frequently repeated. He says of oxygen that it is of great benefit in tiding patients over the crisis. Each patient should be placed in a cool, well-ventilated room. Since the lungs, and usually the kidneys, are seriously crippled by the disease, the available avenues of elimination are the bowels and skin. Calomel five grains, and sodium bicarbonate 15 grains, followed by saline laxatives, and repeated judiciously during the progress of the disease will attend to the gastrointestinal system. The skin may be acted upon by water, cold, tepid, or hot, each according to its special indications and according to the stage of the disease. The author does not believe that serum has any value. [C.A.O.]

6.—The Active Principle of the Suprarenal Gland.—Chassaignac believes that this product may be of service in the presence of engorgement or congestion of any part of the urinary mucosa within reach, whether there is bleeding or not; in some cases it may act only as a temporary expedient, in others it may be permanent and curative. A case is reported to show its curative power in hemorrhage from the bladder. He prepared a solution of the chlorid of this active principle, of about 1 to 20,000, and after rinsing out the bladder with boric solution, he moderately filled the organ with the suprarenal solution through a catheter, allowing it to remain about five minutes, then permitting it to escape slowly. Later the process was repeated with a solution of 1 to 24,000, and again with a 1 to 30,000 solution, when the urine remained clear and all right. [C.A.O.]

7.—How to See the Stomach Curvatures.—Knapp places inspection even above palpation as a method for physical examination of the stomach. The examiner should stand either at the side, or at the shoulder of the patient, so as to have to look up to the stomach region, or down to it. He should bring his eyes on the same level with the prominence of the patient's abdomen and watch abdominal respiration. The patient should breathe in a normal way, and the examiner may follow certain lines which he sees move up and down with the respiration on the abdominal surface. The curvatures of the stomach will be seen distinctly as very fine lines moving under the skin with the respiration. [C.A.O.]

8.—Eye, Ear and Throat Sequels of Typhoid Fever.—Brose reports several interesting cases. One of inflammation of the retrobulbar optic nerve in a man of 23, which, under potassium iodid and hypodermic injections of strychnin, recovered completely at the end of three months. The second is that of great loss of vision through hemorrhage into the vitreous of both eyes. The treatment in this case was potassium iodid in increasing doses, together with mercurial inunction, and at times pilocarpin or sodium salicylate, to produce diaphoresis. The amount of restoration was far below normal. The third case is that of paralysis of the muscles of accommodation. The middle ear showed a predilection to inflammation during typhoid fever. A case of purulent middle-ear inflammation, with involvement of the mastoid, was reported. The mastoid cells were laid open with chisel and hammer, and the pent-up pus liberated. Complete recovery followed. A case of paralysis of the laryngeal muscles, following typhoid fever, was also reported. The treatment employed was the internal use of potassium iodid, intralaryngeal applications of the faradic current, and daily external applications of galvanism, placing a pole on each side of the larynx and making slow interruptions. Complete recovery followed in a few days. [C.A.O.]

Medical News.

February 22, 1902. [Vol. 80, No. 8.]

1. Some Notes on the British Congress on Tuberculosis. E. G. JANEWAY.
2. The Relation Between Bovine and Human Tuberculosis. THEODORE SMITH.
3. A Plea for an Accepted Nomenclature with Reference to the Classification of Pulmonary Tuberculosis. J. EDWARD STUBBERT.
4. Some Notes on the Prophylactic Screen in the Treatment of Tuberculous Conditions of the Larynx and Pharynx. STEPHEN W. WELLS.
5. The Pathology and Etiology of Prostatic Hypertrophy: Suprapubic Drainage and Myomectomy Considered as Methods of Treatment and Cure. AUGUSTUS CHARLES BERNAYS.

1.—British Tuberculosis Congress.—In discussing the questions raised, Janeway expresses the belief that until milk from tuberculous cows is proved harmless, efforts should be continued to obtain a pure supply. When undecided in diagnosis, we should act more frequently than we do according to our suspicions, and send the patient to a different climate, or employ tuberculin or potassium iodid to increase secretion, or use the Röntgen rays. Trudeau, in an included letter, announces that he has never seen any harm from tuberculin in incipient cases. He uses it as a specific method of treatment, but considers it in the experimental stage. It is used in apyretic cases without secondary infection and with good nutrition, in small and gradually increased doses. When toleration of large doses is established it is discontinued, and then resumed after several months. Cases seem to show less tendency to relapse than those recovering under climatic and hygiene methods alone. [H.M.]

2.—Bovine and Human Tuberculosis.—Smith's general standpoint is the same as in 1898. Cases of direct inoculation cannot decide the case, as this does not correspond to natural infection. Cowpox is inoculable, but no longer contagious. It is quite possible that something interferes with the absorption of bovine bacilli which lets human bacilli pass. Bovine bacilli present traits which serve to distinguish them from the majority isolated from the human subject. Differences in form, growth and virulence are described. Tuberculins made from bovine cultures have not differed in results from those obtained from human cultures, but subtle race differences could hardly survive repeated and prolonged boiling. There is less uniformity in the characters of human bacilli. Virulence fluctuates, but does not approach bovine virulence. The bovine-like bacilli should be more thoroughly studied. If any are found agreeing in form, virulence and tissue reactions in inoculated animals with the bovine bacillus we must concede the case of bovine origin. Racial differences probably prevent absorption of bovine bacilli under ordinary circumstances, but while a few bacilli are harmless, flooding the digestive tract with bacilli from tuberculous udders is dangerous. While it is possible that modification may occur in the human body it is improbable except after a number of passages. The hypothesis of modification involves belief in a specific resistance neutralizing the high potency of the bovine bacillus. We have no right to assume either indiscriminate transfer to man nor that the human body cannot be invaded. [H.M.]

3.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 503.

4.—Prophylactic Screen for Throat Work.—This consists of a sliding iron upright on a weighted base holding a metal frame for a glass plate, 13" x 15", which can be easily removed and cleaned. The right arm of the frame is $\frac{1}{2}$ the length of the left, to permit freedom in handling instruments. The amount of protection afforded has been demonstrated by cultures from the glass. There are no disadvantages. [H.M.]

5.—See AMERICAN MEDICINE, Vol. III, No. 2, p. 53.

Philadelphia Medical Journal.

February 22, 1902. [Vol. IX, No. 8.]

1. Some Points Relating to Renal Calculus. A Clinical Lecture Delivered at St. George's Hospital, London, December 3, 1901. WILLIAM BENNETT.
2. The Progress of Knowledge Concerning Venom and Antivenene. A Synoptic Review of the Literature of the Past 15 Years. JOSEPH MCFARLAND. (Continued.)
3. Orthopedic Cases. JAMES K. YOUNG.
4. The Surgery of the Spine. SAMUEL LLOYD. (Concluded.)

1.—Some Points Relating to Renal Calculus.—Bennett details three cases illustrative of the unreliability of symptoms in some cases of renal calculus. When operative interference is required in renal cases, he prefers to cut down upon the kidney by an incision which extends from the angle between the last rib and the erector spinae downward and forward to the crest of the ileum. By this method the kidney can be exposed without coming in contact with any vessel which will require a ligature, and the division of very little muscular structure is necessary. In exposing the left kidney two points must be borne in mind; the possibility of the spleen coming in the way, and the danger of the colon coming in the field of operation and being wounded. [F.C.H.]

3.—Orthopedic Cases.—Young reports four cases which demonstrate that early and persistent treatment in Pott's disease may result in recovery without deformity. Perfect recovery from spine disease can from time to time be obtained in the cervical and lumbar regions, but he has never seen a case in the dorsal region recover without deformity. Light gymnastic exercises are advocated in the treatment of lateral curvature of the spine. [F.C.H.]

4.—The Surgery of the Spine.—Lloyd emphasizes the important fact that in operating upon the spine the removal of bone should not cease until it is evident, without possibility of error, that all compression has been removed from above and below the involved segment and the intravertebral course of the nerves arising from that segment. A number of incomplete results can be attributed to disregard of this. If the cord has been definitely injured, surgery will not afford relief. It is the compression, and only the compression without injury to the cord, that can be benefited, and this may be taken as an axiom in the surgery of the spine. Spinal localization is briefly reviewed. In spina bifida excision is the best procedure, and in selected cases should give good results. A very interesting case of spinal hemorrhage is detailed. A rapidly progressing upward paralysis involving higher segments in rapid succession (only a few hours intervening) and with a history of even a slight traumatism may advantageously be subjected to laminectomy. The lesion may not be discovered, but the spinal canal can be kept free and serious compression of the cord averted. A second and higher laminectomy could readily be performed when the patient's condition would permit it, or it may be done later if necessary. Before attempting a prognosis in fractures of the spine, the region of the spine involved must be considered. Pott's disease is fully considered and a general reference is made to spinal anesthesia. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Uremic Ulceration of the Bowel.—Dickinson was one of the first, if not the first, to point out the occurrence of intestinal ulceration in the course of uremia. Strange to say, however, this "uremic ulceration" has not attracted much attention and the literature concerning it is very meager. The lesions, as shown by Mathieu and Roux, are found chiefly in the small intestine, although some authorities, among them Senator and Dickinson, state that they affect the large bowel more frequently. It has generally been found that when the small intestine is involved, the large is intact, and vice versa. The ulcers are commonly situated in the lower ileum, running longitudinally along the free border of the intestine; they do not seem to have a special predilection for Peyer's patches. On the surface they are covered with a brownish-black detritus, and in some cases are diphtheric in type. Their contour is irregular and their vertical extent variable—they may reach the serous coat, and occasionally may cause perforation. Microscopically, the evidences of inflammation with intense hyperemia are found. There may also be ulcers in the stomach; but those in Mathieu and Roux's case—there were one large and numerous small ulcers—differed histologically from the ulcers in the intestine. They were devoid of inflammatory reaction and resembled in every respect the simple gastric ulcer. Doubt might properly arise as to whether the lesions of the stomach were really uremic. The authors are convinced that they were, and consider them as a proof of the theory that uremia is one of the causes of gastric ulcer. Perry and Shaw, it will be remembered, showed that there was a relation between Bright's disease and duodenal ulcer.

Uremic ulceration is most frequent in the young—in 22 cases collected by Mathieu and Roux, the age in 13 was between 14 and 24. Among these 13 the ulceration was confined to the small intestine in 10. Regarding the symptoms, there appears to be none that can be consid-

ered diagnostic. The patients are usually profoundly uremic and suffer from intense and persistent diarrhea, rarely from constipation. Pain is not a conspicuous feature. The bowel movements may be blood-streaked, but distinct hemorrhages are rare. There is also nothing in the ulcers themselves that at autopsy distinguishes them from ulcers produced by pressure of fecal masses or by mercurial poisoning. The history of the case and the existence of disease of kidneys and of hypertrophy of the heart are the features upon which a diagnosis of uremic ulceration must be based.

In our large hospitals the opportunities for studying this manifestation of uremia are abundant, and we trust that the foregoing brief survey of the subject may stimulate research in this direction.

Silica in Animal Tissues.—The studies of the causes of senescence—of the general loss of elasticity of the tissues, brought about by advancing years—has hitherto been confined to anatomic investigations. An interesting observation from a chemist point of view has recently been made by Hugo Schultz, who has concerned himself with the quantitative estimation of the silica present in the tissues at different periods of life. He finds that there is a steady diminution of this substance from youth to old age, the largest amounts being found in embryonal connective tissue. The muscle in old age, for example, contains 0.0191 grams, while in youth it contains 0.0270 grams of silica per kilogram. The difference is even more marked in the tendons, the silica content of which is in advanced life 0.0408, while in youth it reaches 0.0865 grams. The jelly of Wharton contains no less than 0.2406 grams.

Tuberculosis of the Upper Air Passages.—Tuberculosis of the nasal mucosa, nasopharynx, pharynx and larynx is discussed separately. An examination of the literature shows that a large percentage of the cases of lupus of the cutaneous nose originate in the disease of the mucosa, and contact infection is much more frequent than are infection. In 52 cases of tuberculosis examined by Rosenberg,¹ tubercle bacilli were found 24 times in the secretion of the nasopharynx; 17 patients showed even ulcerations. From the examination of 81 nontubercular patients, among whom he found tubercle bacilli nine times and ulcerations once, he concludes that the nasopharynx is sometimes the site of primary infection. Tuberculosis of the pharynx is, as a rule, secondary; but may be primary, in which case it is due to feeding. Of all the organs of the upper respiratory tract, the larynx is the most frequently attacked by this disease. Four forms are to be distinguished which may coexist—infiltration, ulcerations, perichondritis and tumors. The treatment is both general and local. Under general treatment are included all those hygienic and dietetic measures considered in the therapy of pulmonary tuberculosis. Ocean voyages are valuable, or a resort should be selected that exhibits a certain humidity and is free from dust, creasote and similar substances, as guaiacol carbonate are indicated. Further are indicated stomachics, for severe paroxysms of coughing, narcotics; and as a cardiac stimulant, alcohol. The author uses inhalations of menthol and intralaryngeal injections of a 16% to 20% oily solutions of the same; further, a 3% to 4% solution of boracic acid; and as an anesthetic or analgesic, cocain, potassium bromid, antipyrin, morphin and menthol. Powders used as insufflations are iodoform, iodol, dermatol euphren, pyoktanin; in ulcerations, orthoform. This treatment relates to the ulcerative form of laryngeal tuberculosis. The remaining forms demand surgical interference, preferably intralaryngeal. [C.A.O.]

Drugs for the Nose and Throat.—Moritz² briefly discusses various remedies introduced in the past 10 years. The bitterness of cocain may be covered by saccharin, thus preventing the vomiting or salivation that is often caused by its taste. The hyperemia caused by eucain makes it unsuitable when repeated introduction of instruments may be required, but it is suitable for the removal of single growths or

¹ The Journal of Tuberculosis, July, 1901.

² Medical Chronicle, July, 1901.

before the application of the cautery, and is indicated when the snare is to be used on the turbinates, as it does not reduce their size and the subsequent bleeding is less than with cocaine. Antipyrin prolongs cocaine anesthesia and benefits tuberculous ulceration. "Orthoform new" is an excellent anesthetic when nerve ends are exposed, as in ulcers, and sometimes heals tuberculous ulcerations. Oxycamphor has a remarkable calming action on the respiratory center. Oxaphor gives decided relief in dyspnea. Heroin is given with varying success. Tuberculous ulcers have healed under pyoktanin. Laryngeal papillomas have entirely disappeared with applications of Heryng's phenylsulfuricinic acid. Trichloroacetic acid is very useful in syphilitic ulcerations. [H.M.]

Bacillol and Lysoform, Two New Disinfectants.—Cramer¹ says bacillol is a coal-tar distillate and resembles lysol. The cresols, of which it contains 52%, are its active principle. The author's experiments lead him to the conclusion that the substance is destined to take the place of lysol, and even of carbolic acid. Lysoform is a perfumed oleosaponaceous fluid, smelling of formalin, and appears to be a solution of formalin in a perfumed soap. Aside from being expensive, it is not very efficient as an antiseptic; as a deodorant and cosmetic, however, it possesses value. [D.R.]

Two cases of perityphlitis (commonly called appendicitis) are reported by Findlay,² who believes that from the clinical point of view three classes of cases of perityphlitis stand out prominently: (1) Cases in which it is doubtful whether the appendix is at fault, at least in the first instance. Adults are often the subjects; treatment by rest, careful dieting, and opium with hot fomentations seems to be all that is needed to bring about complete convalescence, the bowels being unloaded by enemas after the temperature has come down to the normal point. With attention to dieting for a prolonged time relapses are uncommon. (2) Cases more common in young subjects in which the appendix is almost always the offending part, although in many instances the absolute proof is wanting. Frequently after convalescence appears to have been established by medical treatment, the patient again becomes ill, examination reveals induration and fluctuation in the right iliac fossa, and at operation the appendix may be gangrenous and perforated. (3) Cases in which owing to the absence of limiting adhesions a sudden perforation of the appendix takes place, intense septic peritonitis sets up, and the duration of the patient's life, if he is not treated surgically, is measured by hours. The use of leeches in mild cases with much pain is recommended, and the use of purgatives is condemned. [A.O.J.K.]

Chromophonic Prophylaxis Against Malarial and Yellow Fever.—According to Nuttall and Shipley,³ mosquitos have a predilection for colors in the following order: Navy blue, dark red, brown, scarlet, black, slate gray, dark green, violet, leaf green, blue, pearl grey, pale green, light blue, ochre, white, orange, yellow. The hum of the female mosquito is of lower pitch than that of the male, and in both it is from half a tone to a tone lower, when they are hungry than when fed. If a tuning fork having the pitch of the hum of a female mosquito be struck, all male mosquitos within 20 feet will hasten to the spot whence the music comes. Therefore by wearing yellow clothing and having everything about us of orange, white or ochre color, we can keep these pestiferous insects away; and to entrap them we have but to fit up a room with navy blue draperies and there suspend a tuning fork of the pitch of a female mosquito's song, and have it struck by some clock work contrivance every few minutes. Here all the male mosquitos of the neighborhood will soon gather, lured to their destruction by the counterfeit song of sirens. We may then electrocute, poison or slay them in any manner that may please us. [J.C.S.]

The Formation of Sugar from Fat.—Loewi,⁴ from a study upon dogs, comes to the conclusion that there is no ground for the belief that in the body sugar can be formed out of fat. [D.R.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The Statistics of Operation for Tumors of the Upper Jaw.—Several valuable papers have appeared upon this subject during recent years, showing considerable difference in the immediate mortality following operation, but comparatively little difference as to the permanent cures. One of the largest series of cases which has been reported is that by Stein (*Archiv für klinische Chirurgie*, 1902, Bd. 65, Heft 2, p. 490), an assistant in von Bergmann's clinic in Berlin. During the ten years from 1890-1900 118 patients have come under observation with tumors of the upper jaw, and operations were performed in 87 cases. In 31 of the patients the disease was so far advanced as to be considered inoperable. The reason for refusing operation was in many cases the very bad general condition of the patients, in others the extent of the growth. In many inoperable cases the growth had extended along the gums, involving the lower jaw and even the temporal region. Carcinoma was the most frequent variety of tumor occurring in 53 patients. Sarcoma in 34 and epulis, which Stein correctly states should be counted among the sarcomas, in 14 cases. The remaining tumors were benign. The great majority of the cases of carcinoma occurred after the fiftieth year, only 7 of the entire series occurring under 40 and over 70. On the other hand, the sarcomas occurred most frequently between the ages of 20 and 40. Carcinoma was met with most frequently in men, sarcoma much more frequently in women. The carcinomas started from the mucous membrane of the antrum in 50% of the cases, while the sarcomas had their point of origin in the alveolar process in 57.6% of the cases. If this relative frequency holds good in other series of cases it might be a point of some value in the differential diagnosis of certain doubtful cases, as only 22.5% of the carcinomas took their origin in the mucous membrane of the alveolar process; nearly three times as many of the sarcomas have their origin in this region. Total resection was performed in 47 cases, partial resection in 23 cases, the remaining 17, most of them benign cases, being operated upon by less extensive methods. The immediate mortality of the operation has in the past been quite great, and although somewhat less than formerly it will no doubt continue to be high. In von Bergmann's cases the mortality was 14.8% as compared with 22% in the series reported by Schultz (*Inaugural Dissertation*, Greifswald, 1897) and 30% reported by Martens (*Deutsch. Zeitschrift für Chirurgie*, 1897, Vol. 44) from the Göttingen clinic, then under the direction of König. Butlin (*Operative Surgery of Malignant Disease*) collected statistics of 127 cases operated upon in St. Bartholomew's Hospital, St. Thomas Hospital and the University Hospital of London between 1886 and 1897 with 16 deaths, a mortality not very different from that of von Bergmann's clinic.

At the last German Surgical Congress, Krönlein, of Zürich (*AMERICAN MEDICINE*, Vol. I., p. 198) reported a series of 35 cases with the surprisingly low mortality of 2.8%. The great sources of the immediate mortality are hemorrhage and aspiration pneumonia. Butlin believes that loss of blood is probably responsible for a larger number of deaths than appear in statistics, for surgeons are not disposed to admit death from primary hemorrhage if it can be explained in any other manner. This is no doubt one explanation of the great difference in mortality reported from these different clinics. Pneumonia is a still more important cause of death, however, and to avoid aspiration pneumonia several suggestions have been made. Martens recommends that the patient be operated upon in the sitting posture, but it is doubtful if this will prevent the aspiration of considerable blood, and the dangers of the anesthetic are in this way

¹ *Münchener medizinische Wochenschrift*, October 8, 1901.

² *British Medical Journal*, February 8, 1902.

³ *The Journal of Hygiene*, January 1, 1902.

⁴ *Archiv f. experimentelle Pathologie u. Pharmakologie*, Bd. xivii, 1902, Hft. 1. u. 2.

greatly increased. Several surgeons have advised the position with patient's head hanging over the end of the table. Some complain, however, that this tends to produce congestion of the bloodvessels of the head, and increases the amount of bleeding, which is always considerable. Still, others have advised tracheotomy with the injection of Hahn's tampon canula. Several of the cases in Marten's series were operated upon in this way, but the mortality was still very large. Tracheotomy, even if performed several days previously, is undesirable, and adds to the difficulty of the after-treatment. Stein recommends the ligation of the external carotid artery between the superior thyroid and the lingual artery and states that the bleeding is so much lessened by this that the danger of aspiration pneumonia is very much lessened.

Few patients would care to adopt Krönlein's method of operation without any general anesthetic if this were proposed to them in the beginning. Krönlein states that a little anesthetic may be given for the mental effect at the beginning, but the greater part of the operation performed without anesthesia, so that the patient will have control of the air-passages, and will not inhale blood or other foreign material. His extremely low mortality is no doubt due to some extent to the prevention of aspiration pneumonia, but we cannot help believing that it is partly from the skill of the operator, and the rapidity with which the operation was performed, comparatively little blood being lost. In von Bergmann's series there were seven deaths and lung affections were responsible for the fatal outcome in four. This small number of deaths from affections of the lungs Stein believes is the result in large part of the preliminary ligation of the external carotid, but also to some extent to the use of the tampon canula, both of which were adopted in all the later cases. Butlin advised the lateral posture of the head in such operations with the head well forward, so that the blood inclines to run out of the mouth rather than down the throat. It remains for future results to determine which of these various methods will be adopted to lessen the dangers of aspiration pneumonia. But as the ligation of the external carotid is so simple and attended with so little danger and the loss of blood will be surely much less, this recommendation of Stein's seems worthy of adoption until something better be discovered.

The permanent results of this operation is of course the matter of greatest interest. Stein was able to obtain information about 51 from the number of 77 patients who recovered from the operation. Of 13 total resections for carcinoma not a single patient is now alive, all dying either from recurrence or from loss of strength, which was no doubt the result of recurrence. Of 11 patients operated upon for sarcoma from whom letters were received, 8 are still alive, 2 of these with recurrence and 6 entirely well. Of these 6 patients, 1 is now living, nine months after the operation, 1 two years, 1 five years, and 3 ten years after the operation. The results of partial resection were much more encouraging, 50% of the patients from whom information was obtained being alive at least three years after the operation. Stein's results do not vary so far from those of Butlin, who has 3 patients out of a total number of 14 who are alive three or more years after operation. These figures as to the permanent results of resection do not differ so far from those of Estlander, who in 1879 placed the percentage of recoveries at about 17%. While the permanent recoveries after complete resection are still comparatively few, it must always be remembered that under normal conditions the duration of life of the patient with sarcoma of the upper jaw is only about one year. If the patient presents himself for operation, as is usually the case at about the end of the first half year of this time, he has but six months' expectation of life if nothing is done for him; whereas, operation even if not permanently successful will give him a probability of one year

increase of life and ten to twenty chances in a hundred of perfect recovery. Though the results of resection for carcinoma are extremely discouraging, it should be remembered that the diagnosis between carcinoma and sarcoma before operation is by no means always possible and the patient should certainly be given the advantage of the doubt. In the cases of partial resection the more favorable results are no doubt to be attributed to the fact that the disease is of a more benign character and the results in these cases are certainly most encouraging. The fact that the tumors almost invariably recur locally, that the glands are not usually affected and if affected the involvement is late, makes it probable that with earlier diagnosis and the improvement in methods of control of hemorrhage and preventing aspiration pneumonias a considerably larger number of these patients may be saved in future.

Hernia of a Diverticulum: A True Littre's Hernia.—Smith¹ reports the case. A female of 34, who for some days had suffered from a bilious attack, and later with retching and vomiting, was admitted to the hospital. For the past two years she had noticed a swelling in the left groin, which disappeared on reclining. During the retching and vomiting this became larger and could not be pushed back. Examination revealed a sausage-shaped tumor on the left side parallel to Poupart's ligament, extending from the region of the femoral ring to $\frac{1}{2}$ inch internal to the anterior superior spine. Taxis failed to reduce it; operation revealed a tightly distended hernial sac. This proved to be part of an intestinal diverticulum, the blind end forming that part of the swelling extending toward the anterior superior spine. [A.B.C.]

Contributions to Tracheoplasty.—Roman v. Baracz² details the case of a child of 14 who had a very severe attack of diphtheria with subsequent stenosis of the larynx, necessitating a laryngotomy. Four weeks after operation the symptoms of difficulty in breathing recurred and laryngotracheotomy was performed. In consequence of the recurrence of the symptoms again an operation was undertaken in which a ring-shaped band of fibrous tissue was excised from the trachea with curved shears. The trachea was packed with iodoform gauze which was removed against advice 10 days later. The symptoms of stenosis recurred from the formation of granulation tissue, which was again removed with scissors and a curet. From this time on the treatment was given over the laryngologists who by frequent cureting, cauterization and dilation, finally overcame the symptoms of stenosis. A laryngeal tube was worn for so long, however, that a defect resulted, which was closed by freshening the edges of the overlying skin and drawing it together with mattress sutures. [M.B.T.]

Retained Testicle with the Surgical Features and Microscopic Findings in Three Cases.—Willard Bartlett³ says: As a result of extensive investigation, Finotti advances the idea that cryptorchism and monorchism are the expression of maldevelopment of the organ itself, and that a normal testicle is never stopped on the way to the usual destination. Bartlett reports three cases in which the specimens show that the anatomic picture in this condition is by no means uniform. Case 1 deviates from the normal chiefly in that there is a *relatively* large amount of connective tissue, the pressure of which is explained by the imperfect development of the glandular element which, in the healthy male of 18, has to a far greater extent displaced the same. In Case 2 there is an *absolute* connective tissue increase in addition to maldevelopment of the tubules; while Case 3 is the subject of intense interstitial cell-growth, vascularization and pressure atrophy of epithelial structures. The literature of the subject has been carefully reviewed. [C.A.O.]

The After Results of Pylorotomy for Gastric Carcinoma.—Rutherford Morrison⁴ reports the after results in six cases which have been under his care. A woman of 40 was operated upon for a movable carcinoma the size of a tangerine orange. She remained well for two years and eight months

¹ British Medical Journal, December 14, 1901.

² Wiener klinische Wochenschrift, October 24, 1901.

³ St. Louis Courier of Medicine, November, 1901.

⁴ Lancet, January 11, 1902.

after the operation, when she began to have gastric symptoms again. On exploratory celiotomy the scar of the previous operation was found adherent to the stomach, and there was a large tumor extending from the pyloric end along the lesser curvature nearly to the esophagus and along the greater curvature to within four inches of the esophagus. Near the duodenal end the growth was adherent to the liver. There were enlarged glands in the lesser omentum. The condition was evidently inoperable, and the abdomen was closed. The patient made a good recovery from this exploration, and died three years and two months after the first operation. In a second case a man of 48 was operated upon for a hard nodular movable tumor. He improved rapidly after the operation and remained well a year and four months. After this his symptoms recurred and a large mass developed in the epigastrium. Death followed two years and two months after the operation. In a third case a woman of 41 was operated upon for a hard, freely movable tumor the size of a walnut. She improved rapidly after the operation for a time, but symptoms recurred and death resulted a year and three months after the operation. In a fourth case a man of 38 was operated upon for a freely movable tumor the size of a cocoanut. He was much improved temporarily, and lived for two years and 11 months after the operation. In a fifth case a man of 41 was operated upon for a small pyloric tumor and died within six months after the operation. [M.B.T.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Treatment of Eclampsia.—The exact etiology of eclampsia has not yet been demonstrated, and so long as this remains obscure, no rational curative treatment can be adopted. The theory of Frerichs that eclampsia is uremic, and that of Petroff and Spiegelberg that it is due to ammonemia have been effectually disposed of by modern investigators; and it may be stated with positiveness that eclampsia does not always depend upon albuminuria and kidney changes and that albuminuria does not constantly accompany the convulsions. In fact, all that we can confidently state is that eclampsia is due to autointoxication through a ferment which is the product of metabolic processes, and that it is masked in the organism during pregnancy owing to derangement of metabolic processes. The theory of toxemia is reasonable, when we consider the various exciting and predisposing causes of eclampsia. The treatment of this condition is varied. Within the last year a remarkable series of cases has been reported by Stroganoff. This series includes 58 cases which came under his observation during three years, 1898-1900. In all these cases a definite routine treatment was adopted, and absolutely no maternal mortality occurred. This result seems extraordinary in view of the latest statistics from various parts of the world quoted by Edgar, which place the maternal mortality at from 25% to 35%. According to this authority, experience does not permit of recommending any single treatment, since many subjects recover no matter what the treatment, many die in spite of treatment, and others do well without any treatment at all. Stroganoff, whose views have been summarized by Newell, of Boston (*Boston Medical and Surgical Journal*, February 20, 1902), considers that puerperal eclampsia is an acute infectious disease which runs an almost indefinitely self-limited course of a few hours' duration, seldom exceeding 24, and still more rarely 48 hours in length. His treatment is designed to accomplish the following results: 1. The prevention of convulsions by lessening the irritability of the nervous system and by removing all external sources of irritation, especially those connected with the birth canal. (2) The strengthening of the vital processes by careful supervision of the cardiac and pulmonary circulation, by securing as large a quantity of oxygen as possible, and by prompt delivery. If with these measures and a proper diet the convulsions do not cease,

his treatment is in brief the following: The administration of oxygen during the convulsions; the use of morphia and chloral to control the seizures; the free use of cardiac stimulants when the heart action weakens; prompt delivery when the convulsions do not yield to treatment; a milk diet, and the avoidance of all methods of treatment which tend to depress the patient.

American obstetricians will probably differ somewhat with the treatment outlined. Many will condemn the use of morphia as a routine treatment because of its danger if serious organic disease of the kidney exists. Others will advocate veratrum viride, which reduces the temperature and pulse-rate, relaxes the rigidity of the cervical canal, and produces prompt diaphoresis and diuresis, thus eliminating the unknown poison. The employment of saline solution has been a valuable addition to the therapeutics of eclampsia, since it reestablishes the renal secretion and dilutes the toxic material present in the blood, as well as stimulates the general circulation. The majority of obstetricians have practically abandoned the teaching of Charpentière, of France, and Winckel, of Germany, namely, that the uterus in eclampsia should be let alone except after the full dilation of the os, as the irritation of inducing labor or artificially dilating the cervix, precipitates convulsive attacks. The weight of medical opinion today is in favor of emptying the uterus in as short a time as possible in cases of eclampsia, whether the attack occurs before or during labor. The method of delivery to be selected will depend upon the environment of the patient and the surgical ability of the obstetrician. Cesarean section for the relief of eclampsia carries with it a high rate of mortality (over 36%, according to Charpentière). Manual dilation of the cervix and the immediate extraction of the fetus appears to be the most popular method of procedure. However, as eclampsia occurs four times more frequently in primipara than multipara, rapid manual dilation and extraction is sometimes quite difficult unless deep cervical incisions are made; but even if such radical procedures are necessary, the modern obstetrician need not be deterred providing he is surgically clean in his manipulations. With our present knowledge the general treatment of eclampsia will remain symptomatic, and it is improbable that any routine treatment for the condition will find favor with American obstetricians. However, if such superb results as those reported by Stroganoff can be obtained by his method of treatment, it certainly demands our most serious consideration; no other reporter has presented such favorable statistics.

Supravaginal Hysterectomy for Fibroids.—Thomas¹ reviews the after history of 100 cases of supravaginal hysterectomy for fibroids and gives tabulated statements of the results. In recapitulating the most prominent conclusions it may be stated that from the patient's standpoint the operation is eminently satisfactory and their capacity for work is greatly increased. The statistics clearly demonstrate that one ovary should be retained but that the importance of this diminishes in proportion as the age of the patient approaches the climacteric. The operation *per se* causes no tendency to insanity but some complain of a loss of memory. The pain and discharge resulting from the operation are very slight; the function of the bowel and bladder is not usually interfered with, and the sexual sensations, as far as can be gathered, are not generally influenced by the operation. [W.K.]

Spurious Abortion.—Fothergill² reviews three cases of so-called spurious abortion already reported, in which a complete decidual cast of the uterus was extended with absence of the decidua serotina or any trace of the ovum. In his own case the cast presented similar characteristics but a yellowish body, the size of a split pea, accidentally found on some packing used, proved to be an ovum five or six days old. The formation of a decidua apart from pregnancy may be possible but the

¹ *Lancet*, February 1, 1902.

² *Medical Chronicle*, October, 1901.

evidence is purely negative. It is probable that in the reported cases the ovum and decidua reflexa were lost, the decidua lining of the uterus being retained and growing after the death of the ovum, as in Fothergill's case. If this is granted the term "spurious abortion" is unnecessary. When no ovum is found careful examination for ectopic gestation should be made. [H.M.]

Double Ovariectomy During Pregnancy.—It is not very often that ovarian tumors are detected and removed during pregnancy, since it is usually their obstruction to delivery that first leads to the diagnosis. But Lowenberg¹ believes that if detected they should be removed, since if situated in the pelvis they make delivery most difficult and dangerous, and if higher up the frequent postpartum torsion of the pedicle makes the prognosis of operation much more unfavorable. The danger of interruption to pregnancy to such operation has become small through advance in technic, and the tumor's rapid growth during pregnancy is very likely to cause interruption of pregnancy without operation. Operation between the second and fourth month is the most favorable to continuance of pregnancy. He reports a case in which, in spite of the difficult complication of a twisted pedicle, an ovariectomy on one side and a resection of the ovary on the other were performed without producing abortion. This case testifies anew that an existing pregnancy offers no contraindication to operation. [W.K.]

Abdominal Tumor with Ascites.—T. W. Eden² describes two cases of solid abdominal tumor, and emphasizes the importance of a correct diagnosis before opening the abdomen. In differential diagnosis of uterine and ovarian tumors symptomatology practically renders little assistance, and dependence must be placed upon physical signs. The first point to which he calls attention is the length of the uterine cavity which is not affected by ovarian growths but is increased by the presence of uterine fibroids, unless they are subperitoneal. If the ovaries are in normal position, ovarian origin may be excluded. In the next place, the palpation of the pedicle can be practised, and this is the most reliable means of distinguishing ovarian and uterine tumors. The attachment of a subperitoneal fibroid is usually much shorter and thicker, and solid rather than membranous. Lastly, ascites as a rule is found with solid tumors of the ovary, while with fibroids it is so rare that its presence almost serves to exclude them. It is a curious phenomenon in intraabdominal disease that a fibroma of the ovary should cause ascites while a growth of similar structure in the uterus has no such effect. [W.K.]

A Case of Epidemic Dysentery in the Fetus.³—A woman of 24, six or seven months pregnant, and suffering from dysentery, gave birth to an asphyxiated child, which was revived by Schultz's method. It died, however, two hours later, without any noteworthy symptoms. At the autopsy some turbid fluid was found in the peritoneal cavity. The mesenteric glands and those near the colon were enlarged. This raised the suspicion of the possible existence of dysentery, and a culture was made from the fluid of the heart. Kruse's *Bacillus dysenteriae*, which had also been obtained from the mother, was isolated. The intestine, macroscopically, presented swelling and redness of the mucosa and fat deposits. There was no distinct ulceration. Microscopically, the bowel showed the early stages of dysentery. Bacilli were found in very small numbers in the intestinal wall. They were more abundant in the exudate. There were none in the lymph glands. [D.R.]

Chronic Pelvic Exudates.—Kehrer⁴ refers to the fact that during the last 20 years there has been a tendency to substitute operative for conservative treatment of pelvic exudates, to use the knife, not only for the more accessible abscess, but for the most deep-seated exudate. The fact that 95% of all parametritis ends through absorption, compels us to justify the treatment of the 95% and seek a means whereby we can hasten the absorption and heal the sick more quickly. Many varied methods have been tried, such as vaginal tampons saturated with glycerin, etc., hydrotherapy, hot vaginal irrigation, pres-

sure with balloons and with quicksilver colpeurynters. Kehrer, however, appears to prefer hot air therapy. The most serious objection to this is the complicated apparatus required; but he believes it is most efficacious in reducing parametritic exudates and inflammatory adnexal swelling. The hot air therapy may also serve best to restore warmth and vitality to a patient reduced by great loss of blood during a long and severe operation. The hot air apparatus is desirable for its cleanliness and comfort, and can be put in action or out again in half a minute, an advantage not to be underestimated. [W.K.]

Ovariectomy During and After Pregnancy.—Doran¹ cites the remark of Sir John Williams that ovariectomy had proved as successful during pregnancy as apart from pregnancy, while the mortality associated with obstetric operation undertaken in cases of labor complicated with ovarian tumor, was appalling. Other recent records and his own operative experience confirm the prevalent teaching that an ovarian tumor detected during pregnancy should be removed, that its removal may be the best course during labor, and that a tumor of this kind is liable to undergo in the puerperium, prejudicial changes which indefinitely increase the dangers of operation. [W.K.]

Death from Air in the Veins of a Puerperal Uterus.—Sengler² reports the case of a woman of 42 who, after the spontaneous delivery of the seventh child, suffered severe hemorrhages and complete atony of the uterus, making necessary the manual loosening of the placenta. Death followed half an hour later. An autopsy showed the presence of air in the blood, both in the pulmonary artery and the left ventricle, and the diagnosis was death in consequence of air embolism. After a thorough review of the whole case, there seemed no doubt that the air entered the uterine veins at the time of the loosening of the placenta. Sengler closes with these propositions: That in all obstetric operations, wherever possible, the patient should occupy the back position, with the upper part of the body somewhat elevated. This secures the best conditions for uterine contraction. If reposition of some displaced part or a difficult version requires a Sim's position on the side, or the knee elbow position, this should be chosen only on the strictest indications. The execution of manual loosening of the placenta or of combined version in case of placenta praevia should be done with continuous irrigation of the vagina or uterine cavity with normal salt solution. The air unavoidably introduced with the hand is thus limited to the minimum. Then should there occur the entrance of any air into the blood passages, the salt solution accompanying it, not only would not do any injury, but it would compensate for the loss of blood and help to sustain life and strength. On the contrary, under the same circumstances a carbolic, lysol, or sublimate solution would cause immediate death. The precautions mentioned may not prevent all cases of air embolism, but it is hoped that they will reduce the dangerous complication to the minimum. [W.K.]

Lactation and National Strength.—Italy, alarmed at the stunted growth of her children, invokes the aid of science and philanthropy to arrest physical deterioration. At the recent Congress for Hygiene of Lactation and the Care of Early Infancy it was pointed out by Ferruta³ that the principal reason why so many women were unable, with best of will, to nurse their own infants was an economic one; poverty, insufficient food, and the necessity to labor (not vanity). He advocated an intense propaganda in favor of maternal suckling, backed by popular instruction as to why it is preferable to other methods of feeding, and he calls upon the ladies of the land to assist in this movement by gifts, precept, and example. In the discussion which followed, it was suggested that charity should be invoked to provide for poor women with better food during pregnancy and lactation, and that one month's rest from labor after confinement should be made compulsory by law. This was opposed by others who considered private charity anarchical in its tendency, and compulsory rest an interference with liberty. It was finally resolved that in the opinion of the congress there should be instituted, in the cause of healthy

¹ Centralblatt für Gynäkologie, December 21, 1901.

² Lancet, February 8, 1902.

³ Münchener medizinische Wochenschrift, November 26, 1901.

⁴ Centralblatt für Gynäkologie, December 28, 1901.

¹ Lancet, February 8, 1902.

² Münchener medizinische Wochenschrift, February 4, 1902.

³ Il Policlinico, February 1, 1902.

development of the race, special sessions of free medical advice and instruction to poor nursing women as to the rational care of children during the first year of their existence; periodic visits to children and mothers; the gratuitous distribution, as far as means would permit, of sterilized milk and other healthy foods, when there was an insufficiency of maternal milk, or when lactation was interrupted by sickness of the mother. The congress also recommended the passage of suitable laws for the best possible protection of gravid and puerperal women. [J.C.S.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Double Current Irrigation of the Bowel.—The method of irrigating the rectum and colon with two tubes or with a double current tube, according to Kemp,¹ whose work on the subject has been freely used in the preparation of this article, possesses distinct advantages over the older method. The temperature of the solution, as well as its quantity, is readily controlled by the operator; the fluid does not cool, since fresh hot fluid is constantly taking the place of the cooler which passes out. The desire to defecate and the straining to overcome the resistance of the sphincter can be relieved at once by checking the inflow and allowing a freer outflow. In this way a prolonged irrigation, lasting an hour if desired, may be given. In diarrhea continuous irrigation appears to clear out the intestinal tract more rapidly by allowing the small intestine to evacuate its contents continuously into the lower bowel. Tympanites is more readily relieved than by any other method, as the gas is carried off by the return flow instead of collecting behind the injection, as often happens when a single tube is used.

A simple method of improvising a double current irrigator is as follows: Take two catheters, one of larger caliber than the other, tie them together with fine cotton or silk so that they will adhere sufficiently to be introduced. The tip of the smaller catheter may project one or two inches above the larger, so that the inflow will be on a higher level than the outflow, and a longer projecting portion remains externally as a discharge tube. The eyes of the catheters should be directed laterally outward. The catheters should be joined only for about two-thirds of their length. This improvised irrigator is passed through a perineal pad of gauze or cotton, covered with oiled silk or a piece of oilcloth or a dress shield, and then inserted in the bowel. The pad keeps the fluid from running out, even if there is incontinence. If only drainage tubes are at hand, the rough edges can be trimmed off, and then by heating over a flame and wiping quickly with a moistened finger or cloth, a smooth and rounded edge and "velvet eyes" can be obtained.

The usual method of administering a colon irrigation is by means of a colon tube which should be as large as can conveniently be passed, as tubes of smaller caliber are apt to kink and double on themselves. It has been objected that with the ordinary colon tube which is at most 18 inches long it is impossible to enter the colon. Kemp has abandoned the use of the colon tube altogether and believes that the small descending colon can be reached more easily with a 5 inch irrigator, of which there are a number on the market, in conjunction with placing the patient in the proper position, with his hips elevated. Nevertheless, the colon tube reaches the sigmoid flexure, and this usually answers all purposes. Certain precautions should be observed during the introduction of the tube or irrigator. As the tip of the irrigator passes through the sphincter into the bowel, it is well to start the flow so as to force the mucous membrane away from the irrigator and its

eyes. In this way also the entrance of the tube is not interfered with by the resistance of the mucous membrane. The irrigator should be well lubricated—and this is equally necessary when the ordinary soft rubber colon tube is used—and inserted with a gentle rotary movement, the tip directed toward the sacrum and not forced in. In withdrawing the instrument it should be rotated slightly first in one direction and then in the other, to prevent the mucous membrane from catching in the openings, or to free the tube if the accident has occurred.

For high irrigation the patient should be placed in the dorsal position, or on either side—Sims's position—with the hips elevated and the shoulders at a lower level. In the dorsal position a douche pan or a Kelly's pad will add to the convenience of the procedure. The most satisfactory position, however, is the knee-chest; it ensures the entrance of the fluid into the colon and is not more fatiguing to the patient than any other.

As the chief object of intestinal irrigation is to effect a thorough cleansing of the bowel—except in those cases in which the thermic factor enters into the question, when the character of the fluid is of secondary importance—the irrigating fluid usually employed is clinical salt solution—a dram of salt to a pint of water. If desired for any reason, however, whether to allay irritation or to introduce a more active antiseptic agent, the solution may be medicated. The oils of peppermint or cinnamon are often added in the dose of 5 to 15 drops to the pint; potassium permanganate up to 10 grains in the pint, and mercury bichlorid in the strength of 1 to 10,000 are among the antiseptic solutions commonly recommended.

The indications for the employment of colonic irrigation are generally familiar; they embrace practically all conditions of the intestinal tract in which the first object is a thorough cleansing of the primæ viæ for the purpose of removing all irritating substances and enabling the intestinal mucous membrane to perform its functions normally. By utilizing the thermic element it may be employed also to combat fever on the one hand, and to supply heat, as in the case of shock, or, locally, to allay pain and spasm and dissipate congestion. In gynecologic conditions rectal irrigation, according to Hyde, is of distinct value as a substitute for vaginal douching in young girls; in leucorrhea; in acute and chronic ovarian and tubal lesions, with the exception of pyosalpinx; in intestinal paralysis following sepsis; after pelvic operations, to relieve abdominal discomfort or tympanites. Continuous irrigation for half an hour to an hour is indicated in shock and in uremia. A large quantity of fluid is employed and from a pint to a quart may be kept continuously in the bowel by pinching the outflow tube and regulating the inflow and by watching the quantity of fluid in the fountain syringe. The temperature of the fluid in these conditions should be between 110° and 120° F. If it is desired to increase renal secretion without increasing pulse tension or temperature, fluid at 100° to 104° F. should be employed. The same treatment is warmly recommended in diphtheria and may be employed in conjunction with antitoxin providing four to six hours are allowed to intervene between the injection of antitoxin and the irrigation of the bowel. In this way the antitoxin is not eliminated before its effects have been secured and yet the renal congestion is relieved and the elimination of toxins accelerated.

Therapeutic Procedures Capable of Reestablishing the Normal Acidity of the Urine.—Bardet (*Bulletin Général de Thérapeutique*, July 15, 1901) in a number of researches demonstrates that the normal coefficient of the acidity of the urine to the quart in excess of the density amounts to from 2% to 3% in contradistinction to that established by Joulie of 4% to 5%. The author claims that patients showing a report of 4% to 5% are in a state of hyperacidity. In cases of decrease in the acidity of the urine the author considers that an acid is generally indicated, particularly phosphoric acid. Three cases are

¹ Enteroclysis, Hypodermoclysis and Infusion. James T. Dougherty; New York, 1900.

cited which show exceptions to the general plan of treatment. In one case in which the urine showed an acidity of 4% to 5% or hyperacidity, the administration of 20 to 30 grains of phosphoric acid decreased acidity of the urine to 2½%. Another patient showing hypoacidity of ½% to 1½% was much benefited by drinking Céléstin water in such amounts that he received 75 to 100 grains of alkaline salt daily. A third patient with grave gastric disturbance, anorexia, and in a state of very poor nutrition showed a hypoacidity of the urine of 0.3%. In this case the change of scene and relief from business cares made possible by a ten days' journey from place to place produced marked improvement in the gastric functions with consequent restoration of the normal acidity of the urine as his nutrition bettered, without the aid of any internal medication. The author states that while the acid medication will render great service, especially in dyspeptics, it should not be used systematically regardless of other methods of treatment, as it sometimes fails. [L.F.A.]

Pyramidon and its Salts.—L. Bertherand (*Bulletin Général de Thérapeutique*, August 30, 1901) after a therapeutic study of pyramidon, the acid pyramidon camphorate and pyramidon salicylate, draws the following conclusions: Pyramidon is an excellent analgesic and antipyretic. As an antipyretic it has the great advantage over antipyrin in that it causes an increase in oxidation, and as a result does not cause the formation of toxic substances in the organism. Pyramidon is more efficacious than antipyrin; its action is more rapid and more prolonged. Irritation of the stomach is not caused by its ingestion, and no eruption nor any unfavorable action on the heart or kidneys follows its use, as is seen at times after the administration of antipyrin. Under the form of acid pyramidon camphorate the dose is from 5 to 10 grains, never over 15 grains, in the fever and sweats of tuberculosis. Under its influence fever is lowered and sweating is completely controlled. It is much superior to antipyrin, salicylic acid, or aspirin, which lower the temperature but cause profuse sweats. It is also of value in the treatment of fever occurring during grip and in typhoid fever. In facial and intercostal neuralgia, sciatica, crises of locomotor ataxia, etc., it appears to produce very good results. It has given unvarying results in migraine if used from the beginning of the attack in the average dose of 6 grains; in such a case, pyramidon itself may be employed. In generalized acute articular rheumatism the use of pyramidon or pyramidon salicylate cannot be compared to the action of sodium salicylate, which remains the specific remedy for acute articular rheumatism. In subacute or chronic rheumatism its action is variable, but it does not appear inferior to other remedies. In two cases it lowered temperature. Pyramidon should not be given in diabetes, phosphaturia, etc. [L.F.A.]

The Salts of Cacodylic Acid in Skin Diseases.—Edmund Saalfeld, of Berlin (*Therapeutische Monatshefte*, Vol. lxv, No. 6, June, 1901), states that the first to propose an organic compound of arsenic for therapeutic purposes was Gautier, who employed cacodylic acid and its salts. The chemie formula of cacodyl is $\text{As}(\text{CH}_3)_2$. When exposed to the air it oxidizes and forms cacodylic acid, $\text{As}(\text{CH}_3)_2\text{O.OH}$. Cacodylic acid contains 53.3% of arsenic, corresponding to 72% of arsenious acid. The salt at present in most common use is sodium cacodylate (or arsyecodile) because owing to its low degree of toxicity it furnishes a means of administering considerable quantities of arsenic without risk. It is well borne in considerable doses. Saalfeld uses it in pill or in solution; each pill contains 0.025 gram (about one-half grain), and of these he gives one or two at a dose, up to four a day. Much larger doses can, however, be given with impunity: 0.4 to 0.6 gram (6 to 9 grains) per day internally, and up to 0.4 gram (6 grains) hypodermically. Another preparation is ferrocodile or cacodylate of iron. Of a 5% solution of sodium or iron cacodylate, from 10 to 20 drops—equivalent to 0.025 to 0.05 (say one-half to one grain) of the drug—up to 40 drops a day are given. Hypodermic injections also are used, 1 cc. of a 5% solution being injected at a dose. The chief advantages claimed for sodium cacodylate are its greater efficacy, the fact that it does not disturb digestion like other arsenic preparations, and that it permits the subcutaneous injection of large doses of arsenic almost without pain and

without unfavorable local consequences. In ferrocodile or cacodylate of iron we have a remedy suitable for hypodermic injection, combining the properties of arsenic and iron, which is of the greatest advantage in treating anemic patients. The disadvantages of the salts of cacodylic acid are the disagreeable garlicky odor imparted to the breath, which is not constant, however; the extreme offensiveness of the stools; the frequent occurrence of colic and of attacks of dermatitis; and finally the danger of producing a toxic neuritis. It is recommended for all diseases in which arsenic is given, including psoriasis, lichen ruber planus, acne, Dühring's disease, lupus erythematosus, and the like. It does not prevent recurrence in psoriasis, but rather shows a tendency to lose its power when given in successive relapses of the disease. [R.M.G.] [I have had excellent results from sodium cacodylate hypodermically in the various anemias, including those of malarial cachexia and pulmonary tuberculosis. It deserves trial in cases of inoperable carcinoma. S.S.C.]

Removal of Intubation Tubes by Means of the Electromagnet.—Collet (*Lyon Médical*, July 28, 1901) describes the process of removing intubation tubes with the electromagnet. The instrument consists of a long, thin coil, which may easily be held between the thumb and forefinger. Two armatures should accompany the instrument, the longer to be used for adults. These are curved, in order to enter the larynx, and the ends are blunt so that they will make perfect contact with the upper extremity of the tube. Before using the instrument the circuit should be completed and the jaws fixed open. The curved extremity of the magnet is then introduced into the pharynx and passed behind the base of the tongue toward the larynx until it is brought in contact with the tube; it is then necessary only to withdraw the magnet with the tube attached. The procedure is instantaneous and extremely easy. No special knowledge is required by the operator. Collet considers it especially serviceable in case of sudden obstruction of the tube when there is danger of death from asphyxia. The metallic part of the instrument can easily be sterilized; the coil should be protected by a rubber covering which can also be sterilized. [L.F.A.]

Treatment of Chronic Emphysematous Bronchitis in Children.—Saint-Philippe (*Bulletin Général de Thérapeutique*, November 23, 1901) recommends the following:

Arsenic iodid	4.5 grains
Distilled water	1½ ounces

Dissolve cold. The initial dose of this solution is five drops in water, wine or milk after the two principal meals, to be increased by one drop morning and evening until 10 to 20 drops have been added, according to the age and tolerance of the patient. The maximum dose is maintained for about one month, then it is progressively decreased until five drops are being taken. The child is given this dose for eight or ten days, when the same treatment is repeated. This treatment gives satisfaction in the majority of cases. [L.F.A.]

Injections for Leukorrhea.—Lutaud (*Bulletin Général de Thérapeutique*, December 15, 1901) gives the following:

Potassium chlorate	1½ ounces
Tincture of opium	1 ounce
Tar water	1 quart

One-half glass in one quart of water to be used as an injection morning and night. [L.F.A.]

Treatment of Rickets with Suprarenal Gland.—Hönigsberger (*Münchener medicinische Wochenschrift*, April 16, 1901, p. 627) cannot confirm Stoeltzner's estimate of the value of suprarenal gland in the treatment of rickets. A daily dose of as many centigrams as the child weighed in kilograms was given at first, and increased to twice the amount or more. No specific effect was noticed, although the general health was sometimes improved by its action on the circulation and the respiratory center, but this result is obtainable with many cheaper drugs. [L.F.A.]

Electrolysis in Angioma Cavernosum.—The so-called pulsating blood tumor, when more than three-fourths of an inch in diameter, should be relegated to the surgeon. When not larger, it may be successfully treated by electrolysis. Two methods are applicable: The use of a single steel needle and the

use of two iridoplatinum needles. With the single needle a monopolar application is made. It is attached to the negative pole, and a current of from 10 to 20 milliampères is used. The needle is boldly plunged into the angioma, and the current permitted to flow until a slight frothing is observed about the needle. Several of these punctures may be made during the same sitting, but the current should be discontinued so soon as the pain becomes unbearable. Before withdrawing the needle the current should gradually be weakened to zero. In the dipolar method the two iridoplatinum needles are plunged into the tumor in opposite directions, with their points not too near each other. The current strength should be regulated according to the size of the angioma, and the flow of electricity be stopped when there is frothing around the negative needle. Some recommend diminishing the current and reversing poles before withdrawal. I have never seen any particular advantage in this method, but have observed intense pain follow, with no abridgement of the whole time needed to destroy the growth. The galvanocautery has been employed for the obliteration of cavernous angiomas, but the method is not to be advised, as unsightly scars follow. The logical method of treating all angiomas is to destroy the bloodvessels that feed them, and even after the tumors have been made to disappear, the vessels that emptied into them should be sought for and destroyed, to prevent any possible recurrence.—A. H. Ohmann-Dumesnil in Jacoby's "Electrotherapy."

Actinomycosis.—Barclay (*British Medico-Chirurgical Journal*, March, 1901), believes there is danger of not recognizing actinomycosis because of its obscure and ill-defined symptomatology and its close clinical resemblance to several much commoner lesions. The specific organism grows on cereals and grasses, and when implanted in the body, manifests itself by the formation of ulcers, or a pale yellowish vascular tumor perforated with various sized holes containing pus, and which presents a superficial resemblance to the interior of a tuberculous or gummatous deposit. It infiltrates all the tissues, being carried by the vascular channels as emboli and deposited in distant parts of the body. The head and neck are affected in 55% of cases; the digestive tract in 19%; the lungs in 14%; the skin in 2%; and, doubtful, 5%. In the jaw it generally simulates the common periosteal or alveolar inflammations, or occasionally suppuration of the antrum. Ruhrah lays great stress on the absence of lymphatic involvement, which he considers a constant feature of the disease. Trismus appears early, and is attributed to involvement of the muscles of masticulation, although sometimes the temporomaxillary joint is affected. Oliver describes a case in which the disease appeared as an ulceration of the mouth. Cases of actinomycosis involving the skin are quite rare. Leser describes two forms: ulcerative and a discrete nodular inflammation of the skin with central cicatrization and peripheral extension, as in lupus. He considers the absence of lymphatic involvement almost pathognomonic. The board-like indurations and nodular conditions found in these cases are not usual in the other forms. The disease may be mistaken for rodent ulcer, when it occurs in the skin. The only sure diagnostic feature is the discovery of sulphur granules in the discharge from sinuses or abscesses, or in the sputum or stools. The prognosis seems to depend on the possibility of a radical extirpation of the growth, and on the presence or absence of secondary infection. When possible the diseased tissue should be completely excised, and the area cauterized thoroughly. The administration of potassium iodid should always be pushed at the same time, beginning with 5 or 10 grains three times a day, and increasing to 40 or 50 grains three times a day, or to the limit of the patient's tolerance. [L.F.A.]

Treatment of Pulmonary Tuberculosis by Means of Mineral Waters.—Garrigon (*Bulletin Général de Thérapeutique*, March 23, 1901) draws the following conclusions from a study of this subject: (1) Mineral waters will become one of the most important agents in the treatment of tuberculosis, but it is necessary to thoroughly understand the composition of the waters as well as the physiologicotherapeutic effects which result; (2) pulmonary tuberculosis has not, properly speaking, a mineral water with a special therapeutic action, since this disease is sometimes cured in thermal stations differing as to the

kind of water, but all are metalliferous to a marked degree; (3) the waters with metallization the most varied appear to be most valuable in the treatment of anemia and tuberculosis, as is shown by the general increase in strength of the patients; (4) They act in all probability by elevating the physiologic state of the blood-corpuscles and in thus repairing the constitution, which gives to the patient a good part of the lost forces; (5) the sulfurous quality possessed by very metalliferous water increases its value in the treatment of tuberculosis, for the sulfur acts not only as a secondary reconstructant, but topically against the secondary microbe actions and against the bacillus of Koch itself; (6) if there is one that may be pointed out as agreeing, by its chemie composition, with a greater number of tuberculous patients, it is that of Saint-Boës which, while rich in metals, is very strongly sulfurous and abundantly provided with natural coal-tar and coal-tar products; (7) for each form of tuberculosis special treatment is necessary. This should consist of waters capable of elevating the forces by their abundant metallization combined with those in which chlorid of sodium and bromin abound; as well as sulfurous waters, which by drinking, by inhalation or by injection act directly on the pulmonary mucous membrane, and in consequence militate against the bacillus of Koch and other microbes which are more easily reached than the one considered special to tuberculosis. [L.F.A.]

Treatment of Vasomotor Rhinitis.—To reduce the swelling W. Lubinski¹ recommends the submucous injection of 6-10 drops of a 10% solution of zinc chlorid, the mucosa having been first anesthetized with a 10% eucain solution. The canula of the syringe should be twice the usual length, and it should be slowly withdrawn while the solution is injected drop by drop. A wad of cotton that has been dipped in a 10% antipyrin solution is then pressed against the puncture to prevent bleeding. The general health must be looked after. A generous diet, iron and arsenic, cold baths and exercise, and light massage of the swollen tissue with a sound covered with cotton that has been moistened with menthol paraffin (1-1%) for five minutes twice or thrice weekly are remedial aids and often suffice in milder cases. The chlorid of zinc injection is easier of execution and less painful, giving rise to less after-disturbance than the electric cautery. [J.C.S.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Passiflora.—H. E. Vitou (*Eclectic Medical Gleaner*, Vol. xi, No 5), obtained a successful result with *passiflora* (passion flower) in an intractable case of rheumatism, complicated with pericarditis. The drug was given in five-drop doses of Lloyd's preparation—probably equivalent to fluid extract—every half hour. [R.M.G.]

OPHTHALMOLOGY

WALTER L. PYLE

The Pupil in Affections of the Optic Nerve.—If in an individual with two healthy eyes one eye is covered, a slight dilation of the pupil occurs in the uncovered eye, followed by immediate contraction to light stimulus. This physiologic dilation has been found by Hirschberg² to amount to about 1 mm. in the average pupil of 3 to 4 mm. diameter. When there is a unilateral affection of the optic nerve interrupting conduction, a much greater dilation of the pupil of the affected eye occurs when its fellow is shaded, and the pupil does not respond to direct light stimulus, although there is consensual reaction. In one of Hirschberg's cases this pathologic dilation amounted to 4.5 mm. The tests were made by a single Welsbach light at one meter distance in a dark room. In this pupillary phenomenon we have an almost infallible sign of blindness due to affection of the optic nerve, even when no evidences have appeared in the

¹ Berliner klinische Wochenschrift, December 30, 1901.

² Berliner klinische Wochenschrift, November 25, 1901.

fundus oculi. It is of great value in eliminating blindness due to hysteria or assumed by malingerers. Again in the course of certain cases of optic-nerve disease, particularly of the retrobulbar type, even a few days before vision begins to return, the pupil will show some reaction to light—a sign of great prognostic importance.

In cases in which there is permanently a great reduction of vision, there is observed a condition midway between the physiologic and pathologic dilation, when the healthy eye is covered. In a woman of 57 in whom by an acute optic neuritis, vision of the left eye was reduced to about $\frac{1}{10}$, there was a dilation of 2 mm., with sluggish reaction to light, while in the right eye, in which there was by no means good vision, there was a dilation of only 1 mm., with prompt reaction to light.

A Pupillary Sign of Syphilis.—Babinski and Charpentier¹ again call attention to their observations regarding the abolition of pupillary reflexes, particularly the reaction to light (Argyll Robertson). They believe that in cases in which there is a lesion limited solely to the nervous apparatus concerned in the light-reflex, that is, not associated with paralysis of the third pair, the loss of pupillary reflex is an almost pathognomonic sign of syphilis, hereditary or acquired. Since their first paper in July, 1899, their observations have been confirmed in France by Parinaud and Antonelli, in Germany by Erb and König, and in England by Harris. The abolition of pupillary reflex is often the only objective sign of organic nervous disorder in syphilitic patients.

The influence of domestication upon the eyes of animals is quite analogous to that seen in man. In his recently published observations George Lindsay Johnson² has shown that the color of the fundus oculi of domesticated animals differs not only from that of the allied wild species, but there is also individual variance, an occurrence very rare in wild animals. In the Carnivora, particularly the dog, in which the color of the fundus is dependent upon the retinal pigment, there is especial susceptibility to variation by domestication and inbreeding; while in the Ungulata, notably the horse, ass, mule and cow, the color of the fundus being mainly determined by the tapetum fibrosum (choroidal), the variation is less marked.

In domesticated animals there frequently occurs myopia and astigmatism, which is found most prevalent in the horse and most marked in the rabbit (when compared with the high degree of hyperopia in the hare). Myopia is almost unknown in wild animals, but it may occur when the beasts have been kept long in captivity, particularly in small and dark compartments.

The Color of the Fundus Oculi and Color-Photography.—In the vast majority of mammals there is great transparency of the retina and extreme brilliancy of the reflecting surface of the choroid. The fundus oculi shows colors of every hue, except blue and violet, the red, yellow and green predominating. These facts have led Johnson to the conclusion that rays of light do not form an image on the retina, as is usually taught, but that the rays traverse the nearly transparent retina and are received by the pigment layer of the choroid and reflected back to the terminals of the bacillary layer. In the last edition of Helmholtz's *Physiologische Optik* the view is expressed that we see by both incident and reflected light, and Brücke believes that this is especially true of animals that possess a tapetum lucidum. This theory is analogous to Lippmann's method of color-photography, in which a reflecting surface of mercury is placed in contact with the sensitive film, thus reflecting the rays of light that have traversed the film back to the particles of silver haloid. In both cases the colors are produced by interference of light-

waves. A difference is that in nature the reflecting surface is colored and reflects only a portion of incident light, which accounts for the absence of blues and violets in the eye-ground. As yet, Johnson has not been able to bring the colors found in the fundus oculi in harmony with the three-color theory of vision.

Posterior Glaucoma Following Optic Neuritis.—Gasparrini¹ reports the clinical study of three cases of chronic simple glaucoma without marked changes in the anterior segment of the eye; and establishes a relation of this affection to previous true optic neuritis. He believes that these cases are not so very rare, and that they are due to alterations of the posterior ocular lymphatic channels, occurring in the processes of neuritis and perineuritis. The neuritis of toxic amblyopia, being limited to the macular fibers of the optic nerve, does not provoke appreciable lymphatic obstruction, and is not followed by posterior glaucoma.

Blindness from Sphenoidal Suppuration.—Considering the thinness of bone separating the sphenoidal sinus from the optic foramen, it seems strange that there are not on record more reports of optic neuritis and blindness from sphenoidal disease. Halsted² reports the case of a woman of 21, in which there was empyema of the right maxillary, ethmoidal and sphenoidal sinuses, which gave rise to no ocular symptoms until suddenly blindness developed on the opposite (left) side. At first examination, the eye showed a marked papillitis, best seen with +7 D. The patient awoke totally blind after attending a dance the night before, from which she retired feeling perfectly well with no symptoms referable to the eyes. Vision was reduced to quantitative perception of light, with sluggish response to direct light reflex, but prompt consensual contraction. There was distinct exophthalmos. There was a history of a very profuse discharge of pus from the right middle meatus. Careful intranasal examination and transillumination determined the diagnosis. The sphenoidal sinus was opened and drained, with resultant early and progressive improvement of vision. The involvement of the left optic foramen in this case is probably explained by a sudden breaking down of the septum between the two sinuses, or a sudden occlusion of the right sinus causing retention in the left, which may have been previously diseased, notwithstanding the absence of symptoms referable to the left side. In either case bulging of sinus wall against the optic nerve would account for the optic neuritis. Although the blindness and the discovery of swollen nerve-head were practically simultaneous, it is not unreasonable to assume that the sudden blindness might have supervened in the course of an optic neuritis of long standing.

Optic Neuritis from Intranasal Disease.—Vail³ describes three types of optic neuritis of nasal origin:

1. Acute fulminating retrobulbar neuritis, due to mechanic compression of the optic nerve and ophthalmic division of the fifth nerve by swelling of the lateral walls of the sphenoidal cavity. In these cases there is profound and rapid amaurosis, with violent neuralgic pain.

2. Acute retrobulbar perineuritis and optic leptomeningitis due to infection from the nose. In these cases there is swelling of the subvaginal and perineural lymph spaces. The violent pain is absent, and the amaurosis is much less marked.

3. Retrobulbar optic neuritis secondary to septic venous thrombosis of nasal origin.

Primary Intradural Tumors of the Optic Nerve.—Byers⁴ epitomizes the distinguishing signs of primary tumors of the optic nerve as follows:

1. Exophthalmos: Painless and slow in development and tending somewhat to coincide with the line of the axis of the orbit.

2. Profound and early disturbance of the function of the optic nerve, as shown by a reduction of vision, often greater than the ophthalmoscopic changes in the intraocular portion of the nerve would lead us to expect.

3. A palpable tumor in the position of the optic nerve, non-

¹ Ann. d'Ottalmologia, April, 1901.

² Archives of Otolaryngology, Vol. xxx, No. 3, 1901.

³ American Journal of Ophthalmology, June, 1901.

⁴ Studies from the Royal Victoria Hospital, Montreal, Vol. I, No. 1, August, 1901.

¹ Soc. méd. des Hôp., May 17, 1901.

² Comparative Anatomy of the Mammalian Eye, London, 1901.

adherent to the orbital wall, and especially to be made out in high degrees of bulging or deviation of the globe, or under an anesthetic.

4. Relatively good movement on the part of the globe, owing to comparatively infrequent impairment of the musculature of the eye.

5. A hyperopic state of the eyeball brought about by the pressure of the tumor upon the posterior surface of the globe.

For many reasons Byers dismisses the arguments against retaining the globe, and agrees with Schlodtmann that the question is not shall we preserve or sacrifice the eyeball, but how best shall we maintain the globe in position. He is in favor of Krönlein's procedure, which, though it leaves a larger scar, affords a better view of the orbit, does not sever the muscular connections, offers a better chance of preserving the anterior ciliary arteries, does not injure the cornea, and does not bring the contaminated conjunctival sac into communication with the easily infected deeper structures of the orbit.

The Use of Haab's Magnet.—Spicer and MacCallan¹ report nine cases of foreign body in the eyeball in which the large Haab magnet was used, and offer the following general conclusions:

1. When the patient is brought up to the magnet it is the rule for severe pain to be experienced by him if a magnetizable particle is present in the globe. Haab's magnet is therefore of valuable diagnostic service in determining the presence or absence of a magnetizable particle.

2. Localization by the x-rays is extremely important. By their means it is possible sometimes to avoid injury to a clear lens in the extraction of a foreign body, and entanglement in the iris can be avoided if its precise situation is known. Nevertheless, if some delay is unavoidable before the x-rays can be applied, we advise in certain cases immediate extraction of the foreign body by Haab's magnet without precise localization; for example (1) in which there is considerable inflammation; (2) in which there is a recent traumatic cataract. In each of these cases there is considerable danger in delay.

3. If there is a recent wound we attempt to remove the foreign body through it, using Haab's magnet alone. If this wound has firmly healed it is necessary to make an opening for its exit. This may be either corneal, in which case the foreign body is withdrawn by Haab's magnet; or peripheral, in which case we usually employ the small magnet for the removal of the foreign body from the anterior chamber after it has been brought forward by Haab's magnet. The latter method is the one we generally adopt.

4. In all cases it is most essential that entanglement of the particle in the iris and ciliary body should be avoided. By bringing the patient up to the magnet gradually from a distance, and by increasing the strength of the current up to the maximum slowly, this is to a certain extent guarded against. The idea of this manoeuvre is to prevent the particle from rushing forward from its posterior position and burying itself in the iris.

Congenital Anophthalmos.—Bietti² reports the macroscopic and microscopic examination of the encephalon and orbital contents in an infant with congenital bilateral anophthalmos. The child died accidentally at the age of 15 months. The eyeballs had undergone complete atrophy in early fetal life, presumably the result of hereditary syphilis. As in the case of van Duyse, there was not a trace of the optic nerves. The optic foramen was traversed simply by the ophthalmic artery. The pregeniculum was deficient, and the pulvinar and anterior quadrigeniculate tubercles were atrophied. Clairborne³ has examined two cases of anophthalmos; one in a marasmic infant of two months, in which there was no sign of an eyeball in either socket; and the other a well-nourished child of six months, in which the right eye was present and normal. Clairborne suggests that in these cases a "plumper" be employed while the skull is growing until an artificial eye may be used. The explanation of the condition may possibly lie in nonformation of the proton in embryonic life, arrest of develop-

ment in utero, or destruction by fetal inflammation, possibly by the microbes of suppuration, or by localized tuberculosis or syphilitic lesion. Morano has reported the occurrence of five cases of anophthalmos in one family.

Metastatic Choroiditis in Pneumonia.—Bull¹ reports the results of a study of six cases of metastatic choroiditis occurring in the course of pneumonia due to grip, with two autopsies. In four of the cases the affection was bilateral, and in four there was a fatal issue. The affection is characterized by pain in the eye and head, intense vascular congestion, with the usual symptoms of choroiditis, and rapid and total loss of sight. It may begin with headache, vomiting and general febrile symptoms. The ocular symptoms generally appear within the first week of the pneumonia. The course of the ocular inflammation is from three to six weeks, and the prognosis is always bad. Enucleation of the affected eye is not advisable in the acute stage of suppuration, on account of the possible danger of meningeal infection. Microscopic examination of the affected eyeballs in Bull's case showed numerous embolic and thrombotic plugs in the intraocular bloodvessels, and numerous micrococci (staphylococci, streptococci and pneumococci) in the infected tissues and vessels.

Metastatic Panophthalmitis from Abscess of the Knee.—Jackson¹ reports the case of a mulatto woman of 45, who became totally blind from panophthalmitis in both eyes, clearly the result of embolic or septic origin in the posterior segment of the eyeball. The ocular inflammation was first noticed nine days previously, and in five days the woman had become totally blind. She died of general septicemia, and at the autopsy the only origin of the general septic infection was discovered in the left kneejoint, which was filled with pus. There were no gonococci demonstrated in the pus or secretions.

Methyl Alcohol Amblyopia.—Moulton² reports a case of blindness from drinking bay rum and compares it to the reported cases of wood-alcohol blindness due to the use of cheap essence of Jamaica ginger and other substitutes for whisky. Under a recent improvement in preparation methyl alcohol is sold under the name of "Columbian spirits," and is free in a degree from the objectionable features, and on account of its cheapness it may be expected in many essences and similar preparations sold at a cheap price, particularly in the stores of rural prohibition districts. On this account it is important to make an immediate diagnosis. The most important toxic symptoms are gastroenteric disturbances when small quantities have been taken, and coma after large doses; followed by rapid failure of vision, which later improves, but soon fails permanently. There are contraction of the fields, absolute scotoma, usually central, and sometimes total blindness. These symptoms are similar to those of retrobulbar optic neuritis, but the prognosis is far different. In more than 90% of the cases of wood-alcohol amblyopia useful vision is permanently lost.

Sun Blinding.—Snell³ reports a case due to watching the eclipse through insufficiently colored glasses. Peripheral vision was 6/9 and central only 6/24. There was slight haziness around the papilla, and the veins were a trifle full, but there were no macular changes. Vision increased to 6/9 in 12 days, but a subjective appearance like a gray disc was still seen growing gradually smaller through several weeks. The literature of the subject is briefly noted. Prognosis is good in most cases as to practical vision, though a more or less distinct scotoma is often left. [H.M.]

Glaucoma and Thrombosis of Retinal Veins.—Jones³ reports three cases in which acute glaucoma followed thrombosis within six weeks, and one in which chronic glaucoma supervened in nine months. In two cases glaucoma occurred in the unaffected eye as well, suggesting a causal relation between the two conditions. Prognosis is often favorable in simple thrombosis, but becomes grave with this complication. [H.M.]

Stereoscopic Ophthalmoscope.—Turner⁴ describes a new stereoscopic ophthalmoscope, invented by him for the purpose

¹ British Medical Journal, January 18, 1902.

² Ann. di Ottalmologia, May-June, 1901.

³ Trans. Amer. Ophthal. Soc., 1901.

¹ Trans. Amer. Ophthal. Soc., 1901.

² Journal American Medical Association, November 30, 1901.

³ The British Medical Journal, January 18, 1902.

⁴ Berliner klinische Wochenschrift, December 2, 1901.

of bringing into clearer relief any equalities existing in the retinal background. By an ingenious use of prisms he has produced an instrument which is 18 times as sensitive to retinal inequalities as that of Giraud-Teulon, and at the same time includes an illuminating apparatus. [H.H.C.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended February 21, 1902:

SMALLPOX—UNITED STATES.			
		Cases	Deaths
California:	Eureka.....Jan. 27.....	1	
	Humboldt County.....Jan. 27.....	5	Imported
			in lumber camps
	Los Angeles.....Feb. 1-8.....	3	
	Sacramento.....Feb. 1-8.....	1	
Colorado:	San Diego.....Feb. 1-8.....	1	
	San Francisco.....Feb. 1-8.....	4	
	Denver.....Dec. 28-Feb. 8.....	12	
	Belleville.....Feb. 8-15.....	2	
	Evansville.....Feb. 8-15.....	5	
Illinois:	Clinton.....Feb. 8-15.....	1	
	Covington.....Feb. 8-15.....	11	
	Lexington.....Feb. 8-15.....	2	
	New Orleans.....Feb. 8-15.....	1	
	Portland.....Feb. 1-15.....	3	
Indiana:	Baltimore.....Feb. 8-15.....	1	
	Boston.....Feb. 8-15.....	38	6
	Cambridge.....Feb. 8-15.....	5	1
	Everett.....Feb. 8-15.....	3	
	Malden.....Feb. 8-15.....	1	
Iowa:	Medford.....Feb. 8-15.....	1	
	New Bedford.....Feb. 8-15.....	1	
	Somerville.....Feb. 8-15.....	1	
	Taunton.....Feb. 8-15.....	3	
	Weymouth.....Feb. 1-8.....	1	
Kentucky:	Bay City.....Feb. 8-15.....	3	
	Detroit.....Feb. 8-15.....	5	
	Grand Rapids.....Jan. 29-Feb. 15.....	3	
	Ludington.....Feb. 8-16.....	2	
	Winona.....Feb. 1-8.....	1	
Louisiana:	Omaha.....Feb. 8-15.....	46	1
	South Omaha.....Feb. 1-17.....	61	
	Nashua.....Feb. 8-15.....	2	
	Camden.....Feb. 8-15.....	3	1
	Jersey City.....Feb. 8-16.....	22	
Maine:	Newark.....Feb. 8-15.....	20	7
	Binghamton.....Feb. 8-15.....	9	
	Mount Vernon City.....Feb. 18.....	1	
	New York.....Feb. 8-15.....	58	14
	Cincinnati.....Feb. 7-14.....	13	
Maryland:	Cleveland.....Feb. 8-15.....	1	
	Hamilton.....Feb. 8-15.....	5	
	Youngstown.....Feb. 1-8.....	1	3
	Allentown.....Feb. 1-8.....	1	
	Norristown.....Feb. 8-15.....	2	
Massachusetts:	Philadelphia.....Feb. 8-15.....	74	19
	Pittsburg.....Feb. 1-21.....	1	
	Reading.....Feb. 10-17.....	2	
	Scranton.....Feb. 1-15.....	2	
	Williamsport.....Feb. 8-16.....	5	
Michigan:	Providence.....Feb. 8-15.....	1	1
	Charleston.....Feb. 8-15.....	3	
	Memphis.....Feb. 8-15.....	12	
	Nashville.....Feb. 8-15.....	1	
	Houston.....Feb. 1-15.....	24	1
Nebraska:	Spokane.....Feb. 1-8.....	20	
	Tacoma.....Feb. 1-8.....	4	
	Fond du Lac.....Feb. 8-15.....	2	
	Green Bay.....Feb. 9-16.....	16	1

SMALLPOX—FOREIGN.			
		Cases	Deaths
Austria:	Prague.....Jan. 18-25.....	15	
	Ghent.....Jan. 25-Feb. 1.....		2
	Ghent.....Feb. 8-15.....	1	2
	Winnipeg.....Feb. 1-8.....	4	
	Cartagena.....Jan. 27-Feb. 2.....		3
Belgium:	Panama.....Feb. 1-10.....	50	
	Paris.....Jan. 18-Feb. 1.....		11
	Dundee.....Jan. 25-Feb. 1.....	1	
	Glasgow.....Jan. 31-Feb. 7.....	13	1
	Liverpool.....Jan. 25-Feb. 1.....	3	
Canada:	London.....Jan. 18-25.....	870	41
	".....Jan. 25-Feb. 1.....	1136	49
	Bombay.....Jan. 7-14.....	1	
	Calcutta.....Jan. 4-11.....	3	
	Karachi.....Jan. 5-12.....	13	1
Colombia:	Madras.....Dec. 28-Feb. 3.....		2
	Naples.....Jan. 25-Feb. 1.....	5	
	City of Mexico.....Jan. 26-Feb. 2.....	1	

YELLOW FEVER.			
		Cases	Deaths
Mexico:	Vera Cruz.....Feb. 1-8.....	4	4
CHOLERA.			
		Cases	Deaths
India:	Bombay.....Jan. 7-14.....	1	
	Calcutta.....Jan. 4-11.....	31	
	Madras.....Dec. 28-Jan. 3.....	4	

PLAGUE.

China:	Hongkong.....Dec. 28-Jan. 11.....	1	1
India:	Bombay.....Jan. 7-14.....	250	
	Calcutta.....Jan. 4-11.....	36	
	Karachi.....Jan. 5-12.....	24	23

Changes in the Medical Corps of the U. S. Army for the week ended February 22, 1902:

BEATTY, WALTER K., contract surgeon, will proceed from Fort Huachuca to Fort Grant for duty, vice Contract Surgeon Max F. Clausius, assigned to duty at Fort Huachuca.

FISHER, WILLIAM C., contract dental surgeon, will proceed from Fort Sheridan to Fort Wayne for temporary duty to render professional services to the members of its garrison.

HUTTON, First Lieutenant PAUL C., assistant surgeon, Fort Keogh, is granted leave for one month, to take effect upon the arrival at that post of a medical officer to relieve him.

WILLIAMSON, First Lieutenant LLEWELLYN P., assistant surgeon, is relieved from further duty in the division of the Philippines, and will proceed to Columbus Barracks for duty, to relieve First Lieutenant Sanford H. Wadhams, assistant surgeon. Lieutenant Wadhams will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

WYETH, Major MARLBOROUGH C., surgeon, is granted leave for one month, to take effect upon his arrival in the United States.

FREEMAN, CHARLES E., contract surgeon, now at San Francisco, Cal., will report for transportation to the Philippine Islands, where he will report for assignment to duty.

ROBERTS, ERNEST E., contract surgeon, now at Los Cerillos, N. M., will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

MCLEAN, Captain ALLEN D., assistant surgeon, having tendered his resignation, is honorably discharged, to take effect February 17, 1902.

HENRY, Major JOSEPH N., surgeon, now at Philadelphia, Pa., on leave of which he availed himself at New York City, will upon the expiration of said leave proceed to Fort Slocum for duty, to accompany the next detachment of recruits to be sent via San Francisco, Cal., to the division of the Philippines, where he will report for assignment to duty.

HEXAMER, Captain CARL R., assistant surgeon, now at San Francisco, Cal., is honorably discharged, to take effect February 28, 1902. Captain Hexamer will proceed to his home.

FORD, First Lieutenant CLYDE S., assistant surgeon, leave granted is extended 14 days.

CHAFFEE, First Lieutenant JEROME S., assistant surgeon, upon the completion of the course of instruction at the Army Medical School in Washington, D. C., will report at United States General Hospital Fort Bayard for duty, to relieve First Lieutenant Louis T. Hess, assistant surgeon. Lieutenant Louis Hess will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

CLOUD, First Lieutenant MARSHALL M., assistant surgeon, is directed to report to Lieutenant Colonel Jacob A. Augur, forth cavalry, president of the army retiring board at Fort Leavenworth, for examination by the board.

GIBSON, EDWARD T., contract surgeon, is relieved from duty at Fort Harrison and will proceed to San Francisco, Cal., and report for duty as transport surgeon on the transport Meade.

So much of orders of December 28 as relates to Contract Surgeon Robert C. Eve is so amended as to relieve Contract Surgeon Eve from duty at Fort Sam Houston and to direct him to proceed to his home, August, Ga., for annulment of contract.

BARNET E. B., contract surgeon, leave granted January 28 is extended one month.

BARNET, E. B., contract surgeon, will upon the expiration of his present leave report to the chief surgeon, department of Cuba, for annulment of contract.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended February 20, 1902:

KINYOUN, J. J., surgeon, granted leave of absence for 2 months and 8 days from February 16—February 14.

ROSENAU, M. J., passed assistant surgeon, detailed to represent the service at meeting of New York Academy of Medicine, to be held at New York, February 20—February 17.

SPRAGUE, E. K., passed assistant surgeon, to proceed to Fort Huron, Michigan, for special temporary duty—February 17.

DECKER, C. E., assistant surgeon, granted extension of leave of absence for 15 days from February 15, on account of sickness—February 19.

MONCURE, J. A., acting assistant surgeon, granted leave of absence for 30 days from February 15—February 18.

HARRIS, B. Y., acting assistant surgeon, granted leave of absence for 15 days from February 15—February 19.

HODGSON, S. H., acting assistant surgeon, granted leave of absence for 30 days from March 1—February 19.

HUNTER, W. R., acting assistant surgeon, granted leave of absence for 2 weeks from February 1—February 14.

PECK, F. H., senior pharmacist, relieved from duty at St. Louis, Mo., and directed to proceed to Evansville, Ind., and report to medical officer in command for duty and assignment to quarters—February 2.

STEPHENSON, C. W., junior pharmacist, upon being relieved from duty at Evansville, Ind., to proceed to St. Louis, Mo., and report to medical officer in command for duty and assignment to quarters—February 20.

Surgeon J. J. Kinyoun resigned to take effect April 19.

American Medicine ³⁷¹

FOUNDED, OWNED, AND CONTROLLED BY THE MEDICAL PROFESSION OF AMERICA

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Vital Statistics as the Index of National Progress.—In the current number of the *Contemporary Review* Mr. J. Holt Schooling sets over against each other figures as to the increase of population of England, Germany and France, in such a way as to arouse interest both from the practical side of national progress and also from the standpoints of the moralist and the hygienist. The increase of population since 1880 is as follows:

Country.	In Millions.	Percent.
Germany	10.8	24
United Kingdom	6.3	18
France	1.2	3

There has been a greater fall in the birth-rate in Great Britain than in any other country of Europe. But the excess of births over deaths is the true measure, and in this, despite the low death-rate, England's loss is greater than that of France. Is this the punishment of luxury and wealth? If so, England has need to rouse herself and look clearly toward her coming fate. It is the power to colonize and stamp civilization upon other young and growing nations that at last tests the question of the success and endurance of a people. The one "all-prevailing and pressing demand," according to the wise and warning words of the Prince of Wales, is the want of population. Trustworthy comparative figures are wanting as to our country, but there can be little doubt that in our superiority of birthrate over deathrate lies the chief source of American ascendancy in the future.

Original Investigation in Popular Magazines.—An article in the current number of the *Century Magazine* well illustrates the folly—or worse than folly—of a new phase of the popularization of science. Certain "discoveries" are thus epitomized, concerning which the newspapers have been so humorously eloquent for several months:

That the chemic stimulation of protoplasm is really an electric stimulation; that the poisonous action of inorganic salts is due to the electric charges of the salts and probably to the movements of these charges; that the negative charges stimulate protoplasm, while the positive prevent stimulation, and if not counteracted by the negative will destroy life; that muscle contraction is probably in its essence an electric phenomenon, and that the conduction of a nerve impulse is almost certainly an electric phenomenon; for the first time we have a physical explanation, which agrees with all the main known facts, of the nerve impulse and changes in irritability;

we have secured a physical explanation of the way in which an anesthetic produces its effect; we are led to the hypothesis of the identity of stimulation by light and by chemicals.

In reply, right-minded scientists will probably say: That every one of these propositions is either doubtful or the facts upon which they are based may be interpreted in a different way; that the "practical results" drawn from them may not be either "results" or "practical"; that there is probably not a dozen readers of the *Century Magazine* who are judges of these matters or who can understand them; that the science dealt out to magazine readers should be admitted and certain, not technical and unsettled; that the original investigator should not concern himself with this work of journalistic exposition; that papers chronicling original research should be first published in scientific journals; that the popularization of science should be in the interests of science and of the populace, and not of the popularizer.

Government and the Public Health.—The brilliant success and progress that has followed the assumption of control and power of matters pertaining to the public health upon the part of governments should encourage trial of the method everywhere. The victory of the German government in practically eradicating smallpox in that country is almost forgotten in our splendid work in Cuba and the Philippines. For a century and a half, as was the way of the world, the Spanish Government was minded only to conquer these islands and get from them selfish economic advantages; and disease was allowed its way unchecked. With our rule this has suddenly changed. General Wood, or better, Dr. Wood, in Cuba, seconded by the army medical corps and our government, has eradicated yellow fever, and completed what is really a revolution in the health conditions of the people. In the Philippines similar reform and progress is evident, and as in Cuba the work is being carried on under an officer of the Army Medical Department—in this case Major Louis M. Maus, Commissioner of Public Health of the Philippines. Sanitary laws in regard to the practice of medicine, compulsory vaccination, and the establishment of provincial and municipal boards of health have been placed on the statute book. A board for the examination of all persons desirous of practising in the

islands is already in session, and it is confidently believed that its work will result in placing the profession on as high a plane as it now occupies in any State of the Union. By hard work the plague, which again became serious last summer, has been nearly, if not wholly, stamped out—partly, it is thought, by means of the rat crusade. Arrangements have also been made for the establishment of a leper colony on the island of Kulion, to which 500 or 600 lepers are to be taken before June 1. In Manila itself more than 3,000 houses have been thoroughly cleaned and remodelled, and this work is to be continued. If such military authority and governmental control of the public health could be extended to our own self-ruling states and cities!

Progress in Psychiatry.—Because the example may be helpful to other institutions, and because also the trend of the present methods instituted at the Sheppard and Enoch Pratt Hospital at Baltimore is in the line of necessary progress, we wish to call attention to the work planned and being carried out at this institution. In order to make the Sheppard a modern hospital for the insane, the trustees began by getting rid of the old word *asylum*, substituting for it the word *hospital*. One of the essentials of the modern hospital is that its medical officers shall be abreast of the times in the practice of their profession. To accomplish this purpose, Dr. Brush advised the trustees that the members of the staff be given plenty of time to work in the clinics of Baltimore,* either in the general medical clinics at the Johns Hopkins Hospital or in the neurologic clinic. This keeps the men in touch with the rest of the medical world, increases their powers as diagnosticians and cultivates a spirit of greater interest in their work. Why may not other institutions be made to feel that the patients entrusted to them are receiving the best medical care only when the interest and ambitions of each individual member of the staff are kept alive by contact with the outside medical world? In Germany the modern and model hospitals for the insane are situated close to the other medical clinics, so that the alienist has an opportunity of knowing the best that is thought and said in his profession. The isolation of our hospitals for the insane is a tremendous disadvantage, but the obstacle may be overcome by some such plan as is in operation at the Sheppard. In the administration of the hospital there the methods of the general medical clinic are being copied. Daily rounds are made by the staff, the histories of new cases as soon as admitted are taken by clinical assistants. Following the example of Worcester and McLean, conferences are held three times a week at which the whole staff is expected to be present, and points of interest are discussed. The hospital has placed at its disposal a sum of money which will enable it to begin psychologic work, as in many of the German clinics, particularly those of Kraepelin, Wernicke, Sommer and others. The hospital is well supplied with all the current neurologic and psychiatric literature, and the

list is constantly being increased. The members of the clinical staff are expected to devote a certain amount of time to work in the laboratory. Although no immediate results are expected from the work done in the laboratory, it is recognized that no member of the staff can become a good clinician unless he has had the training in observation which comes from laboratory work. The aim of the hospital is this: To give to every insane patient the same intelligent medical care that is given to a case of typhoid fever or pneumonia in the wards of the best general medical hospitals.

The following courses, beginning March 15 and lasting until June 15, will be open to a limited number of postgraduate students:—

1. Practical work in the laboratory under the supervision of the director and the assistants. This includes the study of the normal histology and pathology of the central nervous system.

2. Practical courses in the diagnosis and treatment of insanity.

3. Lectures on the symptomatology of insanity:—
(a) Methods of examining patients; (b) fallacious sense-perceptions; (c) disturbance of memory; (d) insane ideas; (e) emotional disturbances; (f) disturbance of will; (g) imperative ideas and acts.

The morals of antivivisectionists and incidentally of some editors are illustrated by a contributor to and the editor of the *Atlantic Monthly*. In the current number the editor so far forgets his duty to literature and to ethics as to allow a foolish article to be published in the interests of the foolish antis. Both editor and contributor should have read Dr. Ernst's pamphlet (to which allusion is made elsewhere), before permitting the *Atlantic Monthly* to be used by antiscience for nefarious purposes. All such diatribes are based upon the repetition of lies, or of the reports of ancient experiments no longer allowed or advised. It would be just as pig-headed to argue that all religion is infamous because of the sins of some medieval religious persons, as to declare that all vivisection is cruel and useless because of the experiments of a Majendie. The logical and right thing for some antis to do would be to stop cruelty if it exists. Instead of that they are immorally silent about their own daily vivisections and cruelties to animals—they who are not vegetarians—and with malicious indiscriminate charge others with motives and acts of which they are not guilty. Take the following excerpt from the article in the *Atlantic Monthly* as an example:

The same arguments which would lead us to vivisect the inferior dumb animal would lead us to vivisect also the inferior human animal. Why not vivisect the child as well as the dog? We take the life of a murderer; why not vivisect him? What right has he to be exempted from torture any more than an unoffending dumb animal, who is equally susceptible to pain? Besides, it is a fact, to which attention has often been called, that, in the interest of medical science, it would be much more profitable to dissect men alive than it is to dissect horses or dogs alive. In other words, it would "pay" better. The vivisection of dumb animals is defended on the ground that it "pays," and it is hard to see why the vivisection of criminals could not be defended on the same ground.

The illogicality and the immorality of this writer are in plain evidence. Every statement is either a lie or an

*The Sheppard and Enoch Pratt Hospital is within easy access of Baltimore, so that physicians taking these courses may also work in the laboratories and clinics at the Johns Hopkins Hospital. Further information in regard to these courses may be obtained by addressing Dr. Edward N. Brush, Towson, Maryland.

error, or both. 1. The dog and child are not of the same value to the world. 2. The results of using them for experimental purposes would not be equally bad or equally good. 3. The profession has never desired nor asked for human vivisection, and has, as a whole, repudiated and repudiated it. 4. Such usage and logic may and does satisfy the reason and conscience of the antivivisectionist, but not ours. 5. There is no "torture" in modern American vivisection experiments. If there is, the antivivisectionists should help us to stop it. All good physicians and experimenters will aid in this noble work. 6. The profession has never said and does not believe that "it pays"—in the sense Mr. Merwin puts into these words.

The antivivisection controversy for all fair-minded people will be settled by the pamphlet compiled by Dr. Harold C. Ernst and published by Little, Brown & Co., of Boston. It is entitled "Animal Experimentation," and is a series of statements showing the value of the method, made by a number of remonstrants to proposed legislation to restrict experimentation upon animals in Massachusetts in 1901. These statements are by the following:

Charles W. Eliot,
Henry P. Walcott,
G. Stanley Hall,
E. H. Capen,
William Lawrence,
George Hodges,
James De Normandie, D.D.,
Rev. J. T. Magrath,
William T. Sedgwick,
Harris Hawthorne Wilder,
Mary A. Willcox,
J. S. Kingsley,
C. F. Hodge, Ph.D.,
J. P. Sutherland,
Arthur W. Weyss,

T. M. Strong,
John Collins Warren,
Arthur T. Cabot,
Maurice H. Richardson, M.D.,
James J. Putnam,
George L. Walton,
Horace D. Arnold,
Henry P. Bowditch,
William Townsend Porter,
William T. Councilman,
Theobald Smith,
Henry G. Beyer,
Theodore Hough,
Edward G. Gardiner,
Harold C. Ernst, M.D.

Physicians who have antivivisectionist friends amenable to reason (with many it is useless to attempt the method) should secure copies of this admirable pamphlet for distribution. Some, even, of the least rabid may be halted in their wild statements by the testimony of Theodore Hough, who of American investigators has probably seen and done more animal experiments than any other. He says:

"Not one of these animals suffered what would be called serious pain."

"I have not once seen curare employed without the concomitant use of ether or other anesthetics."

"In no case have I seen a demonstration for teaching purposes, where pain was possible, that the animal was not rendered unconscious in some merciful way."

"The number of cases where there was the slightest suffering on the part of a dumb animal (beyond the distress which accompanies the administration of ether) is certainly less than twenty-five; and even in these cases, the suffering was not greater than that which accompanies a cut with a sharp instrument, or the healing of a wound which is kept aseptically clean."

"If physiologic experimentation involves the pain and suffering on the part of dumb animals which we might suppose to be the rule from current antivivisection publications, from various imaginative stories which appear from time to time in our magazines, and even from the language of counsel and petitioners for the proposed legislation, it is very remarkable that,

with my opportunities for observation in so many fields in which such suffering is suspected or charged, the actual amount observed should be practically negligible."

Legal Status of the Eddyite and the Osteopathist.—The tangle as to the legal status of the osteopathic and Eddyite practitioners in different states grows greater every day. In Kansas City, Mo., an Eddyite healer who failed to report a case of diphtheria was discharged because the Court held that she was not a physician, and therefore not amenable under the ordinance. In Des Moines, Iowa, a judge has ruled that the State Board of Medical Examiners must grant a certificate to practise osteopathy to a graduate of the Still College of Osteopathy at Des Moines. This is an absurd decision, and should be reversed by the Supreme Court. The Supreme Court of Illinois has just decided that osteopathy is the practice of medicine, as defined by the statutes of that state. This decision is in harmony with similar decisions in Nebraska and Massachusetts. In Ohio the laws permit the practice of osteopathy, but the decision in general harmonizes with that in the Illinois case. The wording of the Illinois Act is as follows:

Any person shall be regarded as practising medicine, within the meaning of this act, who shall treat or profess to treat, operate on or prescribe for any physical ailment or any physical injury to or deformity of another. *Provided*, that nothing in this section shall be construed to apply to the administration of domestic or family remedies in cases of emergency, or to the laws regulating the practice of dentistry or of pharmacy. And this act shall not apply to surgeons of the United States army, navy, or marine-hospital service in the discharge of their official duties, or to any person who ministers to or treats the sick or suffering by mental or spiritual means, without the use of any drug or material remedy.

In the Illinois decision the Court emphasized the fact that the osteopath does not use drugs or any other material remedy, nor does he treat the sick by mental or spiritual means, and that therefore the use of the word *material* has no significance. The duty is plain that when the statutes do not make it clear as to what constitutes the practice of medicine then new laws or amendments should be passed to settle all doubts. Beyond all question the osteopath and Eddyite are aiming to practise medicine, and to do so without the trouble and expense of learning the science and art of medicine. And they are equally desirous of avoiding the responsibility of their ignorance in causing death, etc. The double fraud must not be permitted.

Compulsory insurance and governmental responsibility for the health of the people, is well illustrated in Germany, where working men and women are compelled to contribute to a State Insurance Fund, which pays them pensions when they are too old to work, or become incapacitated by sickness. When it is remembered that 100,000 persons in Germany succumb to consumption annually, and that the number of patients suffering with the disease is estimated at 1,000,000, it is not surprising that the imperial insurance office should evince a lively interest in the sanatoriums for consumptives. Moreover, the statistics recently published by the imperial health office at Berlin show that 87.7% of the patients treated for consumption by the open-air sys-

tem, were discharged as cured or improved, so that it has been demonstrated that a timely course of proper treatment will, in many cases, preserve the capacity of the patients to earn a living. Whether or not the socialistic experiment "made in Germany" of compulsory insurance shall prove worthy of imitation by other governments there is one lesson that will come out of it of most serious interest; and this is the value to the nation of human lives and health, and the expense of avoidable death. The government, whether it insures the worker against death and illness or not, is under the same obligation to value at least as a financial asset, the lives and health of its citizens, and to devote a goodly share of its energies in this direction. It would be the best paying of all investments. In the meantime it is strange that our private insurance companies are so indifferent to a source of possible profit as the care of the lives of their policy-holders would be.

Suicide in the Young.—A correspondent of the New York *Sun* points out from recent statistics how decidedly suicide is on the increase, and adds the startling information that the rate of increase is greatest among young people. According to the reports of the New York Board of Health, there were in the decade between 1870 and 1879 1,308 suicides as compared with 3,944 in the corresponding period, 1890 to 1899; 39 young people between the ages of 15 and 19 years took their own lives during the first period and 138 during the second period. During the first decade the suicide rate of the young people per 1,000,000 of population was 36; during the last-mentioned decade it was 74. While the general percentage of increase of suicide, according to population, was 58%, the percentage for the age from 15 to 19 years was 106%. Familiarity with the idea of suicide evidently has not a little to do with the increase of self-murder. As Dymand said: "Every act of suicide conveys the sanction of one more judgment in its favor. Frequency of repetition diminishes the sensation of abhorrence, and makes subsequent sufferers resort to it with less reluctance." This is especially true of the young. The lurid details of so many suicides as they come to the notice of school boys and girls in our sensation-loving press have their inevitable effect upon young minds especially prone to mimicry. When even slight troubles come there occurs at once the thought of ready escape from them by self-murder. Over-pressure in schools is doubtless a chief cause in producing the morbid sense of egotism and of personal ambition and failure, which often motive the crime of suicide. This is peculiarly true of anemic and neurotic children. It has been said that suicide increase depends closely upon the number of school-hours required. Surely physicians should use every effort to prevent the present harmful tendencies in this matter. It is as much a part of their duty to throw all the weight of their influence against the present pathogenetic license of the press in printing details of crime as it is to insist on the enforcement of any other sanitary regulations that save human life. No effort must be spared to arouse dormant public opinion against the insidious evil propagated by the sensation-mongering newspaper, and the initiative for this could

come with more propriety from the medical profession than any other source.

Spectacles a Sign of National Regeneration.—Because of the necessity of making the soldier a good marksman, the army regulations in Continental Europe have allowed the use of spectacles. It is strange logic, however, that sees in this a proof of national degeneration. It is, in fact, the reverse, because it shows that we are at last becoming aware of the stupidity of the prejudice against spectacles, and that it is easy by their use to make a good and useful soldier of one who, by reason of bad vision, was a poor soldier because he shot at random, instead of with precision. That it is evidence of ocular degeneration in the nation or race, there is not a particle of scientific or statistical evidence. Ametropia, which causes amblyopia, is probably decreasing with the progress of civilization. Civilization makes us need glasses more because we need to see better, not because the eye is poorer than it was. We know of one railway superintendent who was so opposed to spectacles that his trainmen feared to use them, and thus ran constant danger of accidents. Doubtless many wrecks have been due to the poor vision, which itself was caused by lack of proper spectacles. The only objection to their use by soldiers, engineers, etc., is that in rain and fog the lenses require protection or frequent cleansing. An indirect benefit of the army regulations may be that at last some continental ophthalmologist may sometime learn the art of refraction, and that he may teach others, so that in the course of centuries millions may secure the good vision, and the consequent health and usefulness of life now denied them by unprofessional ophthalmology.

State Care of the Insane.—It is evident that a great many abuses are possible under the new system for the management of the insane, the passage of which has just been forced by Governor Odell, of New York, but there is cause for congratulation in the general modification of the plans which has resulted in what may be called a Compromise Bill. By its provisions the State Board of Charities and the Board of Managers of the different institutions are retained, but their powers are abridged. The direct control will be vested in a Superintendent of Charities, who will have the power to appoint subordinates and make estimates of expenses and purchase supplies in bulk. With the retention of their power of investigation and the duty of frequent visiting, the Boards of Managers are able to act as a check upon possible abuses, provided they are actuated by altruism sufficient to compel their performance of duty under somewhat disagreeable conditions. The State Charities Aid Association has issued a reply to Governor Odell stating that his criticisms of the management is based almost entirely upon occurrences previous to 1896, when the present system went into effect. They claim that the system superseded in 1896, and the one advocated by Governor Odell represent two extremes, the present a satisfactory mean, and the only one which will obviate the dangers of placing the entire power either in the hands of Boards of Managers or of a

State Commissioner. Wisdom would seem to consist in maintaining a system whereby power would be so divided among different bodies that each would act as a check upon the others. This is certainly the best method to avoid the placing of important contracts through interested motives. The feature most to be deplored in Governor Odell's attitude is his advocacy of large institutions in preference to the cottage system, and the fact that he bases his opinions upon the relative cost of the two methods evinces a better grasp of details than of general scope. The question at issue should be that of results, not of immediate cost; and the system which returns the largest percentage of patients to productive citizenship is in the end the most economic, even if it should require a greater initial outlay.

Public Lecture Courses by Physicians.—A contemporary expresses the opinion that physicians should use the lecture platform to instruct the public in medical questions of general interest, instead of leaving this duty to the Sunday newspapers. The suggestion is good, and yet there are almost insuperable difficulties in the way of its adoption. The profession is traditionally opposed to everything that smacks of advertising, and, right or wrong, anyone in active practice who would deliver public lectures, just as one who allowed himself to be frequently quoted in the newspapers, would be suspected of ulterior motives, and would lose caste with his colleagues. Physicians engaged in scientific pursuits, and not in active practice, would, of course, not be subject to the same imputation of motive. The excellent plan adopted by the Board of Education of Philadelphia may, in time, overcome a prejudice, the existence of which is a distinct limit to the spread of accurate and useful knowledge among the laity. That Board, in conjunction with the University of Pennsylvania, has established a course of lectures, given in the public schools, in which members of the University Faculty discuss interesting subjects in the sciences and the arts, in history, medicine, etc., in a popular and instructive vein. Lectures are being delivered upon Bacteriology, Hygiene, Sanitation, Typhoid Fever, and other important themes.

A Bill to pension the widow of Dr. Lazear has been introduced in the House at Washington, and recommended by the Military Committee of the House. At the time of his death Dr. Lazear was a contract surgeon and therefore under the general laws his widow is not entitled to a pension. Certainly the death of no soldier in battle could do his country and the world more good than the sacrifice of his life made by Dr. Lazear. Already the result of that glorious act is manifest in the present entire freedom of Cuba from yellow fever. If not for the sake of justice, if not to show a fitting sense of our gratitude, the proposed pension bill should be passed to aid in making the world realize to some extent the beneficence of the work being done by medical science.

Pure Food Law and the Supreme Court.—The recent decision of the Supreme Court of Pennsylvania that the seventh clause of the Pure Food Act of 1895

means that no ingredient injurious to health in any quantity, whether large or small, can be added in any amount to an article of food without violation of the act, is far-reaching. It has been contended that under the Act the onus of proof of use of an adulterant in an injurious quantity lay upon the prosecution, thus practically nullifying the act because of the cost and difficulty of such proof of quantity. The Act places the cost of inspection and analyzing these adulterated products, together with an additional fine of \$50 to \$100, upon the violators of the law, and further provides that these fines shall form a special fund for use in enforcing the act. There is thus every reason for hope that vendors who have been slowly poisoning the public will now be forced to honesty and humanity.

Helmholtz.—It was an excellent idea on the part of the Section in Ophthalmology of the American Medical Association to have a symposium on the achievements of the illustrious Helmholtz, to whom ophthalmology owes its greatest debt. The papers presented at that meeting together with several others are published in the last number of the Journal of the American Medical Association, and make admirable reading.

EDITORIAL ECHOES

The Injection of Solidifying Oils into the Tissues.—From this testimony, derived from a careful examination of medical literature appearing since the invention of the hypodermic needle, it is clear that the credit for the idea of the mechanic employment of oils in the tissues belongs wholly to Dr. Corning. And not only is this true, not only is he entitled to the honor of originating the principle, but also to credit for developing a method far more scientific than that of any of his followers; for even to the merest tyro in pathology it must be clear that by the immediate solidification of the injected oil by cold, as originally recommended by him, the possibility of the occurrence of oil embolism is immeasurably reduced. In any future application of the principle these facts should not be forgotten.—[*Medical Record.*]

How to Stamp Out Smallpox.—The Wisconsin State Board of Health has decided to employ two skilled physicians to travel about the state to assist local boards of health in diagnosing suspected cases of smallpox, maintain strict quarantine, insist on the vaccination of all persons exposed to the pest, and help in all other possible ways to wipe out the disease. That state has been severely afflicted with smallpox for over a year past. The secretary of the State Health Board recently said that in 1901 the disease had existed in every county in the state except two, that 4,415 cases had been reported to him, and that he doubted if more than half the actual cases had been publicly announced.

If smallpox is ever to be stamped out of this country it will have to be fought unitedly, and not single handed. There will have to be a general and vigorous effort all along the line made to that end. Immunity from the disease for many years has made not only the United States but other countries also careless, and this carelessness is now being paid for by a wide prevalence of the disease. A general vaccination all over the country and strict regulations enforced by state and national authorities are the only means adequate to meet the emergency.—[*The Philadelphia Press.*]

BOOK REVIEWS

Outlines of Physiology.—By EDWARD GROVES JONES, M.D., Lecturer on Physical Diagnosis in the Atlanta College of Physicians and Surgeons, and Professor of Physiology in the Dental Department of the same. With 107 illustrations. 12mo, 400 pages. Published by P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia. Price, \$1.50 net.

The reader cannot progress far in this compact little *resumé* of the essential facts of modern physiology without being convinced that the author has done his work conscientiously and with a thorough understanding of the needs of the busy student of medicine. The amount of material brought into a small compass is surprising, making it a splendid compendium for the modern student whose time is mostly taken up with lectures, laboratory work and clinics and who has little left for reading. The book might be mistaken, from its size, for one of the many wishy-washy textbooks prepared for secondary schools, but one has only to glance it through to see that it belongs to a totally different class, being strictly scientific and up-to-date in treatment, and as we have already remarked, surprisingly complete. The illustrations are mostly from the larger standard textbooks, and there is an ample index.

Surgical Experiences in South Africa, 1899-1900.—Being Mainly a Clinical Study of the Nature and Effects of Injuries Produced by Bullets of Small Caliber. By GEORGE HENRY MAKINS, F.R.C.S.; Surgeon to St. Thomas's Hospital, London; late one of the Consulting Surgeons to the South African Field Force, etc. 25 Plates and 96 illustrations in text. Philadelphia: P. Blakiston's Son & Co. Octavo, \$4.00 net.

This volume embodies the results of a clinical study of the nature and effects of injuries produced by bullets of small caliber in the Boer war during 1889 and 1900. The number of cases studied is quite large, and the reports of interesting individual cases are in most cases sufficiently full to give as much new and valuable information on the subject of gunshot wounds. The book is divided into 12 chapters, the first three being devoted to general matters, such as transportation of the wounded, the action of modern military rifles and the general characters of wounds inflicted by bullets of small caliber. The next eight chapters are devoted to injuries of special organs, a chapter being devoted to bloodvessels, bones and limbs, joints, the head and neck, the vertebral column and spinal cord, the peripheral nerves, the chest, and the abdomen. The final chapter is devoted to a discussion of shell wounds. The results of injuries to the bones are evidently not as grave as in former times for Makins states that he did not see a single fatal result in an upper extremity fracture. However, there was a considerable mortality following fractures of the leg and thigh, deaths resulting most frequently from septicemia. As to the necessity for primary amputation following gunshot injuries, the question is decided mainly by the nature of the injury to the soft parts, less commonly by the extent of injury to bones and rules for procedure are now based on exactly the same lines as in civil practice. An excellent comment on the present methods of treating injuries is the fact that among the whole series of cases of injuries to the joints which is reported there was not a single instance of primary or secondary excision of the joint, either partial or complete. The injuries of the head were attended by a high mortality, both on the field and in the field hospitals. Thus, out of 10 cases treated in one field hospital after the battle of Paardeberg Drift no less than eight died. A number of very interesting injuries of the nervous system are reported. It was found that complete section of nerves by gunshot injury were often more rapidly recovered from than injury in which only a portion of the nerve trunk was divided. Makins explains this on the theory that the contiguous portion of the nerve suffered less when tension and resistance were lessened by complete severance. The chapter of wounds of the abdomen is one of the most interesting in the book. Wounds in the intestinal area very often traversed the abdomen without perforating the bowel. Makins gives the best prognosis in perforation of the ascending colon next in the rectum; after this the most favorable segments in the following order: stomach, sigmoid flexure, descending colon. He believes that perforat-

ing wounds of the transverse colon and small intestine are very seldom followed by spontaneous recovery. Wounds of the solid viscera usually heal spontaneously and give no trouble unless great vessels are injured. Wounds of the bladder also often heal spontaneously. It is believed that the small caliber of the bullet is alone responsible for the favorable results observed. In the management of these cases a more conservative course is advised than would generally be considered justifiable by most American surgeons in civil practice. Expectant treatment is advocated because of the numerous recoveries which are said to have followed in such cases and because of the dangers of habitual abdominal exploration under the conditions usually prevailing in the field. This volume is one of the most important contributions to the subject of gunshot injury by modern weapons which have recently appeared and contains many valuable reports of cases together with the results of careful observations of an unusually large series of cases. It is a book which every surgeon interested in this subject will surely wish to own and very frequently consult.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemic Methods, for Students, Hospital Physicians and Practitioners. By CHARLES E. SIMON, M.D., of Baltimore, Md. Fourth edition; thoroughly revised. Illustrated with 139 engravings and 19 plates in colors. Lea Brothers & Co., Philadelphia.

Each year the importance of clinical diagnosis becomes more thoroughly entrenched in the mind of the medical profession; each year sees the older methods of diagnosis relegated to a more subordinate position, and the adoption of the methods of scientific accuracy. No book published within the past few years has contributed more to this healthful change than the manual under consideration. The fourth edition of this valuable work now appears, revised and enlarged, a credit to the author and the publishers. As it now appears, the book comprises a volume of some 600 pages, with numerous handsome and instructive illustrations. It deals in the most thorough and approved manner with every phase of clinical chemistry and microscopy, including the examination of the blood, the secretions of the mouth, the gastric juice, feces, nasal secretions, sputum, urine, transudates, exudates, cystic contents, semen, vaginal discharges, and milk. In each case a description of the normal material precedes the pathologic considerations, which in turn are followed by an account of the methods used in examination. This work is heartily commended to all those who desire to be abreast of the times in that most important of all medical subjects, clinical diagnosis. Former editions have left their impress upon the profession, and the present edition will contribute in a still greater degree to the establishment of truly scientific and accurate methods in the investigation of all pathologic phenomena.

A Textbook on Diseases of the Ear, Nose and Throat. By CHARLES H. BURNETT, A.M., M.D., Clinical Professor of Otology in the Woman's Medical College of Pennsylvania; E. FLETCHER INGALLS, A.M., M.D., Professor of Diseases of the Chest, Throat and Nose, Rush Medical College of Chicago, and JAMES E. NEWCOMB, A.B., M.D., Instructor of Laryngology, Cornell University Medical College, New York City. Octavo, 716 pages, with 282 illustrations and 14 plates. Philadelphia and London: J. B. Lippincott Company, 1901. Cloth.

This work is a conjoint textbook on the diseases of the ear, nose and throat and their treatment. It is divided into three parts, each written by a practical teacher especially familiar with the subject on which it treats. Each division of the work is prefaced by a chapter on the anatomy and physiology of the part considered that is quite complete. The methods of medication and surgery are the newest and accepted as the best by the leading specialists in otology, rhinology and laryngology. The book is well printed in uniform type and is fully illustrated. Few of the illustrations are original, but they are well selected and serve their purpose admirably. The text is concise, but sufficiently full to render the consideration of each topic complete. The treatise will be found helpful both to the general and the special practitioner of medicine and surgery, and by its concise and thorough presentation of the subjects within its scope is particularly adapted to the needs of students.

Municipal Engineering and Sanitation.—By M. N. BAKER, Ph.B., E. C., Associate Editor of *Engineering News*, 317 pages. New York; The MacMillan Company, 1902. Price \$1.25.

This volume which forms part of the Citizen's Library of Economics Politics, and Sociology, is intended for those who as officials or citizens are striving to improve municipal conditions. It is divided in five sections, besides and introductory chapter on The City and Its Needs, treating of Ways and Means of Communication; Municipal Supplies; Collection and Disposal of Wastes; Protection of Life, Health, and Property; Administration of Finance and Public Property. These are again subdivided into 43 chapters. The chapters relating to the disposal of sewage, garbage, and other refuse are based on up-to-date bacteriologic science. With regard to the disposal of the dead, the author favors cremation, and thinks it should be made compulsory in all cases of death from infectious diseases, and of paupers and criminals for both economic and sanitary reasons. This work should be studied by every one who has the health and comfort of humanity at heart, for with the rapid growth of our cities the problems here dealt with become every year more and more complex and difficult to solve, and popular ignorance is dangerous, especially in "The Land of the Free."

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, Other than Drug-Giving, Useful in the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College; Physician to the Philadelphia Hospital and to the Rush Hospital for Consumption, etc. In 11 octavo volumes. American, English, German and French authors. Volume VI, **Dietotherapy and Food in Health.** By NATHAN S. DAVIS, JR., A.M., M.D., Professor of the Principles and Practice of Medicine in Northwestern University Medical School; Physician to Mercy Hospital and Wesley Hospital, Chicago; Member American Medical Association, etc. Philadelphia: P. Blakiston's Son & Co., 1901. 372 pages. Price, for the set complete, \$27.50 net.

In reviewing the sixth volume of the System of Physiologic Therapeutics, it is a pleasure to state that our hopes are fully realized, and that the high standard set by the earlier volumes is fully sustained by the sixth. Dr. Davis has divided his book into two parts: Part I, which treats of the general principles of diet and of diet in health, and Part II, which treats of diet in disease. In Part I he discusses the chemie and physiologic data concerning the nutritive and other qualities of various kinds of food; the relations of foods to the digestive organs, and to the organism as a whole; and the many changes that food must undergo before it can be appropriated to the needs of the human system and prepared for elimination. In Part II, devoted to a consideration of diet for invalids, attention has been given to the causation of disease, especially as diet, and digestive and nutritional processes are related to it. Symptoms are described whenever it seemed best in order to make clear the indications for dietetic and general hygienic treatment. In the preface attention is directed to the fact that many quotations have been made from the reports of studies of food and dietetics prosecuted under the auspices of the United States Department of Agriculture, and under the supervision of Professor Atwater—studies the value of which is not appreciated by the medical profession, but which nevertheless constitute the most valuable original contributions to this subject that have emanated from America, and which rank with the best studies made in other countries. The book is a noteworthy addition to medical literature, and not the least of its valuable features are the force and soundness of its teachings, details of the proper methods of preparing and administering foods to infants as well as to adults, and the indications for and the results to be expected from different dietetic regimens—features that will doubtless appeal to the general practitioner. We compliment Dr. Davis upon the success that has attended his efforts, and congratulate the editor upon entrusting the important, but oft neglected subject of dietetics to one who not only understands it, but who is able to clothe his thoughts in a dress at once attractive and satisfying.

AMERICAN NEWS AND NOTES.

GENERAL.

Disease in Imported Cattle.—In a recent address James Wilson, Secretary of Agriculture, suggested the propriety of preventing the importation of cattle and sheep, as it has been found that tuberculosis is being spread by pure bred imported animals purchased to improve the stock of this country. The same exclusion would be advisable in regard to horses, he thought, as glanders is an imported disease.

Vacancies in Army Medical Corps.—There are at present 63, for which the surgeon-general has no applications. The recent examination has resulted in the selection of 5 assistant surgeons who had been in service several years as contract surgeons. The examinations have been very severe, and the pay is not sufficient to attract capable men, besides promotion is very slow. It is likely that Congress will be asked to increase the pay of officers in this branch of the service.

Pest-houses.—A physician well-known in Washington advances an opinion that so many exposures to smallpox would not occur and its ravages might be checked with a little more foresight and careful management. If the term "pest-house" for instance could be suppressed—eradicated from the press—and if the hospital for contagious diseases was always as well managed and equipped as hospitals for the treatment of other ills, the prejudice against them would disappear. Instead of being clean, light and roomy, where modern methods prevail and the patients receive medical care and efficient nursing—too often the hospital is an isolated, shabby structure with dreary environments.

Yellow fever and its transmission was discussed before the Sanitary Congress in Havana February 19, and papers on the subject were read by Major W. C. Gorgas, chief sanitary officer of Havana; Major Havard, chief surgeon of the medical department in Cuba, and Drs. Finlay and Ross. The congress adopted a resolution setting forth that the mosquito *Stegomyia fasciata* is the only means of the transmission of yellow fever yet discovered, and that preventive measures should be directed toward the destruction of this mosquito when possible, or the isolation of the people from it. Mr. Porter, of the Florida State Board of Health, who voiced the opinion of the medical men and the public of Florida, voted against the resolution, as he did not accept the theory that mosquitoes were the only means of propagating yellow fever.

EASTERN STATES.

The oldest triplets living in the United States are said to be Mrs. Mary Fossett and Mrs. Sarah Fossett, of North Union, Me., and Mrs. Martha Hagar, of Somerville, Mass. They will celebrate their seventy-ninth birthday next June.

A conscientious objector in Boston was fined \$5 recently for refusing to be vaccinated, and for refusal to pay the fine was sent to jail for 10 days, where he was obliged to undergo vaccination, as the health officials are authorized to vaccinate prisoners whether they object or not.

Different Valuation.—A jury in a Justice of the Peace Court in New Haven, Conn., recently awarded \$75 damages to a lady who brought suit against the street car company on the plea that the motorman ran his car at so high a rate of speed that her St. Bernard dog in attempting to cross the track was knocked down and 2 of his toes were severed. A short time before a man who lost two fingers by contact with a buzzsaw while operating in a chair shop secured a judgment in damages for \$50.

NEW YORK.

State Hospital.—Dr. Mary Clayton, of Buffalo, has qualified for the state hospital service, having passed very successfully the recent civil service examination.

A vaccination bill, which increases the authority of the local health boards and permits them to quarantine for 14 days a person who refuses vaccination, has been favorably reported in the New York State Senate.

Impure Food.—Nearly two tons of baking powder advertised to sell for four cents per pound was confiscated recently by the Health Department of New York City. Analysis showed that it contained between 25% and 30% of a finely pulverized stone consisting mostly of magnesium silicate.

A Protest Against a Diet eliminating meat, scheduled for the patients in the Hudson River State Hospital by the State Commissioner to become effective at once, has been entered by the Board of Managers. The laborious work of the institution is performed by 200 of the 2,100 patients. The new order provides for $\frac{3}{4}$ ounces of potatoes for each patient daily.

Sanitation in Barber Shops.—Commissioner Lederle, of the Health Board of New York, has prepared a set of regula-

tions which he will ask to have adopted and conspicuously posted in every barber shop in New York City. The rules prohibit the use of sponges, powder-puffs or alum in stick form, or of a towel more than once, and enjoin the thorough cleansing of the barber's hands after shaving each customer.

Hospitals for Contagious Diseases.—Health Commissioner Ernest J. Lederle, of New York City, proposes having a hospital for contagious and infectious diseases in each of the five boroughs. He considers the present facilities for handling such diseases entirely inadequate, as in many instances the patients must be removed great distances before they can obtain hospital treatment. He has already secured a site on Staten Island for one of the hospitals, and is reasonably sure that he will obtain the appropriation necessary for the erection of the contemplated hospitals.

Carcinoma.—Dr. Daniel Lewis, the New York State Commissioner of Health, in his annual report to the Legislature, urges the annual appropriation of a fund to maintain the cancer laboratory in connection with the University of Buffalo. The investigations there this year will include experiments on treatment by means of x-rays. The town of Brookfield, situated some miles south of Utica, during the 15-year period 1886-1900 had a total mortality of 720 deaths from all causes, of which 82 were due to carcinoma. Dr. Lewis' special investigation of this town shows a large number of "cancer houses," so-called from having had two or more cases of carcinoma develop in them. In the township of Plainfield, near by, a special cancer center has been discovered, where nearly all of the houses within a radius of a quarter of a mile have had from one to five cases each.

State Hospitals.—The annual report of the New York State Charities Aid Association, issued recently, criticizes the congestion of hospitals, as each one at present is accommodating more than there is room for. Bellevue Hospital is reported as needing thorough renovation as regards paint, floors, plumbing, lighting and elevators. Harlem Hospital needs a new site and building. In the present hospital there is only one bath, and that is in the middle of the floor of the ward kitchen. Fordham Hospital is uncomfortable, and has no ward for children, though many are received as patients. Nor has the hospital any crematory, the used dressing, etc., being burned in a vacant lot. Another feature of the hospital's service which the committee criticizes is the long distance over which patients are transported. Some of them have to be carried seven miles, and in emergency cases this has at times resulted in death. During the heated term the mortality of patients overcome by heat and taken to this hospital was much greater than at the others. The committee recommends the erection of a small emergency hospital in the eastern part of the Bronx. It is also recommended that female nurses be employed in preference to men, with orderlies to assist them in the heavy work of caring for the patients. According to the report, on October 1, 1901, there were 24,354 insane persons in the state hospitals and private institutions, an increase of 576 over the previous year. The expense for the maintenance of the insane had reached a minimum, the average per capita cost for the year reported being 46 cents a day.

PHILADELPHIA, PENNSYLVANIA, ETC.

Against Mosquitos.—The bill appropriating \$10,000 for the extermination of mosquitos in New Jersey has passed the House of Assembly by a vote of 48 to 9, and will encounter no opposition in the Senate.

Dr. J. J. Kinyoun, for the past year commanding officer and chief surgeon of the United States Marine Hospital at Detroit, Mich., has sent in his resignation, to take effect May 1, 1902, and has gone to Philadelphia to devote himself to bacteriology.

New Castle County (Del.) Medical Society was organized in Wilmington, February 20, with the following officers: President, Dr. Willard Springer; vice-president, H. G. M. Kollock; secretary, J. W. Bastian; treasurer, J. A. Draper, Jr.; executive committee, J. A. Ellegood, R. P. Stubbs and J. Andrews. Meetings will be held monthly, in Wilmington.

Cost of Smallpox.—At a recent meeting of the Camden City Health Board it was found that over \$20,000 had been expended in trying to eradicate smallpox. The report of the vaccine physicians shows that 4,416 persons have been vaccinated at an expense to the city of \$2,208. Medical Director Dr. Leviitt reported a decrease of 50% in the number of smallpox cases for the month.

Serum-Treatment for Tuberculosis.—The Newark, N. J., Board of Health, after listening to a report of experiments with an antitoxin directed chiefly against septic conditions accompanying tuberculosis, which have been tried in the City Hospital by physicians on the Board, regarded it with such favor that the expense of further experimentation will be defrayed, and the use of the laboratory of the health department has been offered and a room provided in the City Hospital to that end.

The Pennsylvania State Veterinary Medical Association assembled in annual convention in Philadelphia, March 3, with representatives from 16 counties and with delegates from the American, New Jersey, New York, Keystone, and Schuylkill Valley Veterinary Medical Associations in attendance. These officers were elected: President, W. L. Rhoads; vice-presidents, J. F. Butterfield, A. W. Wier, W. G. Benner; treasurer, Francis Bridge; recording secretary, C. J. Marshall; corresponding secretary, E. M. Ranck; trustees, Leonard Pearson, W. Horace Hoskins, Thomas B. Rayner, W. H. Ridge and N. Rectenwald.

Adoption of the Metric System.—A special committee appointed by the Franklin Institute of Philadelphia to consider the feasibility and advisability of the adoption of the metric system in the United States, report that as the adoption of an international standard of weights and measures is desirable and the metric system is commendable not only for this but also for facility of computation, convenience in memorizing and simplicity of enumeration, they passed resolutions that the Franklin Institute approve of any movement to promote universal adoption of the metric system as sole standard with least confusion and expense, and that laws should be enacted by government to this end as rapidly as may be consistent with public service.

SOUTHERN STATES.

The Shelby County Medical Society, of Tennessee, was permanently organized February 17 with these officers: J. H. Stolper, president; B. L. Branch, vice-president; George E. Pettey, secretary; J. H. Liebkemann, treasurer; John H. McKay, reporter. The county contains about 400 physicians.

Promotion of Anatomic Science.—A bill now pending in Congress is especially designed further to promote anatomic science in the District of Columbia. It provides that all persons in charge of hospitals, prison, jail and morgue will deliver all bodies, which would otherwise have to be buried at the public expense, to a board created to control such remains, and vested with authority either to allow the use of such for the promotion of anatomic science under certain definite restrictions or to cause such bodies to be buried. The benefits arising from such a board will accrue immediately to the advantage of medical and dental colleges and the expenses of the board shall therefore be defrayed by these institutions. Attention is called to the fact that the present law authorizing the distribution of corpses has been operative for five years without any objection being raised. The necessity for the establishment of a board to take special charge of the department is emphasized by the disinclination of persons having authority to avail themselves of the law and their having numerous bodies buried at public expense when they might have been used to advance medical and dental education and also because under the present law bodies cannot be delivered to any board for use in examinations on anatomy.

WESTERN STATES.

An epidemic of smallpox in Des Moines, Iowa, has caused the City Council to close all churches and theaters and to prohibit all public gatherings.

An appendicitis club of 700 persons, who fear the disease, is reported to have been formed in Kalamazoo, Mich. Any member contracting the disease is to have his bills paid by assessment.

Impure Food.—Assistant State Food Commissioner Patterson, of Chicago, has located four slaughter-houses there for mules, horses and donkeys, where old and diseased animals are killed at night and the meat dispensed to markets, restaurants and free-lunch saloons.

Cocain Restrictions.—A bill will be introduced in the Ohio State Legislature to prohibit absolutely the sale of cocain by druggists or anyone, except upon the prescription of a regularly registered and accredited physician, and for medical purposes only. A heavy fine or imprisonment or both is attached as a penalty, with an increased penalty for a second offense. The sale of morphin and opium is restricted by similar laws, and the wholesale and retail druggists of the principal cities in the state are greatly interested in the passage of the bill. In Cincinnati alone the number of victims of the cocain habit is estimated at not less than 10,000.

Cigaret Smoking.—Dr. H. F. Fisk, principal of the Northwestern University Preparatory School, has put a ban upon cigaret smoking in the institution, and any boy who refuses to give up the habit will be obliged to leave and his tuition fees will be refunded, as experience has proved to Dr. Fisk that "boys who smoke are no good to the school, learn nothing themselves and set a bad example to the other students," and statistics prepared by him, covering a period of several years, show that of the boys who smoke only 2% are among the 25% of students who stand highest in class scholarship. On the other hand, 57% of the smokers are among the 25% lowest in class scholarship.

FOREIGN NEWS AND NOTES

GREAT BRITAIN.

New Editorial Management.—Dr. Norman Walker and Mr. Harold J. Stiles have been appointed editors of the *Scottish Medical and Surgical Journal* in place of Dr. William Russell, recently resigned.

Vaccination.—According to the *Lancet* the Registrar-General of London in his returns for the week ended January 25 gives tabulated demonstration "that out of those children and young persons" under 20 in the population of London who were not protected by vaccination, 100 have recently died from smallpox; whilst only four deaths from that disease have occurred among those of the same ages who were ascertained to have been vaccinated in infancy. There are also 5 cases in which the evidence was insufficient to warrant a definite statement as to vaccination. If the extreme course be taken of counting these 5 cases with the vaccinated, the figures will show at least 100 deaths from smallpox among the unvaccinated section of the population under 20 years of age, and at most 9 deaths among the vaccinated section at the same ages. At ages over 20 years there were 30 deaths of persons who were admittedly unvaccinated, 126 of persons who had been vaccinated in infancy but not revaccinated, and 3 of persons who had been revaccinated. In all these 3 cases revaccination had taken place more than 10 years ago, and in 2 of them it is uncertain whether the operation was successful. There are also 32 cases at these ages in which the facts as to vaccination could not be definitely ascertained. In 24 of these cases statements were made to the effect that the deceased had been vaccinated, but in none of them was it claimed that the deceased had been revaccinated.

CONTINENTAL EUROPE.

Impure Foods.—A decree has been published recently in Berlin forbidding the sale or importation of meats in the course of the slaughter, preparation or preservation of which chemicals injurious to health have been used.

An anticorset decree has been issued by the Minister of Education in Saxony, who holds that tight lacing is as fatal to intellectual development as the cigaret. By this decree no girl wearing a corset may attend the public schools or colleges.

Ollier Monument.—More than 50,000 francs have been subscribed for the erection of a monument to Ollier, the surgeon of Lyons. Of this amount Americans, through Professor Keen, have contributed 3,217 francs, the Germans 6,000 francs and Austrians 600 francs.

Hindoo Twins.—Radica, one of the Hindoo twins, has completely recovered from the operation, which was performed to separate her from her sister Doodica, to whom she was connected by a membrane similar to that joining the Siamese twins. Doodica died after the operation from the effects of a tuberculous tumor.

Franklin Hospital.—It was announced some weeks ago that a free hospital for American residents and visitors would be erected in Paris, and that the site had been bought in the Passy Quarter. Since then Mr. Edward Tuck, a native of Exeter, N. H., has decided to defray the entire expenses of installing the hospital, and to give a sufficient fund to maintain it permanently without outside aid. It will be known as the Franklin Hospital, and will stand in extensive grounds and will be managed by American physicians under the directorship of Dr. Magiun.

OBITUARIES.

Loxla Edwards, of Opelika, Ala. February 25, aged 27.

J. W. Winslow, for many years a leading physician of Easthampton, Mass. February 24, aged 81.

Albert S. Atkinson, of Philadelphia, from heart disease while assisting at an operation. February 24, aged 81.

R. M. Buck, of London, Ontario, an expert on insanity. February 20, aged 65.

J. A. Garneau, a prominent physician of Quebec, Canada. February 21.

Joseph Addison Booth, of New York, youngest brother of Edwin Booth. February 26, aged 62.

Elizabeth B. Wakeley, of New York. February 27, aged 70.

Benjamin Franklin McCulston, of Paris, Texas. February 28.

George Zabriskie Hunter, of Glen Ellen, Cal. February 18, aged 54.

Nathaniel Greene, of Boston. February 27, aged 71.

E. N. Williams, of Philadelphia, perished in the New Hampshire mountains. February 7, aged 28.

E. M. Moore, of Rochester, N. Y., in his earlier years one of the eminent physicians of the country. March 3, aged 80.

Conrad Mund, of New York. March 3.

W. S. Crawford, of Galena, Ill. March 1, aged 52.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

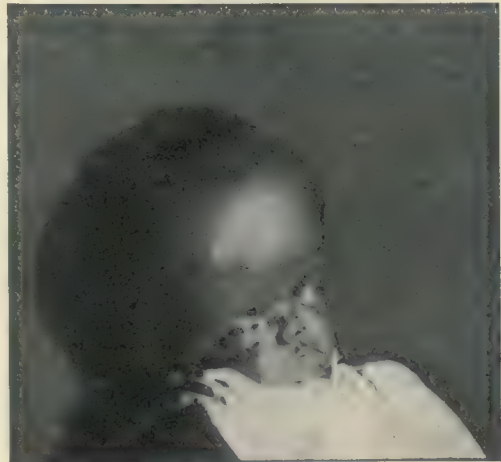
HYDROCEPHALUS: AN UNUSUAL CASE.

BY

RAMON D. GARCIN, M.D.,

of Richmond, Va.

Early in December, 1901, I was called to see Baby H., colored, age about 5 months. The child was suffering with hydrocephalus. Owing to its extreme debility no surgical intervention could be attempted. The point of great interest in the case is the unusual size of the head at this early age. The measurements of the head, carefully taken, are as follows: Circumfer-



ence, 27 inches; vault of cranium from ear to ear, 16½ inches; from before backward, 16½ inches; circumference of back of head, 22½ inches; size of neck, 7 inches; wrist, 3 inches.

The accompanying illustration gives a fair idea of the size of the head. In the course of my practice I have seen much larger heads from this disease, but in older children. This case was reported, and photograph shown, at a meeting of the Church Hill Medical Society in January and excited much interest.

PRIORITY IN TENOTOMY.

To the Editor of AMERICAN MEDICINE:—In his review of orthopedics in your issue of January 25, Dr. H. Augustus Wilson states that Dr. D. L. Rodgers was the first to operate for talipes in this country, in 1834. This may be so, but I am unable to find any account of the operation.

My friend and preceptor, the late Dr. W. Detmold, of New York, performed, in September, 1837, what he presumed was the first operation for clubfoot in this country, and published an account of it in the *American Journal of the Medical Sciences*. After this publication Dr. Dickson, of North Carolina, and Dr. Smith, of Baltimore, both claimed priority; Dr. Dickson having performed his operation in 1834, and Dr. Smith in 1835. Nothing was heard from Dr. Rodgers. As the medical periodicals of this country gave the credit to Dr. Detmold, Stromeyer, of Hanover, in his work on clubfoot, said: "Dr. Detmold, late surgeon of the Royal Hanoverian Army, commenced his practice in New York with a series of successful divisions of the tendo-achillis. The enterprising surgeons of America had until then not undertaken this operation, although my essays in *Rust's Journal* had been translated in the American periodicals." Dr. Detmold made the *amende honorable* to Drs. Dickson and Smith in his article on clubfoot, published in the *New York Journal of Medicine and Surgery*, yielding to them the right of priority.

Thilenius, of Frankfort, first suggested the division of the achilles tendon for the cure of clubfoot; but, not being a surgeon, he had the operation performed by Dr. Lorenz.

Michaelis and Sartorius afterward repeated the operation. Michaelis did not divide the tendon entirely, thinking to

improve upon Thilenius' method. But Michaelis and Sartorius were only partly successful and found no followers. In 1816, Delpech divided the tendon, but he met such serious inflammation and sloughing of the tendon that he never operated again, although the operation was successful in restoring the foot.

Stromeyer, 15 years later, revised the operation with entire success, having followed the rules of Delpech, except that he made the external wound smaller, and did not use extension of the foot immediately.

Dr. Little, of London, in a note to Stromeyer, said that Sir Astley Cooper, after seeing the results of one of his (Dr. Little's) operations, declared tenotomy one of the greatest improvements in modern surgery. He also remarked that Lord Byron would have given one-half of his fortune to have been cured of his deformity; but he was glad Stromeyer had not been 10 or 15 years earlier, as he would have spoiled Lord Byron as a poet.

L. D. SHEETS, M.D.

Bloomfield, N. J.

ANESTHESIA AND AUTOSUGGESTION.

To the Editor of AMERICAN MEDICINE:—The following observation may be of interest to your readers. I had occasion to administer amyl nitrite by inhalation to a young man for purposes of diagnosis. Previous to his visit to my office he had twice taken chloroform for surgical operations. Soon after inhaling the amyl nitrite he said, "That is chloroform and I want to vomit." On assuring him that he would not vomit, he became intensely pale and perspired profusely. He then passed into a deep slumber, from which it was impossible to arouse him, until I suggested that he was awake. This was an instance of autohypnotism, and the individual in question belonged to a small percentage of persons upon whom the physiologic effects of amyl nitrite were not manifest, for it was impossible subsequently to obtain the physiologic action of the drug.

San Francisco, Cal.

ALBERT ABRAMS.

HIGHLY FATAL CONTAGIOUS DISEASES.

To the Editor of AMERICAN MEDICINE:—The editorial in AMERICAN MEDICINE January 18, 1902, "Highly Fatal Contagious Diseases that are Ignored," and ending in an appeal, "when will civilization learn to grapple with its real evil?" should not go unnoticed, although it undoubtedly will. There is one thing that is certain, venereal disease is on the increase, but there is another fact even more striking than this: The vast amount of existing venereal disease is not contracted from prostitutes living in houses of ill fame, but from women whose sexual relations are supposed to be with but one man. It is also true that:

1. Prostitution will never be licensed.
2. Venereal cases will never be reported to a health office; the lawmaker might be the first case so reported.
3. The vast army of prostitutes, if they are to be successful, will never be housed where they will not only protect the public, but the house and themselves.

With the foregoing staring one in the face, the question may be asked: Is there any way by which venereal disease may be lessened, thus preventing the hours, days and even years of misery that follow in their wake? An appropriate answer is: Educate the medical man that these patients should receive the same consideration as other sick people, that gonorrhea is curable and when; that syphilis is curable, and what secretions are contagious, and where to look for gonorrheal infection in women and how to completely eradicate it.

There is no doubt that gonorrhea, and for that matter syphilis, are both curable diseases, and were the same precautions used by the patient, and especially the physician, that are advocated in other infectious diseases, in time both these death-dealing scourges may be entirely wiped out.

Various causes are given why venereal disease is on the increase, with 50% of sterility and 41% of all pelvic disease attributable thereto. It is not deniable that within the past few years the subjects (at college) have received most careful consideration, but when the student of even 10 years ago looks

back and thinks of a one hour's lecture which covered the whole field, what could be expected? But another cause and possibly the most important is the contract treatment.

It is indisputable the vast majority of gonorrheas are treated at \$5, \$10 or \$15 for a cure, this taking place, in the physician's opinion, the moment the discharge ceases to appear at the meatus. As the case hangs on from month to month, it is no wonder that the attendant becomes discouraged, and if perchance by a strong injection the patient sees no secretion some morning he is immediately discharged as cured, although the urine may be full of pus and shreds loaded with cocci, not necessarily gonococci, but bacteria capable of producing inflammation upon a virgin soil.

The physician must be educated to the fact that he is the one to control the increase and help stamp out these diseases, especially gonorrhea, the cause of so much misery and death. Gonorrhea, although a supposedly local disease, causes tenfold more misery and death than syphilis, although the latter takes years to cure.

J. HENRY DOWD, M.D.

Buffalo, N. Y.

CASE OF CARBUNCLE.

BY

H. D. CHAMPLIN, M.D.,

of Cleveland, Ohio.

Mr. M. R., a Canadian male, aged 56, was first seen by me December 26, 1901. I found him suffering with considerable pain, some fever, temperature 101°, and evidences of blood poisoning. He had on his back a carbuncle which measured 11 inches by 8½ inches, and there were about 15 small pouting openings through which a sanious watery exudate was discharging. I passed a thin, narrow bladed bistury through one of the openings and slit them all up, and then with a Volkmann



spoon everted thoroughly all diseased tissue; the hemorrhage was considerable but readily controlled by pressure.

I dressed the carbuncle with ichthyol (pure) for five days, and then applied twice a day Dr. Bulkley's ointment of ergot, carbolic acid, etc., with such excellent results that at the expiration of 10 days there was practically no discharge, and the parts had commenced to heal by granulation.

The remedies used were:

Calcium sulfid	½ gr. every hour
Strych. phos. ʒv	} 3 times a day
Reduced iron, 2 gr.	

The diet was nourishing.

Vaccination Law.—A bill to abolish the conscience clause of the existing law respecting vaccination was killed recently in the House of Lords. In spite of the fact that a smallpox epidemic exists, the government will not retreat from its present position, but intimates that the clause in question will be abolished when the time limit expires next year. The statement is made that renewed vigilance and closer attention to the quality of lymph have gone hand-in-hand with the "conscientious objector" amendment, and that vaccination has increased as the people learned that it was necessary to public health. Although the Lord Chancellor was one of the opponents of the bill he will not permit unvaccinated employes to enter the law courts.

ORIGINAL ARTICLES

CONCERNING THE HYPNOTIC ACTION OF APOMORPHIN HYDROCHLORATE IN ALCOHOLISM.

BY

WARREN COLEMAN, M.D.,

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Assistant Physician to Bellevue Hospital,

AND

JOHN METCALFE POLK, M.D.,

House Physician, Second Medical Division, Bellevue Hospital,
of New York City.

Our attention was directed to the use of apomorphin hydrochlorate as a hypnotic in alcoholism by an article in the *New York Medical Journal* by Charles J. Douglas.¹ Speaking of the treatment of alcoholism, he says, "There is, however, one harmless remedy that will produce sleep in a few minutes, even when the patient is suffering with the wildest delirium. That remedy is apomorphin. * * * While its value has remained so long unrecognized by the profession, yet in point of fact there is no hypnotic in our materia medica that is at once so prompt, so safe, and so sure." In another article Dr. Douglas² states that "apomorphin acts as a hypnotic with the precision of clock-work. If the dose is properly adjusted, the patient will fall into a sound and restful sleep in from 5 to 25 minutes, without nausea or other disagreeable sensation. If no results are obtained within half an hour after its administration, the dose was too small. * * * I am acquainted with no remedy that is so near an approach to an infallible hypnotic."

As a specimen case of alcoholism treated with apomorphin the following may be cited:³

The patient, who had been on a spree, was put on the usual treatment for alcoholism, and was no better at the end of a week, during which time he slept but little, and had hallucinations. For the last 48 hours he had continuous delirium, and did not sleep at all. He was admitted to the sanatorium and immediately given whisky and milk and apomorphin. In 15 minutes he lay down voluntarily and immediately went to sleep. He slept for five hours, when he was awakened for nourishment.

A limited number of reports on the use of apomorphin in alcoholism are scattered through the literature. It will be sufficient to quote from two of them:

J. Edward Tompkins⁴ writes that in acute alcoholism with delirium, apomorphin "gets in its work in minutes, whereas it takes hours for the bromids, chloral, and the like, to have effect." He says, however, that its use is generally contraindicated in genuine delirium tremens because there is usually weakness of the heart.

R. F. Lewis⁵ has used apomorphin frequently during the past eight years in delirium tremens. He relates the following case: The patient was a periodic drinker, who usually wound up a drinking-bout of from four to six weeks' duration in a state of maniacal restlessness, excitement and delirium. Apomorphin gave relief from the excitement, delirium and all the other symptoms of alcoholism.

Having exceptional facilities at our disposal in the alcoholic wards of the Bellevue Hospital for testing the value of apomorphin as a hypnotic in alcoholism, we began the systematic administration of the drug in February, 1901. During six weeks it was used in approximately 300 cases of all grades of alcoholism. We will analyze 87 of these cases in the following report. Before proceeding with the analysis, however, it will be well to give a review of what is known of apomorphin and its physiologic actions.

Apomorphin is derived from morphin by the abstraction of a molecule of water. A salt of the derived alkaloid is then made with hydrochloric acid. Apomorphin hydrochlorate is a white or grayish-white, crystalline powder, soluble in 40 parts of water. The dosage usually given in the textbooks is from $\frac{1}{10}$ to $\frac{1}{5}$ gr., hypodermically, and $\frac{1}{10}$ to $\frac{1}{2}$ gr. by mouth. Exposed to the light in a damp atmosphere it soon turns green, and

should not be used if it imparts an emerald-green color to 100 parts of water.⁶

The action of apomorphin on the vomiting center in the spinal bulb is too well known to need more than mention. Its expectorant action is also well recognized. "Large doses cause prostration and paralysis of the voluntary muscles, depression of the respiratory center, acceleration of the heart, and fall of temperature" (Bruce). The action on the heart, of small or moderate doses, can generally be accounted for by the act of vomiting, though Reichert⁷ believes the increased pulse-rate due to stimulation of the augmentor nerves. Occasionally, after moderate doses, and more or less frequently if the dose be large, cardiac depression and embarrassment follow. Binz⁸ states that in children collapse has been known to result from the injection of $\frac{1}{33}$ gr., and that especial care should be exercised with children.

In *Merck's Index*, 1896, weak and fatty heart are given as contraindications to the use of apomorphin. Reichert confirms the depressing action on the heart. Binz quotes the following cases as illustrative of the depressing action of apomorphin:

The first is that of a man, aged 54, who suffered from chronic bronchitis and emphysema; prognosis not unfavorable. He was given $\frac{1}{10}$ gr. of apomorphin hypodermically near the ensiform cartilage to clear the pulmonary passages. He died seven minutes later from collapse, without vomiting. In another case a solution of apomorphin containing $\frac{1}{4}$ gr. was given hypodermically. It produced an alarming attack of fainting which passed off with the violent vomiting which speedily followed.

Boyer and Guinard⁹ blame the quality of the drug when accidents occur, and claim to have experimental proof that the drug is at fault. They state that the apomorphin of commerce, sold under the same label, comes in two forms, crystalline and amorphous, and that the physiologic properties and toxic manifestations of these are diametrically opposed. They say the crystalline preparations are excitant and convulsant, while the amorphous are depressant and narcotic.

There is great diversity of opinion concerning the action of apomorphin on the nervous system.

Max Quehl¹⁰ states that toxic doses of apomorphin do not have an emetic, but rather a narcotic action.

According to Reichert, who experimented on the lower animals, apomorphin acts primarily as an excitant and secondarily as a depressant. After moderate doses the state of restlessness is followed by one of quietude and sleep. If a toxic dose is given, the restlessness gives way to delirium, which is followed by a state of more or less profound narcosis. Gubler, on the contrary, holds that apomorphin is devoid of all narcotic property.

Bordier¹¹ has observed the phenomena of depression and a tendency to sleep, recalling, he says, the origin of apomorphin.

Routy¹² speaks of the sleep following the administration of apomorphin as restorative rather than harmful. Challand and Rabou¹³ also declare that the sleep is calm and tranquil.

Bourgeois¹⁴ thinks a hypnotic action belongs *per se* to apomorphin, and that in this respect it is comparable to morphin. Boyer and Guinard do not believe that the nervous depression is in any way related to the nausea that apomorphin causes, since animals which vomit almost immediately after the injection, without nausea, are generally the more depressed.

Gellhorn¹⁵ has used apomorphin in insane patients. In many cases of acute and chronic mania he obtained a rapid sedative action and a state of complete calm with doses of $\frac{1}{10}$ grain.

With relatively small doses, Wallender,¹⁶ Gowers,¹⁷ Carrier and Laurencin,¹⁸ and Weill¹⁹ have more or less completely relieved the crises of epilepsy, hysteroepilepsy, cortical epilepsy and grave chorea.

From our own observations we are convinced that apomorphin in small or moderate doses, given hypodermically, possesses definite sedative and hypnotic properties.

* * * * *

The patients admitted to the alcoholic wards of Bellevue Hospital, almost without exception, are victims of chronic alcoholism. They may be classified as follows:

A. Hard drinkers who have taken more than usual and are unusually drunk. They are known in the ward as "acute" or "ordinary drunks."

B. Chronic alcoholics who have abstained from food for several days, while continuing to drink, and are very nervous and shaky.

C. Patients who are verging upon or actually in an attack of delirium tremens. These cases are the most serious and difficult that we are called upon to treat.

We employed apomorphin hydrochlorate in varying doses, administered both by mouth and hypodermically, in approximately 300 cases of all the above classes. Of

these cases, 87 will be analyzed in the following account of the hypnotic action of the drug—34 "ordinary drunks," 25 nervous and shaky chronic alcoholics, 20 cases verging upon delirium tremens, and 8 cases of actual delirium.

Because of the large number of patients to whom the drug was administered, and because of the importance of its hypnotic action, if we can show it to be efficient and "perfectly harmless," we think it advisable to give the results of the treatment in some detail.

GROUP A. "Ordinary drunks."—There are 34 cases in this group. The apomorphin was given hypodermically to 28 patients, and by mouth to 6. The doses varied from $\frac{1}{30}$ to $\frac{1}{20}$ grain, as in the following table:

Hypodermically.....	$\frac{1}{30}$ gr. to 12 cases. $\frac{1}{20}$ gr. to 5 cases. $\frac{1}{10}$ gr. to 11 cases.
By mouth.....	$\frac{1}{30}$ gr. to 5 cases. $\frac{1}{20}$ gr. to 1 case.

Vomiting.—In no case did the patient vomit when the drug was given by mouth. Vomiting occurred, however, in 14 of the patients to whom the apomorphin was given hypodermically, distributed as follows:

Dose.....	$\frac{1}{30}$ gr., 5 of 12 cases. $\frac{1}{20}$ gr., 3 of 5 cases. $\frac{1}{10}$ gr., 6 of 11 cases.
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Effect on the Pulse.—The pulse was not affected in five cases in which the apomorphin was given by mouth. No observation was made in the sixth case.

The following observations were made on patients to whom the apomorphin was given hypodermically:

In three patients given $\frac{1}{10}$ gr., vomiting occurred, and the pulse-rate increased 20, 22, and 24 beats respectively, falling to normal in one-half hour. Two other patients given a like dose, did not vomit, and the pulse became stronger.

Of three patients given $\frac{1}{30}$ gr., two did not vomit: in one the pulse-rate increased 28 beats, falling to normal in 40 minutes; in the other, the pulse was not affected; the third patient vomited for 10 minutes and the pulse-rate decreased 22 beats.

Sleep.—The apomorphin, administered by mouth, acted as a hypnotic in only one of six cases. The dose was $\frac{1}{10}$ gr., the patient slept all night and was discharged next day. None of the other patients slept until given $\frac{1}{2}$ oz. of the hospital bromid-and-chloral mixture,* when they slept through the night and were discharged next day.

Of the 28 patients who received apomorphin hypodermically 22 slept as a result of its action. The size of the dose and its emetic action in these cases are given in the following table:

Dose $\frac{1}{10}$ gr., 10 slept.....	$\frac{1}{30}$ gr., 10 slept..... Vomiting, 5 cases. No vomiting, 5 cases.
Dose $\frac{1}{20}$ gr., 3 slept.....	$\frac{1}{20}$ gr., 3 slept..... Vomiting, 3 cases. No vomiting, 0 case.
Dose $\frac{1}{30}$ gr., 9 slept.....	$\frac{1}{30}$ gr., 9 slept..... Vomiting, 5 cases. No vomiting, 4 cases.

Vomiting occurred in 13 cases, but it does not appear that the vomiting bore any relation to the hypnotic action. The sleep in these cases lasted from three to six hours to all night. In four instances it was necessary to give bromid and chloral after the effect of the apomorphin had worn off.

GROUP B.—Chronic alcoholics who are very nervous and shaky. There are 25 cases in this group. The apomorphin was given hypodermically in 20 cases and

by mouth in 5. The doses may be summarized as follows:

Hypodermically.....	$\frac{1}{30}$ gr. in 7 cases. $\frac{1}{20}$ gr. in 10 cases. $\frac{1}{10}$ gr. in 3 cases.
By mouth.....	$\frac{1}{30}$ gr. in 2 cases. $\frac{1}{20}$ gr. in 3 cases.

Vomiting occurred only in the patients to whom the drug was given hypodermically—four times after $\frac{1}{30}$ gr., five times after $\frac{1}{20}$ gr.; no vomiting after the $\frac{1}{10}$ gr. doses.

In one case $\frac{1}{10}$ gr. was given hypodermically on admission to the hospital. Vomiting followed immediately. Fifteen hours later a second dose of $\frac{1}{20}$ gr. was given. This produced an attack of vomiting lasting four hours in spite of all efforts to control it. The patient was greatly exhausted, but in 24 hours improved sufficiently to leave the hospital.

Effect on the Pulse.—The action of apomorphin on the pulse was noted in seven cases of this group. With $\frac{1}{10}$ gr. the pulse was slowed and strengthened in three cases, while in one case 24 beats were dropped after 15 minutes. After $\frac{1}{30}$ gr. the pulse-rate increased in two cases while in another no change occurred.

Sleep.—In no instance did sleep follow the administration of the drug by mouth. In nine cases the apomorphin had a quieting effect but did not produce sleep. These patients received the following doses:

Dose $\frac{1}{10}$ gr.....	Mouth in 2 cases; no vomiting. Hypodermically in 3 cases; no vomiting.
Dose $\frac{1}{20}$ gr.....	Mouth in 3 cases; no vomiting. Hypodermically in no case.
Dose $\frac{1}{30}$ gr.....	Mouth in no case. Hypodermically in 1 case; repeated in 15 minutes; vomiting.

In one case there was no sedative or hypnotic effect, after $\frac{1}{10}$ gr. given hypodermically, but the patient vomited.

Sleep followed the hypodermic administration of the apomorphin in 15 cases after the following doses:

Dose $\frac{1}{10}$ gr., 9 slept.....	$\frac{1}{30}$ gr., 9 slept..... Vomiting, 4 cases. No vomiting, 5 cases.
Dose $\frac{1}{20}$ gr., 6 slept.....	$\frac{1}{20}$ gr., 6 slept..... Vomiting, 3 cases. No vomiting, 3 cases.

In the above table vomiting occurred in seven cases as against eight in which vomiting did not occur.

Sleep generally came quickly—within half an hour—and lasted varying lengths of time. In several instances, when the patients came in early in the evening, sleep lasted through the night. In other cases the lengths of time, as noted by the nurse, were, "dozed for one hour," "four hours," "five hours," "all afternoon."

In the majority of cases (13) it was necessary to give bromid and chloral to reinforce the action of the apomorphin. The bromid and chloral seemed to act more efficiently when given after the apomorphin.

GROUP C.—Chronic alcoholics, verging upon or actually in delirium tremens.

a. There are 20 patients in whom the delirium had not developed when admitted to the hospital, though in some it developed later. Two patients were given $\frac{1}{10}$ gr. of apomorphin by mouth. The remainder received respectively:

Hypodermically.....	$\frac{1}{30}$ gr., 1 case. $\frac{1}{20}$ gr., 7 cases. $\frac{1}{10}$ gr., 2 cases. $\frac{1}{5}$ gr., 8 cases.
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Vomiting did not occur in the two cases in which the apomorphin was given by mouth, but it did occur in nine of the 18 cases in which the apomorphin was given hypodermically, as follows:

Dose $\frac{1}{10}$ gr.....	$\frac{1}{30}$ gr., 1 case. $\frac{1}{20}$ gr., 5 of 7 cases. $\frac{1}{10}$ gr., 1 of 2 cases. $\frac{1}{5}$ gr., 2 of 8 cases.
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Effect on the Pulse.—Note was made of the action of the apomorphin on the pulse in 11 cases:

In five patients who received $\frac{1}{10}$ gr., vomiting occur-

* R

Potassi bromidi.....	5j
Chloral.....	3ss
Aquae.....	5j

M.

When it is stated that the patient was given bromid and chloral, it will be understood to mean $\frac{1}{2}$ oz. of this mixture, unless otherwise indicated.

red; in one the pulse-rate increased 22 beats, and its force was lessened; in another the pulse was unchanged, while in two others the rate increased 12 and 18 beats respectively. Of two who received a like dose, but who did not vomit, in one the pulse gained 32 beats, but 40 minutes later this had fallen 32 beats to 88 per minute; in the other case the pulse was unchanged. Of two patients who received $\frac{1}{30}$ gr., in one vomiting occurred and the pulse gained 8 beats, while the other did not vomit, and the pulse diminished 8 beats. Of three patients receiving $\frac{1}{30}$ gr., none vomited, and no change in the pulse resulted.

The most constant change of pulse in the above cases was increase in rate. This was generally, though not always, associated with the act of vomiting. The more marked acceleration occurred with the larger doses.

Sleep followed in ten minutes in one patient to whom $\frac{1}{10}$ gr. of apomorphin was given by mouth. There was neither sedative nor hypnotic effect on the other patient to whom the drug was similarly administered.

A sedative, but not hypnotic effect was obtained in 4 patients to whom the apomorphin was given hypodermically in the following doses:

Dose $\frac{1}{30}$ gr.....	Vomiting, 1 case.
Dose $\frac{1}{20}$ gr.....	Vomiting, 2 cases.
Dose $\frac{1}{10}$ gr.....	Vomiting, 1 case.

One patient was quieted for two hours by a dose of $\frac{1}{10}$ gr., and afterward slept all night without other medication.

Sleep was obtained in all the remaining 13 cases, according to the following table:

Dose $\frac{1}{30}$ gr., 4 slept.....	{ Vomiting, 3 cases. No vomiting, 1 case.
Dose $\frac{1}{20}$ gr. + $\frac{1}{30}$ in 20 minutes....	Vomiting, 1 case.
Dose $\frac{1}{20}$ gr., 2 slept.....	{ Vomiting, 1 case. No vomiting, 1 case.
Dose $\frac{1}{10}$ gr., 6 slept.....	{ Vomiting, 1 case. No vomiting, 5 cases.

The emetic and hypnotic actions do not seem to bear any relation to each other.

The sleep generally followed the administration of the drug in from ten minutes to three-quarters of an hour and lasted from two hours to all night.

The treatment of six cases of this group will be given in detail in order to show the thorough trial of the apomorphin.

CASE I.—The patient was verging upon delirium tremens. He was given $\frac{1}{10}$ gr. apomorphin hypodermically at noon; he slept during the greater part of the afternoon. At 4 p.m. he was given 3ss of the bromid-and-chloral mixture, after which he slept all night. He was nervous and shaky the next morning and at 11 a.m. was given another dose of $\frac{1}{10}$ gr. Sleep followed immediately. The bromid-and-chloral mixture was given that night and the patient was discharged cured the next morning.

CASE IV.—The patient was verging upon delirium tremens. He was given $\frac{1}{10}$ gr. apomorphin hypodermically at 5 p.m.; sleep followed and lasted for several hours. At 9 and 10 p.m. he was given bromid and chloral, after which he slept all night. He was nervous and shaky the next morning and at noon was given $\frac{1}{10}$ gr. Vomiting occurred in 10 minutes and the pulse-rate was increased 44 beats. The patient was quieted and remained quiet all afternoon. That night he received bromid and chloral at 9 and 10 o'clock and was discharged the next day cured.

CASE VII.—Verging upon delirium tremens. The patient was given $\frac{1}{10}$ gr. apomorphin hypodermically at 4.45 a.m. with no effect. The dose was repeated a little later but still with no effect. He was then given bromid and chloral which kept him quiet till afternoon. That night he received bromid and chloral at 9, 1, and at 5 o'clock. He became violent at 4 o'clock but was quieted later. The next day he was given $\frac{1}{10}$ gr. apomorphin hypodermically at 12 and 12.30 o'clock with only an emetic effect. At 1.30 and at 4 p.m. he received bromid and chloral but was only slightly quieted. At 9.30 p.m. he was given $\frac{1}{10}$ gr. apomorphin without effect. Bromid and chloral were given at 10 and 2 o'clock. He slept from 3 to 7. The next morning at 10 o'clock $\frac{1}{10}$ gr. apomorphin was given with no effect. Bromid and chloral were given at 11, 3 and 5 o'clock, yet he was restless all day. That night he was given more bromid and chloral after which he slept till 4 a.m. when he became noisy. He was quieted later on, and though very nervous at times, he made a good recovery.

CASE VIII.—Verging upon delirium tremens. The patient was given $\frac{1}{10}$ gr. apomorphin hypodermically at 5.45 a.m. He

became quiet, but did not sleep. At 6.30 he developed delirium tremens, becoming violent at 11 a.m. He was given $\frac{1}{10}$ gr. apomorphin at 12 o'clock. He vomited and the pulse-rate was increased 16 beats, but there was no other effect. At 12.30 p.m. the dose was repeated without effect. He received bromid and chloral at 1.30 and 4 p.m. with only slight effect. Another dose of apomorphin, $\frac{1}{10}$ gr., was given at 9 p.m., but still without effect, and at 10 p.m. and 2 a.m. he was given bromid and chloral. He remained awake and was noisy all night. The next morning he was restless. At 10 a.m. he was given $\frac{1}{10}$ gr. apomorphin, followed by bromid and chloral at 11 a.m. and 3 and 5 p.m. He was drowsy but restless all day. At 9 p.m. he was given $\frac{1}{10}$ gr. apomorphin, which was without effect, and was followed at 11 by bromid and chloral. He was noisy till 4 a.m., when he got some sleep. He was restless and violent the following morning, and at 9, Magendie's sol. of morphin mviij and hyoscin hydrobromate $\frac{1}{100}$ gr. were given hypodermically. He slept only one hour, remaining awake the rest of the day. The pulse was very weak. The patient was violent most of the day. At 9 p.m. he was given another dose of apomorphin, $\frac{1}{10}$ gr., without effect, and bromid and chloral at 11. The patient died at 4.10 a.m.

CASE XVIII.—Verging upon delirium tremens. The patient was given $\frac{1}{10}$ gr. apomorphin hypodermically at 4 p.m. Sleep followed in 20 minutes and lasted for 2 hours. Afterward the patient was very restless. At 11 p.m. he was given a second dose of $\frac{1}{10}$ gr., which quieted him temporarily but did not produce sleep. He grew more restless toward morning and at 3.30 had to be restrained. He was very shaky and nervous the next morning and at 11 a.m. was given $\frac{1}{10}$ gr. apomorphin hypodermically. He was asleep in 20 minutes. That night he required paraldehyd 3ij and was discharged cured the following morning.

CASE XIX.—Verging on delirium tremens. The patient was given $\frac{1}{10}$ gr. apomorphin hypodermically at 8.30 p.m., after which he slept for 2 hours. He awoke in a very nervous condition and the dose was repeated with similar effect. On awaking the second time he was still more nervous. At 10 a.m. he was given $\frac{1}{10}$ gr. apomorphin, but without effect, and it was followed at 10.30 by bromid and chloral. The patient became quiet but did not sleep. He received bromid and chloral at 9 and 10 p.m., slept all night and was discharged cured the following morning.

b.—Eight cases of violent delirium tremens were treated with apomorphin. These cases will be given in detail.

CASE I.—Violent delirium tremens. The patient was admitted at 11.20 p.m., and immediately given $\frac{1}{10}$ gr. apomorphin hypodermically. He vomited and afterward slept as in stupor. Stimulation with strychnin and whisky was required the following day and night. He slept at intervals during the night. His condition was not satisfactory the following morning, and the stimulation was continued. The patient died at 1.50 p.m. The total amount of apomorphin given was $\frac{1}{10}$ gr.

CASE II.—The patient was not quite in actual delirium. He was admitted at 12.50 a.m., and immediately given $\frac{1}{10}$ gr. apomorphin hypodermically. There was no vomiting. The patient slept poorly during the rest of the night. In the morning he was given Magendie's solution of morphin mvij, after which he slept till 3.30 p.m. He then received bromid and chloral, and slept till 7 p.m., though he muttered and twitched in his sleep. At 9 p.m. he was given a second dose of $\frac{1}{10}$ gr. apomorphin, which quieted him for three hours, but he did not sleep. Bromid and chloral were given at 12 o'clock, and he slept the rest of the night. In the morning he was restless and noisy, and at 11 and 11.30 was given two doses of apomorphin of $\frac{1}{10}$ gr. each. The medicine had no effect whatever, and at 11.45 he was given Magendie's sol. mvij. He became quiet, but did not sleep. Bromid and chloral were given at 3, 4 and 5 p.m., the patient becoming violent after 4.30 p.m. During the night he received Magendie mvij, at 9, 12 and 4 o'clock. He slept poorly and was talkative. A further dose of Magendie was given at 9 a.m. The patient slept all day and the following night, though he was restless at times. For three days he received supportive treatment, at the end of which time he was discharged cured. The total amount of apomorphin given was $\frac{1}{10}$ gr. in 36 hours.

CASE III.—Verging upon delirium tremens, developing the attack after admission. The patient was given $\frac{1}{10}$ gr. apomorphin hypodermically at 5.20 p.m. He slept for one hour without previous vomiting. He was restless during the night, and was given bromid and chloral at 9 and 4 o'clock. The following morning he was nervous and shaky, and during the day received bromid and chloral at 9, 1 and 5 o'clock. He was very restless during the night, and was given more bromid and chloral at 2 a.m. The following morning his condition was fairly good, but he became restless in the afternoon and violent at night, when he received Magendie mvij and hyoscin hydrobromate $\frac{1}{100}$ gr. Only slight effect was produced. At 10.30 p.m. and 1 a.m. he was given $\frac{1}{10}$ gr. apomorphin, which quieted him for a short time, but he got no sleep. He was delirious all the next day, not responding to treatment, and died during the following night. This patient received $\frac{1}{10}$ gr. apomorphin in 48 hours.

CASE IV.—Violent delirium tremens. The patient received $\frac{1}{10}$ gr. apomorphin hypodermically at 9 a.m., without effect of

any kind. Magendie mx was given at 10 a.m. but still without effect. The Magendie was repeated and the patient slept till 4 p.m. when he awoke and became very violent. At 4.30 he was given $\frac{1}{10}$ gr. apomorphin which was immediately followed by bromid and chloral. He was quiet but not asleep at 5 p.m., becoming violent at 6. At 9.30 and at 1 he was given $\frac{1}{10}$ gr. apomorphin, and bromid and chloral at 3 a.m. He was violent all night and died at 6 a.m. The total amount of apomorphin given was $\frac{3}{10}$ gr. in 24 hours.

CASE V.—The patient was very noisy and violent and was given $\frac{1}{10}$ gr. apomorphin hypodermically at 8 p.m. without effect. The violence continued and the patient was given bromid and chloral and ext. digitalis fl. miij every three hours. At 2 a.m. the pulse was very weak from the violence. The patient was sleeping at 3 a.m. During the following day the delirium was under control and the patient was stimulated. He was discharged the next morning cured.

CASE VI.—The patient was admitted at 2 p.m. in delirium and was given $\frac{1}{10}$ gr. apomorphin hypodermically. The drug produced no effect whatever and was not repeated. During the night he was given bromid and chloral at 9, 1 and 5 o'clock, but he had a restless night. Under bromid and chloral he made a complete recovery and was discharged cured.

CASE VII.—Violent delirium tremens. The patient was given $\frac{1}{10}$ gr. apomorphin hypodermically on admission. It produced no effect. He was then given bromid and chloral and after three days and nights of delirium he was discharged cured.

CASE VIII.—Violent delirium tremens. The patient was given $\frac{3}{10}$ gr. apomorphin hypodermically at 6.20 p.m., without effect. The dose was repeated at 7.20 but still without effect. He then had to be restrained. At 8, 9 and 10 o'clock he was given bromid and chloral after which he slept. He was very weak next day and had to be stimulated with strychnin and milk punches. Stimulation was continued during the night and he was discharged next day.

On analyzing these cases we find that two patients received $\frac{3}{10}$ gr. each of apomorphin hypodermically on admission, and that all of the others received $\frac{1}{10}$ gr.

Vomiting occurred in only one case and that after a dose of $\frac{1}{10}$ gr.

Sleep occurred in only three cases, with $\frac{1}{10}$ gr. dose in each. But the sleep was of short duration or unnatural. The nurse's notes contain the following statements: "Slept as in stupor." "Slept poorly the rest of the night (4 or 5 hours)." "Slept one hour."

In the remaining five cases the apomorphin acted neither as a hypnotic nor sedative.

Summary of the hypnotic action of apomorphin hydrochlorate in habitual drinkers who are unusually drunk:

Administered by mouth, the apomorphin acted as a hypnotic in only 1 case after a dose of $\frac{1}{10}$ gr. In 5 cases it did not act either as a sedative or hypnotic.

Hypodermically the apomorphin acted as a hypnotic in 22 of 28 cases in the following doses:

Dose $\frac{1}{10}$ gr.....	9 of 12 patients slept.
Dose $\frac{3}{10}$ gr.....	3 of 5 patients slept.
Dose $\frac{1}{10}$ gr.....	10 of 11 patients slept.

In only 4 of the 22 cases was it necessary to supplement the action of the apomorphin with bromid and chloral.

Almost equally good results were obtained with the large and small doses, as is seen above.

In "ordinary drunks," therefore, apomorphin hydrochlorate may be regarded as an efficient and safe hypnotic in doses of $\frac{3}{10}$ to $\frac{1}{10}$ gr. hypodermically administered, producing a sleep which lasts from several hours to all night.

Summary of the hypnotic action of apomorphin hydrochlorate in chronic alcoholics who are very nervous and shaky:

Administered by mouth, the apomorphin did not act as a hypnotic in any of the 5 cases, but acted as a sedative in all of them, lessening the tremor and quieting the patient.

Administered hypodermically, in one case the apomorphin acted neither as a sedative nor hypnotic. It acted as a sedative but not as a hypnotic in 4 cases.

In 15 of 20 cases the apomorphin acted as a hypnotic in the following doses:

Dose $\frac{1}{10}$ gr.....	6 of 7 slept.
Dose $\frac{3}{10}$ gr.....	9 of 10 slept.
Dose $\frac{1}{10}$ gr.....	None of 3 slept.

In 13 of the 15 patients who slept it was necessary to administer bromid and chloral later on to keep the patients quiet and asleep. The bromid and chloral seemed to act more efficiently when preceded by apomorphin.

Again in this group, almost equally good results were obtained with large and small doses, unless the dose was more than $\frac{1}{10}$ gr.

In this group of cases we found the hypnotic action of the apomorphin very transient, the patients later requiring the administration of some other hypnotic. Further, we were unable to satisfy ourselves that the apomorphin accomplished any definite result that the immediate administration of bromid and chloral would not have effected.

A.—*Summary of the hypnotic action of apomorphin hydrochlorate in chronic alcoholics who are verging upon delirium tremens.*

Administered by mouth, sleep followed in 1 of 2 patients to whom $\frac{1}{10}$ gr. dose of apomorphin was given.

Administered hypodermically, a sedative but not hypnotic effect was obtained with the apomorphin in 4 cases, in 2 cases with $\frac{1}{10}$ gr. dose, and 1 each with $\frac{3}{10}$ and $\frac{1}{10}$ gr.

After the following doses 13 of 18 slept:

Dose $\frac{1}{10}$ gr.....	4 of 7 slept.
Dose $\frac{3}{10}$ gr.....	1 slept.
Dose $\frac{1}{10}$ gr.....	2 slept.
Dose $\frac{3}{10}$ gr.....	6 of 8 slept.

In some cases the apomorphin produced no effect, as in Case vii, the patient receiving the following doses at different times: $\frac{3}{10}$, $\frac{1}{10}$, $\frac{3}{10}$, $\frac{1}{10}$ gr.

Active delirium developed in one case (Case viii) 45 minutes after a dose of $\frac{1}{10}$ gr. of apomorphin which acted as a sedative for the time without producing sleep. He was given other doses of $\frac{1}{10}$, $\frac{3}{10}$, $\frac{1}{10}$, $\frac{3}{10}$, $\frac{1}{10}$ gr., all without effect. It should be stated, however, that in this case bromid and chloral failed to produce sleep and that Magendie's solution and hyoscin hydrobromate acted as hypnotics for only one hour. The patient died, but death cannot be attributed to the apomorphin, as the patient lived for seven hours after the last dose.

In Case xix, two doses of $\frac{3}{10}$ gr. each of apomorphin at intervals acted as hypnotics, producing sleep which lasted two hours in each instance, but a dose of $\frac{1}{10}$ gr. the following morning failed to produce any effect.

In these cases the best results were obtained with small doses, as will be seen above.

B.—*Hypnotic action of apomorphin in patients in actual delirium.*

The apomorphin was an absolute failure as a hypnotic in this group. There was neither sedative nor hypnotic action in 5 of the 8 cases, and in the 3 cases in which sleep did not occur, the action was unsatisfactory. One patient "slept as in stupor," another "slept poorly for several hours," while the third slept only one hour.

The depressing action of the apomorphin was marked in this group. Three of the patients died, but in no case did death follow the administration of the apomorphin sufficiently close for the drug to have had a contributory action, the shortest interval being five hours. The largest amount of apomorphin given to any of these patients was $\frac{4}{10}$ gr. in 24 hours. This patient recovered.

All of these patients received the apomorphin hypodermically.

The total results are as follows:

The apomorphin was given by mouth to 13 patients, 2 of whom slept, being 15%.

Hypodermically, the apomorphin acted as a hypnotic in 50 of the remaining 74 cases, or 67.6%. This is not an especially favorable showing. About 50% of the 49 patients vomited.

CONCLUSIONS.

1. To obtain a hypnotic action with apomorphin it should be given hypodermically.

2. The dose cannot be fixed. It is best to begin with a small dose— $\frac{1}{10}$ gr. or less—and to repeat this or give a slightly larger dose within a short time. Further doses should not be given after vomiting occurs, until several hours have passed.

3. Doses repeated in two or three hours have but little beneficial effect.

4. The administration of apomorphin should not be repeated in patients who are weak.

5. The duration of the hypnotic action is only a few hours, and when the patient awakes his condition is practically unchanged, except in "ordinary drunks."

6. The best results are obtained from apomorphin when it is followed in two or three hours by some recognized hypnotic, as bromid, chloral, paraldehyd, etc.

7. Solutions of apomorphin are unstable, and should be freshly made for use. Old solutions should never be used.

8. Apomorphin may be employed as a hypnotic in selected cases of alcoholism. We obtained the best

results in "ordinary drunks" and in cases verging on delirium tremens. But in some of these cases the drug has no effect whatever.

9. The administration of apomorphin to patients in delirium tremens is, in our experience, without beneficial result, and may even be attended with danger from its depressing action.

The above analysis represents in the main, the results obtained with apomorphin in all the 300 patients presenting alcoholism, to whom the drug was administered.

In conclusion, we wish to express our thanks to Professor Thompson, in whose service this study was carried on.

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CLINICAL REPORT OF TWO CASES OF OSTEO-SARCOMA OF THE INFERIOR MAXILLARY TREATED BY EXCISION; REPORT OF THE CONDITION OF THE PATIENTS AFTER ONE YEAR.¹

BY

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CASE I.—Owen G., colored male, aged 40, a fieldhand by occupation, was admitted to ward 1, Charity Hospital, New Orleans, May 1, 1900.

On examination the organs of circulation and respiration, and the liver were found to be normal. The urine was of specific gravity 1.015, acid, presenting leukocytes, bladder epithelium and urates. He gave a history of moderate indulgence in alcoholic drinks. Both parents died of "dropsy;" no history of malignant disease in his family could be elicited.

The personal history bearing on the existing trouble was, that extraction of some teeth from the left half of the lower jaw about Christmas, 1899, had been followed by the appearance of a growth. Examination showed the presence of a tumor about two inches in diameter, involving the entire thickness of the left half of the inferior maxillary to the extent of the posterior half of the body and lower half of the ramus. This tumor, Fig. 1, was dense and hard to the touch externally; there was no involvement of the skin. On its inner aspect it was elastic and presented cysts. There was no infiltration of the floor of the mouth: the tongue was pushed aside and the patient complained of pain of a shooting character.

A diagnosis of osteosarcoma was made, based on the rapidity of growth, pain and cysts; the site of the growth and the race of the patient were looked upon as collateral points in support of the diagnosis. Operation was offered and accepted. It was performed May 11, after preliminary preparation, locally with mouth washes, systemically with strychnin sulfate and tincture of digitalis. The anesthetic was chloroform, administered drop by drop. The incision was begun over the symphysis, below the lower lip (which was not divided), and carried down the median line to the lower border of the inferior maxillary, along

the lower border to the angle and finally along the posterior border of the ramus to near the lobule of the ear. In making the last part of the incision the skin only was divided, injury to the parotid gland and facial nerve being avoided. The left lower lateral incisor was extracted, after which a Gigli saw was introduced on the inner side of the bone and made to divide it through the empty tooth-socket. The soft parts were separated from the bone on its external and internal aspects with a scalpel; the periosteum was left untouched, to be removed with the bone. Disarticulation was effected with stout scissors while the bone was forcibly depressed. Some enlarged lymphatic glands were removed together with the submaxillary salivary gland over which they lay and to which they adhered. Catgut (Kumol) was used to approximate the mucous surfaces, which came together with a moderate degree of tension, silkwormgut for the skin wound. The latter was left partially open for gauze drainage of the space left by the removal of the glands. The tumor was submitted to Dr. O. L. Pothier, pathologist to the Charity Hospital, who reported it to be "sarcoma," without specifying the character of the cells. A further examination could not be made when requested because the preparation had been misplaced.

The after-treatment consisted in stimulating with strychnin and digitalis, feeding with liquids (milk, beef-elixer, broth) through funnel and rubber tube, and cleansing of the mouth with 50% solution of hydrogen peroxid in hot water. Infection manifested itself the next two days; the catgut gave way quickly and allowed the opening in the mucous membrane to gape widely. There was much swelling of the face and scalp,

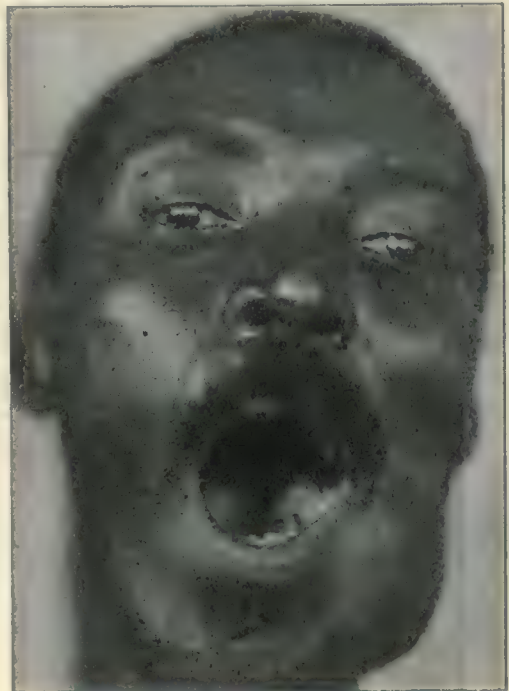


Fig. 1.

with sharp oscillations of temperature. A small collection of pus was discovered in the right upper eyelid, which was evacuated with a scalpel. Free stimulation was kept up, together with daily cleansing of the wound by copious irrigations with formalin solution (1-1000) and free injection of hydrogen peroxid in full strength. The constitution of the patient asserted itself, with the result that on June 7 all of the wound had healed save two small granulating areas, one near the ear, the other near the median line. The tongue was observed to be well supported and under fair control. On July 2, a 2% cocain solution (Schleich formula) was used for analgesia by infiltration while a spiculum of bone and a breaking down gland were removed from the neck just below the symphysis. This wound healed primarily. The patient was discharged on July 15, 1900. Fig. 2 shows his appearance at this time.

I have from time to time received favorable reports on his condition. The last was dated Nov. 8, 1901, coming from Dr. A. Feltus Barrow, of St. Francisville, La., who stated that he had made a close examination a few days before and found him absolutely well.

CASE II.—David W., colored male, aged 13, was admitted to ward 1, Charity Hospital, New Orleans, June 27, 1900.

¹Read at the November, 1901, meeting of the Southern Surgical and Gynecological Association held at Richmond, Va.

No family history could be obtained. Inquiry into the personal history elicited the fact that he had had a swelling of the lower jaw since the age of four years; this had been of the size of his thumb up to Christmas, 1899, when it began to grow quite rapidly.

Examination of the organs of circulation and respiration, and of the liver, showed them to be normal. The urine was of specific gravity 1.023, acid, with leukocytes and urates.

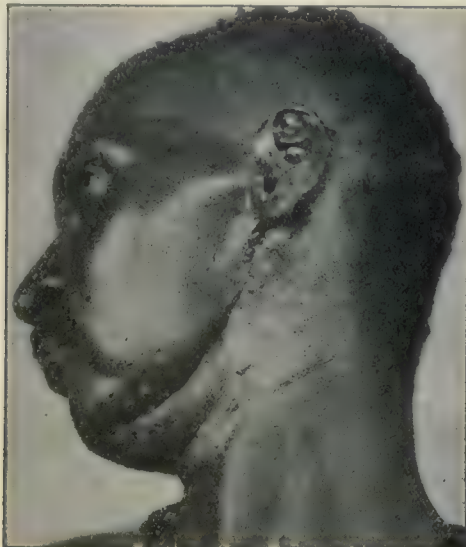


Fig. 2.

He had a hard, inelastic tumor of the inferior maxillary (Fig. 3), extending from the angle on the right to the first bicuspid on the left, and measuring about $1\frac{1}{2}$ inches in diameter. The entire thickness of the bone was involved. The teeth between the second right molar and the first right bicuspid were absent; between these two teeth was a trough, corresponding to the projection of the upper teeth, and bounded by a ridge of tumor on



Fig. 3.

either side. Neither the skin, nor the mucous membrane of the floor of the mouth was involved; the tongue was displaced by the internal projection. Pain, if present at all, was not severe, for the boy did not complain.

A diagnosis of osteosarcoma was made, based largely on the rapid extension of the growth since Christmas of the preceding year. Age, race, and the location of the tumor, were allowed to have some weight in determining the diagnosis.

After preparation, local and systemic, along the same lines as those followed in Case I, the operation was performed July 7 under chloroform anesthesia. An incision was carried along the lower border of the jaw from the angle on the right to the first bicuspid on the left; the facial vessels were divided between two forceps on the right side. The soft parts were dissected up from the bone (internal and external surfaces) to the extent of the external incision, leaving the periosteum to be removed with the tumor. The mucous membrane was divided with scissors above and below the growth. A Gigli saw was used to divide the bone, passing through sound structure about one-fourth inch from the growth at each end. The growth having been removed, the proper closure of the resulting wound was now to be effected and provision made for the support of the tongue, which had lost its attachment, by means of the geniohyoglossus and geniohyoid muscles, to the genial tubercles on either side of the symphysis internally. A piece of silver wire, one-eighth of an inch thick and six inches long, bent so as to represent the contour of the jaw, was employed to support the tissues until healing had taken place. Each end (slightly tapered) was pushed into the inferior dental canal of the corresponding bone stump. The mucous membrane was brought together with interrupted silkwormgut sutures alternating with catgut sutures. The muscle surfaces were brought together with silkwormgut over the wire splint, especial care being taken to fix the origins of the geniohyoglossus and geniohyoid in this manner so as to prevent the falling back of the tongue, which would otherwise have resulted. The skin wound was closed with silkwormgut. At the end of the operation the mouth was found to be deformed, remaining open in circular form.

The tumor was examined by Dr. Pothier, who reported it to be a giant-cell sarcoma. In cross section the growth showed, macroscopically, a thin, circumferential shell of compact bone, enclosing softer structure which resembled the cut surface of a turnip.

The after-treatment, identical with that in Case I, was more successful. No infection followed except such as was shown by a slight superficial suppuration along the line of the skin

sutures. July 13, the boy could approximate his lips for the first time. July 18, he could protrude the tongue, showing the good support afforded the geniohyoglossus by the suturing around the wire splint. July 27, a small necrotic fragment of bone was discharged; there was fair control of the "jaw" as shown by the range of movements of the teeth in the stump of the left side (second bicuspid, two molars). About this time the silver seemed to be causing some irritation; two sinus openings were found on the right side, discharging pus moderately. August 2, chloroform was given; through a sinus opening near the angle of the jaw on the right, the wire splint was removed, as well as some detached silkwormgut sutures. The sinuses were curetted and packed with 10% iodoform gauze. August 16, chloroform was administered for the third time, and a sinus near the median line incised; bone fragments and silkwormgut were removed and a gauze pack introduced. September 4, the boy was discharged cured.



Fig. 4.

Fig. 4 shows his appearance at this time. The tendency of his mouth to remain open persisted to the last day of his stay, though the control of the orbicularis oris was excellent at that time. The left jaw stump, while serviceable, was constantly deviated inward, probably as the result of the unresisted pull of the pterygoids. The last report on his condition was received August 14, 1901, from Dr. C. J. Gremillion, of Alexandria, La., who stated that he had seen him the day before and found "no sign of recurrence."

In concluding my report of these cases I wish to acknowledge my indebtedness to Drs. F. W. Parham and E. D. Martin, the former having confirmed the diagnosis in Case I and the latter having assisted me in both operations, as well as to Mr. T. C. Sexton, interne, for valuable assistance in the after-treatment of these cases.

Credit is due the pathologic department of the hospital, of which Dr. O. L. Pothier is chief, not only for the

microscopic examination of the tumors but also for the photographs of the patients.

COMMENT.

Diagnosis.—The characteristics which distinguish malignant from benign tumors are vascularity, rapidity of growth, pain, invasion of neighboring tissues, involvement of lymphatics (epithelial type of tumors only), metastasis, ulceration, and cachexia. Of these symptoms, the growth in Case I presented rapidity of growth and pain, while in Case II rapidity of growth alone was present to indicate the malign character.

Of the special characteristics of the mesoblastic malignant tumors (sarcomas) Case I, presented cysts, while the age (40 years) and the presence of lymphatic-gland involvement were not in favor of this diagnosis, though not weighing strongly against it. In Case II, the age (13 years) pointed to sarcoma, unsupported by other evidence. In both cases the site (lower jaw) and the race (according to R. Matas, "Surgical Peculiarities of the Negro," Dennis' System of Surgery, Vol. IV) favored the diagnosis of sarcoma.

Treatment.—My experience in Case I, as well as further experience in similar, more recent cases, has caused me to give up catgut for the approximation of the mucous surfaces after operative work about the mouth. Continually bathed in the saliva and exposed to its softening influence, the use of catgut is unsatisfactory. Silkwormgut would seem to be the best material, having the advantage of being less hygroscopic than silk, the other possible substitute for catgut in common use. The disadvantage of having to remove the silkwormgut ultimately is small in comparison with the greater protection against infection afforded by it at the time when this is so important.

I wish to express my satisfaction with the wire splint used in Case II, in the application of which I received valuable assistance from Dr. Martin, who has used similar devices in several cases of operation about the lower jaw involving the sacrifice of the symphysis and its muscle attachments.

I do not wish to be understood to report these two patients as cured, after freedom from recurrence for 18 months and 13 months respectively, though the pathologist's finding of "giant-cell sarcoma" in Case II makes me more hopeful of a cure in that instance. The facts are stated as they stand at this time. Should the future bring forth any new development in either case, I will make it known.

I trust that this report may be of some value as a fairly accurate description of the cases referred to and that it may play its part in bringing into literature two successful cases of excision of the inferior maxillary, which will tend to lower somewhat the present operative mortality of nearly 14% (Butlin).

Skougard-Severini Memorial.—An annual donation of nearly \$4,000 has been paid in quarterly instalments from an anonymous source to the Norwegian Hospital, of Brooklyn, since 1887. This sum was the interest at 6% on \$64,000 which Mr. Alfred Corning Clark left in trust for this purpose with the charge of secrecy until the time arrived for handing over the principal. The name of the donor has now been published and the sum handed over to the trustees of the hospital as a permanent trust fund to be known as the Skougard-Severini Memorial.

Mosquitos.—In connection with the crusade against them, a New Jersey friend of the late Andrew S. Fuller, for many years the editor of the agricultural department of the New York Sun, writes to that paper and recalls a visit to Mr. Fuller's home when the conversation turning upon the extermination of the mosquito, Mr. Fuller exhibited two barrels filled with water at the same time and strictly under the same conditions; one was closely covered with mosquito netting to prevent mosquitos from depositing eggs therein—it was foul and unsavory. The other, unguarded, was full of the larvae of mosquitos and the water was good and sweet. Mr. Fuller's inference was that they purified the water in the marshes and swamps.

PROTEOSURIA.¹

BY

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AND

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Among the proteid products which occur in the urine under various conditions, are proteoses. The urinary proteoses appear to be chemically identical for the most part with the proteoses formed normally in the gastrointestinal tract during the digestion of albuminous matter. Proteoses frequently appear in the urine when extensive tissue catabolism occurs, such as takes place in connection with various fevers, intestinal ulceration, carcinoma, apoplexy, gangrene, yellow atrophy of the liver, absorption of pus and of exudates rich in leukocytes, etc. They arise also, occasionally, from spermatic fluid, and may originate from the food in nephritis, and as a result of disease of the walls of the digestive tract. The urine not infrequently contains proteose during pregnancy. When proteose passes into the blood from any cause it is eliminated in the urine.

Before the time of Kühne's classic researches, proteoses were included in the term peptone. In recent years, however, more exact chemie differentiation of primary and secondary proteoses, and peptones, has taken place and it seems highly probable that the urinary peptone of the earlier observers was in reality deuteroproteose. Many researches in the last decade have demonstrated that deuteroproteose is frequently found in the urine in disease, but that true peptone occurs only rarely and apparently only in association with deuteroproteose. In no known case has more than 5 grams of proteose been eliminated in 24 hours. The quantity is usually much less.

The use of the term "peptonuria" in connection with the proteoses of the urine is not only inaccurate, in the light of our present knowledge, but confusing as well. It should be restricted to the occurrence of true peptone as we now understand the term.

In addition to the various proteoses, another substance of similar qualities, known as histon, sometimes appears in the urine, which was doubtless also formerly detected and designated peptone. Histon has been detected in the urine in cases of peritonitis, pneumonia, erysipelas, scarlet fever and in lymphemia. "Bence Jones' proteid," which repeatedly appears in the urine in association with multiple myelomas of the bones, and which for a long time was regarded as albumose, is in reality a coagulable substance. Recent researches have shown that it is not a proteose. Its exact nature is still undetermined.

Numerous methods for the detection of the proteoses and other proteids in the urine have recently been suggested. Freund² has lately communicated a "method for the detection of peptone in the urine and feces." Freund shows throughout his paper, however, that he has taken the usual liberty with the term peptone. He seems to have had proteose in mind, not peptone.

His method for the detection of proteose is very simple, and may be summarized as follows: 10 cc. of urine is first acidified with 2-3 drops of 2% acetic acid, and then treated with 20% neutral or basic lead acetate—5 cc. The milky mixture is thoroughly boiled and the precipitate of proteid, inorganic matter, etc., is filtered off. The filtrate is next treated with potassium hydroxid as long as a precipitate of lead hydroxid continues to form, when the mixture is again boiled for a moment or

¹ We use the generic term "proteosuria" in preference to "albumosuria" merely because in these urinary conditions more than one type of proteose is eliminated. The generic term, therefore, is the more accurate, unless urine containing only albumose is referred to.

² Freund: Centralblatt für innere Medizin, 1901, xxii, p. 647.

two. The filtrate, it is claimed, is entirely free from urobilin, and contains a little more than 90% of the proteose originally present in the urine. The presence of the proteose in this filtrate may finally be detected with the biuret reaction. The filtrate is always water-clear, says Freund, pigments such as uroerythrin, uro-bilin, bilirubin and hematoporphyrin being completely precipitated.

All of these results, adds Freund, are obtainable with proteose-containing feces. He states that in a large number of experiments with this method, normal feces were found to be entirely free from proteoses ("peptone").

Not only is the title of Freund's paper rather misleading, but his conclusions, also, are hardly warranted. The method he uses for preparing the final proteose-containing filtrate does not exclude peptone, and if gelatin were present, by accident or otherwise, it also would be contained in the filtrate.¹

We have made numerous experiments with urine and feces to test the validity of Freund's method. Moderate amounts of various proteids or their concentrated solutions were dissolved in, or mixed with, urine and feces from individuals who had been in perfect health continuously for a long time. The samples thus prepared, together with the corresponding normal urines and feces as controls, were very carefully subjected to Freund's method, and the biuret reaction applied finally as he directs. The normal feces, and the feces with proteid admixture, were extracted for a few minutes in hot water and the filtrates treated the same as the urine. Care was taken to effect extraction speedily, so as to prevent hydration of any contained proteid. Basic lead acetate was used for precipitative purposes with both urine and feces.

Positive results were repeatedly obtained by this method in samples of normal urine which had been treated with the following substances:

- (1) "Witte's peptone" (containing proteoses).
- (2) Pure peptones, made by us from tendomucoid, fibrin and ligament elastin.
- (3) Commercial gelatin (containing gelatose).
- (4) Pure gelatins, made by us, from tendon, bone, and ligament.
- (5) Pure primary and secondary proteoses, of our own make, from tendomucoid, fibrin, and ligament elastin.
- (6) Aqueous extract of sheep pancreas (containing nucleoproteid, proteose, and peptone).
- (7) Egg albumen: commercial products, also from fresh eggs, (containing ovomucoid, Neumeister's "pseudo-peptone").
- (8) Ox blood (containing seromucoid).

Among the proteid substances which gave negative results under similar conditions were:

- (1) Mucos from the gastrointestinal tract (containing nucleoproteid and mucin.)
- (2) Mucoids from tendon, cartilage and bone.
- (3) Various animal and vegetable albumins and globulins.

Many of the final filtrates were quite yellowish to red in color, contrary to Freund's experience, although in a majority of cases all of the urinary pigment was removed. When large excess of blood was present in the first place, the final filtrate contained soluble, pigmented derivative of hemoglobin. Further addition of lead acetate, however, entirely removed it.

The same positive and negative results with nearly all of the above proteids were also obtained when these substances were admixed with dog feces. The latter normally contained nothing that gave a biuret reaction in the final filtrate. Every sample of normal human feces tested by us, however, gave a positive result. The reaction was stronger in the presence of the above substances.

¹ The frequent use of gelatin in solution in the sick-room makes it highly probable that sometimes small quantities of it by accident get into the vessels used for collecting urine. Commercial gelatin contains gelatose. A very slight quantity of gelatin or gelatose will give a strong biuret reaction.

Further, the final filtrates were usually highly colored. Our biuret tests were made on one-half of each portion; the other half serving for comparison. "Peptone," it is said, does not occur in the feces normally, although it is probable that peptone, as well as proteose, occasionally appears in the feces in health, particularly as a result of the normal bacterial action on undigested proteid such as muscle fibers or on mucus. Possibly the coloring matter present accounted for the biuret reaction in the fecal extracts we examined, just as urobilin in the urine may affect it.

These results show, we think, that Freund's method is not a differential process, and that it cannot be safely applied to the urine or feces as a peptone test. They prove that peptones, proteoses and gelatins in urine and feces may each give positive results with it. They indicate, further, that seromucoid in the urine might also affect the final reaction.

Since the foregoing was completed we have seen Ito's paper on the occurrence of true peptone in the urine. He gives improved methods of detecting proteose and peptone in urine in the presence of each other. (See *Deutsches Archiv für klinische Medizin*, 1901, lxxi, p. 29.)

TUBERCULOUS PERICARDITIS, WITH EFFUSION; REPEATED TAPPINGS; BACILLI IN THE EXUDATE; RECOVERY.

BY

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[From Professor Osler's Clinic.]

The case was that of a colored boy, W. H., aged 20, who entered the Johns Hopkins Hospital under Dr. Osler, March 31, 1901, complaining of pain over the heart. He left the hospital six months later improved, and at the present date, January, 1902, is still improving.

His family and personal history were negative. The present illness began two months before admission, with pain in the right chest, sharp and stabbing in character, worse on taking a deep breath. He had cough, and shortness of breath; had never spat blood, but had had frequent night-sweats. Three weeks before admission he began to have pain over the heart, so severe that he gave up work.

On admission he appeared well nourished, and the mucous membranes were of good color. The signs in the lungs were practically normal, except over the lower right side, where the percussion note was impaired and the breath sounds enfeebled.

Over the heart was heard a loud to and fro pericardial rub. It was superficial, rough and altered by pressure. The heart sounds were heard with difficulty, but a point of maximum impulse was clearly seen. The cardiac dullness was normal in extent. The pulse was regular, of good volume; the arteries were somewhat sclerosed. The abdominal examination was negative. The blood showed hemoglobin of 85%, and red blood-corpuscles of 4,600,000 per cm. The sputum was scanty, muco-purulent, and not blood tinged. No tubercle bacilli were ever found in it, though they were repeatedly sought. The urine showed albumin and casts.

Gradually the signs of pericardial effusion developed. The first change to be noted was in the pulse. To April 8 the average rate was 114 beats per minute. Between April 8 and 25, it was 120. The temperature changed at the same time. Before April 8, it ranged between 100° and 102°; after, it became irregular, occasionally intermittent, ranging between 97° and 104.7°. The area of cardiac dullness began to increase. By April 15, there was movable dullness in Rotch's space. On April 19, the pulse became paradoxical. On auscultation, both the friction rub and the heart sounds became more and more feeble, especially at the apex. The most noticeable

change in symptoms was in the cough, which came in severe paroxysms, ringing and high pitched in character. There was some increase in the shortness of breath. By April 24, the cardiac dullness extended 14 cm., instead of 7 cm., to the left of the middle line in the fourth interspace, and 3 cm., instead of 1.5 cm., to the right.

On April 25 Dr. Osler noted three signs indicating that the effusion was considerable in amount. First, the apex impulse was no longer visible; second, there was distinct bulging of the precordium; and third, there were signs of compression of the left lung, namely flat tympany in the left axilla though not at the back. A needle was introduced in the fifth interspace 1.5 cm. outside the mammillary line. About 10 cc. of slightly yellow fluid were removed. No organisms were found in it. On April 27 the pericardium was again aspirated and 25 cc. removed. The needle was inserted at nearly the same place. The fluid contained a few red and white blood-corpuscles, but no organisms were found.

After the aspirating the patient was better. The cardiac dullness now extended 13.5 cm. to the left and 1.5 cm. to the right. There was no dullness in Rotch's space. By May 1 the apex beat was again visible, and by May 4 the heart sounds were heard, but there was embryocardia. The patient now began to complain of abdominal pain, referred to the epigastrium. The cough continued severe and the temperature was more elevated. On May 11 Dr. Osler ordered a third pericardial tapping. The needle was inserted twice, once in the fifth interspace and once in the sixth. Both times the heart was touched. Fifty cc. of fluid was removed. It was centrifugized and in the pus a clump of eight or ten tubercle bacilli were found.

For a few days the boy was more comfortable, but on May 14 he complained of pain in the right side, sub-mammary region, where a loud pleural friction was to be heard. It is probable that the previous abdominal pain was due to diaphragmatic pleurisy. By June 7 the signs of pericardial effusion had considerably diminished. The apex beat was well seen 10 cm. from the middle line, the heart sounds were loud, and there was gallop rhythm instead of the embryocardia. No pericardial friction rub was heard. However, signs of pleural effusion on the right side began to appear. Increasing dullness, definitely movable, absent vocal fremitus and suppressed breath sounds. On June 8 the right pleural cavity was tapped, and more than a litre of fluid was removed. The chest filled up repeatedly, and was tapped in all 14 times. About 20 litres of fluid were removed. The fluid was always blood-stained and sterile in cultures. No tubercle bacilli were ever found;—this was probably due to the fact that centrifugalizing caused the fluid to clot, thus making the difficulty of the search great. No inoculation experiments were made. At the fifth tapping a differential count of the leucocytes of the exudate was made. Of 1,000 counted, 98.5% were small and 1.3% large mononuclear forms, while only 2% were polynuclear forms. This ratio was constant.

The intervals between the tappings became progressively longer and the patient had shortness of breath only when the fluid was high. He was tapped last on September 7, and the fluid did not collect again. On January 19, 1902, he was seen by Dr. C. H. Bunting at the Hospital, to whom I am indebted for the following examination: There were no signs of pleural nor pericardial effusion. Heart; the point of maximum impulse was within the nipple line, the sounds were well heard and clear and there was no friction rub. Lungs; the right shoulder droops; the left side of the chest is fuller and expands more. Over the right lung the note was resonant above, impaired below. The vocal fremitus was diminished and the breath sounds feeble over this impaired area. The general condition was good. There was still marked cough with scanty expectoration. Thus after extensive serous membrane tuberculosis, the patient is left with a quiescent process,

the only physical signs being of a thickened pleura and a partially collapsed lung.

The points of interest in the case are (1) the great value of repeated tappings in serous effusions; (2) the finding of tubercle bacilli in the pericardial exudate; and (3) the high percent of mononuclear forms in a tuberculous exudate. I wish to thank Dr. Osler for the privilege of reporting the case.

SPRUE OR PSILOSIS IN MANILA.

A Disease or State.¹

BY

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of Hot Springs, Ark.

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The condition or disease, sprue or psilosis, has been described under various names by Eastern physicians for many years. More recently a number of European observers serving in the tropics have given thorough and complete descriptions, and from a clinical standpoint, at least, have established in medical literature records of a truly tropic disease.

Heretofore very little consideration has been accorded the subject by American observers, and still less by American writers. Many of our leading textbooks on medicine do not mention the disease at all, and those that do so, mention it in a very cursory manner. With the acquisition of our tropic possessions, however, this subject, like every other pertaining to the study of tropic medicine, has become one of very great importance to the American medical profession.

To Professors P. Manson and G. Thin, more especially, is probably due the credit of elucidating and clearly describing the condition. The former's article in his "Manual of Tropical Medicine," revised edition 1900, is a clear and concise description, and, in a general way, a true clinical picture of the condition as seen in Manila.

During a period of eight months there were treated in the First Reserve Hospital in Manila 127 cases with a diagnosis of sprue or psilosis. These diagnoses were made by a number of different physicians, some of whom at least were experienced in the diagnosis and treatment of tropic diseases.

The records of the Army Pathological Laboratory for these cases, show intestinal parasites (mostly amebas) in 68 cases; positive blood-serum reactions with *Bacillus dysenteriae* in 17 cases; positive reactions with *Bacillus typhosus* in 6 cases; albumin and casts in the urine in 4 cases; no records of 9 cases. In 118 cases diagnosed sprue or psilosis, ordinary routine microscopic methods furnished a positive diagnosis of other diseases in more than half, and offered strong diagnostic data in a further number of cases. These figures also show that the disease or condition is quite prevalent in Manila, and that the clinical manifestations are frequently seen in other and well-known diseases.

In a series of 57 cases, the patients being treated in the same hospital, 29 patients were transferred to the United States for treatment; 10 were transferred to other hospitals; 2 were returned to duty and 16 died. Of the 10 transferred to other hospitals, 2 died and 7 were transferred to the United States at a later date, showing in all a mortality of more than 81%, and an invalidism for tropic service of approximately 95% of the cases. The mortality is in reality much higher than these figures show, for at least some of the patients died after reaching America.

These statistics show that whether we regard sprue

¹ Most of the work on this report was done during my tour of duty as First Assistant in the Army Pathological Laboratory in Manila and Pathologist to the First Reserve Hospital.

as a disease, a state or a symptom-group, the subject is a very important one to surgeons in Manila.

A knowledge of the disease was obtained from written descriptions, from the study of a case in which the diagnosis had been made by Thin, and through the courtesy of Dr. R. P. Strong, by observations in a case originally diagnosed by Manson. In several instances the diagnoses were made or confirmed by observers of experience in the diagnosis and treatment of diseases in the tropics.

Before describing cases in detail, we will briefly summarize the literature pertaining to the subject.

Manson considers it a dangerous catarrhal inflammation, chronic in nature, affecting the mucosa of all or part of the alimentary canal, associated with suppression of or interference with the glandular functions of the organs subserving digestion. It occurs mostly in Europeans residing in the tropics, and usually after a prolonged residence there. It is characterized by "irregularly alternating periods of exacerbation and quiescence; by an inflamed, bare and eroded condition of the tongue and mucous membrane of the mouth; by flatulent dyspepsia; by pale, copious and generally loose, frothy, fermenting stools; by wasting and anemia, and by tendency to relapse."

It is stated to occur primarily, and secondary to other bowel troubles. Among other places it is especially common in Manila (Hillary). Predisposing causes are prolonged residence in the tropics and diseases of the alimentary canal. The exciting cause is not known. The symptoms, according to Hillary, are infinite in variety, the most constant being a sore mouth, dyspepsia, and diarrhea.

The mouth lesions consist of superficial erosions or ulcerations of the mucous membrane of the tongue and mouth. The mucosa of the esophagus may also become eroded. Consequent upon the eroded condition of the buccal mucous membrane, swallowing of any acid food causes a burning sensation both in the mouth and the gullet.

The dyspeptic symptoms consist of a sense of weight and depression in the epigastrium; gaseous distention is common, and often after eating may become excessive; vomiting may occur.

The diarrhea consists of from two or more to many large fermenting stools in 24 hours, usually watery and often containing undigested food. The passage of the stools is accompanied usually by a sense of relief. Atypical and incomplete cases are described.

Autopsy.—The lesions are those often seen in wasting diseases. The described characteristic lesions are in the intestine, and consist in an atrophy of the muscular coat, with fibroid changes in the submucosa, and atrophy and erosion of the mucous membrane. The mucous surface is covered with tenacious mucus overlying erosions or ulcerations. The villi and glands are eroded or missing. Some of the villi may be dilated and filled with mucoid fluid, causing small, hard nodules. The mesenteric glands are usually large and show hyperplasia of the connective tissue.

Manson concludes that "the condition of the tongue, character of the stools and history, are sufficiently distinctive for a diagnosis."

Sprue as a State.—In at least 13 of the 16 cases which came to autopsy, sprue existed as a state or symptom-group in other diseases; as a complication, if sprue is considered a disease. For the sake of brevity, some of these cases will not be described in detail, but the findings in all will be considered in the totals.

The clinical notes on several of the cases were obtained from the surgeons who had charge of the patients at different times.

CASE I.—But little is known in detail of the early history of this patient. He came to the Philippine Islands in September, 1899, in good health. Shortly after this the first attack of diarrhea developed. From that time until his death, on July 16, 1900, the stools were never entirely normal. There were periods of comparative freedom from active diarrhea, during which times military duty was performed. The whole chain of

clinical symptoms of sprue gradually developed and persisted with exacerbations and periods of quiescence throughout the course of the disease. Sore mouth, anemia, emaciation, diarrhea and weakness were present, but the most aggravating and persistent symptoms were those referable to the stomach. During the last two months of illness, nausea and gaseous distention were present almost constantly, and vomiting occurred at irregular intervals during the morning hours and sometimes after meals. There was no pyrexia at any time during the course of the disease. The tongue was beefy red in color, pointed at the end, and showed superficial ulcers on the sides and under the tip. The stools, averaging from one to four in 24 hours, were pale, soft or semiliquid, and at times fluid, fermenting, and containing little or no mucus and no macroscopic blood. Microscopically, however, there were usually a few red blood-cells to be seen. No history of an acute attack of dysentery could be obtained. The urine was pale, of low specific gravity, and contained albumin, hyalin and granular casts.

Postmortem Examination.—Necropsy one hour after death. There is no rigor mortis nor postmortem lividity. The body is extremely emaciated and the skin very pale. Numerous small ulcers are seen on the sides of the tongue and on the mucous membrane of the mouth. The pericardial cavity appears normal. The heart muscle is pale and soft. The valves are normal, and the coronary arteries smooth and patulous. The arch of the aorta shows a few small, yellowish atheromatous patches. The right pleural cavity is normal. On the left side there are old chronic adhesions, encasing the upper portion of the lung, laterally and posteriorly. The right lung is crepitant throughout. The left is edematous and somewhat congested in the lower portion.

The abdominal cavity is free from adhesions; appendix normal. The subserous fat is very scanty. The serous surfaces are pale and the tissues are somewhat edematous. The mesenteric lymphatics are slightly swollen and pale in color. The spleen weighs 92 grams. The surface is smooth and normal in color; capsules are not thickened. Cut sections are normal in color, and show no increase of pulp. The trabeculae are rather prominent. The liver weighs 1,210 grams. The surface is smooth, and just beneath the capsule numerous slightly yellowish areas are seen. Cut sections are pale, a little yellowish, and greasy looking. The gallbladder and ducts are normal. The kidneys weigh 410 grams. They are quite firm, and pale in color. The capsules are nonadherent and when stripped leave smooth, pale, waxy surfaces; stellate veins injected. There is slightly increased resistance imparted to the knife. Cut sections are pale in color and the cortex is relatively thickened. Pelvis and ureters are normal. The mucous membrane of the stomach is pale and is bathed in a rather large amount of mucus. There are no hemorrhages; the surface is uneven and roughened, and the mucous membrane appears atrophied in the lower portion. The esophagus appears normal; pancreas normal.

There are no dilations nor contractions in the intestine. The peritoneal surface appears normal. In the upper portion of the small intestine there is no change; lower down, however, the mucous membrane is pale soft and glistening. The walls appear atrophied. The lymphoid structures appear normal. The mucous membrane of the large intestine is atrophied, pale, and the walls of the gut are thinner than normal.

Microscopic Examination.—No parasites demonstrated in the intestinal contents. No bacteria in coverslips from the spleen, liver, and blood. The postmortem urine contains albumin, hyalin and granular casts. The postmortem blood in the dilutions of $\frac{1}{10}$, does not agglutinate *Bacillus dysenteriae* nor *Bacillus typhosus* in 20 minutes.

Anatomic Diagnosis.—Chronic parenchymatous nephritis (large white kidney). Albumin and casts in the urine.

General Condition of Sprue.—(Marked anemia, emaciation, atrophy of the intestinal mucosa, ulcerative stomatitis and chronic gastric catarrh). Congestion and edema of the left lung. Fatty degeneration of the liver and cloudy heart muscle. Chronic adhesive pleurisy.

Bacteriology.—Agar plate cultures from the heart, liver and gallbladder, are sterile in the incubator at the end of 48 hours. The plate from the spleen is contaminated. From the intestines (large and small) a nonpathogenic micrococcus, a green pigment producing saprophyte and a large number of bacilli belonging to the colon group are obtained.

CASE II.—An American soldier in good health when he arrived in the Philippine Islands in the latter part of 1899, and well until March, 1900. From March 7 to 10, he was treated in quarters for a mild attack of diarrhea. March 16 to 28 he was in the hospital; diagnosis, acute diarrhea. April 1 to 14, treated in quarters for acute diarrhea. May 22 to July 3, treated in hospital for subacute dysentery. July 21 to October 8, treated in hospital for chronic dysentery. On October 9, patient was transferred to the First Reserve Hospital, Manila, with a diagnosis of chronic dysentery and sprue. At this time he was remarkably emaciated, weak and anemic; temperature, 101.2° F.; pulse, 96, soft and compressible. The temperature record began on July 22, and from that time to his death, showed an irregular, intermittent pyrexia, ranging from 96° to 101°, on two occasions reaching 102.5°, the evening temperature invariably being the higher from .5 to 1 or 2 degrees.

He was complaining of sore mouth and of indigestion. The mucous membrane of the mouth and tongue showed many superficial ulcerations. The appetite was variable, anorexia being most frequent. The smallest amount of any solid or sapid food caused pain in the stomach, and was sometimes followed by vomiting. The stools numbered from 1 to 4 or 5 in 24 hours. They were pale, and soft or semiliquid, containing, microscopically, a few blood-cells and numbers of flagellate infusoria (*Trichomonas intestinalis*). They were passed without pain, patient stating that he had no tenesmus since his attack of dysentery in July, during which he passed from 15 to 20 bloody mucus stools in 24 hours, accompanied by tenesmus and often by vomiting. Death occurred on October 17, 1900. Clinical diagnosis, sprue.

During life his blood showed no leukocytosis, no malarial parasites, and repeatedly gave negative results for agglutination tests with *Bacillus typhosus* and *Bacillus dysenteriae*. Sputum contained no tubercle bacilli. The urine was negative for the diazo reaction, and contained no albumin in a single examination.

Postmortem Examination.—Necropsy 1½ hours after death. There is no rigor mortis. The body is still warm and markedly emaciated. The skin is very pale. The mucous membranes of the mouth and sides of the tongue, show a number of small superficial ulcers. The heart weighs 160 grams. The right auricle contains a postmortem clot. The valves, coronary arteries and arch of the aorta are normal. The muscle is a little pale and of normal firmness. The pericardial cavity is normal. Both pleural cavities contain old fibrous adhesions, and the apex of the left lung contains a few old, calcified tubercles. The lower lobes of both lungs are slightly congested.

The abdominal cavity is free from adhesions and fluid, and the appendix is normal. The omentum and subserous fat is very scanty and the tissues are somewhat edematous. The serous surfaces are normal in color and the vessels are not injected. The mesenteric and retroperitoneal glands are a little swollen, moderately firm, and pale. The spleen weighs 210 grams. The capsule is smooth and not thickened. The organ is moderately firm and normal in color. The structural markings are distinct in cut sections. The liver weighs 1,485 grams. The surface is smooth but the organ is quite firm, imparting an increased resistance to the knife. Cut sections are pale in color and well lobulated by slightly thickened bands of connective tissue. The gallbladder contains a large amount of fluid bile and a few small calculi; the ducts are normal. The kidneys weigh 415 grams. They are large, pale, and very firm. The surfaces are roughened and capsules adherent. Both organs impart marked increased resistance to the knife. Cut sections are pale and irregular. Cortex is a little thin, the bloodvessels are a little injected and stand out prominently. The mucous membrane of the stomach is in general somewhat uneven and mammillated. It is generally pale but shows a few small hemorrhages near the cardiac end and is bathed in a small amount of mucus. The esophagus appears normal.

The small intestine presents no dilations nor contractions and the walls appear of normal thickness. The lumen contains a large amount of semiliquid mucus material, in some places streaked with blood. The mucosa of the upper portion has a moderate number of adult *Uncinaria duodenale* hanging from its surface. In the lower portion the mucous membrane is hyperemic and shows a few small, punctate hemorrhages. There are no areas of atrophy of the mucous membrane. The lymphoid structures are not swollen. The walls of the large bowel are slightly thickened and the lumen contains a small amount of pale, semiliquid material with some mucus. The mucous membrane generally is rather pale but not atrophied. It is covered throughout with a large number of small, superficial ulcers, measuring from 1 to 3 mm. in diameter. These ulcers are extremely superficial and are of a grayish color.

Microscopic Examination.—A few *Trichomonas intestinalis* and ova of *uncinaria* were found in the contents of the large intestine. Many of the adult *uncinaria* in the small intestine are distended with blood. The postmortem urine contains a trace of albumin and a number of hyalin and a few granular casts. Stained coverslips from the spleen and liver are negative for bacteria. The postmortem serum in dilutions of 1 to 10 does not agglutinate *Bacillus typhosus* nor *Bacillus dysenteriae*.

Anatomic Diagnosis.—Chronic nephritis (albumin and casts in the postmortem urine). Moderate cirrhosis of the liver. Chronic gastroenteritis. Ulcerative stomatitis. *Uncinariasis* (moderate). Congestion bases on both lungs (hypostatic). Chronic adhesive pleurisy. Cloudy swelling of liver and heart muscle.

Bacteriology.—Agar plate cultures from the heart, liver and spleen are sterile at the end of 48 hours in the thermostat. From the intestine a nonpathogenic micrococcus occurring singly, in pairs, and in tetrads, is observed and a large number of bacilli belonging to the colon group.

CASE III.—An American soldier, in the Philippine Islands since January, 1900; during this month he was treated in the hospital for dengue fever and in February for intermittent tertian malarial fever. In June, 1900, he had an attack of acute dysentery from which recovery was not complete. His condition improved, however, so that he performed military duty

until August 29, when he was again admitted to the hospital and treated for chronic diarrhea until October 22, when he was again returned to duty. On November 26 he was again admitted to the hospital and treated for chronic malarial cachexia and diarrhea until December 16, when he was transferred to the First Reserve Hospital with a diagnosis of chronic diarrhea. The regimental surgeon writes that "previous to transfer to the First Reserve Hospital his temperature was normal. He was anemic and his nourishment was not well assimilated. When out of the hospital his dejections averaged four or five a day, but when in the hospital his bowels were easily controlled."

On admission to the First Reserve Hospital he was markedly emaciated, pale and anemic, and in 24 hours was passing from 2 to 6 pale, soft or semiliquid, fermenting stools, containing a small amount of mucus. Microscopically they contained a few blood-cells, but intestinal parasites could not be demonstrated. There was little or no pain during the passages and but little tenderness of the colon. He complained of dull, aching pain in the region of the stomach and burning pain along the gullet on swallowing hot or acid foods. The tip and sides of the tongue showed small superficial ulcerations.

Cough at this time was also a noticeable symptom; it was worse in the mornings. The amount of expectoration was small at all times. The sputum was examined and found to contain tubercle bacilli. There was no fever at any time, the temperature ranging from 96° F. to normal. There was no leukocytosis nor any marked poikilocytosis. Hemoglobin estimations were not made.

The digestive powers and assimilation were apparently in almost complete abeyance, resulting in progressive decline and death on January 3, 1901.

Postmortem Examination.—Necropsy six hours after death. The body is poorly nourished and extremely emaciated. The thigh at the middle third measures 19 cm., and the arm at the middle third 17 cm. in circumference. The skin is very pale and scrawny and the subcutaneous fat very scanty. Intercoastal muscles pale; rigor mortis and livor mortis absent.

The heart weighs 180 grams. Both right chambers contain fluid blood. Valves, arch of the aorta and coronary arteries are normal; the muscle is soft and dark in color. The pericardial cavity contains a small amount of straw-colored serous fluid, the serous membranes are smooth and translucent. The left pleural cavity is dry and free from adhesions. The right contains numerous old, strong adhesions, encasing the lung laterally, posteriorly and inferiorly. The lower lobe of the left lung contains a few old, calcified tubercles and is moderately congested. The right upper lobe contains a few old, healed tubercles, and the left lower lobe numerous miliary and conglomerate tubercles; no cavities. The bronchial glands are swollen, dark in color and hemorrhagic.

The abdominal cavity is free from adhesions; appendix normal. Omentum and subserous fat very scanty. The mesenteric glands along the colon are swollen from 2 to 4 mm. in diameter, and hyperemic. Those along the small intestine are slightly enlarged and pale. There is no injection of the subserous vessels. The spleen weighs 330 grams. Surface smooth and dark. Cut sections show very distinct markings and a moderate increase of normal colored pulp. Scattered throughout the organ are a number of small, soft, whitish points (tubercles) measuring about 1 to 2 mm. in diameter. The liver weighs 1,190 grams, the surface is smooth, normal in color and the organ is very soft. Cut sections show injection of the interlobular vessels. The gallbladder contains a small amount of normal-colored bile. The kidneys weigh 260 grams. Capsules nonadherent; surface vessels slightly injected; organs quite firm. Cut sections are pale and show early parenchymatous changes. Pelvis and ureters normal; adrenals normal. The mucous membrane of the stomach is bathed in a considerable quantity of mucus and is pale, soft and velvety. Near the cardiac end there are a number of small superficial hemorrhages. The pancreas is small and has a peculiar, dark, muddy appearance; there are no areas of hemorrhages nor necrosis. The mucous membrane of the esophagus is swollen, shows a number of superficial hemorrhages, and in the lower portion two small, shallow ulcers.

The small intestine shows a number of well marked dilations and contractions. The peritoneal surfaces are very pale throughout. The walls, in areas corresponding to the dilations, are very thin and translucent. In other places they are of nearly normal thickness and are not so pale. The lumen contains a considerable quantity of pale, semiliquid, granular, fermenting material, with a moderate admixture of mucus, but no macroscopic blood. In areas, corresponding to the dilations, the valvulae conniventes are entirely obliterated, and the mucosa is very thin, pale, soft and velvety. In the remaining portion of the bowel the folds are nearly normal, the mucosa not so pale and structureless, in places congested and even in small areas showing superficial hemorrhages. The agminated follicles are slightly swollen and raised, dark in color and a little congested (shaven beard); none of them, however, show definite ulceration. The solitary follicles are swollen, pale and quite firm. There are no marked dilations nor contractions in the large bowel. The walls appear of normal thickness. The mucous membrane in places is moderately congested; but there are no hemorrhages or ulcerations. The solitary follicles are slightly swollen and hyperemic. There

are a number of old, dark, pigmented areas scattered throughout the mucous membrane. They contain no cicatricial tissue.

Microscopic Examination.—This shows tubercle bacilli in the lungs. No malarial parasites nor pigment in the spleen. The postmortem urine contains a trace of albumin, but no casts. No parasites in the intestinal contents. No reaction with *Bacillus typhosus*.

Anatomic Diagnosis.—General tuberculosis (miliary and conglomerate tubercles in the lungs; miliary tubercles in the spleen and lymphatic structures). Chronic ulcerative esophagitis and stomatitis. Chronic adhesive pleurisy (dextra). Cloudy swelling of the kidneys. (Tuberculosis of both large and small intestine, made by microscopic study of the sections.)

Bacteriology.—Agar plate cultures from the heart, liver and spleen show a pure culture of a bacillus answering the following description: The plates all show fairly numerous colonies both on the surface and in the depth. The deep colonies at the end of 24 hours in the incubator are quite small, measuring about 1 mm. in diameter, are clear, round or oval in shape. The surface colonies are slightly larger, some of them measuring 2 mm. in diameter and, in general, look very much like colonies of *Bacillus typhosus*. It is a small, nonmotile bacillus measuring from 3 to 5 μ in length. The growth on ordinary media is rather delicate. Sugars (glucose, mannitose, lactose and saccharose) are not fermented. Indol is not produced. Litmus milk at the end of 24 hours is unchanged, in 48 hours a shallow pink ring forms on the surface and remains constant. In 8 to 10 days the rest of the milk is changed to a peculiar, light bluish-green color and slowly peptonized.

The bacillus is agglutinated by postmortem blood of the host in 1 to 10 dilutions in 20 minutes. It is not agglutinated by blood-serum from cases of dysentery, typhoid fever or from other cases giving clinical symptoms of sprue. It is not pathogenic for Manila rats or cats.

From the intestine the above-described and two varieties of colon bacillus were obtained. The two colon bacilli differ from each other, in that one variety is more actively motile, produces only a bubble of gas in lactose and very slowly coagulates litmus milk; this one shows an indefinite agglutinative reaction with the postmortem serum of the host in 1 to 10 dilutions. The other variety is typical colon and shows no reaction with the blood of the host.

CASE IV.—The patient arrived in the Philippine Islands in September, 1899, and remained in good health until the early part of 1900. In April, 1900, a moderate attack of diarrhea developed and lasted about 4 days. This was followed by several intermittent attacks of diarrhea, so mild as not to incapacitate him for military duty. In July, 1900, in addition to the diarrhea the records show a few days in the hospital with a diagnosis of malarial fever. From September 1 to September 20, 1900, he was treated in the hospital for dyspepsia. From October 12 to October 23 he was treated in the hospital for sprue. On October 23 he was transferred to the First Reserve Hospital. On admission the patient was very weak, anemic and emaciated. The temperature and pulse were normal and remained so until the day before death, when the temperature dropped to 96° and on the day of death, November 25, to 95.2°. The records of the case do not show a temperature above 99.5° at any time during the disease. A few days before death some edema of feet and ankles and a moderate icterus developed. The urine contained albumin and a few hyalin casts.

The patient complained of dyspeptic symptoms and sore mouth. The mucous membrane of the mouth and tongue were ulcerated. There was no history of an acute attack of dysentery. The patient said that he had at one time passed blood in his stools, which had numbered 8 or 10 in 24 hours, but that there had never been any tenesmus or other evidence of a severe dysentery. During the period in the First Reserve Hospital the stools numbered from 2 to 12 in 24 hours. They were pale, semiliquid and fermenting, with but little mucus and usually without macroscopic blood; microscopically, blood-cells were usually present, but amebae were not found. The blood in dilutions of 1 to 10 gave no agglutinative reaction with *Bacillus dysenteriae* nor *Bacillus typhosus*.

Postmortem Examination.—Necropsy 1½ hours after death. No rigor mortis or postmortem lividity. The body is markedly emaciated; skin and conjunctivas slightly jaundiced. Mucous membranes of the mouth and tongue show several small, superficial ulcers. The heart weighs 180 grams. The right auricle contains fluid blood. There are no postmortem thrombi in any of the cavities. The muscle is pale in color and a little soft. The valves, arch of the aorta and coronary arteries appear normal. The pericardial cavity contains about 60 cc. of clear, straw-colored fluid. The serous surfaces are clear and translucent. Both lungs and pleural cavities are normal, except for a few old chronic adhesions on the right side.

The abdominal cavity shows no evidences of a general peritonitis. The tissues are somewhat edematous and the omentum and subserous fat scanty. There is a large abscess in the right iliac fossa involving the cecum and surrounding tissues. It is walled off and communicates with the intestine through a perforation in the cecum. The mesenteric lymphatics along the large bowel are swollen, measuring from 4 to 9 mm. in diameter, are pale in color and quite firm. The spleen weighs 195 grams, and appears normal. The liver weighs 1,320 grams, and shows decided fatty change. The gallbladder and ducts are normal. The kidneys weigh 270 grams. They are quite

firm and impart an increased resistance to the knife. The surfaces are smooth and capsules a little adherent; surface vessels moderately injected. The cortices a little thin; pelvis and ureters normal. The mucous membrane of the esophagus is hyperemic and the lower portion rough and granular, but not ulcerated. The mucous membrane of the stomach is bathed in a moderate quantity of mucus. It is in general pale, but shows a few hemorrhages near the pylorus. The pancreas and bladder appear normal.

The small intestine is normal, except for moderate hyperemia of the mucosa of the lower jejunum and ileum. The large bowel presents a typical picture of advanced amebic dysentery. The mucous membrane contains typical ulcers, one in the cecum has perforated. There is no apparent atrophy of the mucous membrane.

Microscopic Examination.—Motile amebae containing red blood-cells in the intestinal ulcers and in the contents of the pericecal abscess. The postmortem blood-serum in 1 to 10 dilutions does not agglutinate *Bacillus dysenteriae* nor *Bacillus typhosus* in 20 minutes. Stained coverslips from the blood, liver, and spleen are negative for bacteria. The postmortem urine contains a small amount of albumin and a few casts.

Anatomic Diagnosis.—Amebic dysentery (typical ulcers containing amebae). Pericecal abscess (amebic). Chronic interstitial nephritis. Localized peritonitis. Chronic gastric catarrh (moderate). Ulcerative stomatitis. Fatty degeneration of the liver and cloudy heart muscle. Chronic adhesive pleurisy (dextra).

Bacteriology.—Agar plate cultures from the heart, liver, spleen, and gallbladder are sterile at the end of 48 hours in the incubator. No cultures made from the intestine.

CASE V.—The patient arrived in the Philippine Islands in September, 1899. Health remained good until the middle of March, 1900, when he had an attack of dysentery of moderate severity, passing from 8 to 10 mucous stools in 24 hours, some of them showing a small amount of blood. Subsequent intermittent attacks were quite frequent, but never severe. A moderate degree of emaciation and anemia gradually developed. Sore mouth and tongue with symptoms of indigestion became constant and aggravating features of the case.

On July 16, 1900, the patient was received in the First Reserve Hospital, with a diagnosis of sprue. He was extremely emaciated, pale and anemic; temperature and pulse normal. On the second day after admission, temperature reached 101° in the afternoon and continued of an irregular intermittent quotidian type to the end, ranging from 100° to 102° in the afternoons and normal in the mornings. Repeated examinations of the blood were negative for malarial parasites. Blood counts showed 8,500 leukocytes and 2,220,000 red cells. There were present superficial ulcerations of the mouth and tongue, but the most noticeable and aggravating symptoms were referable to the stomach. Nausea was almost constantly present and vomiting occasionally occurred. The vomiting more often followed food or medicine administered by the mouth, until finally a stage was reached when feeding the patient became a serious problem, the swallowing of the smallest quantity of food causing pain in the region of the stomach, occasionally followed by vomiting. Acid or solid food of whatever character caused an active burning sensation in the mouth, gullet and stomach. The stools numbered from 3 to 12 in 24 hours; they were soft or semiliquid in character, pale and fermenting, usually containing mucus and often blood. Microscopically, large, actively motile *Amœba dysenteriae* and numerous, small, flagellate infusoria were present. Death occurred on August 3; clinical diagnosis, sprue and amebic dysentery. During life the blood-serum in dilutions of 1 to 10 showed no agglutinative reaction with *Bacillus dysenteriae* nor with *Bacillus typhosus*. The postmortem serum in 1 to 10 dilutions gave an indefinite reaction with a bacillus of the colon group, obtained from the pleural cavity of the host. Postmortem appearances in this case were those often seen in cases of amebic dysentery of long standing, with liver abscess.

Anatomic Diagnosis.—Advanced amebic dysentery and multiple amebic abscesses of both right and left lobes of the liver; one of the abscesses in the right lobe, perforating into the right pleural cavity. Fatty degeneration of the liver and kidneys and cloudy heart muscle.

General Condition of Sprue.—Marked anemia; emaciation, superficial ulceration of the sides and tip of the tongue and lower portion of the esophagus. Chronic gastric catarrh and moderate atrophy of the mucosa of the lower portion of the small intestine.

Bacteriology.—Agar plate cultures from the heart and spleen are sterile at the end of 48 hours in the thermostat. From the right pleural cavity *B. coli* was obtained. Plates from the liver abscess remain sterile. From the intestine only colon bacilli were obtained.

CASE VI.—This was a case of amebic dysentery of 1½ years' duration, manifesting the clinical symptoms of sprue. It was very similar to Case IV, and a detailed description will be omitted.

CASE VII.—An American soldier, arrived in the Philippine Islands in the early part of 1899 in good health. During the year he had three mild attacks of diarrhea, some indigestion, and lost about 25 pounds in weight. Military duty was performed, however, until July, 1900, when he had an attack of acute dysentery, passing as many as 35 bloody mucous stools in

24 hours, accompanied by considerable tenesmus and some fever. The attack lasted about ten days, after which convalescence was rapid and he was returned to duty. The bowel movements, however, did not return entirely to normal, and upon returning to duty the movements became more frequent. The symptoms of sprue gradually developed, sore mouth, indigestion and fermenting diarrhea. He was treated in the regimental hospital and in quarters several times during the latter part of the year, with a diagnosis of sprue or chronic diarrhea. The condition gradually grew worse, and he was transferred to the First Reserve Hospital in November, 1900, with a diagnosis of sprue.

On admission, he was markedly emaciated and anemic; temperature and respiration, normal; weight, 116 lbs. (normal weight, 180 lbs.). The general symptoms of sprue were present and well marked.

Blood Examination.—Red cells numbered 2,220,000, and showed a moderate poikilocytosis. There were no nucleated red cells. The white cells numbered 5,680, and were normal in proportion, excepting a slight relative increase of eosins (3.5%). The hemoglobin estimated 48% (Fleischel). The blood-serum in dilutions of 1 to 10, showed an indefinite reaction with *Bacillus typhosus*. In dilutions of 1 to 20 there was no reaction in 20 minutes. In dilutions of 1 to 20 the reaction with *Bacillus dysenteriae* was complete in 15 minutes. This positive result was repeatedly obtained with *Bacillus dysenteriae* from different sources. The serum in dilutions of 1 to 10 was tried with colon bacilli from the intestine of six other cases, giving sprue symptoms. In one there was a positive reaction in 20 minutes, with the second, an indefinite reaction, and with the other four the result was negative.

The stools numbered from 1 to 8 in 24 hours. They were pale clay-colored, mushy or semiliquid in character, with little or no mucus and no macroscopic blood. Microscopically, blood-cells were usually present. Intestinal parasites were not found. Aerobic and anaerobic plate cultures were made from the rectum and stools at different times, and every colony that grew was tried with the blood-serum of the host in 1 to 10 dilutions. A few of the cultures showed well-marked agglutination. These organisms were also obtained from the intestine postmortem, and are described in the bacteriology of the case. Aerobic and anaerobic agar plate and blood-serum cultures from the blood taken three months before death, remained sterile at the end of 48 hours in the incubator. Nausea and vomiting were occasional symptoms in the case. The tongue was coated in the center with a whitish fur and the edges were red and contained several ulcers. About two weeks before death an irregular intermittent fever developed and continued throughout the remainder of the disease (terminal infection), sometimes reaching 101°, but more usually from normal to 99.5°. Death occurred in March, 1901. Diagnosis, chronic specific (bacillary) dysentery, general condition of sprue.

Postmortem Examination.—Necropsy 11 hours after death. Moderate rigor mortis and postmortem lividity. Body markedly emaciated. Slight general icterus and darkish, pigmented areas around the nipples. Mucous membrane of the mouth, of a dull yellowish color, and shows a number of small superficial ulcers. Sides and tip of tongue similarly ulcerated. Subcutaneous fat scanty and edematous, and the intercostal muscles normal in color. The heart weighs 210 grams. There are numerous small, discrete, punctate, pericardial hemorrhages scattered over the left side of the heart and over the right auricular appendage. The muscle is very pale and soft, and shows fragmentation of its fibers. Small postmortem clots in both right chambers. The valves appear normal. The coronary arteries are smooth and patulous; arch of the aorta normal. Both pleural cavities are dry and free from adhesions. Both lungs are somewhat voluminous and are moderately edematous.

All the tissues of the abdominal cavity are slightly jaundiced and edematous. The omentum is atrophied and contains but little fat. Adipose tissue is in general very scanty; there are no adhesions and the appendix is normal. The mesenteric lymphatics along the large intestine measure from 2 to 4 mm. in diameter, and are a little hyperemic; those along the small intestine are not visible. The retroperitoneal glands are slightly enlarged. The spleen weighs 420 grams. The surface is smooth, dark in color, and the organ is quite soft. There are a number of small, discreet, punctate hemorrhages just beneath the capsule. Cut sections show a decided increase of soft, dark red pulp, and the structural markings are obscure. The kidneys weigh 360 grams. They are of normal firmness, and capsules are not adherent. The surface vessels, especially the stellate veins, are a little injected. Cut sections are pale in color; pelvis and ureters normal. The liver weighs 2,100 grams. The surface is smooth and pale; no hemorrhages. Cut sections have a pale, yellowish, greasy appearance. The gallbladder and ducts are normal. The pancreas is normal. The stomach contains considerable mucus, and there are numerous small hemorrhages in the lower portion of the mucous membrane, which is in general pale, roughened and mammillated.

The small intestine shows a number of well-marked dilations and contractions, and its walls in the dilated areas are exceedingly thin. The lumen contains a moderate quantity of viscid, tenacious mucus and fecal material. The folds in the upper portion are well marked, but lower down they are partially—and in places entirely—obliterated. The mucous mem-

brane is markedly atrophied, pale and structureless. The Peyer's patches are a little swollen and dark in color, but show no hemorrhages nor ulcerations. The solitary follicles are a little swollen, pale and quite firm.

The large bowel shows a few dilations and contractions, and presents in general a similar appearance to the lower portion of the small intestine. In a few places there is apparently some infiltration of the walls.

Microscopic Examination.—A few embryonic *Strongyloides intestinalis* are seen in the contents of both the small and large intestine. The postmortem blood-serum in dilutions of 1 to 10 does not agglutinate *Bacillus typhosus*, but in the same dilutions it agglutinates *Bacillus dysenteriae* in 15 minutes. No malarial parasites nor pigment in the spleen.

Anatomic Diagnosis.—Chronic specific dysentery. General condition of sprue (marked emaciation and anemia; ulceration of the mucous membrane of the mouth, tongue and esophagus, and atrophy of the intestinal mucosa). Edema and congestion of the lungs. Acute splenic tumor. Fatty degeneration of the heart and liver, and cloudy swelling of the kidneys.

Bacteriology.—Agar plate cultures made from the heart, spleen, liver, large and small intestine, all show numbers of colonies at the end of 24 hours in the incubator. Every colony that grew out, was planted on glucose agar, litmus milk and bouillon, and was tried for reaction with the postmortem blood-serum of the host in 1 to 10 dilutions. The large majority of the cultures are not agglutinated and belong to the colon group, in that they ferment glucose, acidify and coagulate milk, and produce indol. As these bacilli show no definite reaction with the serum of the host, no further attempt to work them out was made. Some of these cultures show an indefinite grouping with a time limit of 40 minutes to an hour, but not more than is often seen with colon bacilli and the serum of healthy individuals.

The cultures which are agglutinated are, without exception, actively motile bacilli, and in this respect seem to form a class. One colony from the heart, two each from the spleen and liver, six from the small, and four from the large intestine, show well-marked reactions. These colonies are culturally identical, and are also apparently identical with cultures obtained from the rectum and stools during life. They are regarded as a variety of the colon bacillus, and answer briefly to the following description: The colonies, morphology and staining reactions do not differ from those of ordinary colon bacilli. The growth is moderately luxuriant and produces a frothy, cloudy appearance in the water of condensation of solid media and in sugars. All sugars are fermented, glucose and mannite abundantly, lactose and saccharose to a less extent. Litmus milk is pink at the end of 24 hours, decolorized in four or five days, and in two weeks decidedly blue again. Indol is not usually produced, though when grown for a time in artificial media, this substance is occasionally found in old cultures. It is pathogenic for Manila rats, mice and young cats when injected in the abdominal cavity, but was fed to cats by the stomach, and given as high enemas in large quantities, without producing diarrhea or intestinal lesions. No definite blood-serum reactions could be obtained with it and the serum in cases showing the symptoms of sprue.

CASE VIII.—The patient arrived in the Philippine Islands in the latter part of 1899, in good health. Health remained good until February, 1900, during which month he suffered with moderate attacks of acute diarrhea. In June, intermittent malarial fever developed and was promptly cured with quinin. On July 1, 1900, a severe attack of acute dysentery developed, the patient passing from 15 to 25 bloody mucous stools in 24 hours, accompanied by violent tenesmus, slight pyrexia, and other symptoms of acute dysentery. The acute process lasted about one week and gradually developed into a subacute and finally into a chronic condition. At times there were periods of marked improvement, when the patient performed military duty, but from July 1 until his death on January 27, 1901, he never had a normal passage from the bowels. The number and character of the stools varied somewhat with the habits and diet of the patient.

When admitted to the First Reserve Hospital in November, the patient was extremely emaciated and anemic. Temperature 100°. The temperature before admission was reported normal, after admission to this hospital it was irregularly intermittent, usually ranging from about 99.5° to normal, though there were a few exacerbations at the last, in which the temperature reached 102°. At other times it was recorded so low as 97°. There was no relation between the number and character of the stools and the exacerbations of temperature. At the time of admission to this hospital the symptoms were those of sprue, as described. Sore mouth, sore tongue (with ulcerations), dyspeptic symptoms, "characteristic diarrhea," extreme emaciation, anorexia and anemia were all present and remained until the end. Respirations and pulse were in proportion to the temperature. Slight morning cough was present, the sputum contained no tubercle bacilli, and physical examination of the chest was negative. At times the stools contained mucus, but in general were typical sprue stools.

Microscopically, no intestinal parasites could be found, but red blood-cells were usually present in small numbers. The serum gave no agglutinative reaction with *Bacillus typhosus* nor with stock cultures of colon bacilli. Colon from the host

not tried. The serum, however, gave repeated positive reactions with *Bacillus dysenteriae*.

Postmortem Examination.—Necropsy 11 hours after death. Rigor mortis and livor mortis present. Body extremely emaciated and skin very pale. There are a few cutaneous ecchymoses scattered over the abdomen. In the right lower lip, near the angle of the mouth, there is an old, dirty, sloughing, gangrenous area, about 1 cm. in diameter. The mucous membrane of the tongue and mouth is pale, and contains several small superficial ulcers. Subcutaneous fat is exceedingly scanty and the intercostal muscles are pale. Apparent age 27 years; length of body 139 cm.

The heart weighs 180 grams. The muscle is normal in color but quite soft. There are a number of small discrete hemorrhages scattered over the right auricle and left ventricle, just beneath the visceral pericardium. The arch of the aorta, coronary arteries and valves appear normal. Both right chambers of the heart contain postmortem thrombi. The pericardial cavity contains 60 cc. of straw-colored fluid. Both lungs and pleural cavities appear normal. The abdominal cavity is free from adhesions. The omentum is atrophied and contains very little fat. The sustentacular tissues are very scanty and there is no visible subserous fat. All the tissues have a dull, bluish-white, edematous appearance. The mesenteric glands are slightly swollen, very pale and quite firm; the appendix is normal. There is moderate injection of the subserous vessels along the ileum.

The spleen weighs 210 grams. It is quite firm, surface smooth, and normal in color; no hemorrhages nor perisplenitis. Cut sections show very little, if any, increase of pulp; structure is well marked and appears normal. The kidneys weigh 300 grams; surfaces pale; capsules nonadherent and no marked injection of the surface vessels. Cut sections are very pale and show slight congestion of the bases of the pyramids. Pelvis and ureters normal. The liver weighs 1,260 grams. The surface is smooth, pale, and the organ moderately soft. Cut sections show chronic passive congestion (nutmeg) and early parenchymatous change. The gallbladder is moderately distended, with a dark, granular, semiliquid bile, and the ducts are patent. The pancreas is pale and quite firm; no hemorrhages nor areas of necrosis. The stomach contains an enormous amount of mucus, and shows numerous old and fresh superficial hemorrhages of the mucous membrane, which is somewhat swollen. The mucous membrane of the esophagus is swollen and congested throughout and contains a number of small superficial hemorrhages and two old, dark pigmented areas, which probably represent old ulcers.

The small intestine presents no dilations nor contractions. The peritoneal coat over the ileum shows a number of dark pigmented areas, which correspond to swollen and congested Peyer's patches. The wall is pale and possibly somewhat thin, though there are numerous areas in which it is of normal thickness, or even thicker than normal. The mucous membrane is somewhat pale; but there are large areas in which it is congested, and a few places which show superficial hemorrhages on the summits of the folds. The Peyer's patches are a little swollen, dark and congested, but show no ulcerations nor hemorrhages. The solitary follicles are not visible. The valvulae conniventes are not obliterated. The lumen of the bowel contains a considerable quantity of pale, granular, fecal material, containing a moderate amount of mucus, and in the lower portion is streaked with blood. In the upper portion of the jejunum there is a small number of *Uncinaria duodenale* hanging to the mucous membrane.

The walls of the large intestine are slightly thickened and there are no dilations nor contractions. The mucous membrane is swollen, congested, and in some places hemorrhagic. There are numerous very small, superficial necroses capping swollen solitary follicles. There is no diphtheritis. The bowel contents are liquid, pale and granular, containing some mucus and a few blood-cells.

Microscopic Examination.—Adult parasites and ova of *uncinaria* are found in the intestinal contents; no other intestinal parasites demonstrated. The postmortem blood-serum in 1 to 10 dilutions promptly agglutinates *Bacillus dysenteriae* and shows no reaction with *Bacillus typhosus*.

Anatomic Diagnosis.—Chronic specific dysentery (swelling and superficial necroses of the solitary follicles of the large intestine; swelling and congestion of the mucous membrane; agglutination of *Bacillus dysenteriae* by the postmortem blood). Gangrenous ulcer of the lower lip. Chronic gastroenteritis. Chronic ulcerative stomatitis and esophagitis. Chronic passive congestion of the liver. Fatty degeneration of the kidneys. Cloudy liver and heart muscle. *Uncinariasis* (slight).

Bacteriology.—Agar plate cultures from the heart, liver and gallbladder, and spleen show a pure culture of streptococcus. Cultures were not made from the intestine.

Cases IX, X, XI, XII and XIII were very similar to Cases VII and VIII, and will not be described in detail.

The foregoing series of 13 cases, which came to autopsy, all showed more or less complete clinical pictures of sprue, and yet there was shown the existence of other diseases. Two of the cases were of chronic nephritis, three were of amebic dysentery, one was of tuberculosis, and seven were of specific or bacillary dysentery.

Similar results were obtained in the study of clinical cases.

AMEBIC DYSENTERY WITH SPRUE.

Perhaps in no other disease, are the sprue symptoms so often seen, as in amebic dysentery. In fact the clinical description of a typical case of sprue forms a good description of many cases of amebic dysentery of long standing. Amebic dysentery existed and was probably the cause of death in three of the 13 cases described, and in clinical work it is found to exist in a much larger proportion of sprue cases. The number of deaths among American soldiers in Manila, at this time, is not a good indication of the mortality of this affection, for as soon as amebas are found in a patient's stools, he is usually sent to America, where better opportunities for recovery are offered.

There are at present 5 patients in the wards of this hospital (Army and Navy, Hot Springs, Ark.), having symptoms of sprue. They are all soldiers who have served in the tropics. The mouth, stomach, and intestinal symptoms are all present, and well marked. Microscopic examination of the stools of these patients, however, show large motile amebas in all. In one patient, who died recently, after 2½ years' sickness, the lesions of amebic dysentery were present. Ulceration of the tongue and esophagus, and atrophy of the mucous membrane of the stomach and small, and upper portion of large intestines were also present.

Some errors in diagnosis may be attributed to a lack of appreciation of the action of amebas. The term dysentery as ordinarily understood, is misleading. The symptoms in the average case are more those of diarrhea and even this symptom may be absent in the early part of the trouble. The action of amebas is insidious, producing a disease essentially chronic from the first. Clinically, cases of apparently acute amebic dysentery are sometimes seen, but at autopsy the lesions of a long-standing trouble are found. A patient who was admitted to the First Reserve Hospital in Manila, with what was thought to be acute amebic dysentery, died on the seventh day. He was an intelligent man, and stated most emphatically that he had never suffered from bowel trouble. His stools had often been soft, but he had never, previous to the present attack, passed more than two in 24 hours. Amebas were numerous in his stools, while in the hospital. At autopsy there was found advanced ulceration of the colon, and one ulcer had perforated, resulting in general peritonitis. There were present old thickenings and adhesions that must have been months old. The early lesions are not seen after death, except in patients who have died of some intercurrent affection.

An absolutely positive diagnosis can be made only by finding amebas in the stools, and this is not always an easy undertaking. In suspected cases, and in all cases giving the clinical symptoms of sprue, persistent daily examinations of the stools may be required before finding amebas. In one case, in Manila, showing the symptoms of sprue, the stools were carefully examined for six days (two of the days after a saline), before amebas were found; and yet so far advanced was the disease in this patient that death occurred eight days later from peritonitis following perforation of an ulcer in the colon.

[To be concluded.]

Medical Laboratory.—Contracts have been awarded by the trustees of the University of Pennsylvania for the erection of a medical laboratory building on the site now occupied by the abandoned buildings of the Veterinary School, west of Thirty-sixth street on the south side of Hamilton Walk (Pine street). The cost of the new building will approximate \$600,000 and it is claimed that in design, accommodations, and equipment it will be the most complete institution of its kind in the country. The purpose of the laboratory is to give to students in medicine the fullest opportunity for practical work in physiology, pathology, and pharmacodynamics and to encourage to the fullest extent, original investigation and research.

OLD COMPOUND DEPRESSED FRACTURE OF FRONTAL BONE INVOLVING THE FRONTAL SINUSES.

BY

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of San Francisco, Cal.

Brux, Hon. F.R.C.S., Ed., Fellow Med. Chir. Soc., London; Visiting Surgeon to St. Mary's Hospital.

John Conway, aged 23, a teamster and a native of Ireland, was admitted to St. Mary's Hospital, August 16, 1901. He was discharged recovered September 17, 1901.

Two years prior to admission the patient was thrown from a horse and dragged, having become entangled in some of the harness. He sustained a compound depressed fracture of the frontal bone. He had the wound dressed, and it apparently healed, but nothing was done to raise the depressed bone. About six months afterward the part began to swell, and pus formed, which found its way to the surface; after discharging for some time it healed again, and from this time he had no further trouble. He now seeks some operation for the relief of the scar and depression. He presents the following condition: About one inch above the glabella is a broad cicatrix extruding outward on each side for about three-fourths of an inch with the extremities turning downward; the frontal bone in this side is depressed, the maximum of depression being at the center of the cicatrix mentioned, the upper limit is $1\frac{1}{2}$ inches above the glabella.

The man was put on the table August 17, 1901, and anesthetized. An incision was made along the lower edge of the scar extending beyond in the horizontal direction for about half an inch. Another incision was made along the upper edge of the scar for the same length, but meeting the lower incision at the extremities; the cicatrix was now removed. The superior flap was then dissected until the upper edge of the fractured bone was found. The break entered the upper point in a semicircle, meeting the superciliary ridges on each side a little external to the supratrochlear notches. The fracture had in places been united by bone, in other parts by fibrous tissue. A sharp, double-beveled chisel was used to free the depressed bone which was incised at about an angle of 45° downward and forward. In this way the whole of the depression was raised including the periosteum and skin over it. The sinuses were now plainly seen, and it was found that the septum had been fractured and broken off. Upon removing the elevator the parts immediately fell to their old positions. It now became a question how to hold the bone in place. I concluded that if I could get a spring to rest against the posterior bony wall of the sinus where the septum should have been, the difficulty would be overcome. I therefore wound a piece of strong silver wire into a spiral spring having a diameter of about half an inch; this I placed in the cavity, and brought the bony flap down to it. It answered admirably. The periosteum around the edge of the bony incision was carefully sutured with catgut, the skin being similarly treated with horsehair. A dry aseptic dressing was applied and carefully sealed. This was not removed for several days, when it was found the wound had healed by first intention. The horsehair sutures were removed on the fourteenth day. When the man left the hospital the old deformity was not apparent, the scar being a lineal one.

THE RESPONSIBILITY OF THE GENERAL PRACTITIONER IN DISEASES OF THE NOSE AND THROAT.

BY

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of Philadelphia.

The progress which has been made in medicine during the past quarter of a century has evidenced itself in no one department, not excepting surgery, so markedly as it has in the study of the diseases of the nasopharynx. The pathology of the morbid conditions affecting the nose and throat has more than kept progress with this branch of science in general medicine, while the special therapeutics and surgical procedures have been marked by fortunate recoveries and brilliant results. The etiology of nasopharyngeal diseases is the only branch of the study which has unfortunately received but comparatively little attention. And indeed this apparent neglect is due in large part to the fact that these pathologic conditions or deformities have existed for some time before they are presented for treatment. The demands upon the time of the busy general practitioner, which he must devote to the study of the almost daily new discoveries in the field of general medicine, permit

him but little opportunity to investigate any new methods of treatment or surgical technic in this or any of the other exclusively special branches of medical practice. He is, therefore, compelled either to resort to antiquated and almost forgotten methods or to secure the assistance of one who has had clinical advantages and opportunities in this special field. It is the purpose of this paper to direct the attention of the general practitioner to some of the more common causes of the diseases and deformities of the nose and throat which he may prevent by timely and suitable measures.

From the hour of birth too little attention is given to the care of the nasal mucous membrane. Ophthalmologists have insisted that the obstetrician shall use all precautions to prevent infection of the eyes, by bathing them with a mild antiseptic solution as soon as the child shall have been delivered. The newborn infant, however, is permitted, before the severance of the cord, to lie upon a bed infected with fecal or vaginal discharges, where the first spasmodic attempts at inspiration cause to be inhaled this infecting material to which both the attending physician and nurse pay but slight attention. Jacobi is among the few who have called special attention to the care of the respiratory apparatus during delivery. He says, "The respiratory organs of the fetus while passing out of the vagina, must be protected from contact with the copious discharges of liquor amnii and other foreign material accumulated in the bed, the face being raised so that aspiration, mostly through the nose, cannot take place." It is from the neglect of these precautions, beyond doubt, that the attacks of rhinitis, so frequent in the newborn, are due, or at least it is a predisposing factor in causing the hyperemia of the nasal mucous membrane upon slight exposure.

Fortunately for humanity the days of the midwife and neighborhood nurse are almost past. To this class many of the deformities of the nose are attributable from the practice which many of them followed of "moulding" that organ. Within a few hours after birth, strenuous efforts were frequently made by these individuals, or perhaps by an overzealous grandparent, to make the nose conform more to the shape of one or the other parent's or that of some other favored member of the family. This practice, more barbarous than the foot-binding of the Chinese, consists either in compressing or elongating the nose to the desired shape with the thumb and fingers, and often retaining it in position by artificial means. By this method the bones are compressed, the delicate tissues lacerated, and injuries resulting in permanent deformities are induced. The nurse and young mother should also be cautioned in the use of soaps and dusting powders. While cleanliness is absolutely necessary in the rearing of healthy children, highly perfumed soaps or those containing an excess of alkali are to be avoided. Frequently in performing the ablutions of the infant, soapsuds are drawn into the anterior nares and so irritate the membrane as to cause an oversecretion and the possible formation of pus or act as a mild escharotic. Many of the dusting or toilet powders contain starch in some form which, if it be inhaled, either forms irritating, dry, hard cakes, occluding the nostril and impairing respiration, or is acted upon by the mucin of the nasal secretions, the resulting fermentation of which is liable to cause a simple chronic catarrh, with permanent tissue changes.

As the infant advances to early childhood there appears to exist an almost uncontrollable desire on his part to introduce foreign substances into the nostrils. The majority of these are promptly removed by the parent, and but little injury results. But the act of inspiration, as well as the moistened condition of the parts, facilitates the progress of these bodies toward the choanae, where they are difficult to see and not readily removed, even by the physician, unless he is constantly trained to such operations. After a time the mucopurulent discharge from the nostril will direct attention to

the part, and frequently after an operation of considerable magnitude, considering the tender age of the subject, the offending cause is removed. Or if the nose becomes tolerant and respiration is not entirely cut off, a rhinolith will form, which by the attraction and deposition of the salts from the nasal secretions grows rapidly, producing all the grave symptoms and attendant impairment of the form and functions of the organ.

At all ages there exists liability to injury of the nose from blows and falls, but in childhood the means of recreation and enjoyment naturally predispose to such accidents. A peculiarity of such injuries is that, at the time of occurrence, the degree of external deformity is rarely commensurate with the amount of damage to the internal structures. This is partly due to the resulting edema and emphysema and to muscular action. Casual examination of the interior of the nose at this time will not reveal the extent of the damage, since a marked hyperemia rapidly takes place. After the subsidence of these symptoms union of the fractured parts will have occurred and serious deformity result. It cannot be too strongly advised, therefore, that in all such cases careful examination, both visual and digital, should be made and the child kept under observation for a considerable period. Indigestion, constipation and intestinal parasites are frequent and potent factors in inducing both anatomic and functional changes in the nasopharyngeal tract. Mouth-breathing, while it is most often due to adenoid growth in the pharyngeal vault, is frequently induced as a habit from these causes. These physiologic and pathologic changes are produced not alone through the disturbances of the vasomotor system but by the alteration in the character of the blood itself and the tendency toward increased exudation. Kyle has said: "Intestinal irritation and chronic constipation may cause the nasopharyngeal mucous membrane to become thickened and congested, and even the veins to present a varicose condition." As these constitutional conditions affect the alteration in function through their systemic influences, so the presence of adenoid vegetations, by the impairment of respiration and the local interference with circulation, may produce equally serious results. It behooves us, therefore, to promptly recognize and at once remove these growths lest the practice of mouth-breathing and the facial deformities become established. The parted lips, the protruding eyeballs, the irregular and prominent teeth with the illformed superior maxillary arch, the alteration of the lines of facial expression due to contractions of the muscles induced by forced dilation of the nostrils, all present a picture that is met too frequently, and it is a subject, the responsibility for the existence of which, it is not difficult to place. In the majority of cases of syphilitic infection little or no attention is given to the nasopharyngeal mucous membrane until the individual directs the notice of the attending physician to the existence of some specific lesion in this location. While prompt local treatment may prevent destructive tissue changes, yet the greater number, in spite of such treatment, progress to perforated septum, necrosed turbinates or cicatricial obstruction of some portion of the tract. Preventive medication before the occurrence of nasopharyngeal involvement, either by means of a mild antiseptic wash or the application of a mercurial oil, would lessen the liability to these unfortunate complications.

It is the daily practice, or, to be more charitable, the habit, of the vast majority of mankind, to perform the toilet of the nose with the aid of the finger. Apart from the possibility of injury to the tissues and the liability of infection, this method is both unpleasant and unsightly. The prevalence of this custom is due in part, no doubt, to the fact that physicians, and more especially those who are interested in the special study of the nose and throat, have considered the subject of too little importance to direct the attention of their patients to the necessity of any other sanitary and more

cleanly method of freeing the nares from thickened and dried mucus or accumulated dust. Many of the milder forms of disease may be cured and very many more prevented by simply instructing patients to wash the nose twice a day with warm water. After this practice has become established, as the brush and mouth-wash are used in the toilet of the teeth, the pocket handkerchief will be all-sufficient to keep the parts free from all irritating material. When it can be employed, a mixture of aqueous extract of hamamelis, cinnamon water and rose water in equal parts, to which has been added two to four grains of boric acid to the ounce, will be found both pleasant and beneficial. About half an ounce of this mixture, added to an equal quantity of warm water, may be drawn from the hollowed palm of the hand through the nostrils and expectorated. Such daily treatment of the nasopharyngeal membrane would in a comparatively short time lessen to a great degree the number of intranasal operations. While it is recognized that there are many other systemic conditions both directly and indirectly responsible for anatomic alterations and functional impairment of the nasopharynx, still the more common abuses and neglects have been enumerated and their correction will, beyond doubt, be productive of beneficial results.

SPECIAL ARTICLE

THE DANGERS TO THE PUBLIC HEALTH AND MORALS, ESPECIALLY TO YOUNG PERSONS, FROM QUACKERY AS PROMULGATED BY PUBLIC ADVERTISEMENTS.¹

BY

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A quack is "one who pretends to skill or knowledge of any kind which he does not possess."—(Century Dictionary). Public advertising does not, of itself, constitute one a quack, in the proper meaning of the term; but as a rule, the physician who resorts to this method, either begins by pretending an ability not possessed, or early develops into a full-fledged quack, for he soon finds that mere pretense on his part is quite as fruitful of financial returns as the actual possession of all claimed ability. Therefore, the temptation is too great to be resisted by ordinary human natures. With a full quota of the universal desire for gain on the one hand, and a notoriously gullible public upon the other, the doctor who resorts to public advertising at all, usually succumbs, and even pretends to the impossible so well as the attainable. The public is credulous, and will believe the unreasonable as readily as the reasonable, at least to the desired end of the quack, which is to induce them to part with their money in the hopes of obtaining relief or cure. Neither may ever be obtained, but the quack is nevertheless as much the gainer financially as if they were actually wrought. Nor in event of failure does his reputation suffer in consequence, for he has only a manufactured or claimed one, that is exactly in proportion to his pretensions, and the manner and extent of the public advertisements through which he heralds himself. To cite one instance by way of illustration, and in proof of these assertions, we will take the case of the notorious Gun Wa Company of a few years ago.

I selected this case: First, because of its remarkable success, and therefore its great prominence, which was secured through the same means by which all advertising quacks obtain patronage, namely, the use of printer's ink: their degree of success depending both upon amount and judiciousness in its use, and on that alone. Second, I personally investigated the case, and know these representations to be true. Third, the records of the United States District Court can be adduced to prove it.

¹This essay received the prize of \$25, offered last year by the Colorado State Medical Society for the best essay on the above subject, over numerous competitors.—COMMITTEE ON PUBLICATION.

The head and proprietor of the Gun Wa combination was the owner and manager of a gambling house in Pueblo, Colorado. He had in his employ, in the capacity of general scrubber and spittoon cleaner, a Chinese coolie, on a salary of \$3.50 a week. Being a shrewd schemer, and knowing the gullibility of the public, he conceived the idea of dressing this Chinaman in the most imposing oriental garb, and advertising him as the celebrated Chinese doctor, "Gun Wa." In 24 hours, after last scrubbing the floor of the gambling den, this great and only Gun Wa was in Denver, 120 miles north of Pueblo, attired in full oriental costume, and occupying most gorgeously furnished office apartments, posing as a great and just-arrived Chinese physician. His expected coming had been heralded through the press of Denver and other cities most profusely, and his ability to cure all manner of diseases was pretended to be so great, that the spacious waiting-rooms of the coolie laborer were filled to overflowing, long before the beginning of his regular office hours.

Gun Wa held undisputed lead at Denver and other places, over all advertising quacks for some two years or more, because his manager spent more money for advertising than all competitors, and we were reliably informed that it was no unusual thing for his daily office receipts to run up into the thousands. Yet he displayed the magnanimity, mainly because he had no diploma or examination certificate, to give examinations and advice free, only charging for the medicine furnished. During his short professional career he was probably the most thoroughly advertised quack ever known. But he was only a tool in the hands of his manager and owner who was certainly an adept as an advertising agent.

But the business grew so prosperous in a little while in Denver, and so many people came from a distance to consult the great Mongolian, that it occurred to this enterprising gambler to "Gun Wa," Omaha, Dallas, Salt Lake City and San Francisco. So, keeping one Gun Wa in Denver, whether the original or not, is of no moment, he hired as many other Chinamen as he needed, and it was not long until Gun Wa was everywhere, at one and the same time. The thing was finally so overdone, the one and only Gun Wa was doing business and was personally present at so many different places, and in so many different states, at one and the same time, and so freely using the United States mails to further his ends, that the Federal authorities took the matter in hand and suppressed the omnipresent Gun Wa. But the laws of Colorado, Nebraska, Texas, Utah, and California were impotent; and, had Gun Wa not appeared in person in so many different states synchronously, nor infringed upon the postal laws of the United States Government, he might, until now, have been holding forth in all his whilom glory, at Denver, or at any other town in any other state in this country.

It is scarcely worth while to comment further upon this case, yet one can hardly avoid some few reflections. Think of the hundreds and thousands, and among them many of the most intelligent people from different states, who, during the prevalence of the Gun Wa mania, thronged the offices, and would sit for hours in the reception rooms of this almond-eyed coolie, waiting their turn to be ushered into the august presence of the so-called great Gun Wa, conceived and born for their special regalement in the resourceful brain of the enterprising gambler. Though visited by thousands upon thousands during his halcyon days, and at that time in the thoughts and upon the tongues of everyone who had an ailment, it would be difficult now to find a baker's dozen who would acknowledge having been taken in by this egregious fraud.

What induced them to do it? Certainly not any real benefit ever obtained by anybody in fact, for the truth of the matter was, as is now well-known, that this so-called Chinese doctor was totally ignorant of any and everything pertaining to medicine, occidental or oriental, and that the so-called medicines dispensed were nothing more than inert powders.

Nothing under the blue canopy of heaven induced them to do it but the pretended knowledge and skill promulgated through public advertisements. There is absolutely no ground for any other conclusion. The degree of pretended knowledge and skill as made known most volubly and profusely through advertisements in the public press was simply unbounded. Certificates of miraculous cures were obtained galore from all classes of people and published with a liberality that constituted the Gun Wa enterprise a regular bonanza to the newspaper men.

It is an unhealthy state of affairs when all manner of false pretenders are so facilitated in their nefarious schemes, and it presents a dark picture upon the social canopy of every community, more especially when we consider that it is done by authority, and under the protection, of the laws of our land,

abetted and encouraged by the secular and religious press of the country. To show the comparative value of the press as an advertising medium, we can do no better than quote the language of that able writer, Charles Hopkins Smith, of the Hartford (Conn.) *Courant*, who, in a lecture recently delivered by him on "How to Make a Newspaper," said: "Imagine yourself agent to canvass Hartford for the sale of any article, however desirable. How are you going to get at the public? Mail them circulars, and the postmen groan and the wastebaskets in our ten thousand homes give each a weary yawn, and the circular disappears unread. Call upon people and explain the merits of your wares? How are you going to get in? The sign, 'Our Busy Day,' hangs in big letters in business offices; in private houses you must ring the bell. Oftenest you are turned away. If you get in by any shrewd excuse, you cannot get beyond the hall or reception-room. You are quietly watched there in the interest of overcoats and umbrellas, and when you explain your errand you are speedily restored to the outer air. But put a cleverly worded advertisement of those same wares in a newspaper that has an established circulation in the city's homes and business houses and see what happens. You couldn't get in there yourself, but your advertisement is there on the breakfast table, in the library, in the parlor, in the sewing-room, and when everybody is inquiring for the paper which can't be found, it is very likely doing duty on the quiet in the kitchen. It is all over the house and wanted there. You were not. Similarly at the office it is read and reread, and part of the use of the 'Our Busy Day' sign is to get the chance to read the papers. The advertisement thus started is taken right into the family life and business life."

Taking a fair survey of the whole field of quackery there is no phase of it that is so far-reaching in its dangerous effects upon the public morals as that branch of it that is promulgated through public advertisements. In his multiform ways of attracting public notice the advertising quack is peculiar. He does not scruple to resort to any scheme or method to call the public's attention to himself or his nostrums. By the flaming handbill or poster, the leaflet or pamphlet, or by aptly-worded advertisements in the secular or religious press, he obtrudes himself upon the notice of everybody, and too frequently in manner and language not fit for the eyes of any decent man or woman. I will only consider one of the many hobbies of the advertising quacks, but one of their many chimeras of disease to catch the unwary, namely, that one familiar to all which they refer to in flaming headlines as "lost manhood." Who has not read such advertisements both in the secular and religious press, and in such papers seen something of their description of the symptoms and results of "lost manhood," caused by what they claim "self-abuse" or "early indiscretions?" Now, what is there to call this forth? Simply that the exceptions are rare in which young men have not committed self-abuses to a greater or less extent. These matters, I confess, belong to the "unmentionable errors of life" which I would more than gladly ignore in this paper could I do so in justice and honesty, but the importance, nay, I might say sacredness, of interests at stake will permit of no such nicety. It will be enough for me to say that those of the medical profession whose lines of practice constitute them the best judges are of the opinion that self-abuse is very widely practised. This fact the astute advertising quacks know also, and grasping the situation they utilize it for all it may be worth to their business, not for the good of the erring, but to the unholy ends of money-getting, even though they may incidentally injure, perchance ruin, their victims.

There is scarcely a person whose physiologic or healthy existence has not occasional interruptions, either from dietary indiscretions, physical and mental overtax, or from exposure to unhealthy atmospheres or surroundings. The symptoms of any and all such passing indispositions are carefully described by these advertising quacks, and falsely charged to the account of self-abuses, with familiar comments upon what they will lead to if the sufferer does not early seek the one and only cure, the secret remedy of the particular quack so advertising. The young man sees these advertisements. He, in fact everybody, has some of the symptoms described, at least at times. He

begins to reflect upon his "early indiscretions," and knowing himself to be thoroughly guilty, is easily led to imagine himself a sure victim of "lost manhood." He writes to the advertising quack—most usually under an assumed name, for purposes of secrecy (for he is ashamed)—and the specially prepared literature follows. He reads the chimerical stuff that is forthcoming, and continues to brood over his condition. He compares his symptoms with those which the advertiser so cunningly describes as due to self-abuses, and becomes convinced that he is thoroughly in the toils of "early indiscretions." He boldly enters the gilded parlor, so to speak, of the professional spider, and though he does not realize it, every effort at promised relief only further entangles him in the astutely woven web of the moral aranea. If any are doubtful of the truth of this, let them take up a secular or religious paper containing such advertisements, open a correspondence with the advertiser, who usually promises a free treatise on the subject, read all the literature which he will furnish them from time to time, and then stand forth, if they can, in denial of these statements. I think after such personal experiences, and that is the only fair way to investigate it, any skeptic would be ready to exclaim that the half had not been told, that the facts had been understated rather than overdrawn, and that no language or combination of languages was sufficiently rich in descriptive adjectives to anathematize too severely the professional turpitude of these moral perverts.

If every parent in this country could be made to fully realize what they are aiding when they admit to the family circle the average secular and religious papers of the day they would stand aghast at their own stupidity. Though ever so careful of the associations and indulgences of those whom God has entrusted to them, they frequently are guilty of placing in their hands, from day to day and week to week, enough satanic venom, only hidden by thin veneerings of a pretense at decency, to thoroughly nullify the consummation of all such parental hopes. Their studied efforts to protect their children from a precocious knowledge of the unmentionable filths of life "gang aft agley" before the daily and weekly advertisements contained in the secular and religious papers which they admit to their family firesides.

Once thoroughly in the toils, it is hard to reclaim a young man from the thralldom of quackery, for having been led by these press advertisements to clandestinely correspond with the quack doctor, he is thoroughly convinced from the literature conveyed to him from time to time that he is truly a victim of various private ills. This would be the case even though the parents ascertained the cause of their child's decline, which they rarely, or never, do.

It is the common experience of the regular profession to find it difficult to convince the young man who has once fallen a victim and prey to these medical sharks, of his mistake, and dissuade him from further following them in their wily methods of maintaining their hold upon their subjects; these masters, who by shrewdly playing upon their guilty imaginations, continue to further injure and drain them of their money. These remarks only hint at some of the most extreme injuries wrought by the advertising quack in his unbridled efforts to entice his victims into the labyrinths of delusion for the sole and only purpose of rendering them willing and easy prey for prolonged and continuous robberies. The quack whose advertisement is in the daily and weekly papers, secular and religious, which the parents placed in the hands of their own child, is a monster of injury to, and in some cases the utter ruin of, untold numbers of the youth of the United States of America alone. God only knows the full measure of harm that is being wrought everywhere by these multidamnable excrescences.

We may analyze this subject *ad nauseam*, and speculate upon remedies *ad infinitum*, but when resolved into its component parts, we will find that we have money and money-getting pitted against the morals and health of the community. Upon the money-getting side there is the advertising quack, the secular and religious press, together with all persons, in high places or low, from the ecclesiastic with a large cargo of pseudo-piety to the obscure prostitute, from United States Senators and Representatives, and Governors of the states, to the hodcarrier and washerwoman of the land, who in exchange

for a little money, will give certificates laudatory of the wonderful curative powers of the various nostrums of the advertising quacks. The scriptural aphorism that "The love of money is the root of all evil," is strikingly apt here. It is the desire for money-getting that induces the advertising quack to embark in the enterprise; it is the money paid by these quacks which induces both the secular and religious press to give a space in their advertising columns to these pretenders, and it is money which buys the so-called certificates of gratitude, so pictorially published, from the high officials and so-called ministers of the gospel down to the poor washerwoman.

On the other side we have the youth of the land, whose health and morals are in continual menace and jeopardy from quackery, as promulgated by public advertisements. Thorough and drastic legislation in every state in the Union is the only remedy to limit and control such impositions. The question is how to get this. I was recently told by a nonmedical friend that only a few years ago the physicians of the State of Massachusetts raised a campaign fund among themselves of some \$20,000 for the purpose of securing needed legislation to limit quackery as practised in that state. But the result was, that when the committee on legislation arrived at the assembly halls, they met an opposition committee, backed with \$250,000, subscribed by quackdom.

Always bearing in mind the predominant fact that the fight is between money and money-getting on one side, and the public health and morals—especially of young persons—on the other; and carefully reviewing them all for points of vantage in a campaign of education against the cohorts of quackdom, there is nowhere that we can so safely hinge our *point d'appui* as in the hearts of the honest and educated physicians of the land.

It is the duty of every true physician to work actively in the cause, and by every means in his power endeavor to teach the individual as well as the public "the dangers to the public health and morals—especially to young persons—from quackery as promulgated by public advertisements."

The effect of cigaret smoking on schoolboys has been investigated by Professor Ogg, superintendent of the Kokomo (Ind.) schools. He reports that out of 1,300 boys from the first grade through the high school the 400 addicted to cigaret smoking are two years behind the others in their studies. Whether the dull mind is due to the smoking or the cigaret is the accompaniment of an idle disposition Professor Ogg does not decide.

Honor Conferred.—Dr. Samuel G. Dixon, President of the Academy of Natural Sciences, has been elected to honorary membership in the French National Society of Natural Science and Mathematics, in recognition of Dr. Dixon's services to the scientific world in his labors in bacteriology. It is said that an article by Dr. Harper published in the London *Lancet* in December, 1901, detailing some experiments with tubercle bacilli on lines discovered by Dr. Dixon and Dr. Urea in Paris four years ago brought about the conferring of this honor.

Jefferson Hospital.—Plans have been accepted for the new seven-story fireproof building which will be erected at Tenth and Sansom streets on the site of the old college structure. This operation has been projected for several years and when completed will afford the center of the city unsurpassed hospital facilities. A roof-garden for convalescents will cover the entire main building. Connected with the hospital by a courtyard will be the J. M. Da Costa clinical laboratory and amphitheater, which will be a gift to the institution from the alumni of the college and the friends of Dr. Da Costa. When the new hospital is completed a building will be erected on the old site for the maternity hospital and nurses' home.

The Tuberculous Poor.—A committee consisting of Drs. Henry P. Loomis, Edward G. Janeway and Alfred Meyer, appointed by the Academy of Medicine at the request of Commissioner Homer Folks, of the Charities Department, to report concerning the tuberculous patients in the city hospitals recommend emphatically that Blackwell's Island be used only for advanced cases of tuberculosis, and in their opinion the buildings there could be adapted for the purpose. The old Manhattan State Hospital has been made available, and has room for 80 more patients beside the 120 which have been brought there from the Bellevue, the City Hospital and the Metropolitan, where they were in contact with the nontuberculous. It is said there are about 25,000 cases of tuberculosis in the city of New York and the majority of the sufferers too poor to afford treatment or even to die in a warm or cheerful place. There is urgent need for separate provision for both incipient and advanced cases.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 1, 1902. [Vol. xxxviii, No. 9.]

1. The History of the Invention and of the Development of the Ophthalmoscope. HARRY FRIEDENWALD.
2. Hermann von Helmholtz: the Inventor of the Ophthalmoscope. CASEY A. WOOD.
3. A Few Personal Recollections of Helmholtz. HERMANN KNAPP.
4. The Contributions of Helmholtz to Physiology and Psychology. WINFIELD HALL.
5. The Debt of Otology to Helmholtz. B. ALEX. RANDALL.
6. Contribution of Helmholtz to Physical Science, Especially with Reference to Physiologic Optics, Including the Dynamics of Eyeball Movements and of Accommodation. ARTHUR W. GOODSPEED.
7. Examination of a Genitourinary Patient by the General Practitioner. FERD. C. VALENTINE.
8. The Unveiling of the Cell. LEWELLYS F. BARKER.

1.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 498.

7.—See AMERICAN MEDICINE, Vol. I, No. 11, p. 481.

8.—**The Unveiling of the Cell.**—After touching on theories of strictures and physiologic units, Barker notes the importance of distinguishing sharply between the constituents of living and dead cells. There is a growing belief in the polymorphism of protoplasm. Some claim the methods of microscopic cytologists do nothing toward solving the problems of living organisms. This is gross injustice. The advantages of a study of microchemic reactions is not dwelt upon enough. Confusion has arisen with regard to the meaning of the word organization. Some have hypothesized a machinelike organization of the ultimate constituents and others a chemic organization. The truth may lie in compromise. Progress is being made just now in applying the laws of physics and chemistry to cell life. The partition between organized and unorganized ferments has fallen. The specificity of their action concerns a certain spatially arranged group of atoms in the molecule corresponding to a related group in the ferment. Some still hold that the enzymes are simply nonmaterial centers of energy. The chemic theory is strengthened by the demonstrated reversibility of ferment action. The affinity of toxin for antitoxin is explained by corresponding configuration of atomic groups. Ehrlich's theory is stated at length. The application to biology of the laws to which the phenomena of osmotic pressure, chemic equilibrium and of substances in various conditions of aggregation conform, is being crowned with unusual success. Researches in artificial parthenogenesis illustrate the value of conceptions of osmotic pressure and electrolytic dissociation in revealing the secrets of cell life. [H.M.]

Boston Medical and Surgical Journal.

February 27, 1902. [Vol. cxlvi, No. 9.]

1. Five Maine "Murders." ADDISON S. THAYER.
2. The Significance, Pathologic and Clinical, of Abdominal Pain. MAURICE H. RICHARDSON.
3. Some Points of Value in the Diagnosis of Disease of the Abdominal Organs. HENRY JACKSON.

1.—**Five Maine "Murders."**—Thayer quotes a statement of the legal criterion of responsibility which is the mental power to distinguish between right and wrong in regard to the particular act at the time it was committed. Five cases are recited at length. If the next homicide which occurs in an insane hospital were investigated in court the sickening cruelty of the only proper legal criterion might become evident to the courts. It seems strange that Maine courts should in this matter assume for themselves the predetermination of fact. They in effect charge juries that no mental disease exists, that there can be no cerebral defect which destroys power of all self-control, liberty of will and action, provided only the accused retains a mental consciousness of right and wrong. [H.M.]

2.—**Significance of Abdominal Pain.**—Pain is the earliest symptom of practically all acute abdominal lesions. Upon early recognition of its significance and prompt surgery depends successful treatment. Lesions are divided into those fatal in a few hours, a few days, a few weeks, or months, and those in which there is no urgency. Each class is discussed at length with the following conclusions: Sudden pain should not be masked with opiates before seen by the surgeon. History, symptoms and signs must be carefully considered. Thorax and abdomen must be examined. In suspected hemorrhage the

abdomen should be explored, preliminary salt infusion being made in cases of collapse. In excruciating pain with abdominal signs of infection explore at once. The seat of initial pain is a good guide to incision when in doubt. When the rarer abdominal lesions are suspected exploration should nevertheless be made. The genuineness of pain should be tested as thoroughly as possible. The pain of atypic typhoid, pleurisy and pneumouia must be guarded against as well as confusion of pain from functional disturbance with that of organic disease. When in doubt explore. When exploration is unjustifiable control pain by morphin, hypnotics or general anesthesia. [H.M.]

3.—**Diagnosis of Abdominal Disease.**—In doubtful cases explore. Even when operation is impossible, exploration decides the treatment, which may be morphin, to relieve the pain. No symptom is less reliable than pain. Susceptibility is most varied. Distress and discomfort in the previously healthy is of graver import than acute pain. The seat of pain is of little value. In appendicitis pain is usually at the umbilicus or epigastrium. In severe lesions absence of pain may be the result of shock. Pain is usually the first sign of perforation but nausea and vomiting are of greater importance, and are rarely absent in acute disturbance of the peritoneum. In distinction to the hebetude of febrile conditions there is bright mental condition, anxious facies, limited excursion of the diaphragm. Patients usually lie still with bent knees. Irregularities suggestive of tumor should be searched for. Aortic pulsation below the umbilicus is always suggestive; it is not transmitted through ascitic fluid. Look for peristaltic movements in intestinal obstruction. A mass that can be taken between the two hands is subcutaneous, not abdominal. Tenderness as distinguished from pain is of paramount importance in diagnosing acute inflammatory processes. Spasm clinches the diagnosis. It is evident under full etherization, as it is reflex, not voluntary. In differentiating between thoracic and abdominal disease, determine the line of dullness under both expiration and full inspiration. In obstruction the diagnostic importance of an empty rectum, especially with the finding of blood, is emphasized. Blood-count is important in differentiating typhoid and appendicitis. [H.M.]

Medical Record.

March 1, 1902. [Vol. 61, No. 9.]

1. Some Varieties, Complications and Sequels of Smallpox as Noted in the Norfolk Epidemic of 1898-99. LEMUEL C. SHEPHERD.
2. Follicular Tonsillitis. ROBERT CURTIS BROWN.
3. A Case of Presenile or Angiosclerotic Gangrene Precipitated by Influenza. THEODORE B. BARRINGER.
4. Discoveries in Pathology. MARY DIXON JONES.
5. Report of Five Cases of Ulcer of the Esophagus, Diagnosed as Pulmonary Tuberculosis. MARK I. KNAPP.

1.—Varieties, Complications and Sequels of Smallpox.

—The notes are based on about 1,000 cases. Variola in all its forms is entirely distinct from varicella. The typical varieties are varioloid and discrete and confluent variola, but in many cases the form is not sharply defined. In abortive forms the pocks may stop short in the papular or vesicular stage, drying on the fifth day; or may pass rapidly through all phases of development, or may be extremely discrete. Discrete variola probably has a longer incubation period than the confluent variety. In a variety described as "corymbosa" the pustules are confluent in patches, with intervals of unaffected skin. In several cases on exposed parts after scabbing began, the bases became red and indurated, the solid part of the pocks remained, continuing to grow and resembling warts, and were hard to reduce. This occurred in those with a tuberculous diathesis. Conjunctivitis was present in 10% of the cases, corneal ulcer occurred twice. Marked ptialism was seen several times, one man expectorating two or three pints daily. Enlarged submaxillary glands, boils and pneumonia occurred a few times. In some cases the pustule began to spread peripherally on the eleventh day, the cause of this secondary eruption seeming to be pyogenic infection. Bad cases were complicated with pharyngitis or laryngitis. In one colored patient the scars were pearly-white instead of black. [H.M.]

2.—**Follicular Tonsillitis.**—The exudate has no texture and is nonadherent. It is a hypersecretion of the tonsil itself,

enforced by inflammatory products. One of the functions of the tonsil is to resist infection. Follicular tonsillitis may be caused by any irritation, the most common being some pathogenic germ. It complicates almost all infectious diseases. Tonsillitis is neither the cause nor effect of rheumatism, but is produced by the same germs, the faulty elimination of the toxins of which causes the rheumatism. Germs invading the body by the tonsil overexcite its function, producing a follicular tonsillitis, the severity of which depends upon the virulence of the infection and the ability of the lymph corpuscles to overcome it by their bacteriologic action. Thus one often escapes the original disease by having a follicular tonsillitis. Diphtheria does not always commence on the tonsil, but follicular tonsillitis never commences anywhere else. *Bacillus diphtheriae* may be present in the latter just as in a healthy buccal cavity. Is it fanciful to suppose the lymph corpuscles develop a toxin antagonistic to diphtheric toxin, yet in this activity cause a follicular tonsillitis? That tonsillitis, unlike scarlet fever, etc., does not protect from subsequent attacks, shows a radically different nature. Antitoxin is given 10 times in follicular tonsillitis to once in diphtheria. When *Streptococcus pyogenes* is the cause, diagnosis is very difficult. The exudate should be removed by dry swab or peroxid spray. Calomel and sodium salicylate are the best eliminatives. [H.M.]

3.—Angiosclerotic Gangrene from Influenza.—The case is described in detail with the microscopic findings. The lesion was circumscribed with a healthy main artery putting the case in a separate class, the surgical treatment of which is decidedly different from that of the usual form. The conditions found were advanced panarteritis with complete occlusion of the large vessels and advanced intestinal neuritis. The attack of influenza afforded an impulse sufficient to precipitate the thrombosis in arteries which, from the nature of the lesions found, had been damaged long before. There was no specific history, but the results following the exhibition of iodid and mercury suggest a specific origin. Low operation, followed by hot sand baths and bandaging with 95% alcohol, resulted in a condition still satisfactory eight months later. [H.M.]

5.—Ulcer of the Esophagus Diagnosed as Pulmonary Tuberculosis.—The symptoms of esophagitis, pain between the shoulder blades or behind and along the sternum are often interpreted as "reflex." A hemorrhage from an esophageal ulcer is bright red. The stomach tube causes irritation and circular contraction, hence it cannot be passed. Of course one must be sure of dexterity in handling it. An ulcer and innocent bronchitis may coexist leading to wrong diagnosis. The presence of tubercle bacilli in the sputum does not prove the hemorrhage has come from the lungs. Ulcer of the esophagus is comparatively frequent, and in hemorrhage the esophagus should be searched by a competent man. [H.M.]

New York Medical Journal.

February 22, 1902. [Vol. LXXV, No. 8.]

1. A Critical Review of Some of the Recent Literature of Tuberculosis. JONATHAN WRIGHT.
2. General Anesthesia and Its Administration in Throat Surgery. M. L. MADURO.
3. Twenty-three Consecutive Cases of Appendicitis Treated by Operation, with Recovery. WILLIAM C. WOOD.
4. On the Identification of the Cardiac Neuroses, with Special Remarks on the Nomenclature. JAMES K. CROOK.
5. Practical Pharmacy for the Physician. EDWARD T. HARGRAVE.
6. The "Poultice Method" of Healing Cutaneous and Subcutaneous Abscess Cavities. M. B. HUTCHINS.
7. The Management of the Tendency of the Upper Fragment to Tilt Forward in Fractures of the Upper Third of the Femur. RUSSELL A. HIBBS.
8. Cretinism. WALTER SANDS MILLS.

1.—The recent literature of tuberculosis is reviewed by Wright, who says that while any regulation which does not materially interfere with the personal liberty of the patient is to be cheerfully accepted, he does not believe the present state of our knowledge warrants us in enforcing rules requiring the isolation or serious discomfort and annoyance of tuberculous patients. He regards the strengthening of the individual index of resistance as of much greater importance and much more easy of attainment. [C.A.O.]

2.—General Anesthesia in Throat Surgery.—Maduro says that in operations of short duration ether, preceded by

nitrous oxid, is the safest and best anesthetic, and, barring special contraindications, should be the one selected by the throat surgeon. In using nitrous oxid as a preliminary to ether, the following points should be observed: (1) The valves of the gas apparatus should fit accurately, thereby establishing the certainty of a rapid exit of atmospheric air from the lungs; (2) a certain amount of rebreathing of nitrous oxid should be allowed at the end of its inhalation, in order that a longer gas, and a shorter ether anesthesia can be obtained; (3) the transition to ether should be accompanied by a rather free amount of admixture of air through the various inlets in the apparatus without removing its face-piece; (4) the head of the patient should be well drawn back, and forward pressure made on the jaws, at the time of the transition to ether, so that the airway may be increased to its utmost. The actual time necessary until the patient is ready for operation, averages five minutes. This method is especially applicable to the extraction of adenoids and enlarged tonsils. [C.A.O.]

3.—Appendicitis.—Wood reports 23 consecutive cases of appendicitis treated by operation, with recovery. The accompanying table shows how little either duration of attack or severity of symptoms can tell us as to the actual condition of the patient. In one case at the end of 14 hours from the beginning of the attack, an operation was performed, a pelvis full of pus evacuated, and a perforated appendix removed; while in another case the patient had been sick for a week with scarcely a rise of pulse and temperature, there was no pain, and the only serious symptom was an excessive tenderness on pressure over the region of the appendix, which, on operation, was found to be absolutely rotten. He emphasizes the fact that the surgical treatment of appendicitis is the safe treatment, and that the physician who still clings to the idea of there being a medical treatment of this disease is risking valued lives. [H.M.]

4.—See AMERICAN MEDICINE, Vol. II, No. 18, p. 680.

6.—The "poultice method" of healing cutaneous and subcutaneous abscess cavities is advocated by Hutchins. The method consists in applying over the opening of the abscess a poultice of flaxseed meal, made with 3% carbolic, instead of plain water. A thin cloth or gauze layer may be put next to the opening. Nothing is put in the abscess cavity, which is simply emptied of pus by pressure—through a small opening—if not already open. The poultices are changed as often as cleanliness or dryness requires. Several cases successfully treated by this method are reported. [C.A.O.]

8.—Cretinism.—Mills discusses this subject and reports at length a case in a woman of 26. Her condition appeared normal until when 4 or 5 years of age she seemed to stop growing, and the mind made no further progress. Later she became very stout and presented all the characteristics of a cretin. At the age of 21 she had been placed on some form of thyroid treatment with good results, but treatment had been discontinued, and she had retrograded to some extent. The author placed her on thyroïdin, 5 grains, once daily; this was increased to 5 grains three times daily. After 10 months' treatment she had gained in height, the features were more clearly defined, she walked better and had improved in many ways, but the mental condition remained about the same. [C.A.O.]

Medical News.

March 1, 1902. [Vol. 80, No. 9.]

1. Suturing the Head of the Humerus to the Acromion in Old Subcoracoid Dislocation. CARL BECK.
2. Diphtheria; with Special Reference to the Symptoms and Treatment. LAWRENCE T. ROYSTER.
3. Acute Pelvic Suppuration; Its Conservative Treatment. JOHN O. POLAK.
4. Ventrofixation; a Suggestion. VICTOR C. PEDERSEN.
5. A Case of Leukemia, Preceded by Mucosanguinolent Colitis and Physiologic Leukocytosis. G. W. MCCASKEY.

1.—Suturing Head of the Humerus to the Acromion in Old Subcoracoid Dislocation.—Carl Beck reports that six months ago a man of 43 suffered a dislocation at the right shoulder joint, and was treated by a druggist. Later he came under the author's care. A skiagraph showed an old subcoracoid luxation. The various attempts at reduction having failed arthrotomy was performed and reduction accomplished. There

being a tendency for the luxation to recur, a hole was drilled through the acromion process and through the head of the humerus, ligatures passed through these holes and tied firmly, held the bones in place. [A.B.C.]

2.—Diphtheria.—The etiology and symptoms are discussed. In treatment antiseptics are useless, as they cannot penetrate the membrane, and removal of the latter is inadvisable, leaving a raw surface for fresh infection. Irrigation with salt solution at 110° to 130° F. three or four times daily is advised, and the technic described. The heat alleviates the inflammation. Early diagnosis and large doses of antitoxin are the important factors. The initial dose should be 2,000 units, repeated in 24 hours if improvement is not marked. In severe cases, 3,000 units may be given to children, and 4,000 to 5,000 to adults. Stimulation is next in importance; whisky is best. Morphine is advised for restlessness. Tracheotomy is superior to intubation only when the membrane has extended lower than the intubation tube. Bronchopneumonia occurs oftenest after tracheotomy. As a rule the child can drink from a cup, but when this is impossible, it may nurse from a bottle while in a reclining posture with the head lower than the body. [H.M.]

3.—Acute Pelvic Suppuration.—The irreparable damage which continued suppuration can inflict upon the several pelvic organs of a woman is well known, yet few appreciate the simple and effectual means that we have for the arrest of these ravages. There are two classes of pelvic inflammations: the first, cellulitic and peritonitic lymph effusions, in which absolute rest in bed, light catharsis, rectal irrigation and application of ice or poultice over the seat of the pain will usually cause spontaneous resolution and gradual absorption of the exudate; second, pus accumulations in the tubes, broad ligaments, ovaries and pelvic peritoneum, in regard to the treatment of which Polak makes the following statements and claims: (1) Early diagnosis in pelvic suppuration is imperative; (2) when the diagnosis is made, operate; (3) the vaginal operation is the one of choice; (4) when it is done early, with strict asepsis, it is curative and may preserve the function of the woman's organs; (5) it improves the patient's condition, makes subsequent operations easy, prevents rather than causes adhesions; (6) it may be used for diagnosis in obscure cases without shock or injury to the patient (if aseptically performed); (7) finally, this operation may be applied to every acute suppurative condition within the pelvis. [W.K.]

4.—Ventrofixation.—Pedersen suggests a method of performing this operation which obviates the necessity of passing directly through the linea alba, as its after union is not of the best. The details are these: (1) Exposure of the sheath of the rectus through a median cutaneous incision two or three inches long; (2) strong retraction of the skin to one or the other side; (3) opening the sheath of the rectus about three-quarters of an inch from the median line; (4) liberal loosening of the rectus from its sheath and retraction of it as far outward as possible; (5) opening of the peritoneal cavity; (6) loosening of the peritoneum behind the linea alba; (7) search for large vessels at this point; (8) passage of the sutures as follows: The median edge of the peritoneal wound is seized with forceps and the needle is introduced half an inch away from the middle line; it is next carried through the uterus, emerging beyond the median line on the opposite side; it is then passed forward through the peritoneum, previously loosened as described, and then through the linea alba sufficiently deep to secure a firm hold; the two ends are then seized in an artery clamp; the other suture is passed in the same way and both are tied, so that the knot is extraperitoneal; (9) suture of the peritoneum; (10) restoration of the rectus to its sheath; (11) ordinary layer sutures close the rest of the wound. [A.B.C.]

5.—Leukemia Preceded by Colitis and Physiologic Leukocytosis.—The points of importance in the case are the long-standing mucosanguinolent colitis, associated with catarrh of the small intestine. This and the leukocytosis recognized before the appearance of myelocytes raises the question of etiology. That intestinal disease may be causative is not a new belief, but the order of events has rarely been so definitely established. Something more than toxemia and malnutrition of intestinal origin is necessary for the production of leukemia.

There must be a special vulnerability. While the clinic picture is one of general infection, there is no available evidence for assuming specific infection. [H.M.]

Philadelphia Medical Journal.

March 1, 1902. [Vol. IX, No. 9.]

1. Two Cases of Adiposis Dolorosa; One in a Man, Complicated by Epilepsy; Another in a Woman, Presenting Also Circinate Retinitis. F. X. DERCUM.
2. A Case of Ascites, Due to Hepatic Cirrhosis. Treated by Transplanting the Omentum Between the Peritoneum and Abdominal Wall; Results with Autopsy Eight Months Later and Exhibition of No Abdominal Viscera, Showing Specimen and Horseshoe Kidney. W. J. ROE and GEO. W. SPENCER.
3. The Progress of Knowledge Concerning Venom and Antivenene; A Synoptical Review of the Literature of the Past Fifteen Years. JOSEPH MCFARLAND.
4. The Recognition and Training of Mental Defectives. MARTIN W. BARR.
5. A Further Report on Cases of Tuberculosis Treated by Intravenous Injections of Sodium Cinnamate. ALFRED MANN.
6. The Ice Pack, and Its Definite Therapeutic Advantages Over Other Methods. LESLIE L. ROOS.

1.—Adiposis Dolorosa.—Dercum details two cases, one in a man complicated by epilepsy, the other in a woman presenting also circinate retinitis. The male here reported constitutes the fourth male case on record. [F.C.H.]

2.—See AMERICAN MEDICINE, Vol. II, No. 15, p. 562.

4.—The Recognition and Training of Mental Defectives.—Barr discusses the different classes and grades of mental defect, and outlines the present methods of dealing with each. Attention is called to the impossibility of carrying out these methods in the home, and the impossibility of cure; the evils of atavism, the certain transmission of inherited taint, and the absolute necessity for permanent sequestration in order to secure the greatest good for the greatest number, are discussed. [F.C.H.]

5.—A Further Report on Cases of Tuberculosis Treated by Intravenous Injections of Sodium Cinnamate.—Mann gives a further account of a series of cases which he had previously reported, and details seven new cases, all of which were subjected to Landerer's sodium cinnamate treatment. The action of the sodium cinnamate causes an immediate leukocytosis, followed by greater activity in the healing process in the diseased areas. [F.C.H.]

6.—The Ice Pack.—Roos gives a detailed account of the employment of the ice pack in typhoid fever, and its definite therapeutic advantages over other methods. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Etiology of Noma.—The discovery of the diphtheria bacillus in two cases of noma by Freymuth and Petruschky¹ was a bacteriologic surprise. Since then, however, the same discovery has been made in numerous instances. Thus Walsh² reported no less than eight cases; and recently, Sailer³ found the organism in two cases of noma complicating typhoid fever. The most recent observation upon the subject is that of Traumbusti⁴ who, in a case of spontaneous noma, involving the nose, lip, and jaw, found a hitherto undescribed organism. In form, it was a short bacillus with rounded ends, none-motile, and staining by Gram. It grew upon all media—best at the body temperature. It was pathogenic for laboratory animals. By passage through animals, its virulence could be much enhanced, so that it killed a rabbit weighing 1½ kilos in less than seven hours. Injected alone, either subcutaneously, intraperitoneally, or intravenously, it caused death by septicemia, without producing gangrene; when, however, it was introduced into the mucous membrane of the mouth and nose, where it came into contact with the common bacteria of that cavity, there was distinct gangrenous necrosis.

¹ Deutsche med. Woch., 1898, Nos. 15 and 38.

² Proceedings of the Pathologic Society of Philadelphia, New Series, Vol. IV, 1901, p. 179.

³ Proceedings of the Philadelphia County Medical Society, New Series, Vol. III, November 1901.

⁴ II Polliclinico, Vol. IX, January, 1902.

Trambusti's communication is, however, too brief to permit of a definite judgment as to the nature of the organism discovered by him. That the diphtheria bacillus bears a distinct relation to many cases of noma has been proved by the beneficial effects of antitoxin injections. Even in the absence of a bacteriologic examination, in cases of cancrum oris and of noma elsewhere, it is advisable to use injections of diphtheria antitoxin.

The Ubiquity of Bacillus Coli Communis.—The ubiquity of *Bacillus coli communis* has now been so well established that its presence in water can no longer be considered as an absolute indication of fecal contamination. Papasotiriou,¹ for instance, has found that the bacillus is constantly present in flour, and is frequently demonstrable in grain, such as wheat, maize, rye, oats, and barley, and in pease and beans. *Bacillus coli*, he concludes, is the cause of the working of leaven, a phenomenon hitherto attributed to a hypothetical organism called *Bacterium levans*. The presence of the bacillus in water in small numbers is of no diagnostic import whatever, but if large numbers are found in perfectly fresh water it raises the suspicion of fecal contamination. The thought should, however, be borne in mind that the waste of bakeries carries into the water large quantities of *Bacillus coli*. There is every evidence, also, that the organism can multiply in water if certain favorable conditions, such as temperature and the presence of carbohydrates, exist.

The Agglutination of the Tubercle Bacilli and the Value of This Agglutination.—Koch,² after experimenting with the methods of Arloing and Courmont in producing agglutination of tubercle bacilli, has partially succeeded in perfecting a method of his own which he hopes will be of material aid in the treatment of tuberculous patients. Although no positive results have as yet been attained, he has been able to produce a serum which possesses an agglutinative value of one to 3,500. As a diagnostic factor he has found this serum of practically no value, tuberculin being still the best means of detecting the presence of tuberculosis. As a therapeutic agent, however, it promises to be of value. The blood of patients in the first stages of tuberculosis appears to acquire readily a high agglutinative power—a condition which lasts for a long time. Curiously enough, this phenomenon does not hold good in the later stages of the disease, the reaction gradually lessening in intensity with the progress of the malady. Koch finds that with the artificially induced agglutinant faculty, a corresponding production of protective bodies occurs in the blood, thus rendering the patient in some degree immune, as witnessed by the increase in appetite and weight, the lessening of night-sweats, abnormal respiratory phenomena, bacilli in the sputum, febrile symptoms, etc., in patients thus treated. [H.H.C.]

Treatment in Tuberculosis.—Ewart³ thinks that in the pyrexial, subpyrexial or chronic cases, the open-air treatment is not the shortest way to a cure. Many are at first ill-suited to it, and need preliminary hospital treatment for bronchitis, catarrh, caseation and suppuration. Injections of protargol, 1½ to 2½ grains in saline solution are recommended, either daily or on alternate days, for clearance of bacilli from the tissues. Ichthyol is the remedy which will most rapidly influence catarrhal complications. [H.M.]

Treatment of Hysteria.—Tesorpf⁴ points out that bodily derangements in the hysteric, such as anesthesia, hyperesthesia, muscular weakness, functional disturbances of glandular activity, etc., do not necessarily depend on psychic conditions, but that the latter are often dependent on the former, and that therefore local bodily (mechanic) therapeutics, gymnastics, massage and various hardening processes, that have been found so efficacious, are rational modes of treatment. [J.C.S.]

Cancer and Malaria.—Löffler made the suggestion that cancer might be combatted by the inoculation of malaria. The suggestion was based upon an old belief that a cancerous

patient loses his tumor upon recovery from malaria. In order to throw some light upon this question, Kruse¹ has studied the malaria and cancer statistics of Italy, and found that, despite the great distribution of malaria, cancer is just as common in Italy as it is in Prussia, where paludism is one of the rarest diseases. Climatic influences seem also to be of no moment. The only factor that appears to have any influence is that of race. Cancer is more common in northern than in southern Italy, and there is a marked ethnologic difference between the inhabitants of these two sections. Those of the south are small in stature, have small heads, and are deeply pigmented. In Central Europe, there is also an increase in cancer toward the Alps. This accords with the anthropologic view that there was an Alpine race which has helped to stock Northern Italy and Southern Germany. If the belief of Löffler that cancer is less frequent in the tropics than elsewhere is confirmed, the reason will probably be found, not in the action of malaria, but in a congenital (relative) immunity of tropic races toward cancer. Further studies upon this subject are eminently desirable. [D.R.]

Inoculation of the White Rat With Human Cancer.—Mayet² reports that out of 54 experiments in infecting the white rat by injections of cancerous materials, he has secured 5 positive cases, 7 doubtful and 42 negative cases. [C.S.D.]

Soft Chancre and Syphilis.—Finger³ gives a brief historic review of the various doctrines held as regards the etiology of venereal diseases and the contention between their defenders. The identity theory, refuted by Ricord, as well as the nonvirulistic theory of blennorrhea received their final death-blow, by the discovery, 22 years ago, of the gonococcus; and although the syphilis microbe has as yet escaped detection, the discovery by Ducrey in 1889 of bacillus of chancroid put an end to the unitarian chancre theory. But while we are now certain that a sore in which Ducrey's bacillus is found is chancroidal, we must not, therefore, be too sure in our diagnosis and exclude syphilis. Such a sore, making its appearance shortly after exposure to contagion, will in its course frequently change into the initial true syphilitic lesion to be followed by all the stages of syphilis. In these cases, which are not uncommon, we have to deal with a mixed contagion. One can, therefore, never be too guarded in diagnosis and prognosis. Serious mistakes of this kind, unpleasant to both physician and patient have often been made. The author denies that soft chancre inoculations have any curative influence on syphilis, an old long since exploded theory recently revived by Tederu. [J.C.S.]

The Treatment of Epilepsy.—Brower⁴ regards the careful investigation of convulsions in infants with an inherited neurotic tendency of great importance for this may be the first manifestation of epilepsy. The antecedents of the child should be carefully looked into, as congenital syphilis, rachitis and cerebral hemorrhage are often obscure causes difficult to detect. Children thus affected should be watched as to mental strain, the use of tea, coffee, narcotics and alcohol, and sexual abuses. A careful system of mental and physical development should be imposed, which can not be found in the public schools. The choice of an occupation must be made subservient to the child's physical and mental welfare; an outdoor life is most desirable. The prevention of posttraumatic epilepsy requires immediate and skilful treatment of injuries to the head; surgery done at once may prevent what surgery years hence cannot eradicate. When an aura is present, prevention of individual seizures can often be accomplished by instant measures, such as a perle of nitrite of amyl, or a cord or ligature tightened immediately about a limb, if this be the location of the aura. As to treatment and return seizures, individual oversight of diet is most important. Meat should be allowed, but the whole diet should be minimized in quantity. The amount of sugar should be lessened. The complete elimination of salt from the diet has furnished remarkable results. A milk diet is sometimes indicated. Hydrotherapy is of great value and the majority of cases profit by some form of gymnastics. A galvanic current applied to the cerebral region is also of value, and should be used daily. [H.H.C.]

¹ Archiv f. Hygiene, Bd. xli, Hft. 3, 1902.

² Deutsche medicinische Wochenschrift, November 23, 1901.

³ Medical Press and Circular, September 25, 1901.

⁴ Münchener medicinische Wochenschrift, January 14, 1902.

¹ Münchener medicinische Wochenschrift, November 26 1901.

² La Semaine Médicale, December 25, 1902.

³ Wiener klinische Wochenschrift, January 9, 1902.

⁴ The Medical Age, June 25, 1901.

Tuberculous Laryngitis.—Thomson¹ notes that in the majority of cases the focus of infection is in or near the crico-arytenoid joint, and many patients present themselves at a stage when cure by local measures is impossible. Lactic acid applications are unfavorably criticised. Many measures which have been tried in this affection have only distressed the patient and thereby hastened the disease. Early diagnosis is most important, and suspicious laryngeal catarrh should be treated seriously on even a presumptive diagnosis by modern sanatorium methods, and in addition silence should be enjoined proportionate to the degree in which infiltration interferes with the arytenoid joint. Symptomatic treatment should be directed to irritative, catarrhal or obstructive conditions of the air passages. [H.M.]

New Theory Regarding Diphtheria.—Schanz,² who since 1894 has strongly defended the theory of identity of the xerosis bacillus, the pseudodiphtheria bacillus of Löffler and Hoffmann, a saprophyte always present in the conjunctival sac, and the genuine diphtheria bacillus, which only differs from the others in its virulent toxicity, refers to the new theory of Behring, according to which the diphtheria bacillus is ubiquitous and may at all times be found on the mucous membranes of every one, but that only those sicken who have not the necessary quantity of antitoxin in their blood. According to Wassermann and others most persons are thus protected, though the blood of the newborn is usually antitoxin free. The author mentions that Neisser and Kahnert have found large quantities of antitoxin in the blood of those who have never had true diphtheria, but who have been under the influence of atypical diphtheric diseases, in which both toxic and nontoxic Löffler bacilli were present on the mucous surfaces, as in chronic atrophic rhinitis and dry pharyngitis (usually classed as ozena). Experiments have proved that the blood of such patients is rich in antitoxin and affords protection against diphtheria. [J.C.S.]

The Toxins of Tuberculin.—Arloing and Descos,³ after suppressing the acute intoxication following the injection of tuberculin in guineapigs, have demonstrated the existence of a particular toxicity which is not destroyed by the addition to the tuberculin of two or three volumes of antituberculin; this they attribute to the presence of toxins. [C.S.D.]

Chronic, Nongonorrheal Urethritis.—L. Walsch⁴ reports five cases (one in detail) of this affection, which he finds characterized in general by (1) its long period of incubation, in one case eight days; (2) its exquisitely chronic course; (3) the comparatively slight subjective and objective symptoms; (4) the complete absence of gonococci in the discharge at all stages of the disease; (5) the great difficulty experienced in bringing about a complete cure, even with the latest and most modern methods of treatment; and consequently (6) the unfavorable prognosis with regard to duration and final cure. [H.H.C.]

Opticosensory Aphasia.—Rosenfeld⁵ details the case of a youth of 23 who had received a blow upon the left parietal region. When he recovered from his unconsciousness, which lasted only a few hours, speech and vision were disturbed. The parietal portion of the skull on the left side, between the temporal and occipital bones, was depressed. There was slight facial paresis on the right side. There was no paralysis of the limbs, but the right hand became easily fatigued. In the left eye the retina was detached. There was no hemianopsia, or mind-blindness, but a peculiar form of aphasia. The patient had command of a large number of words, but occasionally omitted some in speaking, particularly concrete nouns. He could recognize the elementary qualities of objects placed in his hands, but not their more definite character. Thus, when a bottle, an iron or wooden ball was given to him, he said glass, iron, wood, but could not with eyes either open or shut, name the object. There was also alexia, as well as agraphia. The ability to write numbers on dictation alone remained. Writing and printing he copied, but without any comprehension. The patient could recognize a watch when he

heard it tick, but not by touch. This and other cases show that opticosensory aphasia can be combined with tactile aphasia (astereognosis). [D.R.]

Pneumococcus Arthritis.—Raw¹ reports seven cases of pneumococcus arthritis, occurring among 817 patients suffering from pneumonia, of whom four recovered and three died. Reference is made also to the occurrence of a slight redness and pain in the shoulder-joint of the side affected and which subsides with the crisis. The joint affection may precede the lung symptoms, or follow the crisis, or develop intercurrently. Alcohol seems to decide in great measure the severity of the attack and the prospect of recovery. The only treatment is thorough evacuation of the pus if it can be reached. [A.O.J.K.]

Manganese Dioxid Intoxication.—Emden² describes as follows the symptoms of intoxication met in workers in manganese dioxid mills: General weakness and inability to do heavy work; paresis of various muscular groups without apparent atrophy; increased muscular tension, especially of the facial muscles (mask-like expression) with inability to whistle; disturbances of gait, especially in turning and simultaneous movements of the arms; retropulsion in complicated movements; tremor of the trunk in forced positions; "action-tremor" in movements requiring exact coordination and some force (especially noticeable in writing); low, uncertain and monotonous articulation, which is distinctly "bulbar;" sometimes stuttering; occasionally mild paresthesia and pain in the lumbar and crural regions; and often uncontrollable fits of laughing. The psychic and reflex functions are always intact. The intoxication closely resembles in many ways the symptom-complex of multiple sclerosis, but should be differentiated without special difficulty. The treatment is practically limited to a removal of the patient from work in the manganese dioxid mills. [H.H.C.]

Urea in Tuberculosis.—A. H. Busch³ says by far the greater proportion of mankind provide a fit soil for the germs of acute specific fevers, whereas only a small minority are capable of developing in their tissues the tubercle bacillus. This is due to some vitoechemic combination which creates immunity to any ordinary dose, as everyone of us has been exposed. In contradistinction to antitoxins, this must be something neither harmful nor foreign to the human organism. The immunity of the gouty led Harper to use urea. That urea is decomposed in the process of absorption and assimilation, and that its nitrogen is retained in the body can be ascertained only by analysis. Buch's satisfactory clinical results from its use are illustrated in the history of seven cases. [H.M.]

The Nature and Treatment of Pernicious Anemia.—McPhedran⁴ believes that pernicious anemia is probably due to a toxin of gastrointestinal origin, that this affects not only blood destruction inducing rapid hemolysis but also blood formation resulting in the formation of abnormal corpuscles. The blood formation is atypical, and therefore to be attributed to pathologic irritation, rather than to excessive physiologic stimulation. The other changes met, especially those in the spinal cord and the peripheral nerves, are probably produced by the action of the same irritant, rather than as the result of the protracted anemia. Different reasons for believing that the cause of the disease is a toxin, and that this probably is of gastrointestinal origin, are pointed out, and reference is made to the importance that lately has been attached to the probability of infection of the stomach by secretion from diseased gums around decayed teeth. Treatment is unsatisfactory—no plan of management or treatment so far devised avails to cure the disease or even, in most cases at least, to alter its erratic course. Preference, however, is given to moderate purgation, intestinal antiseptics, and strychnin, arsenic, iron, bone-marrow, and the like. [A.O.J.K.]

Why Does Gelatin Act as a Hemostatic?—The answer to this question given by Zibell⁵ is, "because gelatin contains calcium in considerable quantities. He found this substance substance present to the amount of 0.6%." [D.R.]

¹ Medical Press and Circular, September 25, 1902.

² Münchener medizinische Wochenschrift, January 14, 1902.

³ La Semaine Médicale, December 25, 1901.

⁴ Prager medizinische Wochenschrift, Vol. xxvi, No. 48.

⁵ Neurologisches Centralblatt, May 1901.

¹ British Medical Journal, December 21, 1901.

² Deutsche medizinische Wochenschrift, November 14, 1901.

³ Medical Press and Circular, August 14, 1901.

⁴ Lancet, January 18, 1902.

⁵ Münchener medizinische Wochenschrift, October 15, 1901.

Sequels of Dysentery.—Haasler¹ contributes a paper on this subject based on clinical and postmortem observations while chief staff surgeon with the German army in China. Beside pronounced lesions of the entire colon, but most marked at the flexures, especially the sigmoid abscesses (usually small and multiple) of the liver and of the spleen, infarcts of spleen and kidneys, thrombosis of larger vessels, and inflammations of the lungs and pleura, were frequent complications. The mucous surfaces of the colon presented the most varied appearances—hemorrhagic diphtheric inflammations, all stages and forms of ulcers, occasional perforations through the wall with fresh hemorrhages, cicatrices, degenerations of the mucosa, constrictions, and appendicitis. In very few cases would surgical treatment have been of any avail, and a large number of those who survive an attack of tropical dysentery are unfitted for further service, especially in the tropics. [J.C.S.]

A Method of Quantitatively Estimating the Phagocytic Power of the Leukocytes of the Blood.—Leishman² describes a method that aims at enumerating the number of bacilli or cocci phagocytized within a definite time by the polynuclear cells of the blood under examination, obtaining an average of these values, and comparing the result with that of a control blood, preferably that of the observer, put up under identical conditions. [A.O.J.K.]

Microorganisms in the Blood of Epileptics.—M. Bora³ has examined the blood in 70 cases of epilepsy, taken either during or after the attacks, and finds present a streptococcus, of less than 1 μ diameter, either isolated or united in chains with the largest individuals at the extremities. [C.S.D.]

Nervous Exhaustion as a Cause of Autointoxication.—Von Poehl⁴ has investigated, principally by means of urinary analysis, the abnormal metabolic process occurring in the body after great physical or nervous exhaustion. These metabolic abnormalities he regards as the result of autointoxication due to defective tissue-oxidation. According to Poehl overexhaustion (1) reduces the alkalescence of the body fluids; (2) reduces the energy of the oxidation-processes; (3) increases the quantity of intermediate nitrogenous metabolic products in the body fluids; (4) decreases the osmotic coefficient of the body fluids. (1) decreases the rapidity of the flow in the uriniferous tubules; and (6) decreases the electric conductivity of the body fluids. [H.H.C.]

Thyroiditis Complicating Typhoid Fever.—Robertson⁵ reviews the literature and reports a case of simple thyroiditis complicating typhoid fever and terminating in recovery. [A.O.J.K.]

Prevention of Postmortem Digestion of the Stomach.—E. E. Glynn⁶ has arrested changes by the introduction of a 4% to 6% solution of formaldehyd six hours or less after death. This requires a screwgag, a stiff tube and a rigid retractor to hold back the larynx. Ten to 20 ounces may be used. The mucosa is decolorized, but variations in texture or density and minute ulcers are easily seen. The epithelial lining is perfect. If introduced after one or two hours the whole stomach is hardened; if delayed five or six hours only the cardiac half is preserved. The method is of great utility in studying ulcer, gastritis, dilation, pernicious anemia, fatty degeneration and atrophy. Cuts of microscopic specimens illustrate results. [H.M.]

Two cases of acute delirium ending fatally are reported by Cole.⁷ The disease is of obscure etiology, although it is presumed by some writers that microorganisms are concerned in its production. Cole believes that the toxins act autogenetically. The patients usually are predisposed to mental instability, either hereditary or acquired. [A.O.J.K.]

Acute Suffocative Pulmonary Edema.—Lissaman⁸ describes a case of this condition recently described by Steven (AMERICAN MEDICINE, February 15, p. 285). The patient has been markedly improved by the use of chloroform by inhalation. [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The results of operation for carcinoma of the lip should be of general interest for this is one of the most common forms of malignant new growth. Comparatively little has appeared in recent literature on this subject, however, it is too early for satisfactory statistics as to the permanent results of the complete operation with extirpation of the glands below the jaw, which is now recognized by the best surgeons as the proper procedure in such cases. Janowsky, of the Kaiser Nicolai II Hospital in Kiew, Russia (*Arch. f. klin. Chirurgie*, 1902, Vol. 65, H. 2, p. 329), gives the results of his experience in the treatment of 178 cases in 71 of which the after-results of operative treatment have been definitely ascertained. While the number of cases presented is not very great, Janowsky's results agree in the main with other writers who have recently discussed this subject and his article with the more complete ones of Loos who gives the statistics of 565 cases from v. Brun's clinic in Tübingen (*Beiträge zur klinische Chirurgie*, 1900, Bd. 27, p. 57), and Fricke (*Deutsche Zeitschrift f. Chirurgie*, Bd. 50), will give those interested in the subject a very satisfactory idea of the latest views in regard to carcinoma of the lip. Fricke based his paper upon 127 cases which were treated in the clinic at Göttingen. He found that 60.5% of the cases operated upon remained free from recurrence. Loos reports even more favorable results, 67% of the cases in the Tübingen clinic remaining from recurrence. Although Janowsky's paper appears two years later than those of the other two writers his results are not as favorable, only 49% of his cases being followed by permanent recovery. This may be accounted for to some extent from the fact to which he calls attention that his patients come from a less cultivated class of people who frequently neglect the most favorable time for operation. In the majority of cases all of these writers advocate the complete operation, removing the growth usually by a V-shaped incision and dissecting out the glands of the upper part of the neck. For removal of the glands of the neck Loos recommends a horseshoe-shaped incision extending below the lower border of the jaw from the angle of one side to that of the other. Through this incision when the flap has been reflected the submental and submaxillary glands can all be thoroughly removed. All of these writers are agreed that the operation is practically devoid of danger and primary healing nearly always follows. In Janowsky's series there was suppuration in one case, erysipelas in another, some postoperative bleeding in still another, and in three cases the result was not as perfect as might be desired from the stitches cutting through. Otherwise the results are considered perfectly satisfactory. In cases in which it seems necessary the operator should not hesitate to resect the lower jaw. Fricke and Loos give an absolutely unfavorable prognosis in cases in which resection seems necessary, but Janowsky has had one recovery in which the patient is now living over three years after the operation. When recurrences occurred they followed in the great majority of cases in the first six months after operation, the recurrence appearing most frequently either at the site of the wound or in the submental region. The duration of the disease before operation has an influence on the results, but this is not as great as might be at first supposed, for in certain cases of superficial epithelioma of the lip the tumor is not very malignant and may last for from two to ten years before the patient seeks operative relief. This lack of malignancy in such tumors of long duration is of course much more favorable to permanent recovery than the condition in other cases in which the disease progresses much more rapidly because of greater malignancy. In the latter cases operation one year after

¹ Deutsche medicinische Wochenschrift, January 9 and 16, 1902.² British Medical Journal, January 11, 1902.³ La Semaine Médicale, January 15, 1902.⁴ Deutsche medicinische Wochenschrift, November 14, 1901.⁵ American Journal Medical Sciences, January, 1902.⁶ Liverpool Medico-Chirurgical Journal, September, 1901.⁷ Lancet, February 8, 1902.

appearance of the growth may not give as favorable a result as after a longer duration in other cases. The disease appears most frequently at about the sixtieth year of life; the upper lip is affected 12 to 19 times less frequently than the lower lip; and carcinoma of the lip is 10 to 12 times less frequent in men than in women. There seems to be no special predisposition because of occupation.

Three points with regard to these papers deserve special emphasis: (1) The care with which the after results of operation have been looked up in such a large number of cases. It is only by keeping careful records of cases and following them for some time after operation that we can gain any reliable information as regards the results of operations. Probably there are less than a dozen hospitals in the United States where such careful record-taking and following of cases after operation is practised. (3) There are still numerous surgeons who consider it sufficient to remove an epithelioma of the lip with a V-shaped incision none too wide of the growth without any attempt at cleaning out the glands of the neck. The importance of removal of the glands of the neck is seen when we learn, as has been found from histologic examination in these cases, that the glands are affected relatively early, sometimes from two to three months after the appearance of the disease. While permanent cures sometimes result without removal of the glands, the prospects of permanent recovery are far greater if they be carefully removed. In v. Brun's clinic, where the complete operation has been done as routine since 1895, there have been only two recurrences both following removal of very extensive growths. At the time of the appearance of Loos' paper, it was impossible to state definitely what the permanent results would be in a very large series of cases because that sufficient time had not then elapsed, but as recurrences nearly always occur within the first year after operation, these results may be considered very favorable. Another matter to which Janowsky calls attention, is the importance of studying the different varieties of carcinoma of the lip. It seems that there are certain very malignant growths which progress rapidly, and without thorough removal tend to produce an early fatal result. This class of cases makes up about 25% of all those which come under observation; about 15% of the cases are sufficiently benign, so that the results are almost always very satisfactory; the remaining 60% of the cases are forms varying in malignancy from the worst cases to the most benign. In estimating the results of operation, it is very important to discriminate between the malignant and benign forms of carcinoma, and what would be considered a favorable result in one form, could not be so considered in the other. So far as we know, no one has yet undertaken to carefully distinguish the different forms of carcinoma of the lower lip. This would make a most valuable contribution from any clinic where a large number of cases are operated upon and carefully recorded.

Cure of Congenital Cleft Bladder.—Although admitting the value of Maydl's operation in which the ureters are implanted in the walls of the sigmoid flexure, Trendelenburg¹ believes that his own operation is preferable, since by its use the bladder is not only closed and made to functionate with some degree of normality, but absolute continence of urine is often attained. Trendelenburg reports three additional cases which he has treated by his method, two of which are still convalescent. In the third that of a boy of six, five operations, stretching over a period of 2½ years were necessary before a complete cure was obtained. The first operation consisted of separation of the right sacroiliac synchondrosis, the second (three months later) of freshening, loosening, and suturing of the lateral vesical walls, a small fistula being left just above the pubes, the third of partial closure of this fistula by means of

cutaneous flaps, the fourth of final closure of this fistula, and the fifth of closure of a tiny fistula just back of the glands. The child now urinates every two hours during the day, and several times during the night, about 40 cc. being voided at each period. [H.H.C.]

Penetrating Wounds of the Abdomen Treated by Cellotomy.—Fenner² reports six successful cases of operation for penetrating wounds of the abdomen, and gives statistic tables of 152 cases thus operated upon at the Charity Hospital, in New Orleans, from January, 1892, when operative intervention was first attempted, to January, 1901. At the Charity Hospital all cases are operated upon as soon as possible, except where the wound is in the upper thoracic region on the left side so that the viscera probably escape injury, and upon the right side when it seems likely that only the liver has been injured. In case of evidence of severe internal hemorrhage, operation is of course indicated. If 24 hours has elapsed since the infliction of the wound, intervention is useless, and even after 12 hours the prospect of recovery is so small as to make operation a doubtful procedure. The conditions are most favorable for operation when the stomach and intestines are empty and undistended with gas. Five out of Fenner's six patients were negroes, the sixth being a white child. In the first case, a stab wound of the abdomen, the omentum was protruding. It was excised, cellotomy was performed to examine the viscera; no injury being discovered the abdomen was closed and an uneventful recovery followed. In a second case of gunshot wound in the left lumbar region three perforations of the colon and a grazed wound of the stomach resulted. Cellotomy was performed, the perforation sutured, and recovery followed. No food was given until the fourth day. On the eighth and eleventh days there was hemorrhage from the intestines. Otherwise the recovery was uninterrupted. In a third case a gunshot wound of the right buttock penetrating the abdomen, one perforation of the bowel and one of the bladder resulted. Cellotomy with enterorrhaphy and suture of the bladder resulted in recovery. In a fourth case, a gunshot wound of the hip, penetrating the abdomen, eight perforations of the intestine resulted. The wounds were sutured and recovery followed. In a fifth case an incised wound of the abdomen was caused by a child's falling on a piece of glass. About one and one-half feet of intestine escaped through the wound in the abdominal wall, but the intestines were not perforated. They were returned to the abdomen, the wound was sutured, and recovery followed. In a sixth case a gunshot wound of the thorax causing perforation also into the abdomen, wounding the diaphragm, spleen, stomach, liver. Splenectomy was performed, the diaphragm, stomach and liver were sutured, the abdomen was cleansed and closed, recovery resulting. Of the 152 cases which Fenner tabulates from the Charity Hospital records there were 87 deaths, a mortality of 57.23%; 113 of these cases were for gunshot wounds, with 78 deaths, a mortality of 69%, and 39 were for stab wounds, with nine deaths, or 23.07%. In 105 cases there were wounds of the viscera; 96 of these were gunshot wounds, of which 71 died, a mortality of 73.95%; nine were stab wounds, with three deaths, a mortality of 33.33%. In all of these cases Fenner considers that the patients' lives were undoubtedly saved by the operation, so that even though the mortality is high, the operation is justified as the only means of saving life in these cases. [M.B.T.]

The Relative Prevalence and Fatality of Fractures in the White and Colored Races.—Rudolph Matas² makes a statistical contribution on this subject based upon the Annual Reports of the New Orleans Charity Hospital for the Decennium 1896-99. There were 2,376 indoor patients with fractures during that period, or 34.4% of the total population. Of these 1,619 were whites and 757 colored, or 35.5% and 32.3% of the respective populations, which would prove that whites are more liable to fractures than negroes, or that the latter are oftener treated at their own homes. When we consider the different kind of labor performed by the two races, there can be no doubt that the bones of the negro are tougher. Of the total number of cases 296 or 12.46% prove fatal, but the fatality among the colored was

¹ Münchener medizinische Wochenschrift, October 29, 1901.

² Annals of Surgery, January, 1902, Vol. xxv, No. 1.

² Transactions of Louisiana State Medical Society, 1901.

only 11.23%, while among the whites it was 13.03%. In classifying the fractures the fatality was as follows:

	Percent Fatality.		
	White.	Colored.	Total
Head.....	44.40	31.93	40.48
Trunk.....	15.62%	21.92	17.17
Upper Extremities.....	2.57	1.48	2.27
Lower Extremities.....	6.62	0.72	6.66
Total.....	13.03	11.23	12.46

It would appear then that fractures of the head and upper extremities are more fatal in white people, and that in fractures of the lower extremities there is no perceptible difference, while fractures of the trunk (spine, ribs, sternum, pelvis) are more fatal in the negro race. [J.C.S.]

The Operative Treatment of Lymphangiectasis of Filial Origin.—Maitland,¹ of Madras, reports the case of a young man suffering from lymphangiectasis of the glands of the groin. A blood examination showed the presence of filariae. The patient complained of the usual symptoms in these cases, pain and periodic attacks of fever. The enlarged glands were excised and permanent relief followed. The author says that similar cases have occurred in Madras, and have been relieved by similar treatment. He asserts that many authors and teachers declare that operation in such cases is unwarranted; but the experience of Madras surgeons have fully proved the contrary. [A.B.C.]

Cholelithiasis.—Fiedler,² in commenting on the frequency of gallstones, cites the statistics of Schmorl, recently compiled from the postmortem material at the hospital in Dresden. Of the 500 cases examined, 49 (nearly 10%) revealed the presence of gallstones. Of these 49 cases, 15 were of men, and 34 of women—in other words, showing a frequency of occurrence upon the part of the female sex more than double that of the male sex. Fiedler believes, with Naunyn, that gallstones are not a product of abnormal chemie changes in the bile, but are due to the secretion on the part of the epithelium lining the gall-bladder of cholestearin and calcium salts, the stones only forming when the cystic mucosa is inflamed (cholecystitis). Fiedler ascribes the pain accompanying the passage of gallstones to two causes, (1) the inflammation of the bileducts and (2) the jamming of stones within the common bileduct. The pain due to the first is milder and more chronic than that due to the second cause, the latter constituting the sharp, acute, "specific" colic, which begins abruptly, is almost intolerable while it lasts, and often ends as abruptly as it began. [H.H.C.]

Intussusception of Meckel's Diverticulum.—Wainwright³ reports a case of this very rare condition in a boy of 17 who had always been in good health. Six days before admission he noticed a sense of fullness after eating, and from that time on he was constipated up to the day of entrance to the hospital. He continued working, however, until the morning before admission, when he was suddenly seized with very severe pain in the epigastric region and soon began to vomit dark-green bitter fluid without retching. The pain and vomiting continued. Cathartics and a high oil-enema were administered without result. The abdomen was retracted and rigid. Over the lower part there was tenderness and pain. Rectal examination was negative and the pulse was 80, of good quality, respiration 20, temperature 99° by mouth. The patient was operated upon the evening of admission, 36 hours after the onset of the acute symptoms. On opening the peritoneum clear fluid escaped. The small intestine presented; it was distended and injected. The appendix was normal. Collapsed ileum was found and followed until an intussusception three inches long was found about three feet from the ileocecal valve. There were no adhesions and the invagination was readily reduced by pressure on the apex. When the lumen of the bowel was

restored it was found that there was also a diverticulum which was itself inverted. In its turn it was readily reduced and found to be one inch long and somewhat less in diameter. It was clamped, excised and the wound in the intestine closed with Lambert silk sutures. The abdomen was closed without drainage, and rapid, uneventful recovery followed. Microscopic examination of the removed diverticulum showed that all of the coats of the intestine were present, very good evidence that it was a real Meckel's diverticulum. [M.B.T.]

Operation for Frontal Sinus Suppuration.—W. T. Thomas¹ makes an incision along the margin of the orbit from the supraorbital notch to the side of the nose in the line of the nasomaxillary suture. The tissues are then raised from the front wall of the sinus by an elevator, a short vertical cut at either end being added if necessary. A circular hole of $\frac{1}{2}$ inch or more is cut with a gouge, the lining is incised, and the interior examined, cleaned and growths or polypi removed, with care not to mistake exuberant granulations for the latter. Strong silk is carried on a Panas probe through the ostium frontale and seized by a Spencer Wells compression forceps. The probe is withdrawn, guiding the forceps to the roof of the nose, the blades are forcibly separated in an anteroposterior direction, crushing the anterior ethmoidal cells, and forming a large communication with the nose. Six inches of a 9 or 10 English rubber catheter is inserted, the upper end projecting from the inner end of the wound and is anchored to the lower end with strong silk. The forehead wound is sutured, leaving an opening for the tube. For 7 or 9 days the tube is moved up and down and syringed. Then the tube is drawn into the sinus, the silk only remaining outside, fixed to the forehead by plaster. Syringing is done from below until the aperture nearly closes, when the silk is cut and the tube withdrawn. [H.M.]

Sequels of Tracheotomy and Intubation.—Pfandler² has collected the records of 262 children upon whom tracheotomy or intubation was performed at the University of Gratz (1880-1899). Of these the author was able to keep under further observation 173 cases, of which 8 died soon after operation from postdiphtheritic causes. Of the remaining 165 children 137 (83.03%) have since died from causes in no way connected with the operation, 16 (9.70%) present subjective disturbances of so mild a character as to be practically physiologic, while 12 (7.27%) may be said to suffer from affections more or less serious and evidently directly due to the operative treatment. Of the 173 children, 141 underwent intubation, 16 tracheotomy and 16 intubation and tracheotomy. Pfandler believes that intubation is far preferable to tracheotomy, not only on account of its simplicity, the instant relief obtained and the avoidance of a bloody operation with its often unpleasant sequels, but also because statistics show a much lessened tendency to serious after-disturbances in the case of intubation as compared with tracheotomy. [H.H.C.]

Treatment of Anal Fissure.—Gussenbauer³ maintains that the results obtained by forcible stretching of the sphincter ani, according to the method of Recamier, are invariably and immeasurably better than those obtained by either incision, excision, cauterization, or the subcutaneous division of the sphincter. He records 50 cases, 23 men and 27 women, thus treated since 1894. Most of them were discharged cured in from four days to a week, while a few very obstinate cases remained under treatment for from two to three weeks. The after treatment consisted mostly of laxatives, enemas, iodoform gauze tamponade, and sitz baths. In a few cases the thermocautery was applied to hemorrhoidal tumors or a fistula was split there-with. [J.C.S.]

Sterilization of Flexible Catheters by Boiling.—Beard⁴ recommends for rubber catheters boiling for five minutes in a saturated solution of ammonium sulfate, as suggested by Hermon, for the sterilization of silk catheters. Silk-web, elastic gum and black olivary French catheters are boiled from two to five hours every day for three weeks and stood it well but were somewhat softer after boiling than before. The ammonium sulfate is not irritating to the urethra. [H.M.]

¹ British Medical Journal, January 25, 1902.

² Münchener medicinische Wochenschrift, October 22, 1901.

³ Annals of Surgery, January, 1902.

¹ Liverpool Medico-Chirurgical Journal, September, 1901.

² Münchener medicinische Wochenschrift, October 22, 1901.

³ Wiener klinische Wochenschrift, January 9, 1902.

⁴ Medical Press and Circular, October 9, 1901.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Organisms Producing Puerperal Sepsis.—Ever since Semmelweis, in 1847, began to study the cause of the frightful mortality attending the confinement of women in the Vienna Lying-in Hospital as compared with the small number of women succumbing to puerperal infection in their own homes, efforts have been made to determine the exact cause of puerperal infection. Long ago it was conclusively demonstrated by excellent observers that the streptococcus is the usual cause of the epidemic and fatal form of puerperal infection, and to Pasteur belongs the credit of having first cultivated streptococci from these cases. What part other microorganisms have played in the production of puerperal sepsis and pyemia is not so positively determined. Brieger, in 1888, was the first to prove that puerperal infection might be due to the staphylococcus when he reported the autopsies upon seven cases, in five of which he was able to demonstrate *Staphylococcus aureus*. Gaertner (*American Journal of Medical Sciences*, March, 1902) details an experimental investigation of puerperal pyemia. According to Kehrer, this is due to an inflammation of the placental veins or the veins of the walls of the uterus. Occasionally it originates in inflamed veins of the vagina or external genitals. From these primary sources of infection pus, or thrombi containing pus, passing into the bloodvessels, cause those secondary symptoms which are characteristic of pyemia. Gaertner conducted a series of experiments upon animals to demonstrate that puerperal pyemia is solely due to infectious thrombi, no matter what kind of pus germs are in question; and he found that it did not make any difference whether staphylococci or streptococci alone, or both together, were used for the infection of the artificial cotton-wick thrombi employed, the insertion of the same in the external jugular vein of 18 animals caused uniformly pyemia with its characteristic symptoms—phlebitis, suppuration in the surrounding tissue, embolic abscesses in submaxillaris, parotis, cerebrum, and general blood-poisoning and death of animals.

The intensity of the pyemic infection depended first, upon the place whence the employed cocci were taken. Staphylococci from carbuncle pus and streptococci from erysipelas proved the most poisonous ones, no matter how many passages of their cultivation they experienced. Second, upon the duration of the preservation of the completed artificial thrombi before their insertion in the external jugular vein. The longer staphylococci and streptococci were kept in a dry state, the greater was the loss of virulence, no matter how virulent the cocci proved at their first examination.

Williams, in his studies of puerperal infection, calls attention to the fact that colon bacillus has been demonstrated in case of puerperal infection, and also to the proximity of the genital tract to the rectum, and the ease with which contamination may occur from that source when the obstetrician infringes the strict rules of asepsis. Krönig was able to cultivate the gonococcus in 50 out of 179 cases presenting febrile puerperia, and has thus shown that it plays an important part in the production of puerperal disease. In 1898 Williams and Dobbin isolated the typhoid bacillus, streptococcus, *Staphylococcus aureus* and an unidentified anaerobic gas-producing bacillus from the uterine lochia of a patient admitted to Johns Hopkins Hospital. Bacillus diphtheriae, the pneumococcus and *Bacillus aerogenes capsulatus*, all have been occasionally found. But the streptococcus still remains as the most common and the most dangerous of the virulent microorganisms. It is probable that puerperal infection, although a comparatively preventable disaster, will always exist. But our efforts along the line of investigation and prophylaxis must be untiring, and the patient and laborious experi-

mental work that is being carried on by different observers is highly commendable.

A Gynecologic Demonstration and Exercise Manikin.—Ludwig Knopp¹ advocates the use of a phantom to give instruction in gynecologic massage, especially when students have no access to hospital material for practice. A manikin for such purposes should be composed of leather, rubber and such material that it can be quickly changed into as many combinations as possible, showing the inner genitalia under normal conditions and also all different pathologic phases. Such a manikin permits external massage together with correction of malpositions of uterus by pessary treatment, and bimanual compression of the uterus as well as intrauterine compression by vaginal tampons. [W.K.]

Multiple Echinococcus of the Peritoneum and Pelvic Connective Tissue.—Siller² reports a case of multiple echinococcus resulting from the dispersion of the germs throughout the pelvis after the puncture of a primary echinococcus sac on the left lobe of the liver, 6 years before. The operation naturally could only be palliative, being limited to peeling out many of the small parasitic tumors and reducing the large sac through drainage. This procedure relieved the patient from pain and she regained health and strength. A large cyst of the anterior pelvis connective tissue, as seen in this case, is rare; for as a rule such echinococcus sacs occur in the posterior half of the pelvis. [W.K.]

Hot Air Treatment of Gynecologic Diseases.—Thompson³ testifies to the efficacy of hot air therapy, and describes a simple apparatus suitable for the purpose of subjecting the patient to the effects of hot air. It has been used with favorable results in chronic disease of the adnexa, in pelvoperitonitis, endometritis, lactation atrophy of the uterus, etc., and he recommends it in all chronic inflammatory gynecologic diseases, especially in obstinate cases, as a very efficient means of reducing all local troubles through its powerful influence upon the assimilation of the entire organism. Contraindications for its use are great heart weakness or much diseased vessels. [W.K.]

The Lessening of the Abdominal Cavity and Prevention of Ventral Hernia Through Doubling the Abdominal Wall.—Heidenhain⁴ quotes Hegar's observation that upon the extirpation of a voluminous tumor there often exists a great surplus of abdominal wall. The fascial layer is thin and the abdominal muscles weakened, disposing to ventral hernia, while in the abnormally increased cavity a prolapsing liver or stomach, wandering spleen, or chronic intestinal inertia are no exceptional conditions. As a preventive measure Heidenhain has lessened the cavity and strengthened the muscle by doubling the abdominal wall, exclusive of the skin and cellular tissue, in a manner similar to a man's doublebreasted coat. After the removal of the tumor the skin with the fatty layer is separated from the muscular part of the abdominal wall, the separation being close to the upper surface of the fascia and causing little or no bleeding. The right side of the abdominal wall is raised up, the left side is passed under and its edge sutured to the parietal peritoneum about a hand's breadth beyond the median line with a continuous suture passing through about $\frac{1}{4}$ of the thickness of the wall. This closes the abdominal cavity. The right side is then laid over the left and its edges also securely sutured. The skin of both sides with the fatty tissue is then united along the median line without the removal of any of the superfluous skin, thus leaving space for a new fatty layer when the woman recovers health. This procedure requires a long incision but it guards against the danger of ventral hernia. A too great lessening of the abdominal cavity may be inconvenient as the possibility of a subsequent pregnancy must be taken into consideration. [W.K.]

Laparotomy for Spontaneous Uterine Rupture During Delivery.—Törngern⁵ reports two cases of laparotomy for uterine rupture, one with the complication of a lacerated bladder which was sutured, the gangrenous edges of the ruptured

¹ Centralblatt für Gynäkologie, November 23, 1901.

² Centralblatt für Gynäkologie, November 30, 1901.

³ Centralblatt für Gynäkologie, December 28, 1901.

⁴ Centralblatt für Gynäkologie, January 4, 1902.

uterus removed and edges sutured, also abdomen closed without drainage. Death followed from sepsis. In the second case there was no complication, the uterus was amputated, the abdomen closed with drainage, and the patient recovered. The cause of rupture seemed to lie in the comparative size of the fetal head and the pelvis, as well as in the degeneration of the uterine walls. Törngren concludes that in incomplete rupture the treatment should be with tampons in the vagina. In complete rupture with threatening hemorrhage, laparotomy and supracervical amputation should be performed. In complete rupture without any alarming hemorrhage, in private practice, after the extraction of the child, the treatment should be by vaginal tampons. On the other hand, in hospital practice, when the diagnosis is made before the extraction of the child, laparotomy is the primary procedure. [w.k.]

Twins in a Double Uterus.—Koslenko¹ reports a case of the delivery of living twins from a double uterus, one from each cavity. The first was normally delivered from the left cavity after two hours' labor, but high forceps were required to deliver the second, because of the muscular weakness and inertia of the right side of the uterus. [w.k.]

The Median Splitting of the Uterus in Vaginal and Abdominal Total Extirpation.—The advantages claimed for this procedure by Kelly, Kustner and Döderlein influenced Kronig² to adopt and use it in 32 cases with satisfactory results in 31 and one death. Injuries to bladder, ureters and intestines occurred in no case, and the loosening of strong and extensive adhesions was much facilitated. His experience justifies the claim of Döderlein that the hemisection of the uterus had essentially reduced the number of injuries to adjacent organs which are associated with total extirpation of uterus and adnexa. At first Kronig thought to limit the use of this method to cases of enlarged myomatous uterus, or homocentric myoma, but he is now convinced of its advantage under other conditions such as pedunculated myoma or extirpation for climacteric hemorrhage. After the splitting of the uterus, the ligation, or suturing, of the broad ligament and parametria can be done more readily in smaller sections and with more certain and satisfactory results. [w.k.]

Topography of the Uterus and Bladder after Alexander-Adams Operation.—The assertion that the uterus occupies its normal position after the Alexander-Adams operation is at variance with the observation of Bulius.³ Examination after such operation shows the uterus almost horizontal, the fundus above the pelvic inlet, it may be 5-6 cm.; the portio vaginalis as a rule directly above, or in front of, the spinal line and on a level with the lower rim of the pubic symphysis. The position of the portio depends largely upon the rigidity or relaxation of the sacrouterine ligament and the vaginal wall. The shortening of the round ligaments does not give normal conditions, it brings the uterine fundus forward, yet it does not bring the entire uterus into a normal anteversioflexion, but into a horizontal position. The evidence, however, that the round ligaments, after being shortened, retain their complete functional capacity, appears of the greatest significance in view of any subsequent pregnancy, and it is probable that the usual pregnancy changes take place, and growth and distention of the uterus can go on unhampered. [w.k.]

Cystic Mole in Ovarian Cystomas.—There is no agreement among authors as to the etiology of a cystic or hydatid mole. Some consider weakness, heart failure, anemia, kidney disease or syphilis as causes. Kalenbach observes an especial frequency of cystic mole at the beginning and end of the procreative age; Kehrler finds it most frequent in older women. Other theories are that the anomaly is due to changes in fructified ova; that it is a hyperplasia of the connective tissue due to change in the endometrium. Baumgart³ thinks the etiology may be sought in a primary ovarian disease, and he reports the case of a married woman of 22 who, after failure of menses two months, was delivered of a cystic mole. Examination showed the presence of a movable cystic tumor on each side of the uterus which were removed by abdominal section. [w.k.]

Carcinoma Statistics.—Winter³ emphasizes the import-

ance of some general principles to be observed in giving statistics of carcinoma, else they are of little value as a basis of comparison of the advantages and disadvantages of the various operations. He considers the following points as essential in all statistics: The statement of primary results; of permanent results; percentage of operable cases; the number absolutely cured. The first is the simplest and the one chiefly influencing the choice of operation. The others are much more difficult, and he discusses at length all the conditions and modifying circumstances to be observed in making up the tables in order that they may be uniform and be of real value in aiding the judgment of the surgeon. Statistics should be made not to prove what one wishes, but one should collect the results of his experience in order to ascertain the truth, let it be what it may. [w.k.]

Uterine Rupture.—From a study of the subject of uterine rupture in his own experience and in literature, H. Peham¹ concludes that any existing scars in the sphere of the inner genitalia are a matter of much significance in subsequent labor; that not only injuries from previous labors, but also scars after operations, especially fistula operations play a great role in producing uterine rupture. Krukenberg stated in 1886 that 50% of all cesarean section scars resulted in rupture in later pregnancies. A more exact execution of the uterine suture has somewhat lessened the percentage. The more frequent ruptures after previous lacerations are explained by the unfavorable position of the scars. If a woman becomes pregnant after previous extensive uterine injuries, he would advise the induction of abortion, thus avoiding the threatening danger of second rupture and perhaps necessary extirpation of the uterus. [w.k.]

Polypus Cyst of the Mucous Glands of the Labium Minus.—Bluhm² divides these cysts into two groups: (1) Cysts which originate from the normal constituents of the labium minus and are of the same structure. To this group belong the numerous retention cysts of the fat glands of the nymphas and the lymph cysts of this organ. (2) Cysts which originate in growths coming abnormally on the labium minus and are of heterotopic nature. A third group is sometimes designated as Wolffian cysts originating at the end of the Gärtner duct. These are clinically and anatomically similar to the reported cases of polypous glandular cysts, and may be included in the second group. These cysts may become the size of a small orange, and usually contain a whitish or brownish colloidal fluid. Bluhm reports three cases, describes the removal of the cysts, and gives in detail the results of the microscopic examination of the structures. [w.k.]

Cesarean Section for Eclampsia.—Lowenstein² thinks that cesarean section for eclampsia is indicated when the condition of the woman is hopeless but the child is still living and its quick delivery in any other way is impossible. Müller and Olshausen are quoted in support of this view, and three cases of eclampsia thus treated are reported, which resulted in saving the lives of two children. [w.k.]

Treatment of Sepsis.—Wernitz³ advocates the use of rectal injection of salt solution in the treatment of sepsis, but thinks the manner of the injection is very important. The fluid should be introduced gently, gradually and continuously. The first effect is to empty the rectum and cause free escape of gas, to the great relief of the patient. This is followed by the absorption of the fluid, which is, after all, the chief object in view. The procedure being continued an hour, about $\frac{1}{2}$ to 1 liter of the fluid will be absorbed. This should be repeated at hourly intervals until it increases the secretion of urine, relieves the thirst, induces free perspiration and reduces the temperature; but care must be taken that the process does not lead to any symptoms of shivering, nor weakening of the patient with consequent collapse. He reports using this treatment successfully in four cases: (1) Acute sepsis after normal delivery of a primipara; (2) acute peritonitis in consequence of a salpingitic process; (3 and 4) septic abortion with threatening symptoms and local infection. [w.k.]

¹ Centralblatt für Gynäkologie, January 11, 1902.

² Centralblatt für Gynäkologie, January 18, 1902.

³ Centralblatt für Gynäkologie, January 25, 1902.

¹ Centralblatt für Gynäkologie, January 25, 1902.

² Centralblatt für Gynäkologie, February 1, 1902.

³ Centralblatt für Gynäkologie, February 8, 1902.

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Editor of "Treatment," AMERICAN MEDICINE:—Your rejoinder to the challenge of the *Medical Gleaner* is the brightest point in the therapeutics of drugs that I have seen for many days. Your attitude of mind is admirable and the positions you take are, from my standpoint, to be improved only by an insistence that the drugs used under test conditions shall be the drugs they purport to be. For instance, the eclectics, a few years ago, put forward *echinacea angustifolium* as a remedy. That it will do what they claim for it I am convinced by clinical experience. How it does it I don't know, but so many other physicians are of my mind that it has been exploited as a proprietary remedy under a somewhat similar name, and I have little doubt many physicians of our school are using this.

I would suggest that you take up *echinacea* as the first drug for investigation by asking for reports on its use. Aided by *Gleaner* and other eclectic journals you will get more than enough to induce our school men to test it. If they will do this under your guidance as to the genuineness of the preparation it will result in one of the greatest single additions to the drug armamentarium of modern times.

I am not oversanguine, moreover, for I have found that a third of a century in the practice of medicine has left me few enthusiasms.

GEO. M. AYLSWORTH, M.D.

Collingwood, Canada.

Treatment of Potts' Disease with Deformity.—The *Journal des Praticiens*, June 1, 1901, points out 2 essentials in the treatment of Potts' disease with deformity, (1) put the tuberculous area at rest, (2) overcome the bending of the spine, which is principally caused by intersegmentary ulceration due to compression. Two methods are employed in attaining these results: (1) The method of rest, which consists in placing the patient on his back in a mechanic bed, so that while in this position he may be transported to the open air. This method is indicated in the painful forms of the disease, in the presence of an abscess, in patients who are pale, thin and weak, and in paraplegia. Ménard considers a horizontal position the best means of overcoming beginning deformity and of hastening a cure. This position must be maintained until reparation takes place, usually about 3 years. The duration of this treatment is often an obstacle to its acceptance, yet it should be urged. Digestive and circulatory disturbances have followed this treatment. (2) The ambulatory method consists in the application of an orthopedic apparatus which allows patients to enjoy the air and sunshine when they would otherwise be deprived of it. The mechanic conditions of treatment are not fulfilled so well by this method as by the rest cure. Sayre's apparatus is most frequently employed. The treatment aims to maintain the patient in such a position that the inflexion may be corrected at a distance from the deformity by a compensatory lordosis. It hastens the appearance of this lordosis and maintains it, and intersegmentary ulceration due to compression is prevented. This method is especially applicable to disease of the cervical vertebrae. When the lumbar or lumbodorsal vertebrae are affected the best results have been obtained by the rest cure. The prolonged use of orthopedic apparatus may result in muscular atrophy, and for this reason the rest cure may be substituted for a time. Calcium phosphate and codliver-oil should be administered and careful attention paid to food and hygiene. [L.F.A.]

Tattoo Marks.—The removal of these disfigurements is accomplished by electrolysis. The needle attached in the negative pole is driven below the tattooing, and an irritation is excited. The current should be one of about 10 milliamperes. The inflammation that results throws the pigment to the surface.—OHMANN-DUMESNIL.

The Simultaneous Therapeutic Use of Mercury and Iodin Preparations.—Lesser¹ finds from experiments on animals and clinical observation that innunctions of unguentum cinereum and intramuscular injections of hydrargyrum salicylate, hydrargyrum thymol-acetate and oleum cinereum, as well

as injections of soluble mercuric salts, never lead to the formation of mercuric iodid when given simultaneously with preparations of iodine. Hence a mixed treatment consisting of these combinations is both safe and capable of extensive use. [H.H.C.]

Diet in Constipation.—Oldfield¹ believes that when bulky and irritating foods do not relieve constipation the trouble is generally connected with the ingestion of foods rich in uric acid and xanthin as animal foods and tea. Cure may be effected either by (1) continuing the dietary and giving uric acid solvents, or (2) by substituting a diet free from uric acid, and which contains a high proportion of potassium salts (as green vegetables), or (3) by sufficiently reducing the uric acid containing foods and increasing those rich in potassium without entirely living on them. By enjoining the last as a normal dietary and using the second curatively many chronic and obstinate cases have been relieved. [H.M.]

On the Physiologic Action of Ibogain.—From a plant indigenous to the Congo region and known to the natives as Iboga, Dybowski and Landrin have isolated an alkaloid which they have named ibogain. It acts directly on the brain centers increases blood-pressure and diuresis, excites the secretions and raises bodily temperature. In large doses it produces hallucinations, with paresis and coordination of movement. Excessive doses produce death by paralysis of respiratory muscles. [C.S.D.]

A New Syringe for Hypodermic Injections or Auto-injection from Sterilized Vials.—Paillard (*Bulletin Général de Thérapeutique*, July 15, 1901) has constructed a syringe for the direct injection of sterilized liquids contained in vials. The apparatus has three principal parts: An air-pump, in the end of which may be placed a little sterilized packing to act as a filter; a body, in two parts, intended to receive the vial, and which is the main part of the instrument; and a special canula, the end of which is threaded, permitting the use of the ordinary hypodermic needle. To use it, the canula and body of the instrument are sterilized. The extremities of the body are separated by screwing the one from the other. The vial is sterilized and supplied with two small ends of rubber placed over the small ends of the glass in order to make the joints tight when fitted into the instrument. This done, the vial is placed in the body of the instrument, which is then closed by screwing the two parts together sufficiently tight to hold the vial firmly. By a scratch with a file, the thin part of the vial which extends beyond the upper part of the instrument, is broken off and the pump then adjusted to this end, which is closed by a stop-cock. By another scratch of the file the lower part of the vial is broken, and the canula adjusted. The valve may be opened and the needle filled by gentle pressure upon the piston of the air-pump. The injection may then be given in the usual manner. By this apparatus the vials may be used without first transferring the contents from them. [L.F.A.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Extract of Pichi-pichi.—Friedländer (*Therapeutische Monatshefte*, Vol. xv, No. 9, 1901) believes that in this substance we have a drug which possesses all the advantages of the balsams without their unpleasant secondary effects, and warmly recommends it for internal administration in the treatment of urinary diseases. The advantages of the dry extract over the fluid extract are, the greater convenience of administration, the permanence of the preparation, the possibility of regulating the dosage, and the entire absence of alcohol, the presence of which is a serious defect in any antibleorrhoeic remedy. The drug may be used alone, in tablets of 0.25 grams (4 grains), equivalent to a teaspoonful of the fluid mixture. Under the name of "urosteril tablets" a preparation is manufactured in Germany which combines the dry extract of pichi-pichi with salol for an internal antiseptic, and tannin for an astringent; 0.25 grams (4 grains) of the extract being combined with 0.125 grams (2 grains) of salol and tannin each, making a tablet of 0.5 grams

¹ Medical Press and Circular, October 2, 1901.² La Semaine Médicale, December 18, 1901.¹ Deutsche medicinische Wochenschrift, November 28, 1901.

(8 grains). Friedländer tested the efficacy of pichi-pichi on himself, and found that it exerted a marked influence on the acidity of the urine without producing any disagreeable secondary effects. He has used it in acute gonorrhea with lymphangitis, edema, and violent pain, and found that it acted as an analgesic, antiphlogistic, and astringent in every case. [R.M.G.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended February 28, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Birmingham.....Jan. 1-31.....	5	
Alaska:	Hoonah.....Jan. 29.....	8	
California:	Sacramento.....Feb. 8-15.....	1	
	San Francisco.....Feb. 9-16.....	20	
Colorado:	Denver.....Feb. 8-15.....	5	
Illinois:	Belleville.....Feb. 15-22.....	2	
	Chicago.....Feb. 15-22.....	5	
	Danville.....Feb. 15-22.....	7	
	Galesburg.....Feb. 15-22.....	2	
Indiana:	Elkhart.....Feb. 1-15.....	20	
	Evansville.....Feb. 15-22.....	14	
	Indianapolis.....Feb. 8-15.....	8	
	Clinton.....Feb. 15-22.....	1	
Iowa:	Covington.....Feb. 14-23.....	6	
Kentucky:	New Orleans.....Feb. 15-22.....	2	
Louisiana:	Durham.....Feb. 15.....	5	
Maine:	Freeport.....Feb. 15.....	1	
	Portland.....Feb. 15.....	2	
Maryland:	Baltimore.....Feb. 15-22.....	3	
Massachusetts:	Boston.....Feb. 15-22.....	19	4
	Cambridge.....Feb. 15-22.....	4	
	Everett.....Feb. 14-21.....	1	
	New Bedford.....Feb. 14-21.....	3	
	Newburyport.....Feb. 15-22.....	1	
	Quincy.....Feb. 15-22.....	2	
	Waltham.....Feb. 15-22.....	1	
Michigan:	Detroit.....Feb. 15-22.....	5	
	Ludington.....Feb. 15-22.....	7	
Minnesota:	Minneapolis.....Feb. 8-22.....	48	
Montana:	Butte.....Feb. 9-16.....	4	
Nebraska:	Omaha.....Feb. 15-22.....	45	
New Hampshire:	Nashua.....Feb. 15-22.....	1	
New Jersey:	Camden.....Feb. 15-22.....	3	
	Jersey City.....Feb. 15-22.....	23	
	Newark.....Feb. 15-22.....	29	5
New York:	Binghamton.....Feb. 15-22.....	2	
	New York.....Feb. 15-22.....	55	13
	Yonkers.....Feb. 14-21.....	1	
Ohio:	Cincinnati.....Feb. 14-21.....	19	
	Hamilton.....Feb. 15-22.....	1	
	Middletown.....Feb. 8-15.....	1	
Pennsylvania:	Youngstown.....Feb. 8-15.....	1	
	Allegheny.....Feb. 15-22.....	2	
	Lebanon.....Feb. 15-22.....	1	
	Philadelphia.....Feb. 15-22.....	63	15
	Pittsburg.....Feb. 15-22.....	1	
	Reading.....Feb. 17-24.....	1	
	Steelton.....Feb. 15-22.....	1	
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Tennessee:	Memphis.....Feb. 15-22.....	6	
Texas:	Fort Worth.....Jan. 1-31.....	8	
	Houston.....Feb. 15-22.....	12	
Vermont:	Burlington.....Feb. 15-22.....	17	
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	Tacoma.....Feb. 8-16.....	8	
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Belgium:	Antwerp.....Jan. 25-Feb. 8.....	16	3
Brazil:	Bahia.....Jan. 10-25.....	2	1
Canada:	Halifax.....Feb. 15-22.....	1	
	Victoria.....Jan. 4-11.....	1	
Colombia:	Cartagena.....Feb. 3-9.....	1	2
	Panama.....Feb. 10-17.....	50	10
France:	Nantes.....Jan. 1-31.....	2	
	Paris.....Feb. 1-8.....	3	
Great Britain:	Birmingham.....Feb. 1-8.....	1	
	Glasgow.....Feb. 7-14.....	6	1
	Liverpool.....Feb. 1-15.....	26	
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	Karachi.....Jan. 12-19.....	10	3
	Madras.....Jan. 17-24.....	2	
Italy:	Naples.....Feb. 1-8.....	11	
	Palermo.....Jan. 25-Feb. 1.....	1	
Malta:Feb. 1-8.....	2	
Russia:	Moscow.....Jan. 18-Feb. 1.....	32	12
	Odessa.....Jan. 25-Feb. 8.....	11	3
	St. Petersburg.....Jan. 25-Feb. 1.....	13	4
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CHOLERA.

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	Madras.....Jan. 11-24.....	3
Straits Settlements:	Singapore.....Dec. 28-Jan. 11.....	4

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Changes in the Medical Corps of the U. S. Army for the week ended March 1, 1902:

GILCHRIST, First Lieutenant HARRY L., assistant surgeon, will proceed to Fort Flagler for temporary duty.

HARVEY, Captain L. S., assistant surgeon, has been granted leave for 1 month, on surgeon's certificate, with permission to apply for an extension of 1 month, and to go beyond the limits of the Department of Cuba.

VAUGHAN, Captain MILTON, assistant surgeon, has been granted leave of absence for 2 months.

Orders of January 30 are so amended as to direct Contract Surgeon Elias H. Porter, upon the expiration of his present leave, to proceed to San Francisco, Cal., from Fort Hancock, instead of Louisa, Ky.

PEASE, FRANK D., contract surgeon, is relieved from duty at Fort Mackenzie and will proceed to Fort Harrison for duty.

CURRY, Captain JOSEPH J., assistant surgeon, now at San Francisco, Cal., will proceed to Fort Bayard for duty.

SUGGS, FRANK, contract surgeon, will proceed from Hornbeck, La., to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

JENKES, ERNEST, hospital steward, now at Hampton, Va., having relinquished the unexpired portion of furlough granted him in the Philippine Islands, will report at Fort Monroe for temporary duty at that post.

CLARKE, Captain JOSEPH T., assistant surgeon, is granted leave for 20 days, to take effect after his arrival in Philadelphia, Pa., as directed in orders of October 26, 1901.

DENNIS, MILLS, contract surgeon, now at Temple, Tex., will proceed to San Francisco, Cal., for transportation to the Philippine Islands for assignment to duty.

GILCHRIST, First Lieutenant HARRY L., assistant surgeon, is relieved from temporary duty at Fort Flagler and will return to his proper station.

BAILEY, EDWARD B., contract surgeon, now at Demopolis, Ala., will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

DAVIS, OSCAR F., contract surgeon, now at Bloomington, Ind., will proceed to Fort De Soto, Fla., for duty.

WARWICK, CLARENCE A., contract surgeon, now at Keokuk, Ia., will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

DADE, Captain WALLER H., assistant surgeon, is granted leave for 1 month, to take effect upon the expiration of his present sick leave.

THOMAS, Captain JEROME B., assistant surgeon, having tendered his resignation, is honorably discharged, to take effect February 27.

STEWART, WILLIAM J. S., contract surgeon, now at San Francisco, Cal., will repair to Washington, D. C., and report to the Surgeon-General of the Army for instructions.

Changes in the Medical Corps of the U. S. Navy for the week ended March 1, 1902:

BERTOLOTTE, Medical Inspector D. N., detached from the Brooklyn and ordered to the New York—February 21.

HIBBETT, Surgeon C. T., detached from the Cavite Naval Station and ordered to the Brooklyn—February 21.

GARDNER, Surgeon J. E., detached from the New York and ordered to the Naval Hospital, Cavite, P. I.—February 21.

SNYDER, Assistant Surgeon J. J., ordered to Port Royal Naval Station for temporary duty with recruiting party—February 24.

WRIGHT, Assistant Surgeon B. L., when discharged from treatment at Naval Hospital, New York, ordered home and granted sick leave for 3 months—February 24.

SPRATLING, Surgeon L. W., ordered to Buffalo, N. Y., for duty at the naval and marine recruiting rendezvous—February 25.

LAW, Surgeon H. L., retired, detached from duty at the naval and marine recruiting rendezvous, Buffalo, N. Y., and ordered home—February 25.

ULSH, Assistant Surgeon W. H., reported at the Naval Hospital, Mare Island, Cal.—February 27.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended February 27, 1902:

WILLIAMS, L. L., surgeon, granted leave of absence for 1 day, February 26.

PERRY, T. B., surgeon, granted leave of absence for 7 days from February 12, 1902, under paragraph 181 of the Regulations.

THOMAS, A. R., passed assistant surgeon, relieved from duty at Glasgow, Scotland, and directed to proceed to London, England, for duty in the office of the U. S. Consul-General—February 21.

ROEHRIK, A. M., senior pharmacist, granted leave of absence for 6 days from February 5, 1902, under paragraph 201 of the Regulations.

NEWBERN, WALTER, Jr., senior pharmacist, granted leave of absence for 1 day, February 11, 1902, under paragraph 201 of the Regulations.

SIEDENBERG, FRANK, junior pharmacist, granted leave of absence for 3 days from February 19, 1902, under paragraph 201 of the Regulations.

American Medicine

FOUNDED, OWNED, AND CONTROLLED BY THE MEDICAL PROFESSION OF AMERICA

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The reformation of young criminals at the New York State Reformatory at Elmira, as shown in the 1901 report, must inspire penologists with encouragement, and justifies those who have labored to revolutionize the old methods of treatment. On September 30, 1901, the population of the reformatory was 1,276, and the average cost of maintenance was .419 cents a day. Of this total number 559 had been previously imprisoned. In 25 years 7,010 men have been paroled from the institution, and the greater number of these are today living good lives as private citizens. Had the definite sentence and punishment, instead of reform and education, been the rule, there can be little doubt that a very different result would exist. Each one has gone out better educated than when he entered and fairly skilled in a mechanical trade. The report wisely emphasizes that wisdom, economy, and true religion are all illustrated by the plan of kindness, justice, and reform. Two years ago the inmates were in a condition of chronic nervous excitement and unrest, mingled with apprehension and fear. "A criminal population knows by wireless telegraphy every occurrence within the walls and waves of indignation or of sympathy reach every one simultaneously." To day, secret punishments, etc., being abrogated, the reverse is the case. Quoting the words of an observer the report says:

"If the expression upon the faces of men means anything, then I confidently affirm that a beneficent improvement has taken place at Elmira. The young men there—from 16 to 30 years of age—no longer have the dogged look that in the past seemed to express their loss of hope and the haunting of fear. Every inmate now there, by good conduct may see his way to deliverance. And in returning to the outside world most of the young men take with them the helpful qualifications of a knowledge to read and write and the acquisition of one of the forty trades taught and daily practised in the institution."

The necessity for the medical examination of criminals on trial and before sentencing them is clearly brought out in the report of the Elmira Reformatory. It would seem a plain dictate of common and also of legal and medical sense, that if the source of criminality is disease or mental alienation, the commitment and treatment of the criminal should be very different from what it must be when vicious intent is the dominating factor. In the 1900 report there were 78 insane transferred, but owing to measures recommended and adopted to prevent this there were but 17 in 1901. A medical ex-

amination would have shown the heredity, the epilepsy or the insanity which brought these young men to Elmira. Five of the 1901 transfers had already been in insane hospitals, one was an imbecile, one a morphin habitue and one "physically abnormal." A more careful classification would have saved the injustice and the needless trouble and expense.

The following is a part of a resolution which was adopted at the last meeting of the Congress of Criminal Anthropology, recently held in the city of Amsterdam, Holland; it should be followed in the rules of procedure in all of our criminal courts:

"1. Every child who has committed a crime should be examined by a competent physician, before being summoned into court, and those discovered to be actual degenerates should be placed in pedagogic establishments organized for the purpose of training and improving them intellectually and morally. 2. The biologic record of the criminal should be appended to the court record in every criminal case. 3. Government should take effective steps to arrest the progress of alcoholism."

No Quarantine Against Consumptives in Colorado.—The continued publication of false reports that the state of Colorado is about to quarantine against consumptives, has induced a number of officers and members of the State Board of Health, with several Health Commissioners, etc., to issue a statement denying any such act or intent. According to this denial, no officer of the State Board, and no member of the executive or legislative branch of the government has proposed or suggested such a law; no law of the kind or city ordinance, and no such regulation of any Board of Health, exists. On the contrary, the State Board of Health in 1900 issued a circular in which was the following paragraph:

"That this climate has saved the lives of many who have come early, cannot be doubted. There is no need to talk of quarantining against tuberculosis. Such a course is both unnecessary and impracticable. Doubtless many persons with advanced tuberculosis should not be sent here, but for those who can be benefited by coming, Colorado should have nothing but a warm welcome."

To the same conclusion must come those responsible for control of public health matters in any other state, and we trust those concerned will take similar action. To quarantine against consumptives, is not only against good morals and good medicine, but against good politics. It would be a crime both against the citizen

and the visitor; but "worse than a crime, it would be a blunder."

Signed Editorials, Notes and Reviews.—The question raised by Dr. Stiles in our correspondence columns is old, but we think has long been practically and definitely answered. The reasons for continuing the custom of anonymity in the editorials of a journal are many and cannot be adequately set forth in the space at our disposal. That these reasons are good and sufficient is proved by the fact that the great journals of the world, medical, scientific, and lay, do not break with the custom. The great newspapers and magazines would certainly do so if it were wise and of advantage. From the bibliographic point of view we see that the criticism of Dr. Stiles has a certain weight, but we think it is easily exaggerated, and that corresponding disadvantages far more than counterweight. Good editorials are of course the result only of good original thinking, but original scientific discoveries are not published in anonymous editorials, and the holding some individual person "responsible" for certain views presupposes the error that individual responsibility is of a higher or better kind than the editorial or corporate responsibility. We think that the anonymous editorial writer is much more careful to speak judicially or objectively, *i. e.*, in the interests of science and the profession, than when he signs his contributions. And we think that Dr. Stiles is in error when he thinks we, the readers, are more influenced by the reputation of the actual writer than by the journal in which the article appears. The reverse is the case; merging one's individuality into that of the journal gives added weight and value to individual opinion. This would not be so if Virchow would write all the editorials upon pathology in all the medical journals of the world, and if other equally great leaders in research, in clinical medicine, and in surgery, would do the same in their special fields of work. Editors would find some difficulty in realizing this ideal. The journal is of course responsible for its editorial utterances, and bibliographically must be held to account, even if its editor is so careless as to allow his journal to contract itself, and even if journals do "run down." Individuals "run down" also. The absolute is not attainable, and all opinion is but relatively true. Perhaps the greatest benefit of unsigned editorials, etc., is in breaking up the very reverence for authority which Dr. Stiles appears to overvalue. In the last analysis the value of a statement consists in its truth, and not in the name of the writer. Anonymity teaches the reader to discriminate and judge, not to accept on the authority of a great name. We are sorry, and genuinely so, for the tried bibliographer, but we fear he will have to endure his burden (also anonymous) for a long time to come.*

The Termination -itis.—Fitzgerald, in his recent work "Word and Phrase," calls attention to the effort of finical people to restrict the use of "sickness" to nausea, and is led to remark that "the Anglic people in

their several divisions are really or virtually autonomous as regards their use of language." This autonomy characteristic of English-speaking people is not more striking than that shown by scientific writers in general. All attempts on the part of purists to place arbitrary or academic restrictions on the signification of technical words or syllables has been thus far without result. The common use of the termination *-itis* as meaning inflammation has provoked criticism on the ground that it was not the original signification of the suffix. Such criticism is pointless. The explanation is demanded of how it came to have its present significance. Assertions to the contrary notwithstanding, *-itis* does mean inflammation, and among others has included that meaning from the time of Hippocrates, and there is little danger of being taken for a philologic anarchist in maintaining the propriety of its use in that sense. The terminal stem suffix *-τις*, giving nominatives in *-τις*, genitive *-τιδος* has several significations. It is employed as the feminine form of the agent termination *-της* *e. g.*, one of the by-names of Athena is *ὀφθαλμίτις*—protectress of the eyes. Again *-itis* is used as a feminine adjectival termination, meaning, *pertaining to*, or, *belonging to*; this is shown in the use of *ιπαίτις* and *σπληνίτις* by Diogenes, as quoted by Aristotle in his description of the two great veins of the body. "The one is called the (*ιπαίτις*) hepatic splenic, and the other the (*σπληνίτις*) hepatic vein." Thus far the idea of inflammation is not involved, but we find abundant illustration of its use in the sense of disease, a meaning in which the use of the *-itis* appears to have been purely adjectival, as *νοσος φρενίτις*; and finally taking the definite article; from a diseased state or disturbed condition it came to be *the* kidney disease; *ἡ πνευρίτις* (*νόσος*); or *the* affection of the chest, *ἡ πνευρίτις*. It thus assumed the specific signification of the most frequently recurring disease of a part or organ, *i. e.*, inflammation. In the case of *φρενίτις* which, as has been said, "does not indicate inflammation of the mind," it is very obvious that the termination was employed to indicate the most familiar form of mental disturbance. A fact that has undoubtedly aided in the gradual restriction of the termination to inflammation, was the other meaning of *-τις*, as denoting high activity of the part affected. The ancient idea of inflammation, as shown by the word itself, was that of a burning or fiery activity of a part, and though the word *inflammatis* is post-classic, the idea is not and the agency termination *-τις*, had long lent itself to the conveyance of this idea, thus *ἡ νεφρίτις* (*νοσος*) would be "the disease caused by 'too much doing' in the kidneys." While not restricted to inflammation by the classical writers, their use of it certainly included the idea. Its narrower significance of inflammation cannot, therefore, be traced to any given time, but serves to illustrate the gradual differentiation of language. Its use in this sense is not likely to be discontinued for any philologic or historic reason.

Progress in the work of organizing charity is shown in the reports of the Societies of New York, Boston, etc., in which all physicians will find interest. In Philadelphia during the past year the districts have dealt with 5,759 different families. They have procured

*As to the pagination of reprints, they can only be paged with the same numbers as in the original when the size of the page of the reprint is the same as it was in the journal. As the journal page differs in every instance, uniformity of paging is impossible. References, however, should be made.

help from individuals, churches and other charities 4,212 times, have also given help themselves valued at \$11,105.50 (over one-fifth of which was worked for); they have found employment outside the Society for 566 persons, and have aided 820 families by other friendly services. Visits paid to the poor or in their interest numbered 16,997. The two wood yards and lodges provided 11,072 homeless men and women with 30,690 lodgings and 61,274 meals in exchange for work. The nonresident department investigated 800 applications from persons or families claiming to be stranded here, and sent 331 to their homes.

In nothing better than in this work is the difference shown between the old or oriental and the modern or occidental civilization. In its last outworking democracy is to render every citizen self-supporting and self-respecting, or to make Christianity a reality. No movement proves it so well as that for organizing charities.

When Mayor Low organized his new city government he selected as his secretary a man who had worked as a settlement worker in the most crowded part of the East Side for many years, explaining that he wanted some one to represent the chief executive of the city who could give a patient and intelligent hearing to the humblest citizen. At the same time the president and the assistant secretary of the Charity Organization Society were invited to organize the new tenement house department to which New York must look for improved living conditions among its poor. The secretary of another private society became the expert head of the Department of Charities. A veteran member of the Society of St. Vincent de Paul became the head of the Department of Correction. The Superintendent of Public Baths was selected because of his success in managing the baths of the Association for Improving the Condition of the Poor.

Those who have not carefully observed the close interdependence of the prevalence of disease and poverty are not aware how intimately professional progress is associated with this magnificent work of organizing charities. Neither religion nor ethics has more concern in it than has medicine. This is seen in the reports of the district workers and in Miss Octavia Hill's address, published in the report for 1901 of the Philadelphia Society.

"The Practical Osteopath" is the title of a periodical which we wish the legislators who have voted to legalize the practice as medicine would carefully examine, at least those of them who know how to spell, and to write grammatically. *Falsus in uno, falsus in omnibus*. The legislator has probably no knowledge of physiology, so he would think it new truth when almost all the diseases which afflict the race are traced to "slipped cervical vertebra," "bones awry" and "abnormal bone condition." On the same page with such nonsense is blame unlimited of regular medical men who "do not know much about anatomy and physiology, and surely not much about histology, or else they would not pour a lot of drugs and stuff down their patients' throats." That touch about histology and the omission of the apostrophe in "patients" are characteristic. The same habit is seen in tracing all diseases of the "visera"

to "muscle contractures," and which develop infectious diseases if continued too long. "Bony lesions produced by slipped vertebrae or other osseous structures," produce "muscles contracted on nerves or blood-vessels and must be relaxed," and "a displaced visera must be replaced." Thus is avoided the necessity of giving "heart depressants," when "a slipped inominate bone" or "a luxated vertebrae," should have been fixed by the bony path. For "in disease of the kidney, he treats directly the nerve and blood-supply to that organ alone without effecting other organs. In drug treatment several organs are effected before its effect upon the kidneys." Thus as an art osteopathy cures astigmatism, gallstones, enlarged tonsils, erysipelas, consumption, Bright's disease, insanity, locomotor ataxia, paralysis agitans, etc., and—

"as the careful and experienced mariner avoids the rocks and shoals, and outrides the tempest, so the osteopath's skill steadies the wavering pulse, allays the fitful fever, soothes the racking pain, calms the wild delirium, strengthens the weakened heart, inspires the waning hope, till the eye regains its original luster, the pulse has lost its irritable thrill, and the silver cord is strengthened, that else would have been unloosed."

The Pan-path, or to speak more correctly, *The Chicago Pan-path*, a weekly medical journal, published, we judge, in the interest of the National Medical University, has appeared. It has been long awaited; it was inevitable, and it is strange that the word and sect have been such recent coinages of the mint. In the depreciation of currency progress is fast, whether the morbidity is financial, medical, or philological. The poor terminal *-pathy* has much to complain of in these degenerate days. At least one new sect of medical-pathists is born every day, and we should use the word *panopathy* to cover them all. But the pan-path will not have it so. If one takes the significance of the component roots in such words as allopathy, homeopathy, antipathy, hydro-pathy, electropathy, acetopathy, vitapathy, etc., we have a more or less definite idea that they signify the cure of disease by water, by life, by similars, by opposites, etc. But what can *pan-pathy* mean, unless it is either the treatment by *pan* (cf. Carlyle's *pantheism*, *pottheism*, etc.), or by the god Pan? In this last case, "Great Pan cannot be dead." It may, perhaps, mean the pessimistic theory that all is disease, and this would help us to explain the rise of panantiism and the panantis. We find by consulting the editorial columns of *The Pan-path* that the treatment of all kinds of diseases and these by all methods, is what is meant. We regulars are given a sound drubbing because we do not recognize osteopathy and its method of treatment. As massage has long been praised and used by us, this would appear somewhat unjust. (By-the-way, this word *osteopathy* in itself betrays its sorry origin, according to the analogy of all other similarly-formed words it can only mean the treatment of disease by bones—i. e., by prescribing bones [after the manner of Samson?], bone-dust, etc.—but the bony path is *super grammaticum*, and constructs words and philosophies according to his own wayward will.) This issue of the *All-diseased* contains a glowing account of the discovery of Professor Loeb, and following this an editorial claiming that the discovery was made six years

previously by "Dr. Harry Preston Pratt, the Professor of Electrotherapy in the National Medical University, Chicago, whose picture appears elsewhere in this issue." Professor Pratt "was also the first person to advance and prove the theory that the x-ray had therapeutic value."

The "Blood Relationship" of Man and the Anthropoid Apes.—In a recent number of the *Lancet* Grünbaum gives a short note of some extremely interesting observations that he has made on the blood of three anthropoid apes—the gorilla, the orang, and the chimpanzee. He first points out that in a general way it may be said that the serum from an animal, for instance, a rabbit, that has been injected intraperitoneally several times with any given organic fluid will, if mixed in small quantity with a dilute solution of the fluid used for injection, produce a more or less marked precipitate. To such a serum has been given the name "antiserum." Hence the serum from the rabbit that has been treated in this way with human blood which gives a precipitate with human blood may be, although somewhat paradoxically, called "human antiserum." Such a serum has, to use the term applied by Durham to agglutinating serums, a "special" although not a "specific" action. Grünbaum, adopting the general mode of application of the test, found that "human antiserum" gives a precipitate with all three species of anthropoid apes above mentioned—a precipitate that is practically indistinguishable either in quantity or quality from that obtained with human blood. Occasionally it seemed that the blood of the orang gave a more gelatinous precipitate as compared with the granular precipitate of the other bloods, but this may have been due to accidental circumstances. But it is not only by the action of the human antiserum on anthropoid blood that this close relationship of the various bloods may be demonstrated. Grünbaum having prepared gorilla, orang, and chimpanzee antiserum, and having tested them, found that all reacted not only with their own blood but with each of the others and also with human blood. This would seem to indicate a somewhat close "blood relationship" between man and certain of the anthropoid apes.

The Relative Rights of the Dissector and the Pathologist.—The anatomists are complaining that the postmortem examinations of the pathologist renders the bodies delivered to them far less valuable for anatomic purposes; and in this contention the law doubtless generally favors the anatomist, although when such enactments were made the question had hardly arisen. In New York a petition has been presented to a legislative committee by Dr. Harrington, of the Danvers Hospital for the Insane, asking for the right to perform autopsies before relinquishing bodies for dissection. If it is impossible for the two classes of scientists to arrange their differences amicably and without the intervention of legal sanction and authority, there seems little doubt that within proper limits the clinician and pathologist should have their way. Anatomy, and indeed pathology too, of course, are studied only to make it possible to cure and prevent

disease. Whatever best and most contributes to this end must be encouraged, for medicine exists for man, not man for medicine. Beyond all question the lessons of the postmortem examinations are absolutely necessary for accuracy of diagnosis and treatment, and hence for the progress of medical science. If so the anatomists should concur in the work of their colleagues in pathology, although it may to some extent give them less valuable dissection material. But it would seem as if both needs might be met by hearty cooperation.

The Licensing of Masseurs.—There are several reasons why treatment by massage should be taken in hand and regulated in a legal and professional manner. In the first place it would put the osteopath in his proper place. What is new in his therapy is not true and what is true is not new, but this does not prevent him from stealing the old without thanks or acknowledgment and attempting to practise medicine on the new untrue part of the fad. Let him, therefore, be legally required to secure the right to put in practice his valuable but partial old truth and art by a proper examination and license.¹ In the second place there is danger that what is good in massage will be degraded and ignored because of the base uses to which it has been prostituted. A law against such misuse should be passed prohibiting signs in disreputable streets and places and advertisements in more disreputable newspapers. The educated, moral and responsible masseurs and masseuses should do all they can to stop the abuse; the profession should help in the work because of the scandalous misappropriation of a good therapeutic measure, and legislators and the public should be most glad to lend support to a commendable reform.

The Cleveland Medical Journal Company, and the profession, should be congratulated upon the establishment of the admirable *Cleveland Medical Journal*. The first number under the able editorship of Dr. Foshay has just appeared. It is the result of the fusion of the *Cleveland Medical Gazette* and the *Cleveland Journal of Medicine*. The motives and ideals expressed in the leading editorial are worthy of all praise and are indicative of the determination to make our literature professional in fact and not in name only. Dr. Foshay says:

The subscribers to the capital stock of the Cleveland Medical Journal Company have put their money into the enterprise with the full understanding that they have made a contribution to medicine. They aim to own a broad professional journal that shall do a service to the whole profession, and it is not intended to have any dividends. Any profits that might be made are to go to the betterment of the *Journal*.

Upon this platform and with this statement of its principles the *Cleveland Medical Journal* asks the support of physicians everywhere. Our subscribers may rest assured that they will be given the full value of their money in the quality of the matter that will be returned to them, and they will, in addition, have the great satisfaction of knowing that their money goes to

¹ That all is not gold that glitters may be seen in the advertisements and in the book reviews of osteopathic journals. Concerning the most loathsome and nauseatingly immoral book we have ever seen a review in an osteopathic journal says: "If the teachings of this book were observed and practised there would be a social and moral uplift to society, the result of which no one could predict. We are thoroughly pleased with the work and its spirit and intention. It is a good book to put in the hands of the newly married. We commend it."

the support of a purely professional enterprise. Only a few of the medical journals of this country can make such a statement, and physicians should not hesitate to extend their support to an enterprise based on such catholic foundations.

Dr. Pfeiffer Remains an Antivaccinationist.—

The now famous antivaccinationist, Dr. Pfeiffer, of Boston, who to prove his creed exposed himself with much brag and bluster to the risk of smallpox infection, has so far recovered from the disease as to reassert his "views" over the telephone. "Nothing," of course, "has happened to change my views on the subject." Although he did not get precisely the sort of notoriety he sought, he has succeeded so admirably in his desire in a general way, that the advantage gained must not be lost, and so "his views have not changed." We shall read with interest the next number of *Our Home Rights*. It should contain the editor's regrets that as a rule one attack of smallpox "immunes," as Dr. Still would say, against subsequent infection. Already Dr. Pfeiffer, Jr., who attended his father during his illness, claims that he had been vaccinated "only as a matter of form," and this did not take; ergo, the antivaccination creed is demonstrated. But the demonstration would be equally convincing if the Junior had promptly fallen ill. A belief not founded upon reason and evidence is affected neither by reason nor evidence.

Libraries for the blind are needed in every city.

The largest in the country is said to be in Philadelphia and contains about 2,500 volumes. The membership is at present 200. Books for the sightless are printed in three styles of embossed writing—by the Moon alphabet, made up of simple straight lines and arcs, the Braille system in which dots represent letters, by the American method, in which the ordinary letters of the English alphabet are used. The blind soon learn to read almost as rapidly as the ordinary reader with the eyes. The great need is good modern books, which should be supplied by some philanthropist in the interests of a large number of people sadly denied the most valuable of earthly blessings.

American Hospitals in Foreign Countries.—We notice in despatches from Paris that a perfectly equipped and endowed hospital is to be established at Paris, by the generosity of an American. It is to be called the Franklin Hospital, and is to be managed entirely by American physicians and nurses. We wish that such hospitals existed in all the principal cities of foreign countries, especially if gratuitous treatment of the poor is provided. Many travelers are poor, and are also unable to speak the language of the country in which they may fall ill. In such cases there is a solicitude which doubtless prevents recovery. To hear one's own language under such circumstances, and to know that American methods of care and treatment will be used in his case, is at least most comforting.

Homology Between Man and Animals.—The homology between man and the lower animals is shown

as much in their pathology as in their anatomy. Felix Regnault (*Bull. et mem. de la Soc. anatom. de Paris*, July, 1901) has recently demonstrated that the alteration in the skull produced by hydrocephalus is the same for both, the increase in size being, in animals as well as in man, principally in the transverse diameter. This is distinctly true of hydrocephalic horses. Regnault also found a cat with arthritis involving the vertebral column, and producing an ankylosis, with a carriage of the head corresponding in every respect with the analogous process in man.

Notice.—It has been brought to our attention that attempts have been made to use the confidence of the profession in this journal and its management to induce investment in commercial undertakings having no relation to medical journalism. We warn physicians that this use of our name or company is entirely unauthorized, and that if such investments are made it must be irrespective of any reference to AMERICAN MEDICINE, its editors, or its publishers.

GEORGE M. GOULD, *Pres. Board of Directors.*

G. C. C. HOWARD,

Treasurer.

WILMER KRUSEN,

Secretary.

EDITORIAL ECHOES

The Hygiene of the Railroad Car.—So long as railroad companies vie with each other in making their cars as luxurious and as gaudy as possible, without regard to after-effects on their patrons, just so long will railroad travel be accompanied with danger from infectious diseases.—[*Journal American Medical Association.*]

Legalizing osteopathy is really only a scheme for practising medicine by a short cut. Every man who has not got the time, the endurance, the brain, to enter the regular medical profession in the regular way, and who wishes to be a fake practitioner of some kind or other, will take this method of getting a license.—[*The Post Graduate.*]

Physicians as Business Men.—A temporary embarrassment is one thing and an habitual or slipshod method another. To those under the stress of the former every consideration should be shown; for those afflicted with the latter, the kindest treatment is to be called to time. If made to recognize their just obligations, especially to settle them, they will likely pursue the same tactics with those indebted to them, and the opposite of the vicious circle of careless paying and careless receiving will be established. In this intensely utilitarian and commercial age, doctors must adopt sound business methods. To charge well and collect systematically is a good plan to follow. People appreciate you more if you value your own services. They pay nearly everybody else better than the physician. The doctor gets less when he saves a human life than the undertaker would have received if he had had the patient to bury, and much less than the lawyer would have charged if he had had the chance to settle the succession. If your services are valuable, make the patient understand and pay them in proportion. Your families will be better off and the profession will have a better business reputation, even if there are a few people less who say after you are dead, how kind you were.—[*New Orleans Medical and Surgical Journal.*]

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox in the United States, as officially reported from December 28, 1901, to March 7, 1902, amounted to 20,044 cases with 615 deaths. The total for the corresponding period in 1901 was 7,637 cases and 104 deaths.

Smallpox.—Announcement is made of the approaching publication of the first modern comprehensive work on this widely disseminated disease, to be made of practical value by a series of illustrations in color of eruptive diseases likely to confuse the practitioner, and representing typical and unusual cases of variola. Professor George Henry Fox, of the New York College of Physicians and Surgeons, has the work in charge, assisted by such experts as Drs. S. Dana Hubbard, Sigmond Pollitzer and John H. Huddleston.

Infectious Diseases in the Army.—The constant outbreaks of measles and similar diseases at recruiting stations, in spite of every effort toward their control by the surgeons of these stations, has resulted in the adoption of the following measure as a further means of prevention. Hereafter, at all the larger stations, the wearing apparel of recruits shall be promptly disinfected upon enlistment. For this purpose there will be provided an airtight closet having hooks and spreaders upon which the clothing may be suspended, and an apparatus for the atomization of formaldehyd solution, which is so arranged that the spraying device can be fastened directly to the standard bottles in which the solution is delivered for army use.

EASTERN STATES.

Harvard University Medical School has just received a gift from Mrs. Collis P. Huntington, of New York, which brings the sum total raised to nearly \$3,000,000, making the total plant value \$5,000,000. This is exclusive of hospitals.

Compulsory vaccination has been quietly established in Cambridge, Mass., by the Board of Health, and 17 physicians detailed for the duty. A map of the city divided into 17 districts has been prepared for the occasion, so that each physician has a definite limit within which he works. This measure applies also to the university students. A list of those who refuse vaccination will be made, and it is probable that continued refusal will result in prosecution.

Baking Powder Research.—The Massachusetts House of 1901 ordered the State Board of Health to investigate the healthfulness of baking powder, and report whether the ingestion of an ordinarily harmless article in small quantities and with other food would in time undermine the system of a person in delicate health. The Health Board replies that it has been unable to comply, as an investigation affording conclusive results would involve an expenditure necessary for running a special laboratory and for employing physiologic chemists who could control completely for a considerable period many children and adults for determining the condition of their digestive and excretive organs and analyzing all their food and excreta. In the opinion of the board, experiments on animals would not yield conclusive information, and hitherto it had not been the practice of the state to experiment on persons under its care.

NEW YORK.

The anti pigeon-shooting bill notwithstanding powerful influences arraigned against it has passed both houses of the New York Legislature, and is sure of the governor's signature.

Heated Cars.—The increase in the death rate in Brooklyn due to cold street cars led, at a recent meeting of the Board of Aldermen, to the introduction of an ordinance requiring all street railroad companies to warm at least every other car, and to display a sign on those heated; a penalty for noncompliance is provided.

Against the Transfer of Hospital Control.—The female physicians composing the medical staff of the Brooklyn Memorial Hospital protest against the alleged plan of the board of directors to transfer the hospital, which is the only homeopathic institution of its kind in Brooklyn, to the control of the regular school Williamsburg Hospital. A committee has been appointed to meet the board of directors, with a view to persuade them from disposing of the property and also to abandon the alleged proposition to provide for the admission of male patients by eliminating from the charter the words "for women and children." If the committee fails to accomplish its purpose the matter will be carried into the courts.

The American Association of Urologists was organized on February 22, 1902, for the study of the urinary organs and their diseases and the demonstration of new methods of technic and treatment. The membership includes specialists in genito-urinary diseases, gynecologists interested in renal and vesical surgery, and men devoted to the microscopy and chemistry of the urine. The organization consists of active, corresponding and honorary members, and will meet the first Wednesday in

each month. The officers of the association are: Ramón Guiteras, president; William K. Otis, vice-president; John Van der Pool, treasurer; Ferd. C. Valentine, secretary; A. D. Mabie, assistant secretary.

PHILADELPHIA, PENNSYLVANIA, ETC.

The University of Pennsylvania is the recipient of a gift of \$10,000 for the new medical laboratory, it is announced. The name of the donor is not published.

Spitting Restrictions.—The Pennsylvania State Board of Health has adopted resolutions requiring cuspidors in the trains of the Pennsylvania Railroad and Philadelphia and Reading Railway, and an effort is being made to secure legislation providing a penalty for inattention to the rule. The resolution provides that a cuspidor shall be furnished for each seat in the smokers' cars and one at each end of the day coaches, and that thorough cleansing and disinfection of them shall be observed at the end of each run. The Pennsylvania Railroad authorities would heartily cooperate with any movement leading to a penalty for expectorating in cars, but an opinion is expressed that the habit should be done away with, as in New York State, where a state law inflicts a fine of \$500 or less, and not encouraged by conveniences. The Women's Sanitary League of Pennsylvania adopted a resolution recently and appointed a committee to confer with the Board of Health, to urge the enactment of a state law to prevent spitting in public places.

SOUTHERN STATES.

The Georgia Journal of Medicine and Surgery.—Dr. W. E. Fitch, the founder and for many years editor and business manager of the publication, has sold his interest in it to his co-editor, Dr. St. J. B. Graham, who now becomes editor and sole proprietor.

Battery Lazear.—The War Department has ordered recently that one of the sea coast defences of Maryland shall be known hereafter as Battery Lazear, in honor of "Dr. Jesse W. Lazear, late an acting assistant surgeon, United States Army who, while on a visit to Las Animas Hospital, Havana, Cuba, on September 13, 1900, and while collecting blood from yellow fever patients for scientific study was bitten by a culex mosquito and deliberately allowed it to satisfy its hunger, and as a result, contracted yellow fever, of which he died on September 25, 1900, thus by his self-sacrifice positively determining that the mosquito carries yellow fever infection."

WESTERN STATES.

Home for Army Invalids.—The crowded condition of the medical quarters at the Presidio Barracks at San Francisco has rendered it necessary to establish a temporary health resort for invalid soldiers of the regular army at Fort Niobrara.

Gregory Testimonial Banquet.—Arrangements are being rapidly completed for the Gregory testimonial banquet to be held in St. Louis, on April 17. Hon. A. M. Dockery, Governor of Missouri, who is himself a physician and a student of Dr. Gregory, will preside over the banquet. Every indication points to a large attendance.

A sanatorium commission sent by the State of Minnesota, and composed of Drs. G. S. Wattam, J. L. Camp and H. Longstreet Taylor, is making a tour of investigation among the sanatoriums for tuberculous patients in Canada, New York, Pennsylvania and Ohio in order to study the state and municipal methods which obtain in the East.

The establishment of a hospital to perpetuate the memory of the school sold lately by the Northwestern University, was decided at a recent meeting of the alumnae of the Women's Medical School. The hospital will be entirely under the management of women physicians, surgery and all branches of medicine being practised. As guests or as patients men will be received.

Tuberculosis Cured.—Highly gratifying results from pure air of an elevated region, out-of-door life, careful selection of the most nutritious diet, and absolute rest in reduced patients, are reported by Major Appel, chief surgeon at the Government Soldiers' Sanatorium, at Fort Bayard, New Mexico. He claims to have demonstrated that tuberculosis in every stage is curable.

CANADA.

A congress of the French physicians of America will be held in June at Quebec in conjunction with the celebration of the golden jubilee of the Laval University.

Canadian Surgeons in the British Army.—A bill to amend the medical act of 1858, which governs army surgeons, has been reintroduced in the British House of Commons. As the law now stands surgeons desiring to serve in the army who have received their training in Canada must limit their professional services exclusively to Canadian troops. On account of this restriction leading surgeons of Canada who volunteered at the opening of the war were refused and on this account a removal of these disabilities is sought.

FOREIGN NEWS AND NOTES

GENERAL.

Smallpox hardly exists in Japan. This exemption from the disease can be attributed to systematic vaccination and revaccination.

Cholera and Plague.—According to a late report, cholera is epidemic in various parts of Asia. Over 100 deaths have occurred at Medina, and it is also very prevalent among the Chinese on an island opposite Canton. One European in Canton is said to be dead from the disease. The Hong Kong authorities are taking every possible precaution against it. A despatch from Melbourne states that all dirty blocks are being cleaned, rats are being destroyed and garbage is being burned in order to prevent the further spread of bubonic plague which is epidemic in parts of Australia.

GREAT BRITAIN.

Careful revaccination has been proved again a complete safeguard against smallpox, as during the past year it is said no case of the disease has occurred among the staff of the London smallpox hospitals.

Influenza is reported as raging throughout Great Britain, but in a mild form. In London contagious fevers and pneumonia are also prevalent, and there is but slight abatement in smallpox. A wide dissemination has been made through the mails recently of pamphlets urging that newborn infants shall not be vaccinated on the ground that vaccination causes cancer.

Antivaccination Bill.—A bill has been introduced into the House of Commons which provides for the abolishment of compulsory vaccination in England. The measure as promulgated does not interfere with the provision of vaccine lymph nor with the present method of carrying out the operation; it deals only with the question of compulsion. The bill will probably be held over till the next session of Parliament.

Foreign Practitioners.—Of the 4,801 physicians and surgeons listed in the census returns for London there are no less than 169 males and six females who are foreigners. Nearly all countries are represented in this foreign element, America leading the list with 63 male physicians. There are in the city 16,107 persons who are entered as nurses or invalid attendants, of these 15,844 are women, three of whom are said to be blind. Besides these there are also 266 midwives. There are 62 female dentists in London.

A triumph of surgery is reported in the case of Captain A. R. Finlay, of the Bedfordshire Regiment, who was shot in the head on a battlefield of South Africa. The bullet penetrated the forehead and emerged at the back of the skull. He was carried in an apparently lifeless condition to a hospital tent, where he remained unconscious for nearly two months, and then was removed to Southampton, England, where Mr. Victor Horsley removed 27 pieces of shattered bone from his head, and thus restored sensation to the side of his body which had been paralyzed since the injury. His complete recovery is confidently anticipated.

CONTINENTAL EUROPE.

Statue of Haeckel.—The sculptor Harro Magnussen has been commissioned to execute a marble bust of Haeckel, professor of zoology and comparative anatomy at Jena.

Against Charlatany.—In the crusade against charlatany in Germany one of the adopted measures is the publication in the medical journals of the nature of the most extensively advertised quack remedies.

Silver Larynx.—Professor Bergmann, of Berlin, surgeon to King William, will remove the larynx of a girl who has had paralysis of the throat for two years, and introduce a silver mechanism to restore speech.

Professor Virchow's steady progress toward recovery is reported. He made an effort to walk with suitable support six weeks after the accident, and with his wonted activity persevered in the attempt. His physical condition is excellent, but owing to his age and the severity of the injury, a slight lameness is feared.

Cesarean section has been performed by Dr. N. Charles, of Liège, for the fourth time on a small rachitic patient, whose pelvis has a sacropubic diameter of only 6 cm. Both mother and child are reported as doing well. Of the three children previously delivered in the same manner two are well and one died at the age of 13 months from bronchitis.

OBITUARIES.

Edward Mott Moore, who died full of honors and of years in Rochester, N. Y., March 8, aged 88, was born in Rahway, N. J., was a nephew of Lucretia Mott, and in his youth resided with her in Phila-

delphia, where he was graduated from the medical department of the University of Pennsylvania with the class of 1834-5, and afterward served as resident physician at Blockley Hospital, and also of the Friends' Asylum at Frankford. During this period he made experiments which were important in rendering knowledge of cardiac diseases more accurate. He began the general practice of his profession at Rochester. From 1842 to 1853 he was professor of surgery in the medical school at Woodstock, Vt. Afterward he held the same position successively in the Berkshire (Mass.) Medical College, Starling Medical College, Columbus, O., and the Buffalo Medical College, from which he resigned in 1883, after having been connected with it 25 years. He was at one time president of the Medical Society of the State of New York and a founder of the Surgical Association of the United States, being the first successor to Dr. Gross in its presidency. In 1884 he was a delegate to the International Congress of Physicians at Copenhagen, and for many years he was a trustee of the University of Rochester. Among the many Rochester organizations that met the day after Dr. Moore's death to pay loving tribute to the memory of a magnanimous and beneficent nature, not only were medicine, surgery, science and public health largely represented, but commerce, letters, arts, and arms also, for "wherever he was placed he was easily first, not only by reason of his noble presence, his exquisite graciousness of manner, but more than all by the fervor of his devotion to all beneficent ends."

Christian Fenger, a noted surgeon of Chicago, March 7, aged 62. Dr. Fenger was born in Copenhagen, Denmark, and while still a medical student served as surgeon in the war between Denmark and Germany. After his graduation from the University of Copenhagen in 1867, he acted as assistant in Wilhelm Mayer's ear clinic, and for two years was an interne in the Royal Friedrich's Hospital, succeeding the great Jacobson. He served on the French side throughout the Franco-Prussian war in the Red Cross ambulance corps. From 1873-74 he was privat-docent at the Copenhagen City Hospital. In 1875 he went to Egypt with Griessenger as a member of the sanitary council sent to study the etiology of diseases there, and in 1877 came to Chicago and began the career in pathology which gave him an international reputation. He filled successively the chair in clinical surgery at the College of Physicians and Surgeons, the Chicago Medical College, and at Rush Medical College. He was surgeon to a number of hospitals and made many contributions to scientific literature, and the King of Denmark conferred a knighthood upon him.

Francis W. Lewis, of Philadelphia, March 2, aged 77. He was graduated from the college department of the University of Pennsylvania in 1848, and from the Jefferson Medical College in 1846. He acted as army surgeon in several military hospitals during the Civil War. For many years Dr. Lewis was a director of the Children's Hospital, and was a member of the College of Physicians.

Arthur T. Muzzy, an ear and eye specialist of New York, March 4, aged 51. He was born in India, the son of a missionary, was graduated from Amherst College in 1874, and from the New York College of Physicians and Surgeons in 1879. He was assistant surgeon at the New York Eye and Ear Infirmary, and consulting physician for the eye and ear at Gabels Heimath Home.

E. A. Tucker, a prominent obstetrician and gynecologist in New York, attending physician of the Sloane Maternity Hospital, and member of the New York Academy of Medicine, March 3, aged 41.

George W. King, of Kings Station, New York, ex-president of the Eclectic Medical Society of the state of New York and the Saratoga District Medical Society, March 7, aged 76.

H. W. Sparks, a well-known practitioner of northeast Kentucky, and graduate of Louisville Medical College, 1882, at Ashland, Ky., February 27, aged 40.

Julius Wolff, professor of orthopedic surgery in the University of Berlin, and for years editor of the *Zeitschrift für Orthopädische Chirurgie*, February 18, aged 41.

Frank R. Schmucker, one of the oldest homeopathic practitioners in Reading, Pa., and a veteran of the Civil War, March 4, aged 64.

Moriz Kaposi, the celebrated dermatologist who succeeded Professor Hebra at the University of Vienna in 1879, March 6, aged 65.

Charles O. Carpenter, one of the best-known physicians and surgeons of Massachusetts, at Holyoke, March 7, aged 68.

Worthy Streater, of Cleveland, from whom the city of Streater, Ill., was named, March 3, aged 85.

William W. Collins, for 38 years one of the leading physicians of Albion, Mich., March 7, aged 77.

Albigeance W. Kingsley, of Elizabeth, New Jersey, at Mattland, Fla., February 26, aged 87.

Richard Ferguson, formerly of Richmond, Va., at Columbia, S. C., March 6, aged 28.

Henry B. Noble, of Washington, D. C., March 5, aged 70.

J. C. Nicholson, of Mount Meigs, Ala., March 3, aged 73.

George W. Jackson, of Eglinton, Can., March 7, aged 51.

James McLaren, of Deer Park, Can., March 7, aged 78.

Mordecai Price, of Fallston, Md., March 5, aged 80.

John C. Mock, of Huston, Pa., March 3, aged 57.

SOCIETY REPORTS

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

MEETING OF THE EASTERN SECTION, NEW YORK ACADEMY OF MEDICINE, MARCH 1.

The opening address was delivered by Dr. H. Holbrook Curtis, president of the section, who briefly reviewed the advances made in recent years in laryngology, rhinology and otology, and congratulated the members on the success which had attended the society's efforts to awaken greater interest in these allied specialties.

Nasopharyngeal Adenoids: Carl E. Munger, Waterbury, Conn., reported an unusual case of adenoids, in which some of the cartilage was found to be hypertrophied. In the discussion which followed, attention was especially directed to the question of the best way of stopping hemorrhages which, as was remarked, while not common in such cases, were unusually severe when they did occur.

Discussion.—B. S. Booth, Troy, N. Y., described two cases in which a tampon had proved effective after several hemostatics had failed. NORTON L. WILSON, Elizabeth, N. J., advocated the use of adrenalin. GEO. L. RICHARDS, Fall River, Mass., said he had great faith in peroxid of hydrogen as a temporary hemostatic. C. G. COAKLEY, New York, spoke of the use of alcohol at one of the hospitals, but admitted that he had always been afraid to use it himself. Dr. HOLBROOK CURTIS said he always depended largely on mechanical strapping of the extremities.

Postnasal Polyps and a Safety-pin in the Trachea: Two cases were reported by George L. Richards. One was postnasal polyps in a child with unique features. The other that of a safety-pin remaining lodged in a child's trachea for several weeks without presenting any symptoms beyond a very slight cough. There was difficulty in locating it, and as the child continued to take its food and play about as usual, and did not complain of any pain, there was some hesitation about performing a tracheotomy. Ultimately, however, the position of the pin was discovered by means of the x-ray, and an operation being then determined on, the pin was removed at the fifth attempt.

Discussion.—Dr. MUNGER said he also had had experience with a safety-pin in the trachea, but his case was complicated by the fact that the child had bronchial pneumonia and afterward scarlet fever, which prevented operation for five weeks, when he succeeded in getting the pin out. After other cases had been reported of foreign bodies being removed after being long lodged in the trachea or esophagus, Dr. RICHARDS closed the discussion by saying that his case was principally of importance in this respect, that it proved the x-ray to be an absolutely reliable guide when the foreign substance was a metallic solid body.

Four cases of polypi attached to the upper wall of the maxillary antrum and protruding into the nose and nasopharynx were reported by Robert C. Myles, New York. All these cases presented peculiarities—their hidden position, the fact that the patients were all young persons, and the further fact that the symptoms had baffled the efforts of physicians to make a diagnosis. In each instance relief was obtained by curetting the antrum, and so far as had been ascertained there had been no recurrence of the trouble.

A case of granular neoplasm of obscure origin was described by H. L. Myers, Norfolk, Va., who invited and received suggestions, mainly corroborative of his own views, as to the diagnosis and consequent treatment.

Peritonsillar abscess, by Frederick C. Cobb, Boston, dealt largely with the anatomy of the parts liable to be affected, in regard to which the information given in the textbooks was admittedly deficient. He also described the technic of the operation which he was in the habit of performing for the purpose of giving relief. Instead of making an incision through the pillar, as was generally done, he punctured along the line between the anterior and posterior pillars. He had satisfied his colleagues that this procedure was preferable to the old one, as the latter was liable to close and force the pus from the abscess to seek an outlet by some other channel. He did not think it advisable to puncture until about the fourth day, by which time it would generally be found that the abscess was in a condition to permit of the escape of the pus.

Discussion.—HOLBROOK CURTIS remarked that the author of the paper had conferred a benefit on the profession by showing it how to differentiate the different kinds of peritonsillar abscess. Dr. RICHARDS related a case of such an abscess following vaccination, though he could not say that it resulted from it. Dr. MYLES spoke in favor of early incision, observing that the patient operated on early had the minimum amount of suffering. Dr. MYERS thought the time to puncture was before the pus formed. After some further discussion Dr. COBB replied, admitting that when pus was obtained near the surface immediate puncturing afforded relief; but when it was necessary to go down to a depth of a quarter or half an inch the

aperture was sure to close, and the pus would not come out through the cut, but elsewhere. He justified the removal of the tonsils in certain cases during the attack, on the ground that, while it might be painful, it enabled the operator to know exactly where the abscesses were.

Temporoparietal Abscess.—James F. McKernon, New York, reported a case and presented the patient, a boy of 9. Three or four drams of pus were evacuated from the abscess, which was washed out with a normal salt solution, and on the eighteenth day after operation the brain cavity was found to have quite healed. On many previous occasions he had spoken against the custom formerly so much in vogue of performing a Wilde's incision in these and other cases, and his experience in this instance confirmed his objections. It was, in fact, as much for this reason as in order to report a successful case that he had brought the matter up, for had a radical operation been done on the mastoid at the time the Wilde's incision was made he thought it safe to say that the little patient would have been saved months of suffering, while all danger of cerebral complications and subsequent danger to life would have been avoided. Another point which he considered of importance was that, when cases of chronic purulent otitis media came under their observation, they should examine the case carefully to determine the presence or absence of intratympanic caries, and if caries were present its removal should be advised at once, in order to prevent the possibility of any subsequent intracranial infection taking place.

Septum Operations.—B. S. Booth described an operation correcting the deviation of the septum which he is in the habit of performing under the combined use of adrenalin chlorid, cocaine and nitrous oxid gas. Some months ago, he mentioned, he had read a somewhat similar paper before the Section of Rhinology and Laryngology of the New York Academy of Medicine, but at that time he did not use nitrous oxid but merely adrenalin chlorid and cocaine. In the discussion which followed a number of the members expressed the opinion that, considering the amount of pain and shock that must be caused by an operation of this magnitude, a general anesthesia had better be given. Since operating upon this type of cases under local anesthetics he had found that there was but one step in the operation that was really painful, and that was the process of breaking up the elasticity of the septum; and inasmuch as this part of the operation took but a few seconds it occurred to him to try a general anesthesia which lasted just long enough to allow him to accomplish this purpose. He selected nitrous oxid as being the safest and most easily given, and for the last six months he had been operating under adrenalin chlorid, cocaine and nitrous oxid. After the operation the patient was allowed to rest for a few minutes in the office, and was then able to proceed home. The procedure seemed to him an improvement over using either general or local anesthesia separately. It was certainly more practical, more humane, and less dangerous.

Discussion.—Dr. RICHARDS said he did not think it was a good plan to minimize the importance of the surgical operations they did. It was important to take sufficient time in all these cases, and he deprecated the idea that they could be done in a few minutes in the doctor's office, and the patient started off home. GEORGE T. ROSS, Montreal, added that there was always the danger of sepsis. Dr. MYLES thought patients might just as well be allowed to go home as to be confined in some more or less pus-laden hospital. Dr. BOOTH said he failed to see that there was any more reason to expect sepsis when the patients were allowed to go out into the open air; he had never had any trouble of this kind. He denied that he minimized the importance of those operations, though he thought it of importance to perform them in as short a time as was compatible with proper work.

The Treatment of Tonsillar Mycosis.—Charles W. Richardson, Washington, D. C., pointed out that there was an accumulation of evidence that many cases that were classed as mycosis of the larynx were really not mycotic affections, but simply a keratosis, and would recover spontaneously without treatment. In cases where the disease was proved to be present the only efficacious treatment was by the thorough removal of the affected part.

Discussion.—WENDELL C. PHILLIPS, New York, said he had considerable experience in the treatment of these cases. A large proportion of his patients had been young women who were very fond of pets, as dogs, cats, and horses; he did not know whether that had anything to do with it or not. He never found it necessary to excise the tonsils, always being able to effect a cure by means of the galvanic cauterization. Dr. MYLES remarked that he had had a series of cases which suggested the possibility of a milk diet having something to do with the production of the disease. M. D. LEDERMAN reported good results from the use of formalin, following the use of cocaine. After further discussion, Dr. RICHARDSON replied, admitting the want of knowledge as to the etiology of the disease, and remarking that, in view of the marked tendency to resolution, it was best to leave it alone unless the conditions clearly called for an operation.

Epithelioma of the Auricle and Auditory Canal.—Thomas R. Pooley, New York, said that cases were so rare in which a patient could be presented after an operation for this condition that he felt warranted in making the report. The

proper and only treatment worthy of consideration in such cases was excision of all the growth, cutting well into the healthy tissue. Caustics were often used, but they should be cast aside whenever the knife could be applied.

Rhinitis Rheumatica.—W. Freudenthal, New York, said that in 1894 he first drew attention to a class of cases that had not been noticed before, namely, rheumatic affections of the nose. His paper had been noticed quite frequently, but there was little literature apart from it. The theory had been advanced that rheumatism included all bacterial disease; but whatever its cause, his observations led him to believe that it showed itself in the nose as well as in other parts of the body, and that it appeared as an acute as well as a chronic affection.

Chronic Hypertrophic Rhinitis.—Z. L. Leonard, New York, said he believed that a rheumatic or gouty diathesis was an important factor in the production of affections of the nasal organs.

Dr. Arthur B. Duel, New York, discussed the operative treatment of tracheal stenosis following intubation.

Dr. Thomas J. Harris, New York, submitted an analysis of 100 cases in which he had made observations with the view of ascertaining the significance of persisting temperature after mastoid operations. The conclusion at which he arrived was that, in the absence of other symptoms, this persisting temperature need not cause anxiety.

Dr. H. N. Hoople, Brooklyn, reported a case of empyema of antrum of highmore, with interesting complications; and papers on Extrinsic Nasal Neoplasms and Empyema of the Frontal Sinus were read respectively by Dr. John C. Lester, Brooklyn, and Dr. Conrad Berens, Philadelphia, which brought the program to a close.

Inspection of Immigrants.—During the month of January 21,145 immigrants were inspected at the port of New York. Of these 91 were certified for deportation on account of contagious or loathsome disease or other physical causes.

Sanitation in Manila.—Colonel L. M. Maus, commissioner of public health in Manila, writing to Surgeon-General Sternberg, notes a thorough cleaning up of more than 3,000 houses in that city, in many of which cases of plague had occurred or infected rats had been found, and in numerous cases the remodeling had entailed an outlay of \$2,000 or \$3,000. Suitable medical and sanitary laws for the Philippines have been prepared. Before April 1, the authorities anticipate transporting 500 or 600 lepers to the island of Kulion, selected for the leper colony. It is in the Calamianes group, situate about 20 hours distant from Manila by steamer. It is about 20 miles long, 10 miles broad, and contains many fertile valleys and is well-watered and timbered. It is intended to make this colony self-supporting.

Health in United States.—The census report recently issued demonstrates what sanitation and hygienic methods have accomplished in the improvement of the general health. A comparison of the returns for 1900 with those of 1890 shows a gain of more than seven years in the average life of Americans. To illustrate, in 1890 the average age of Americans was 31.1 years, and in 1900 it was 38.2 years, showing an increase of 22.8% in longevity. In connection with this encouraging report may be mentioned the fact that a noticeable decrease is observable in the mortality from tuberculosis, diphtheria, typhoid fever, cholera infantum, bronchitis and all other diseases which have had hygienic methods strictly enforced in respect to them. (On the other hand, an increase is shown in the rate of mortality from pneumonia, cancer, kidney complaints and heart affections.)

Tua-Tua for Leprosy.—Interest has revived again in this shrub, *Jatropha gossypifolia*, L. a native of the South American tropics, to which marvelous curative effects upon leprosy have been alleged. Several years ago Consul Plumacher, at Maracaibo, reported the alleged cures effected by the internal use of its fluid extract in Venezuela, and 27 plants were sent by the United States Department of Agriculture to Dr. Carmichael, United States Marine-Hospital Surgeon, then in Honolulu. The plants were set out in the experiment station grounds, and grew well. Since that time Dr. C. E. Camp, assistant in the bacteriological laboratory of the Board of Health of Hawaii, has been experimenting with it on lepers, but owing to the severe pain attending its use there has been difficulty in inducing the lepers to submit to the treatment. The Board of Health of Hawaii is unwilling, apparently, to aid in these experiments or to permit him to treat those lepers under the care of the Board, as it has been a rule with them to refuse requests to experiment with leprosy cures, having been besieged with proprietors of nostrums who designed to sell their wares through the endorsement of the board. The lepers are free to choose or refuse the treatment. A Portuguese in Honolulu afflicted with leprosy, according to Dr. Camp, was entirely cured by tua-tua, and gratifying results are reported from its use in Tahiti, whither some of the shrubs were sent by a schoolteacher, and a decoction prepared from the leaves, twigs and seeds, which produced violent convulsions in the patients, but had the direct effect of reducing the disfiguring swelling and the stiffness which renders the hands useless.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

A VETERAN'S CRITICISMS ON MODERN SURGICAL PROCEDURES: ANESTHESIA: OPERATIONS.

BY

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of Seattle, Wash.

"It is a disquieting fact that during the last ten years the deaths under anesthetics in England and Wales have almost doubled." (Editorial note in the *Medical Review*, London, Vol. iv, No. 12, p. 710.)

In the *Lancet* of November 6, 1901, Sir William M. Banks, in the course of a long and thoughtful article, points out that the "sudden collapse" as usually reported is not a fact—the clearly premonitory symptoms really not being observed by the careless or ignorant anesthetizer. Henle states that pneumonia commonly follows the operation of laparotomy. Out of 1,787 operations, it occurred in 143 patients, of whom 65 died. The great majority of cases were lobular in character (*Archiv für klinische Chirurgie*, Vol. 64, No. 2, p. 20, 1901).

Every surgeon in this country must be familiar with the paper of Drs. Da Costa and Kaltefleiter read before the American Surgical Association at their meeting in May, 1901, in which they showed the destructive effect of ether anesthesia upon the erythrocytes and hemoglobin, and urged minimum quantities of ether and rapidity of operation.

During my pupilage with Dr. John Murray Carnochan, of New York (1859-62), that brilliant surgeon passed his 12,000 mark of operations performed under chloroform (he abominated ether, both because of its slowness of action and almost invariably resulting vomiting) without one single death, and it should be instructive to study the methods by which he secured such desirable results. These may be summed up under two heads: (1) The most careful precautions regarding anesthesia, and (2) extreme rapidity of operation. He was already a famous surgeon before ever employing anesthesia (Warren's first use of it having been only in October of 1846), and had acquired a manual dexterity—ambidexterity I should say—such as I have never seen equaled by any other man, and, furthermore, he never lost his dread of anesthetics. He always had at command a number of students and young graduates who had been his students, who were thoroughly and sternly drilled in the entire subject as then understood, and its practical application. A savage rebuke smote the youngster who let his eye or attention wander from his own duty—no matter how attractive the operation might be. Preliminary examination of the heart was a matter of course, but he cared little for murmurs and only refused anesthesia in marked cardiac debility. The anesthetic was of the purest and best, no matter at what cost—and I notice that several recent writers have uttered emphatic words of caution on this point—it was administered slowly at first, with the very lowest possible quantity throughout, and *always* with the freest admixture of air. The room was kept absolutely quiet; the anesthetizer was intently observant of respiration, pulse, and pupil—striving to keep the patient barely within the portal of insensibility, and dreading any further advance as if the very hole of hell lay but just beyond. The slightest sigh or stertor, or flutter of the pulse, or relaxation of the iris, was signal enough for the instant withdrawal of the cone—"I don't want him to kick, but far better kick than die!" he would say. The assistant who carried the patient through the operation at the nearest possible approach to the happy medium, and with the least possible amount of chloroform, was sure to get a few words of hearty commendation that would set his heart aglow; otherwise—well, the less said about that, the better; but, in either case, there was a lesson he was not likely to forget in all time.

A valuable resultant of this salutary dread was that he continued operating with almost the speed of anteanesthetic days, though it was not for this reason alone; and he impressed upon

his students and classes the fact that prolonged operations also greatly increased the "shock"—even if we could not definitely calculate how much so. When, like a medical Rip Van Winkle—after 20 years' retirement from ill-health, through keeping book-posted as to advancements—I went East for some personal observations and special studies, there was nothing that so much astonished me as the calm and chatingly unhurried deliberation of many surgeons in their work, and their apparently utter indifference as to the length of time and methods of administrations of the anesthesia. (There were some noble exceptions whom I honor accordingly). As to methods, there have been many complaints within the last year or two; but I do not see enough protest against the often needless length of time, which I am sure must be exceedingly harmful. Undoubtedly a considerable proportion of the succeeding pneumonia must be caused (in laparotomies) by the chilling of the viscera; but in many of these as well as other cases it is the direct result of the prolonged inhalation of the anesthetic; and I am strongly inclined to think that the former produces the lobar form, and the latter the lobular variety, of that disease, and that both might be largely decreased in frequency by more rapid procedures.

UNSIGNED EDITORIALS, NOTES AND REVIEWS.

BY

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It is not my desire to enter into a general criticism of scientific and medical journals, but I would respectfully draw attention to an almost universal custom in editorial departments which, in my experience, often leads to serious confusion and considerable bibliographic difficulty. Reference is made to unsigned editorials, notes and reviews.

In viewing this subject the question of "giving credit" to a certain person for certain views, original or otherwise, does not enter into consideration. The point of holding a given person responsible for certain views is, on the other hand, very important. Suppose two different authors write editorials on the same subject in the same journal at two different times and these two editorials (as occasionally happens) express diametrically opposite views, is it to be assumed that the editor has changed his opinion? If so, is he to be held personally responsible for the statements made, or is the journal the responsible author?

Again, in reading an article on a given subject are we not influenced more by the reputation of the actual writer than by the journal in which the article appears? It will indeed be admitted that it would be questionable to look upon a journal as a scientific or medical investigator, and it is equally questionable to assume that any given editor could advance all the valuable thoughts which we find in the many excellent editorials printed on such varied and almost unrelated subjects.

The serious objection to unsigned editorials is from the standpoint of the bibliographer and the original worker. To classify all editorials under the subjects treated often results in extreme inconvenience; to classify them under "editor" or "anonymous" increases confusion still more; to classify them with the journal as author detracts from the weight to be attached to them (since journals do *occasionally* run down!) and leads to contradiction of views with no apparent explanation.

A particularly unfortunate complication arises when an editorial contains new scientific names, for it is necessary for zoologists and botanists to know the responsible author of every name published.

In preparing an index catalogue of medical and veterinary zoology unsigned editorials, notes and reviews have given us more trouble than any other class of literature, and other persons who have prepared bibliographies complain of the same difficulty.

In view of the difficulties which arise, I would respectfully raise the question for consideration whether, from the standpoint of the editorial sanctum, there are any reasons for pub-

lishing editorials, notes and reviews *unsigned* which would outweigh the reasons for having them all signed with the names, or at least with the initials, of the actual authors?

A WORD TO THE "KNITTING NEEDLE" AND THE "SAW NAIL" ADVOCATES IN RUPTURING THE BAG OF AMNIOTIC FLUID DURING LABOR.

To the Editor of AMERICAN MEDICINE:—Both recent correspondents condemn themselves when they advocate any abnormal method of hastening labor. They should not forget that the presence of the bag of waters in labor is nature's method of dilating the os and cervix uteri, and that any attempt to interfere with or hasten the rupture of the amniotic bag is delaying the labor and may turn out to be a cause of resorting to instruments for the aid of, and possible injury to the patient.

If one has not sufficient patience or time to wait for nature to do her work, do not remain in the lying-in room, but make it convenient to visit some nearby patients and return from time to time to note the progress of labor. One will very soon be able to calculate the probable duration and when their presence will be required to remain with and give encouragement to the patient. Early in my practice I was inclined to hasten the rupture of the bag of amniotic fluid, believing it was necessary for the relief of the patient and the hastening of labor, but after an experience of about 3,000 confinements I can affirm that I never found it necessary to puncture the amniotic bag by any pointed instrument, whereby I might be liable to wound the fetus if it should prove to be a face presentation, and I further learned that a forcible rupture of the sac was the cause of greater delay than permitting the bag of waters to remain intact.

Since I have given up the greater part of my obstetric work it surprises me to find that some of my former patients who gave me little delay in their normal labor have had performed on them symphysiotomy and cesarean sections for no other reason, so far as I can learn, than because the bag of waters was ruptured prematurely, the os and cervix uteri not being sufficiently relaxed to permit the passage of the fetus within the limit of time ordinarily required.

Too much meddlesome midwifery has been resorted to for unjustifiable reasons of late years by some, who seem very desirous of publishing their experiences. These doctors meet with extraordinary cases which they state require heroic and wonderful treatment, and yet if the doctors only realized the risk they run and the damage they cause, surely they would not be guilty of such hasty proceedings.

It seems to me that the doctors of the present day are such hustlers and so averse to being detained by the lying-in woman, and so very eager to exhibit their skill in the use of the forceps or knife (if permitted to do so after an urgent presentation of the fatality of delay) that it is not surprising that at the present time giving birth to a child is looked upon as a very hazardous thing, and abortion is frequently resorted to by the timid and frightened wife when her condition is discovered.

It certainly seems to be an exception to the rule when we find a prospective mother delighted with the idea that she is in a condition to be the happy producer of a living child.

Please allow the smooth pressing wedge of the amniotic fluid to accomplish its work thoroughly before resorting to the saw nail finger or the penetrating knitting needle or any other instrument of interference.

Philadelphia.

WM. S. STEWART.

Brains at Cornell.—A recent enumeration gives a total of 1,476 preparations of the brain in the neurologic division of the museum of Cornell University. Of these 402 are from human adults; 207 from fetuses or embryos; 282 from apes, monkeys and lemurs; 400 from other mammals, and 185 from other vertebrates.

For Tuberculous Patients.—The Board of Estimate and Apportionment has been asked by Homer Folke, Commissioner of Charities, for an appropriation of \$40,000 for the equipment of four pavilions for reception of tuberculous patients, in connection with the tuberculous division of the Metropolitan Hospital, and for the further sum of \$48,000 annually for their maintenance.

ORIGINAL ARTICLES

THE USE OF BORAX AND BORIC ACID AS FOOD PRESERVATIVES.

BY

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AND

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In 1900 Professor Oscar Liebreich, of Berlin, published a paper "On the Action of Boric Acid and Borax,"¹ in which, after a most exhaustive study, this author concluded that boric acid and its salts are practically without harmful effects upon man, and that they may be used as food preservatives without injury, provided that the amounts employed be kept within certain limits. This matter is of sufficient importance to justify a brief statement of the points made by Professor Liebreich. In the first place, it is shown that boric acid is a normal constituent of many plants, and its presence in California wine was detected by Baumert in 1888. At first it was supposed that its presence in the wine was due to the fact that it had been used as an adulterant. However, more extended investigation, embracing the examination of a thousand different kinds of wine of German and foreign make, demonstrated that boric acid is a normal constituent of the grape-vine, and of wine. It follows from this that if we regard wine as a normal and proper food, we must admit that boric acid is naturally present in this widely used food product, and that habitual wine drinkers must consume considerable quantities of this substance.

In order to demonstrate the harmless nature of boric acid, Professor Liebreich fed a number of animals upon foods mixed with considerable amounts of this substance, and in this way studied its effects. To a dog, three grams of boric acid was administered daily for 36 days. On the twelfth day this animal vomited, but it is doubtful whether this was due to the administration of boric acid or not, for the administration was continued in undiminished quantities, and without any evidence of harmful effect upon the animal. At the expiration of the 36 days, and after the dog had taken 108 grams of boric acid, it was found that its weight had increased 0.26 kilogram. To the second dog, two grams was administered daily during a period of 36 days. On the fifteenth day this animal vomited, but again the administration of the boric acid was continued, without evidence of further disturbance, and at the expiration of 36 days, and after the animal had taken 72 grams of boric acid, it remained in apparently perfect health, and it was found to have increased in weight 0.01 kilogram. To a third dog, one gram of boric acid was administered daily for 24 days, without any evidence of ill effect, and at the expiration of the time the animal was found to have gained 0.37 kilogram in weight. As a companion test, a dog was fed three grams of sodium bicarbonate daily for 36 days. Diarrhea in mild form prevailed during a part of this time, and at the end of the experiment it was found that the animal had lost 0.05 kilogram. Still another animal was given three grams of potassium nitrate, or saltpeter, daily for 36 days, at the expiration of which time it was found that this dog had lost 5.4 kilograms, which was equivalent to 19.4% of its original weight. Additional experiments were made upon rabbits and guineapigs, in which it was shown that these animals may be given as much as 0.3 gram of boric acid daily without injury.

In the further prosecution of his studies, Professor Liebreich investigated the local action of borax, soda, and saltpeter upon ciliated epithelium, and upon the

mucous membrane of the stomach and intestines. He ascertained that a solution of boric acid had no effect upon the movements of ciliated epithelium, until the strength was increased to from 2% to 3%, while a 4% solution of borax locally applied for 20 minutes did not affect the movements. In comparison with these findings, it was demonstrated that 5% solutions of either common salt or saltpeter arrest the movements of ciliated epithelium. In his studies on the action of these agents upon the mucous membrane of the stomach and intestines, the abdominal cavities of narcotized animals were opened, and solutions of varying strength of the different substances were locally applied. After this had been done, the mucous membrane was studied both macroscopically and microscopically, and the latter form of investigation was carried out with both fresh and fixed preparations. As a result of this work it was found that 5% solutions of boric acid are totally without effect upon the mucous membrane of the stomach and intestines. However, these tissues are more susceptible to the action of borax, the difference being due to the alkalinity of the solution of the salt. When a 1% solution of borax was employed, slight changes were observable under the microscope, and were found to be identical with those induced by other alkalis. When stronger solutions were applied, an excess of mucus was poured out, and some epithelial cells were found to be separated from the membrane. A 2% solution of borax had a markedly injurious effect upon the mucous membrane of the stomach and intestines. With soda the effects were still more marked, and with a 1% solution there was plainly defined disintegration of the epithelial cells. Solutions of saltpeter were found to be still more injurious, and even 0.5% solutions of this substance have a markedly harmful local action on the mucous membrane of the stomach and intestines. From his studies along this line Professor Liebreich came to the conclusion that boric acid is practically without effect upon the mucous membrane of the stomach and intestines, while the action of borax on these tissues is due simply to the fact that it is an alkaline substance.

In still another series of experiments Professor Liebreich studied the influence of the administration of borax upon tissue metabolism. In these investigations the amount of nitrogen in the food and in the excretions, together with the volume, specific gravity and reaction of the urine, and the weight of the feces were regarded. The metabolism of the animal was studied through a period preceding the administration of the borax, then during the time of administration, and lastly, through an after period. It was found that the administration of 2 grams of borax daily had no appreciable effect upon tissue metabolism. It did increase the specific gravity of the urine and render this secretion alkaline. The animal continued during the whole time of the experimentation in a state of nitrogen equilibrium, thus showing that its metabolism was not altered.

Professor Liebreich demonstrated that both borax and boric acid are easily and rapidly excreted from the system, and that there is no cumulative action. Two dogs were fed for five consecutive days, number one with borax and number two with boric acid, the dose in both instances being 150 centigrams daily. Thirty hours after the administration of the last dose the animals were killed and their brain, cord, bone-marrow, blood and liver chemically examined, and in no instance could any trace of boric acid be found. Professor Liebreich concludes from this and similar experiments, as well as from the literature of the medical administration of boric acid and its salts, that cumulative action is not to be expected. It is true he states that very large doses, administered for a long time, may be detrimental, but the amount necessary to induce these harmful effects is many times that used in the preservation of foods. Professor Liebreich makes the following statement: "Quite naturally there have been observed in the thera-

peutic applications certain cases of idiosyncrasy. However, similar cases occur after eating certain kinds of food, such as strawberries, crayfish, etc., which in some people may cause eruptions on the skin. Like cases of idiosyncrasy are met in the administration of medicinal agents, such as quinin and potassium iodid, and even rhubarb in rare instances causes the formation of large blisters on the skin. However, idiosyncrasy is not of special importance in the administration of borax and boric acid. In the treatment of epilepsy Gowers administered daily 0.91 of a gram of borax for two years, and then 3.62 grams daily (the period during which the last mentioned dose was administered is not given) when finally a psoriasis-like eruption appeared on the skin. Similar eruptions occurred in other epileptics submitted to the same treatment. Evans reports a case in which from 1.8 to 3.6 grams were administered daily during a long period, after which a dermatitis occurred in one instance, and a disease of the nails and falling out of the hair in another. However, Evans states that these patients were possibly syphilitic, and he is not altogether certain that the symptoms should not be attributed to this condition. Moreover, these doses are far in excess of the amounts which would be used as food preservatives." Some unfortunate accidents have occurred in surgery in cases in which large quantities of boric acid have been injected into cavities. A case reported by Sophia Grumpelt belongs to this class. A teaspoonful of boric acid dissolved in one pint of water was used for irrigation of the large intestine. After three or four injections the patient complained of headache, slight nausea and intense dryness of the skin. On discontinuing the use of the boric acid the symptoms ceased, to reappear again with the resumption of the irrigation. In the majority of cases reported in surgery in which ill effects have been attributed to injections of boric acid there is no statement of the amount of the substance injected, and the reporter usually confines his statement to the percent of the solution employed, without giving any definite idea as to the volume of the solution retained in the body.

In still another series of experiments Professor Liebreich studied the action of borax and boric acid on the different digestive ferments, with the following results: (1) The addition of 5% of borax to saliva decreased the amount of sugar formed by 57.8%. This was probably due to the alkalinity, inasmuch as it was found that sodium carbonate completely arrested the diastatic action of the saliva. (2) On gastric digestion solutions of borax of from 0.1 to 0.25% have no action. When the strength of the solution is increased to 0.5% there is a slight effect. This is undoubtedly due to the fact that the borax neutralizes the acid of the gastric juice, for it was shown that even a 5% solution of boric acid does not retard gastric digestion. At the same time a control experiment showed that the presence of salt-peter to the extent of 0.1 of 1% so greatly retarded gastric digestion artificially carried out that one-fourth of the albumin remained undigested. (3) Neither borax nor boric acid retards the digestion of starches by the pancreatic juice. Boric acid was also found to be without effect upon the proteolytic enzymes of the pancreatic juice.

A very important point brought out by Professor Liebreich in his paper is the fact that while borax and boric acid can be used for the preservation of fresh foods, they cannot be used for restoring decomposed foods to apparently a fresh state. In other words, borax and boric acid are not disinfectants; they are only feeble antiseptics. They are not capable of destroying germs which are already growing abundantly, but they have an inhibiting effect upon the relatively few germs that are present in fresh foods, and therefore tend to prevent decomposition. However, Professor Liebreich brought forward no experimental evidence on this special point, and it was one of the objects of our own work to determine to what extent borax and boric acid may be used

for the purpose of inhibiting the growth of bacteria, and we will return to the discussion of this subject after we have more fully reviewed the literature.

In point of time, the paper by Chittenden and Gies on "The Influence of Borax and Boric Acid upon Nutrition, with special reference to Proteid Metabolism,"² preceded the investigations of Professor Liebreich. Chittenden and Gies made an exhaustive study of the influence of borax and boric acid upon metabolism in dogs. Their general conclusions are stated as follows: "Moderate doses of borax, up to 5 grams per day, even when continued for some time, are without influence upon proteid metabolism. Neither do they exert any specific influence upon the general nutritional changes of the body. Under no circumstances, so far as we have been able to ascertain, does borax tend to increase body weight, or to protect the proteid matter of the tissues."

"Large doses of borax, 5 to 10 grams daily, have a direct stimulating effect upon proteid metabolism, as claimed by Gruber; such doses, especially if continued, lead to an increased excretion of nitrogen through the urine, also of sulfuric acid and phosphoric acid."

"Boric acid, on the other hand, in doses up to 8 grams per day, is practically without influence upon proteid metabolism, and upon the general nutrition of the body."

"Borax, when taken in large doses, tends to retard somewhat the assimilation of proteid and fatty foods, increasing noticeably the weight of the feces, and their content of nitrogen and fat. With very large doses there is a tendency toward diarrhea, and an increased excretion of mucus. Boric acid, on the contrary, in doses up to 3 grams per day, is wholly without influence in these directions."

"Borax causes a decrease in the volume of the urine, changes the reaction of the fluid to alkaline, and raises the specific gravity, owing to the rapid elimination of the borax through this channel. Under no circumstances have we observed any diuretic action with either borax or boric acid. The latter agent has little effect on the volume of the urine."

"Both borax and boric acid are quickly eliminated from the body through the urine, 24 to 36 hours being generally sufficient for their complete removal. Rarely are they found in the feces."

"Neither borax nor boric acid have any influence upon the putrefactive processes of the intestine, as measured by the amount of combined sulfuric acid in the urine, or by Jaffe's indoxyl test. Exceedingly large doses of borax are inactive in this direction, not because the salt is without action upon microorganisms, but because of its rapid absorption from the intestinal tract."

"Borax and boric acid, when given in quantities equal to 1.5% to 2% of the daily food, are liable to produce nausea and vomiting."

"Owing to the rapid elimination of both borax and boric acid, no marked cumulative action can result from their daily ingestion in moderate quantities."

"At no time in these experiments was there any indication of abnormality in the urine; albumin and sugar were never present."

The third notable paper upon this subject is one entitled, "On the Influence of Boric Acid and Borax upon the General Metabolism of Children,"³ by Professor Tunnicliffe, of King's College, London, and Dr. Rosenheim. These experiments were made upon three children, two boys aged 2½ and 5 years, and a girl aged 4 years. The boys were healthy and robust, but the girl was delicate, and, in fact, was convalescing from a pneumonia. With a mixed diet the children were found to be approximately in a condition of nitrogen equilibrium. Then they were fed upon accurately-weighed quantities of proper foods, and their excretions collected, weighed, and submitted to analysis. In the case of the boy aged 2½ years, metabolism was studied during a period of 25 days, this time being divided into a "fore-period" of eight days, a "boric acid period"

of seven days, a "borax period" of five days, and an "after period" of five days. With the other children the "fore-period" was reduced to five days, reducing the total period of metabolism study from 25 to 22 days. In each case the urine was collected, measured, its reaction and specific gravity determined, and its nitrogen, uric acid, phosphorus, sulfuric acid, both total and ethereal, content determined. The feces were also collected, weighed, and the amount of water, nitrogen, phosphorus, and fat determined. The body weight was ascertained at the beginning and close of each period. The conclusions reached by these investigators are stated as follows:

"Boric acid.—1. Small doses, up to 1 gram per diem, continued for some time, exert in healthy or delicate children no influence upon proteid metabolism. The assimilation of the proteid food was improved in one healthy child. 2. The phosphorus metabolism was unaffected in all cases. The assimilation of phosphorus was in all cases improved. 3. The assimilation of fat was not affected. 4. The body weight increased in all cases. 5. The quantity of dry feces was not affected. Their nitrogen and phosphorus percentage was slightly decreased. 6. No inhibitory effect upon intestinal putrefaction could be demonstrated."

"Borax.—1. Continued doses of 1.5 grams have no influence in healthy or delicate children upon proteid metabolism. The proteid assimilation was unaffected in healthy children, slightly depressed in the delicate child. 2. The phosphorus metabolism was not affected in healthy or delicate children. The assimilation of phosphorus was improved in all cases, the amount being least marked in the case of the delicate child. 3. The fat assimilation was improved in the case of one healthy child, and unaffected in the case of the others. 4. The bodyweight was increased in all cases; the increase was most marked in the case of the delicate child. 5. The weight of dry feces and their nitrogen and phosphorus percentage remained unaltered. 6. Borax tended rather to increase intestinal putrefaction."

"Boric acid and borax.—1. Both boric acid and borax were quickly eliminated, no cumulative action being therefore probable. 2. Neither boric acid nor borax in any way affected the general health and well-being of the children."

The above are the most important and exhaustive papers that have been written on the influence of borax and boric acid, on metabolism. We have refrained from going more minutely into the literature of the subject, because the papers referred to above have done this in an exhaustive manner. We will now turn to the question of the present use of borax and boric acid as food preservatives. It will be well to ascertain in what things, and to what extent these substances are used. On June 5, 1899, Robert T. Lunham, a pork-packer of Chicago, in his testimony before the Pure Food Committee of the United States Senate, of which Senator Mason of Illinois, has been chairman, stated that his firm used borax on the meats which they export. He claimed that until these preservatives were used it was impossible to ship meat to England without its becoming slimy. He stated that the meat is first cured in a brine containing salt and saltpeter. When ready for shipment it is taken from this brine, and the surface is sprinkled with powdered borax, which keeps the meat from getting slimy. When the consignment reaches England the borax is washed off as soon as the meat is unpacked, and it is then in practically the same condition as it was when taken from the brine in Chicago. As to the amount employed, he stated that for a box of meat weighing from 500 to 600 pounds as much as seven pounds of borax was sometimes used. If the meat was quite dry a smaller amount sufficed. The firm which he represents began the use of borax and boric acid in 1875 and has continued it ever since. When asked what percentage of the exports of pork go out boraxed, he replied that it was not less than

95%. Mr. Lunham was very positive in his statement that the use of borax on export pork is absolutely necessary to carry on the business in a manner satisfactory to the European consumer.

Before the same committee, Mr. Charles Y. Knight, editor of *Chicago Dairy Produce*, stated that borax or boric acid has been long used by Australian, South American, and French dairymen in the products shipped from these countries to England, and that the same preservative is now used in butter exported from this country, though not so extensively as that exported from the other countries mentioned. According to this witness, 1% of borax is worked in the butter with the salt, and about one-half of it is removed in the washing-out process, thus leaving one-half of 1% in the product when it reaches the consumer. Borax and boric acid are quite generally used as preservatives in chopped meats. The butcher buys it under some fanciful name, such as "Preservitas," and is advised by the directions to add one-half of 1% to the meat. It is also used, especially in the larger cities, for the preservation of cream.

In 1899 the local government board of England appointed a committee to investigate the use of preservatives and coloring matters in the preservation and coloring of food. The result of the work of this committee has recently (1901) appeared in the form of a voluminous blue book. This committee consisted of Sir Herbert Maxwell, Professor Thorpe, vice-president of the Royal Society, Dr. Herbert Bulstrode, and Professor Francis Tunncliffe, of King's College. This report is made up of the testimony of importers and other dealers in food-products in England, of prominent physicians and health officers, and of certain scientific investigations carried on by members of the committee, together with reports of the personal investigation of dairies in Holland, Denmark, and other countries. It will not be possible, nor is it desirable, for us to go very minutely into the evidence contained in this report, but a few quotations or abstracts may be of value in this connection. Mr. John Kellitt, on behalf of the Grocers' Federation, made the following statement: "American bacon used to be very salty. You might steep it, and do what you liked with it, but you could not make it mild. Formerly the American bacon used to be cured in America and then packed in boxes with a large quantity of salt; so long as it remained in those boxes it was gradually becoming more salt, and when we took it out of the boxes and prepared it for sale, we had to steep it for a long time to extract the salt; but do what we could, we could not make it mild. The consequence was that we had endless complaints about the bacon being salty, and this is not a condition that we have at all now. The bacon is cured now, and the salt washed off, and it is just dusted with borax, and sent over in that form, and the borax prevents its becoming slimy, and does away with the excessive saltiness that we formerly had in the bacon." When asked whether or not the method of treating hams with boric acid had led to an increased sale, this witness replied: "I think so. I think we have had better sale of bacon preserved by the borax, as we call it, and indeed, unless there had been an alteration in the method, the sale would have been limited very much, it was so salty." Other importers of meat gave practically the same testimony, both concerning the method of using the preservative and its beneficial effects upon the quality of the meat. It was also stated that fly-blown meat is now rarely seen, while formerly, when salt and saltpeter were relied upon as preservatives, many tons of meat exported from America to England were rendered unfit for use by flies. The testimony of the English importers of butter was equally positive and unanimous. One firm had made an experiment as follows: A churning of 112 pounds of butter was divided into four equal lots. To No. 1, there was added 1% of boric acid. To No. 2, 1% of boric acid

and 3% of salt. To No. 3, 3% of salt only, and to No. 4, 6% of salt. These samples were packed in exactly the same way, in similar boxes, and stored for nine months, at the expiration of which time Nos. 1 and 2 were found to be good and eatable, while Nos. 3 and 4 were rancid and unfit for use. The report shows that practically all the butter now imported into England from Australia, North and South America, France, and Ireland is treated with borax or boric acid, while that brought from Denmark contains no preservative. However, it is the custom in Denmark—at least it is a widely prevalent custom—to pasteurize the milk before it is churned, and this undoubtedly improves the keeping qualities of the butter. Moreover, a number of food dealers testify that Danish butter, even when made from pasteurized milk, has not the keeping qualities possessed by other foreign butters, which are preserved with boric acid.

After collecting the information contained in this voluminous report, the English commission made the following recommendations to the Local Government Board: (a) That the use of formaldehyd or formalin or preparations thereof in foods or drinks be absolutely prohibited, and that salicylic acid be not used in a greater proportion than one grain per pint in liquid food, and one grain per pound in solid food. Its presence in all cases to be declared. (b) That the use of any preservative or coloring matter whatever in milk offered for sale in the United Kingdom be constituted an offence under the Sale of Food and Drugs Acts. (c) That the only preservative which it shall be lawful to use in cream be boric acid, or mixtures of boric acid and borax, and in amount not exceeding 0.25% expressed as boric acid. The amount of such preservative to be notified by a label upon the vessel. (d) That the only preservative permitted to be used in butter and margarin be boric acid or mixtures of boric acid and borax, to be used in proportions not exceeding 0.5%, expressed as boric acid. (e) That in the case of all dietetic preparations, intended for the use of invalids or infants, chemical preservatives of all kinds be prohibited. (f) That the use of copper salts in the so-called "greening" of preserved foods be prohibited (one member of the committee, Professor Tunnicliffe, dissented from this recommendation). (g) That means be provided, either by the establishment of a separate court of reference or by the imposition of more direct obligation on the Local Government Board, to exercise supervision over the use of preservatives and coloring matters in foods, and to prepare schedules of such as may be considered inimical to the public health.

We have given the recommendations of this commission in full, thinking that all of them would possess more or less practical interest to American sanitarians. On the whole, we are inclined to think that these recommendations—founded as they are upon valuable testimony and scientific experimentation—are fair and just. At present there can be no question about the desirability of preventing the use of formaldehyd in any and all foods. Salicylic acid in the proportion permitted in the recommendation is sufficient to arrest the fermentation of cider and certain other fermentative drinks, and we do not believe that in these small quantities it can be harmful, especially since its use is prohibited in the foods of infants and invalids. The second recommendation, which prevents the employment of any preservative or coloring matter in milk, is certainly a wise one. Milk is so prone to decomposition, that in order to preserve it nothing short of questionable quantities of any known antiseptic or germicide would be of service. In the second place, inasmuch as milk constitutes the sole food of infants, the amount of any effective preservative would have to be sufficiently large to endanger the health of the consumer. In the third place, if the use of preservatives in milk is permitted, the extreme care and the marked skill which should be given to the marketing of this food would be neglected

and harm would result. In the fourth place, while milk is now transported several hundred miles in order to reach the consumer, in our largest cities, this distance is much less than that over which butter and meat are carried. Permission to use one-fourth of 1% of boric acid in cream seems to us to be not likely to cause any harm. This food is practically used only by adults, and in such small quantities that the amount of boric acid taken by the consumer in his cream, with the restriction imposed by the recommendations, must be regarded as altogether free from danger. The same is true concerning the permission to use one-half of 1% of boric acid in butter. This small amount is quite as inert as 5% or 6% of common salt, and certainly butter preserved with one-half of 1% of boric acid is more palatable than that which contains 6% of salt. The fifth recommendation, which forbids the use of all chemie preservatives in food for invalids and infants is certainly, for the present at least, wise. So far as the employment of copper salts in the greening of peas is concerned, we agree with the dissenting member of the committee. It is somewhat strange that the committee in its recommendations fails to say anything about the use of preservatives in meat. In their conclusions, upon which their recommendations are founded, there is the following statement: "Compounds of boric acid have not been proved to be more harmful than saltpeter to the consumer, yet saltpeter has been used from time immemorial in curing bacon, etc. The modern use of borax and boric acid has enabled producers to dispense with a large proportion of common salt formerly necessary, thereby rendering bacon far milder to the palate, and protecting it from taint and fly-blow. Although the greater number of the witnesses disclaimed any knowledge that boric acid or borax is actually injected into the carcasses, we are convinced from our own observations, as well as from the testimony of certain witnesses, that these preservatives are used in the curing of hog products, ham having been found to contain amounts varying from 4 to 24 grains per pound, and bacon from 2½ to 8½ grains per pound. The use of boron preservatives, which began about 20 years ago, is now very general in the import trade in bacon and ham. No doubt they are exceedingly convenient, but that they are not indispensable is proved by the success of a large and well-known firm of exporters of Wiltshire bacon, which uses no antiseptics but salt and saltpeter. * * * After very carefully weighing the evidence, we have come to the conclusion that as regards the trade in fresh and cured meat, fish, butter, margarin, and other food substances, in the consumption of which but small quantities of the antiseptic are taken into the system, there exists no sufficient reason for endeavoring to prevent the use of boron preservatives."

It will be observed that none of the above mentioned investigators have given special attention to the antiseptic properties of boric acid. Of course the fact that this agent has been found practically to be of value in the preservation of food indicates that it must have marked antiseptic properties. We have undertaken to look up the literature of this part of this subject, and make some additional experiments. In 1889 Herzen⁴ demonstrated experimentally that boric acid, even in dilutions of from 0.5% to 0.05% inhibits the acetic acid fermentation of wine. The same investigator took pieces of meat and immersed them from one to two hours in a hot solution of boric acid and then enclosed them in air-tight vessels and found that meat thus treated showed no signs of putrefaction after many months. Next he took two quarters of veal, immersed them for a few moments in a hot 5% solution of boric acid and then sealed them in metallic cans, which were shipped to Buenos Ayres. After reaching the South American port, one of these cans was opened, and the meat found to be perfectly fresh. The other can was returned to France, and when opened the surface of the meat appeared to be quite

fresh, but the deeper parts of the tissue were greenish and gave off a putrefactive odor. According to the investigations of Biernacki⁵ less than a 4% solution of boric acid is without effect upon alcoholic fermentation. Pettersson⁶ finds as a result of extensive studies of different meat preservatives that boric acid has marked inhibitory effect upon the growth of bacteria, but that it is without influence upon the development of yeasts. He states that borax is a very active preservative, and when mixed with common salt, even in small quantities, it forms a most effective preservative agent. In his experimental work he came to the conclusion that in the preservation of meat 3% of borax is as effective as 20% of salt, and as 4% of boric acid.

We will now proceed to detail our own experiments upon the preservative properties of borax and boric acid. We have experimented with meat, butter, and cream. In our meat experiments we used finely chopped beef. Finely powdered borax or boric acid was added to the meat and the two thoroughly mixed with a sterilized spatula. In order to take up constant quantities of this meat, we had prepared small metallic spoons which hold 10 milligrams of the meat when closely packed down. In this way 10 milligrams of the meat was placed in 10 cc. of sterilized beef tea, and $\frac{1}{10}$ of a cc. of this was transferred to a second tube containing 10 cc. of bouillon. In this way we had two dilutions of the meat, from each of which gelatin and agar plates were made at different periods as indicated in the following table, and the germs that developed were counted. In making the plates a loop carrying $\frac{1}{100}$ cc. of fluid was employed.

TABLE 1.—Chopped meat with boric acid: Colonies grown on gelatin plates at room temperature.

Amount of boric acid used.....	1%		0.5%		0.25%		0	
	Conc.	Dil.	Conc.	Dil.	Conc.	Dil.	Conc.	Dil.
Immediate.....	25	0	32	0	28	0	40	0
24 hrs.....	6	0	9	0	18	0	56	0
36 ".....	5	0	21	0	29	0	79	0
48 ".....	7	0	36	0	48	0	185	0
60 ".....	7	0	43	0	67	0	187	0
72 ".....	9	0	50	0	72	0	212	0
84 ".....	6	0	151	0	510	2	1126	18
96 ".....	10	0	247	0	1250	29	1930	63
108 ".....	30	0	450	1	2520	163	13260	175
120 ".....	57	0	647	7	9640	197	29480	321
132 ".....	375	5	820	17	15000	240	*	500
144 ".....	476	0	1726	39	23460	304	*	906
156 ".....	629	3	3253	52	32500	395	*	820
168 ".....	860	8	12840	87	*	527	*	980

TABLE 2.—Chopped meat with boric acid: Colonies grown on agar plates at 37°C.

Amount of boric acid used.....	1%		0.5%		0.25%		0	
	Conc.	Dil.	Conc.	Dil.	Conc.	Dil.	Conc.	Dil.
Immediate.....	33	0	20	0	19	0	22	0
24 hrs.....	2	0	5	0	3	0	7	0
36 ".....	1	0	7	0	11	0	13	0
48 ".....	2	0	8	0	15	0	22	0
60 ".....	0	0	4	0	19	0	25	0
72 ".....	1	0	7	0	20	0	29	0
84 ".....	2	0	15	0	57	0	320	2
96 ".....	1	0	25	0	153	0	960	7
108 ".....	2	0	27	0	217	0	1127	10
120 ".....	4	0	32	0	299	0	1300	14
132 ".....	5	0	35	0	913	4	3213	27
144 ".....	15	0	60	0	8130	12	10800	213
156 ".....	150	0	3154	27	32500	360	*	480
168 ".....	490	2	9250	85	*	495	*	660

During the first 72 hours of both of these series of experiments the meat used was kept out of doors, where the temperature was slightly below the freezing point. During the remainder of the period of experimentation the preparations were kept indoors, where the temperature varied from 15° to 25° C.

* Innumerable.

In our experiments with cream $\frac{1}{10}$ cc. of the cream was added to 10 cc. of sterilized bouillon, and a loop⁷ of $\frac{1}{100}$ of a cc. of this was taken to inoculate the plates.

TABLE 3.—Cream with borax: Colonies grown on gelatin plates at room temperature, varying from 15° to 25° C.

Amount of borax used.....	0.5%	0.25%	0.125%	0
Immediate.....	3	2	2	0
24 hrs.....	420	510	916	4080
48 ".....	730	860	4350	8420 sour
72 ".....	810	951	12150 sour	24760
96 ".....	2120	4297 sour	19820	5861
120 ".....	6827	10960	4267	172

TABLE 4.—Cream with boric acid: Colonies grown on gelatin plates at room temperature, varying from 15° to 25° C.

Amount of boric acid.....	0.5%	0.25%	0.125%	0
Immediate.....	2	2	1	2
24 hrs.....	296	784	810	3720
48 ".....	1210	3642	6850	8240 sour
72 ".....	4180	10240	18730 sour	21600
96 ".....	8460	14120 sour	15165	3125
120 ".....	17461	12240	9160	220

TABLE 5.—Cream with borax: Colonies grown on agar plates at 36° C.

Amount of borax used.....	0.5%	0.25%	0.125%	0
Immediate.....	2	3	6	3
24 hours.....	63	582	618	1680
48 ".....	503	982	1176	2846 sour
72 ".....	804	1633	2960 sour	7912
96 ".....	2016	3160 sour	4675	620
120 ".....	4135	6240	1270	240

TABLE 6.—Cream with boric acid: Colonies grown on agar plates at 36° C.

Amount of boric acid.....	0.5%	0.25%	0.125%	0
Immediate.....	3	1	0	1
24 hours.....	146	584	690	972
48 ".....	420	1240	1876	2127 sour
72 ".....	760	1580	2310 sour	3890
96 ".....	1200	3610 sour	4120	960
120 ".....	5980	12960	1270	487

We purchased five samples of margarin and butter. They may be designated as follows: *Number 1*, uncolored oleomargarin; *Number 2*, colored oleomargarin; *Number 3*, country butter; *Number 4*, creamery butter; *Number 5*, process butter. Each of these was tested for borax, with negative results. Each sample was divided into two portions of equal weight, and these portions placed in sterilized moist chambers. To one portion of each kind 0.5% of boric acid was added. All the samples were then kept practically at the freezing point, the temperature varying not more than 5° above or below the freezing point. In the preparation of the plates a small amount of each sample was placed in a sterilized test-tube, and this heated to the melting point of the butter. One-twentieth of a cubic centimeter of the melted butter was placed in 10 cc. of bouillon, and thoroughly agitated. In making the plates, a loop containing $\frac{1}{100}$ cc. of the beef-tea dilution was employed. The plates were kept at 37°.

TABLE 7.—Butter and margarin with 0.5% boric acid. Colonies grown on agar plates at 37° C.

Kind of Butter.....	Uncolored Oleomargarin.	Colored Oleomargarin.	Country Butter.	Creamery Butter.	Process Butter.
Number of sample.....	1	2	1	2	1
Am't of boric acid.....	0.5%	0.5%	0.5%	0.5%	0.5%
No. of colonies, 80; days after adding boric acid.....	10	21	18	0	13
35th day.....	2	40	31	0	32
50th day.....	7	2	1	3	10
55th day.....	2	7	4	2	74
60th day.....	6	13	5	0	6
82nd day.....	5	0	15	0	7
					18
					132
					187
					175
					183
					82
					10

The object in having two dilutions from which plates were made in Tables 1 and 2 was to enable us to count the germs in the second dilution after they had become too numerous to be counted in the more concentrated preparation. Both Tables 1 and 2 show that 0.5% boric acid is quite sufficient to markedly inhibit the growth of germs which are generally found in meat, and we are of the opinion that the amount of this preservative allowed in chopped meats should be limited to one-half of 1%. When the preservative is used as it is in export meats, and is merely sprinkled on the surface, we can see no objection to the use of as much as 1.5%, because most of this is washed off when the consignment of meat reaches its destination. Attention has already been called to the fact that the use of borax and boric acid prevents meat becoming slimy. We thought this point of sufficient importance to justify special investigation. We observed in our own experiments that meats without borax kept at ordinary temperature became slimy within a few days. From the surface of such meats we made gelatin and agar plates, and from these we obtained 20 different kinds of microorganisms. Of these, 14 are peptonizing bacteria. Some peptonize meat and gelatin rapidly, converting an ordinary gelatin tube into a fluid at ordinary room temperature within 24 to 48 hours, while others peptonize more slowly. All of these 14 peptonizing germs which we found on the surface of the meat are obligate aerobes. From these findings we conclude that meat becomes slimy on account of the growth on its surface of peptonizing aerobic bacteria, and this easily explains why it is that hams and bacon sprinkled with borax or boric acid do not become slimy. Tables 3, 4, 5 and 6 explain themselves, and need no special comment. It may be pointed out, however, that even one-eighth of 1% of boric acid markedly inhibits the growth of bacteria in cream. It is also of importance to call attention to the fact that after cream becomes markedly sour, whether it contains a preservative or not, there is a marked decrease in its bacterial content. This undoubtedly is due to the acid formed in the cream. The tables show that one-eighth of 1% of either borax or boric acid delays the souring of cream, when kept at ordinary room temperature, for about 24 hours, and when the amount of the preservative is increased to 0.25% the souring does not appear until an additional day has elapsed, while with 0.5% the souring is still further delayed.

We were surprised at the small number of germs in the country butter, and in fact, the number of colonies developed in all the samples of margarin and butter seemed to us surprisingly small. We could account for this only on the ground that the low temperature at which these samples had been kept inhibited the growth of bacteria.

From our study of the literature and from our own investigations, we draw the following conclusions:

1. The use of borax or boric acid as a preservative in butter and cream in the quantities specified in the recommendations of the English Commission is justified both by practical results and by scientific experimentation.

2. The dusting of the surfaces of hams and bacon which are to be transported long distances, with borax or boric acid, not exceeding 1.5% of the weight of the meat, is effective and not objectionable from a sanitary standpoint.

3. Meat thus dusted with borax or boric acid does not become slimy because the preservative thus used prevents the growth of aerobic, peptonizing microorganisms.

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THE EXAMINATION OF THE BLOOD IN RELATION TO SURGERY OF SCIENTIFIC, BUT OFTEN OF NO PRACTICAL VALUE, AND MAY MISGUIDE THE SURGEON.

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The above title is one which was used by Dr. John B. Deaver, for a paper on the subject of blood examinations, and of which Dr. Robert N. Willson practically says that the author intends to convey the meaning that the blood examination is often of no service to the surgeon, and may be even harmful to his view of the case and his intelligent treatment of the same. He then proceeds to disagree almost in toto with the conclusions drawn by Deaver in his paper. In view of the position taken by Willson and other laboratory men on this subject, I have adopted the title of Deaver's paper for my own, with the full assumption of its meaning as understood by Willson and quoted above. From a careful observation covering a long period of time, from a careful consideration of all the recent papers on this subject, both pro and con, from a recent careful and systematic observation of a large number of surgical cases, I have come to the conclusion that so far as the blood count being an aid to surgical diagnosis, Deaver's estimate is strictly correct as implied by his title.

The "systematic and careful observation" of which I speak is as follows: For the past three or four months every patient, without exception, who has passed through my service at the Pennsylvania Hospital, has had blood examinations made. These have been made in the Ayer clinical laboratory of the hospital, which is under the charge of Dr. Simon Flexner and a corps of assistants, all of who are firm believers in the value of such examinations. Not only have the white and red corpuscles been counted and the percentage of hemoglobin taken, but a differential count (on which Wilson lays such stress) has been made in each case. In no instance have I had anything to do with the examination except to indicate the time of the taking of the blood and to read and consider the reports when they were handed to me. In order that my readers who may not have a perfectly clear idea as to what is approximately normal in this matter I may say that the following tables have been taken as normal (Cabot's Histology of the blood) and with which it is only necessary to compare any cases quoted and note the deviation in order to estimate their significance.

Erythrocytes (red corpuscles).....	5,000,000
Leukocytes (white corpuscles)	6,000 to 8,000
Hemoglobin.....	100%
Differential count of the leukocytes (white corpuscles):	
Polymorphonuclears.....	62% to 70%
Small lymphocytes.....	20% to 30%
Large lymphocytes.....	4% to 8%
Transitionals.....	1% to 2%
Eosinophiles.....	1/4% to 4%
Mastzellen.....	1/4% to 1 1/2%

Although the white blood-corpuscles are estimated as normal at from 6,000 to 8,000, yet as a matter of practical fact so many factors may enter into the case that an increase to 10,000 is without much practical significance and is to be still considered normal under most circumstances. A fairly normal case which illustrates the laboratory position in the matter of being able to diagnose pus follows: A woman had acute pus-tubes a week or more old. The blood count showed 13,450 white corpuscles; polymorphonuclears, 80.08%; small lymphocytes, 15.2%. This shows an increase to almost double the normal number of leukocytes, an increase of over 10% of the polymorphonuclears and a corresponding decrease in the small lymphocytes. The clinical diagnosis was pus, the blood count shows pus, and at the operation pus was found as indicated by both clinical and laboratory examinations. If such a typical condition of affairs should exist in all cases the matter would stand proven

and would be one of the well-established facts of medicine. Although pus is indicated in the above quoted case, I take it no scientific man will be willing to hold because it is so in one or a dozen cases it is a good system on which to rely. It is necessary to be at all reliable for practical purposes that not only in even a large number of cases will the test work out correctly, but that it will do so always or so nearly universally as to be the great exception when it does not, and such exception should be readily explainable.

Is that the case in these blood-counts? Not at all; quite the reverse is true. In fact, so many are the exceptions and so unexplainable are they as to make one at times wonder if there is really any value at all in them. For instance, a case was examined clinically and a diagnosis of pus tubes made. In order to ascertain how far the blood-count would uphold the diagnosis, a count was made, and the result was that 12,850 white corpuscles were found; polymorphonuclear, 86%; small lymphocytes, 8%. The case was as much like the above typical case as possible in all its characteristics, and the result was the same—a clinical diagnosis with corroborative blood-count which was more emphatic than the first. The operation showed the ordinary chronic adherent salpingitis without a trace of pus.

We are told chronic pus cavities do not give leukocytosis, but that the suppuration must be acute. One patient had 15,000 leukocytes: polymorphonuclear, 74%; small lymphocytes, 16%. A second patient had 11,500 leukocytes: polymorphonuclear, 78.5%; small lymphocytes, 17%. Both patients were very old chronic salpingitis cases with pus, and yet the leukocytosis was as great practically as in either of the above acute cases. Again, compare them with two cases of acute suppuration, one of the abdominal wall (13,000 leukocytes), one of the pelvis following operation (13,450 leukocytes), both cases with profuse acute suppuration.

Deaver details a case of appendicitis with a leukocyte count of 20,000 on day of admission, the count dropping gradually, until on the sixth day it was 7,500 (normal), and yet the operation revealed a large quantity of pus. Frederick J. Kalteyer, in criticising this case, says: "It is a well-established fact that if an abscess is walled off, a low leukocytic count (from 8,000 to 11,000) is usually present, and when this stage of a pathologic process, such as acute appendicitis, is reached, the function of the leukocyte has been carried out, the leukocytic-forming tissues have rendered their services and are deserving of a rest." To the clinical surgeon this statement is rather puzzling.

An abscess is of course "walled off" from the beginning or it is not an abscess at all but free suppuration. The only cases of pus in the belly which are not walled off even before the pus forms are those fortunately rare cases of general suppurative peritonitis, in almost all of which the patients die very promptly. The second feature which strikes me as unwarranted in this criticism is to consider an appendicitis of six days' standing anything but acute. The leukocytes have all they want to do at that time and are abominably derelict in their duty if they fall from 20,000 to normal. The case is a perfectly fair one for Deaver to quote to show the uncertainty and unreliability of the blood-count from a diagnostic standpoint. Nor does it stand alone. Any surgeon actively engaged in the practice of surgery can readily show such cases. For instance, a gangrenous appendix was removed on the fourth day in which the count fell before operation from 22,000 to 13,000. Surely that is early enough for the leukocytes to be still actively at work. If not where does the aid to diagnosis come in? Again, bearing in mind that the leukocytes are at rest, according to the theory of the laboratory in chronic cases, and the leukocytosis is small (8,000 to 11,000) and that in acute cases they are active and the count large, how can one reconcile the two cases which follow: an acute double pyosalpinx and ovarian abscess with pus in

the adhesions (a quarter of a pint of pus), with 7,200 white corpuscles and a long standing chronic ovarian abscess with 21,050 white corpuscles; polymorphonuclear 87.2%, small lymphocytes 8%.

In the second case cited in this paper in which the blood-count indicated pus and the clinical diagnosis did the same but in which there was no pus, it may be contended that this was an individual instance and that there must have been some satisfactory explanation. But such is not the case nor does the instance stand alone—in fact it is a quite common discrepancy as witness these three instances:

(1) Chronic salpingitis with subacute attacks of pain, normal pregnancy, no pus; leukocytes 16,800; polymorphonuclear 85.5%; small lymphocytes 8.5%.

(2) Fibroid of uterus, no pus; leukocytes 11,630; polymorphonuclears, 86%; small lymphocytes, 11%.

(3) Threatened abortion, no pus; leukocytes, 15,500; polymorphonuclears, 83%; small lymphocytes, 11.5%.

As a matter of fact leukocytosis, as well as an increase in the polymorphonuclear and a decrease in the small lymphocytes, will occur in many conditions. It is not necessary to consider drug leukocytosis, because it occurs only with a known few of the ordinary drugs, and one can readily avoid errors of that kind. It will occur in an acute inflammation or a subacute one just as readily as in the presence of pus or gangrene, as witness the foregoing instances. It will do more; it will occur in that variety of so-called inflammation of the peritoneum, which is not an inflammation at all, but an irritation. A case of sudden rupture of ectopic gestation, with a leukocytosis of 26,000; polymorphonuclear, 80%; small lymphocytes, 12.2% had no pus, no inflammation, but an abdomen full of warm, unirritating blood. The hemoglobin in this case was 30%, at a point where the laboratory men tell us we must not give an anesthetic and operate. This patient recovered. Deaver quotes several cases even lower in percentage of hemoglobin, and as a matter of fact, they are far from uncommon.

The blood-count shows positive leukocytosis when there is apparently little or nothing the matter with the patient. A patient with 23,000 leukocytes, on admission to the hospital, had pain over the region of the appendix. Operation showed a few old adhesions, nothing more. Within a week white corpuscles were 44,000; in another week they were down to 17,000, and at end of fourth week were 23,000. Pain was now transferred to the left side along the colon. At operation nothing wrong was observed with the left colon or pelvis. Another patient was sent me by a colleague in the medical clinic with the statement that the white blood corpuscles counted 26,000. The count was unexplainable, and I was requested to examine the pelvis. The pelvis was perfectly healthy. The only trouble I could find with the patient was a few symptoms of ordinary chronic indigestion, such as large numbers of clinical patients suffer from.

What about typhoid perforation, of which we hear so much? First, at the time of perforation, a temporary (a few hours at most) and progressive drop in the number of white corpuscles, then a rush from all the hidden recesses and a quick rise. To catch the drop one has to have all their typhoid patients examined frequently and by routine from the beginning to the end of the case. Once a day would not be sufficient, almost every hour would be necessary, else it would be pure luck that one caught the time of the drop. As a matter of practice it is advised to examine when the pain and distention begins—the first clinical indication of perforation. That means practically that the theory of a drop in the leukocytes is of little use, because by the time these symptoms arise usually the perforation is some hours old and the peritonitis beginning and one would count at the time (especially allowing for the delay necessary to get the blood for the count) when

there existed a rise in the number of the white corpuscles—in other words, in the stage of the leukocytosis. Practically that is just what has happened in a number of cases, and it is what must always happen. How then will leukocytosis indicate typhoid perforation, and will there always be an increase in the white blood corpuscles? Emphatically no! One patient on the eighth day had perforation, leukocytes 5,000. Next day at 9 o'clock 5,350; at 1 o'clock 3,840; at 3 o'clock 3,000. If the theory is reliable, at the time the white blood corpuscles were dropping they should have been rushing in immense quantities through the blood to the rescue of the threatened points. Another case of perforation at 8 o'clock, 12,440; at 10 o'clock 12,430, taken at a period before the operation similar to the above case and in contrast to the above case there is no change in the blood count. Still another case with no leukocytosis at all, and a fourth with only 7,000 white corpuscles.

It is a well admitted fact that any inflammation in any part of the body will cause leukocytosis; for instance, a pneumonia. The fourth patient with typhoid, with 7,000 white corpuscles, had a pneumonia at the right base, proven after death, and yet a normal blood count in spite of the double cause for leukocytosis. The third patient with typhoid had normal blood count, and was also afflicted with a coexisting pneumonia, and although there should be a leukocytosis there is none. Where did the blood count contribute an atom of aid in these cases?

Even provided an increase of the white blood-corpuscles does occur in a suspected perforation! It may mean a beginning pneumonia or other inflammation; it may even happen that a leukocytosis existed from other causes, possibly unknown, and had continued through the typhoid attack. A pain in the abdomen; a blood count; an operation determined upon; no perforation; a death. It is not a fanciful risk. Many men will come to experience the reality if they allow the blood-count as at present understood to induce them to operate where otherwise they would not. Pneumonia is a too common complication of typhoid not to be reckoned with.

I have been able only to allow room for a few instances of common discrepancies and apparent contradictions in this paper but they are sufficient to illustrate the points; they could readily be supplemented by many others if necessary.

I ask then in all soberness, wherein does the blood-count aid those of us interested in clinical surgery in our diagnosis? If there be a positive count in pus formation, also in inflammations without pus as well, and even when there is apparently nothing the matter with the patient at all with the indiscriminant frequency with which it seems to occur, wherein is there sufficient justification for the surgeon to rely on it?

It cannot even be relied upon to indicate with any degree of accuracy an inflammation, to say nothing of pus formation, as witness the class of cases I have quoted, in which a high grade of leukocytosis existed and nothing of any importance can be found either before or after the operation. Where is the aid to the surgeon, when if he had never heard of such a thing as a blood-count he would be a very poor diagnostician if he could not say in the vast majority of cases, there is or is not inflammation. One has only to put his finger on an acute inflammation to know it; what the surgeon is in doubt about is whether or not pus is forming at that point, and if such as indicated is the truth about the blood-count, how can it aid? If it does not prove a reliable aid in the doubtful cases, it is no aid at all, for when the diagnosis is arrived at without it, it would be at best only corroborative, and of scientific interest.

If, in addition to this, it misleads, as in a number of cases I have seen and some of which I have referred to, then it is not an aid, but a positive harm. I know of nothing more fatal to a correct diagnosis than an

assumption of a truth which is only a partial truth, and the placing of reliance thereon.

Not for a moment would I be understood as decrying the great present aid and future possibilities of the laboratory to medicine. I am a great and consistent friend and advocate of the laboratory, and, being such, am only striving against a current which it seems to me will, eventually, temporarily swing the pendulum against that great institution. If we allow our enthusiasm to induce us to insist on certain things on insufficient data, which the general medical man must find in actual application not to be reliable, he will lose confidence and finally ignore it. In the matter of blood examinations the laboratory has developed many valuable facts, and no doubt will do more in the future, possibly sufficient to put it in the accepted position of positive and permanent value of the Widal reaction, the protozoon of malaria, the estimation of anemia, etc. But in this matter of leukocytosis as an aid to the surgeon in diagnosis of surgical troubles we are far from having anything of positive value. The facts (not the theories) are too much at variance and too contradictory to be relied upon. As at present developed in the hands of the average surgeon, if accepted and consistently acted upon, they would do great harm. One would have to discriminate most astutely not to come to grief. As to the future—that is another thing. We may yet arrive at something of value, and for one I mean to continue my observations on the subject.

SPRUE OR PSILOSIS IN MANILA.

A Disease or State.¹

BY

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[Concluded from page 389.]

SPECIFIC DYSENTERY AND SPRUE.

In this series of 13 cases, specific or bacillary dysentery occurred in 7. If we consider all cases in which sprue occurs as a complication, or as a symptom-group, this is probably too high a proportion; for the reason that, contrary to the action taken in cases of amebic dysentery, these patients are not so promptly returned to America, and are thus under observation throughout the course of the disease. Specific dysentery always begins with an acute or subacute attack, and many of the patients die or recover in a short time. A certain number, however, do not entirely recover, but the disease gradually becomes chronic. The stools become less frequent and diarrheal in character. Anemia, wasting indigestion, sore mouth, and the other sprue symptoms may develop. The history of the acute attack, the bacteriology of the stools, or the blood-serum reaction will usually reveal the true nature of the disease. In some cases the history of the acute attack may be vague, and in cases of long standing, the blood-serum reaction may become indefinite or have entirely disappeared. In these old cases, unfortunately, it is usually impossible to obtain *Bacillus dysenteriae* from the stools during life, or from the intestine at autopsy; and it may be extremely difficult, or impossible, to make a diagnosis either during life or after death. In these cases we may have a typical picture of sprue clinically and anatomically.

TYPHOID FEVER WITH SPRUE.

Typhoid fever did not occur in any of the 13 cases; but in a few instances, in clinical cases, it has been found

¹ Most of the work on this report was done during my tour of duty as First Assistant in the Army Pathological Laboratory in Manila and Pathologist to the First Reserve Hospital.

associated with sprue symptoms. In one case in Manila with a diagnosis of sprue of about ten months' duration, typhoid fever of the malignant type developed, and the patient died on the eighth day (diagnosis being made post mortem). For sometime previous to the development of the typhoid, enormous numbers of embryonic *Strongyloides intestinalis* had been found in the stools. The majority of typhoid fever cases seen in the tropics, present the usual symptoms, but in a certain number there is an element to be considered that is not often encountered in temperate climates. In America the disease usually attacks persons previously in good health with nature's resisting powers in good condition. In the tropics it occasionally attacks persons already weak, anemic and debilitated from other conditions. In these cases the clinical phenomena are often atypical, and a diagnosis during life may sometimes be rendered impossible. The fever may be very low and irregular. In one case the temperature was never above 99° at any time during the disease. In these cases, the agglutinating power of the blood-serum also seems to be diminished; the reactions are more often indefinite or absent. In one case, in which the patient died on the thirty-second day of the disease, the reaction was repeatedly absent, and in dilutions of 1 to 10 did not occur with *Bacillus typhosus* from the spleen of the host. Sprue symptoms may appear in cases of this class.

OTHER DISEASES WITH SPRUE.

In the tropics, chronic wasting diseases of whatever character, may have part or all the symptoms of sprue develop during the latter part of the trouble. The essential appears to be the reduction of the general vitality below a certain point. Chronic disorders of the gastrointestinal tract are especially productive of this condition. One of the 13 cases and 2 clinical cases were of general tuberculosis.

SPRUE AS A DISEASE.

Under this heading will be considered those cases with manifestations of sprue, in which clinical and post-mortem methods failed to demonstrate the presence of a known disease.

CASE XIV.—An American soldier, 25 years old, who arrived in the Philippines in the early part of 1899. He remained in good health until about September of the same year, when he began to have mild attacks of diarrhea, one of these amounting to an acute attack of dysentery, lasting for about two weeks, during which time 20 to 30 bloody mucous stools were passed in 24 hours. From this time on the diarrhea was more severe, and on January 22, 1900, he was transferred to the First Reserve Hospital, Manila, with a diagnosis of chronic diarrhea. At this time he was considerably emaciated, pulse normal, temperature 99.8°. The temperature ranged from 97° to 100° F. from this time to his death, on May 29, 1900.

The blood was negative for malarial parasites, and gave no agglutination reaction with *Bacillus typhosus*, *Bacillus dysenteriae* nor stock cultures of *Bacillus coli*. There was slight morning cough, with expectorations of small amounts of tenacious glairy mucus. Repeated examinations of the sputum were negative for tubercle bacilli. He complained of anorexia, though at times his appetite was ravenous; a moderate meal, however, was followed by gastric distress and sometimes by vomiting. Dyspeptic symptoms, including sore mouth and tongue, were prominent throughout the course of the disease. The stools varied from 1 to 8 or 10 in 24 hours; they were copious, pale, semiliquid, fermenting, usually with a moderate amount of mucus. Microscopically, they contained myriads of flagellate infusoria, epithelial cells, undigested food particles and a few blood-cells. There were periods of apparent slight improvement.

Postmortem Examination.—Necropsy one hour after death; no rigor mortis; no postmortem lividity; body is still warm, extremely emaciated, and the skin very pale. The mucous membrane of the mouth and the sides of the tongue show numerous small superficial ulcers. The heart weighs 150 grams. There are no postmortem thrombi and the valves appear normal. The arch of the aorta is smooth; coronary arteries not thickened. The muscle is pale and quite soft. The pericardial cavity appears normal. Both pleural cavities and both lungs are normal.

The abdominal cavity is dry and free from adhesions. Omentum and mesenteric fat is scanty. The serous surfaces all show marked pallor, and all the tissues are somewhat edematous.

The mesenteric lymphatics along the large intestine measure from 3 to 6 mm. in diameter, are hyperemic, and a few of them show small hemorrhages into their substance. The retroperitoneal and other lymphatics appear normal. The spleen weighs 100 grams. The surface is smooth and of normal color; the capsule is not thickened. Cut sections are normal in color and show no increase of pulp. The structural markings are distinct. The liver weighs 1,080 grams. The surface is smooth and a little pale in color. Cut sections are cloudy. The gallbladder and ducts are normal. The kidneys weigh 280 grams. Surface is smooth; capsules very slightly adherent, and surface vessels a little injected. There is no increased resistance imparted to the knife. Cut sections appear a little mottled and cloudy. The cortex possibly is a little thin; the adrenals are normal. The mucous membrane of the stomach shows a few small hemorrhages in the lower portion; otherwise it is a little pale, somewhat uneven and bathed in a considerable quantity of mucus. The esophagus is normal, excepting a slight roughening of the mucous membrane in the lower portion. The pancreas is of average size, pale, and moderately firm. There are no areas of necrosis and no hemorrhages.

The small intestine is moderately and uniformly dilated throughout. The walls are exceedingly thin and pale. The lumen contains a small quantity of granular, semiliquid material, with little mucus and no blood. The folds of the bowel are completely obliterated over large areas. The mucous membrane is pale, atrophied, soft and structureless, and imparts a peculiar, sticky sensation to the fingers. There is not a congested or hyperemic spot in the whole bowel. The lymphoid structures are normal. The large intestine presents a similar appearance to the small intestine, but to a slightly less marked degree.

Microscopic Examination.—Fresh coverslips from the intestinal contents show numerous flagellate infusoria (*Trichomonas intestinalis*) and the products of catarrh. Stained coverslips from the heart, liver, and spleen are negative for bacteria. The postmortem blood in 1 to 10 dilutions does not agglutinate *Bacillus dysenteriae*, *Bacillus typhosus*, nor stock cultures of the colon bacillus. The postmortem urine does not contain albumin or casts.

Anatomic Diagnosis.—General condition of sprue (marked secondary anemia, emaciation, atrophy of the intestinal mucosa, and ulceration of the mouth and tongue). Parenchymatous degeneration of the heart, liver and kidneys.

Bacteriologic Examination.—Agar plate cultures (with and without oxygen) from the heart, liver, gallbladder, kidneys and spleen, are sterile at the end of 48 hours in the thermostat. On the plates from the intestine an average number of colonies developed. A number of these colonies are of a nonpathogenic micrococcus, a still larger number belong to the colon group, and a few are capsulated bacilli, answering briefly the following description:

The plate colonies are of average size, oval or round and slightly raised, with regular margins, and are piled up in the center, without, however, a distinct nucleus. In 48 hours the colonies spread; some have a slightly yellowish tint and are soft and mucus-like. On agar slant a rather profuse, yellowish-white, raised, soft mucous growth rapidly develops. The growth on serum and glycerin agar is similar to that on agar. Gas bubbles are often seen in glycerin agar. In glucose agar the growth is abundant; gas is produced, and a flat mucus-like surface growth rapidly develops. Litmus milk is quickly acidified and slowly coagulated. On potato there is a profuse, yellowish-white, mucus-like growth. It is a rather large bacillus with rounded ends and nonmotile. It takes the aniline dyes and decolorizes by Gram. In tissues, and sometimes in 24-hour cultures, a distinct capsule can be demonstrated by the usual methods. This bacillus is pathogenic for white mice and Manila rats when injected into the abdominal cavity. Feeding it to cats was without results. It is not agglutinated by the post-mortem serum of the host in 1 to 10 dilutions.

CASE XV.—This was an American soldier, 26 years old, strong and robust, who weighed 180 pounds when he arrived in the Philippines. On June 24, 1900, about six months after his arrival, he was admitted to sick report, suffering from sub-acute gastritis and moderate diarrhea. He stated that a month previous to this attack he had suffered with mild attacks of indigestion and headache, but that the present attack was the first accompanied by diarrhea and the first also to incapacitate him for duty. Under treatment, his general condition improved and he was returned to duty on July 4. Soon after this, however, the indigestion and diarrhea returned and became so severe that he was re-admitted to the hospital on July 28 complaining of diarrhea and indigestion. His stools, 2 to 7 in 24 hours, were fluid containing mucus and occasionally blood. After meals he complained of nausea and a sense of weight in the epigastrium. Also, during this attack, he began to complain of sore mouth and tongue. The tongue and buccal mucous membrane were red but not ulcerated. Under treatment his condition again improved and he was returned to military duty on September 2. Temperature, pulse and respiration were normal during his stay in the hospital.

As before, upon returning to military duty, his condition rapidly became worse, and he was returned to the hospital November 21. His stools numbered from 8 to 10 in 24 hours. They were grayish colored, fluid, and contained considerable blood-tinged

mucus. He had lost considerable weight and his digestion was poor. He did not improve under treatment, and on November 8 was transferred to the First Reserve Hospital, Manila, for treatment. On admission to this hospital his temperature and respiration were normal, his pulse 64. He was markedly emaciated and very anemic. Death occurred on January 24, 1901. While in this hospital his temperature ranged from 97° to 99.2°, pulse from 64 to 80, and respiration was normal. His appetite was capricious, but anorexia was the most constant complaint; digestion was practically nil, even undigested milk would often be found in the stools. Dull aching pains in the region of the stomach, nausea and diarrhea, were the most constant subjective symptoms. At times he complained of sore mouth, and the tongue and buccal mucous membrane were at times red and inflamed, but not ulcerated.

His stools were repeatedly examined microscopically and no intestinal parasites were found. At times the stools were soft, pale and fermenting; usually though, they were fluid, grayish in color, containing mucus and blood. Enormous numbers of rather large, actively motile bacilli were repeatedly noted in the stools, but no cultures were made. The blood was repeatedly examined in fresh smears, with negative results; actual counts were not made. His serum in dilutions of 1 to 10 gave no agglutination reaction with *Bacillus dysenteriae*, *Bacillus typhosus*, *Bacillus para colon*, nor with several varieties of colon.

Postmortem Examination.—Necropsy 3 hours after death. Body extremely emaciated and anemic. Skin very pale and drawn. Conjunctivas of a bluish, pearly-white luster; pupils dilated to paralysis; mucous membrane of the tongue and mouth has no ulcers, but it is dull, opaque and lusterless, and contains a number of small, darkly-pigmented areas. There is slight rigor mortis in the upper and lower extremities, but no postmortem lividity. Subcutaneous fat is extremely scanty, and the intercostal muscles are very pale. The middle arm measures 10 cm., and the middle thigh is 18 cm. in circumference. Apparent age, 23 years. Length of body, 142 cm.

The heart weighs 150 grams. The muscle is quite firm and dark in color; both left chambers contain fluid blood; no post-mortem thrombi are found. The serous surfaces, valves, coronary arteries and arch of the aorta appear normal. The left pleural cavity and left lung are normal. On the right side there are a number of old chronic adhesions encasing the lower lobe laterally and posteriorly, and this lobe is moderately congested toward the dorsal surface (hypostatic). The abdominal cavity contains no adhesions. Subcutaneous and subserous adipose tissue is very scanty or entirely absent. The sustentacular tissues are delicate and have a peculiar, edematous, dull, water-soaked appearance. The serous surfaces are very pale, and there is no injection of the subserous vessels. A few of the mesenteric lymphatics are slightly swollen, soft, and pale. The spleen weighs 72 grams. It is very small, the surface is wrinkled, and the organ is quite firm. Cut sections are very dry, and show but a small amount of pulp. The kidneys weigh 280 grams. The surfaces are pale; there is no injection of the bloodvessels, and the capsules are nonadherent. Cut sections are a little pale, but the structure is distinct and there are no evidences of decided change. Pelvis and ureters are normal. The liver weighs 1,000 grams. It is somewhat small but normal in color and consistency. Cut sections show a small amount of blood; the markings are distinct. The gallbladder is moderately distended with fluid bile, and the ducts are patent. The pancreas and bladder are normal. The stomach is small and contracted, and contains a moderate amount of mucus. The mucosa appears somewhat swollen, but there are no hemorrhages or ulcerations. The mucous membrane of the esophagus is congested in its lower portion and shows a few small, darkly-pigmented areas.

The small intestine is moderately distended with gas, especially in the lower portion. There are a number of dilations and contractions. The walls are very thin, and in the dilated area diaphanous. The gut contains considerable mucus throughout. In the upper portion the mucus is mixed with undigested food, is of a pale color and shows no blood; lower down the mucus becomes more tenacious, glairy, and contains some blood. In the ileum it forms almost complete casts of the lumen of the bowel. In the upper portion the valvulae conniventes are well marked, and the general structure of the mucous membrane shows no macroscopic lesions. Lower down in the bowel the folds entirely disappear over large areas, leaving a smooth, velvety, pale, structureless surface. In the lower portion of the jejunum and ileum, there are a number of small areas showing superficial hemorrhages. The agminated follicles are all swollen, congested, and those in the lower portion ulcerated. The ulcers are superficial, but are usually continuous over the entire patch. They are covered in most instances with a thin scale of firmly coagulated, albuminous, bloody material. This scale is rather hard and dry, and often contracted, giving a picture not unlike cicatricial contraction. The solitary follicles in the upper ileum and jejunum are swollen, pale, and moderately firm.

The cecum is moderately dilated, otherwise there are no dilations nor contractions in the large intestine. The walls are thin and exceedingly pale. The lumen of the bowel is filled with granular, pale, fermenting, fecal material, containing a

small amount of mucus and no macroscopic blood. The mucous membrane is decidedly atrophied, pale, soft, velvety, and structureless. There are no areas of ulceration, necrosis or hemorrhage; there are, however, a few small areas showing congestion, and a few old, darkly-pigmented spots without any evidence of ulceration. The solitary follicles are not swollen.

Microscopic Examination.—The contents of the upper portion of the small intestine consists of undigested food particles, mucus, epithelial and a few blood-cells and bacteria. Of the bacteria, an actively motile bacillus of the medium size is the predominating organism. Lower down, the organisms are in enormous numbers, and the blood and mucus a more prominent feature of the contents. The large intestine contains but little or no mucus, and but very few blood-cells. No intestinal parasites could be demonstrated in the stools during life nor in the intestine post mortem. The postmortem blood-serum in dilutions of 1 to 10 shows absolutely no agglutination reaction with *Bacillus dysenteriae*, *Bacillus typhosus*, nor with stock cultures of colon bacilli after one hour. Three cultures of *Bacillus typhosus* from different sources were used in these reactions; the same bouillon cultures of all three are promptly agglutinated by the serum from known cases of typhoid fever.

Anatomic Diagnosis.—General condition of sprue (marked secondary anemia, extreme emaciation and atrophy of all the organs). Congestion of the lower right lobe of the lungs. Brown atrophy of the heart muscle, and cloudy swelling of the liver and kidneys.

Bacteriologic Examination.—Plate cultures from the gallbladder, and kidneys remain sterile; from the large intestine, streptococcus; from the heart, spleen and intestine, *Bacillus coli*. The colon bacilli are culturally of at least two varieties. Most of those from the intestine are ordinary colon, showing none at all, or at most, indefinite agglutination reaction with the serum of the host in 1 to 10 dilutions. The colonies from the heart and spleen, and a number of colonies from the intestine, are decidedly more actively motile, and are agglutinated by the postmortem serum of the host in 1 to 15 dilutions in 15 minutes. This colon is pathogenic for Manila rats and young cats, when injected into the abdominal cavity, and is again agglutinated by the blood of the host after passing through animals.

Its cultural characteristics are as follow: Morphology and staining reactions are those of ordinary colon. It is very actively motile. Culturally, indol is not produced in bouillon in 32 days. In mannite and glucose, about 15% of gas is produced; in saccharose, 10% of gas, and in lactose only a bubble of gas. Litmus milk is acidified and very slowly coagulated. Some of the milk tubes from the original culture were red-dened, and then decolorized without coagulation.

CASE XVI.—An American soldier, 28 years of age, who was in good health when he arrived in the Philippine Islands in the early part of 1899. During the year he suffered with four or five attacks of malarial fever, which promptly reacted to quinin. In August and October of the same year, he had light attacks of diarrhea of only a few days' duration. In December of the same year, an acute attack of dysentery of moderate severity developed and lasted for about 10 days. During this attack he passed 20 to 30 bloody mucous stools in 24 hours, and had considerable tenesmus, but no fever. He was apparently cured, but upon returning to military duty, a diarrhea developed which became chronic. He passed from 2 to 6 semiliquid stools in 24 hours. Symptoms of indigestion developed, and in March, 1900, his mouth began to get sore. He was repeatedly treated in different hospitals, for short periods of time, for chronic diarrhea, sprue, or chronic dysentery. Loss of weight and anemia were progressive, and in July, 1901, he became totally incapacitated for duty. He was transferred to the First Reserve Hospital in February, 1901, with a diagnosis of chronic dysentery and sprue.

On admission, the patient was extremely emaciated and anemic; temperature was normal. He complained of weakness, sore mouth, indigestion, nausea and occasional vomiting and diarrhea. The mucous membrane of the mouth, and edges and tip of the tongue showed small superficial ulcers. The effort of swallowing was painful, and the pain increased on ingestion of food or fluid. The stools numbered from 1 to 10 in 24 hours. They were soft and mushy, or more often, semiliquid, fermenting and frothy, with little or no mucus and no blood. Microscopically, no intestinal parasites could be found. There were usually red cells present. The white blood-cells were 6,280; the red 2,680,000, hemoglobin 53% (Fleischel). There was a moderate poikilocytosis. Serum reaction in 1 to 10 dilution (20-minute limit) was negative with *Bacillus typhosus* and *Bacillus dysenteriae*. The urine was negative for albumin and casts. On March 9 an irregular fever developed which reached 104° on the day of his death, March 20. On three different occasions during life, cultures were made from the stools, and serum reaction with the blood of the host tried on large numbers of colonies, without definite results.

Postmortem Examination.—Necropsy 5 hours after death. Moderate rigor mortis and livor mortis are present; the skin is very pale and scrawny; numerous small superficial ulcers on the mucous membrane of the mouth and tongue. The heart weighs 240 grams. There are a number of small subpericardial hemorrhages over the right auricle, auricular appendage, and anterior surface of the left ventricle. The muscle is pale and has scattered through it some bright hyperemic spots.

The right auricle contains a small postmortem clot. The valves and coronary arteries are normal. The arch of the aorta is smooth. The pericardial cavity is normal. The left pleural cavity is dry and free from adhesions. On the right side there are a few fibrous adhesions laterally over the upper lobe. Both lungs are somewhat congested and edematous throughout. The abdominal cavity is free from adhesions and contains no fluid. The omentum is deficient in quantity and of a pale yellowish color. The subcutaneous and abdominal fat is very scanty and the tissues in general have a water-soaked, edematous appearance. The mesocolic glands measure from 2 to 5 mm. in diameter, are a little hyperemic and moderately firm. The glands along the small intestine measure from 5 to 9 mm. in diameter, are pale and quite firm. The retroperitoneal glands measure from 9 to 20 mm. in diameter and are congested, the surrounding small vessels are brightly injected. The spleen weighs 840 grams. It is moderately firm, the surface is a little wrinkled and dark in color; capsule is not thickened. Cut sections are of a slate-blue color and quite dry; there is some increase of soft pulp; structural markings fairly distinct. The liver weighs 1,860 grams. The surface is smooth and a little pale; cut sections are pale yellowish and greasy looking. The gallbladder and ducts are normal. The kidneys are normal in size and capsules nonadherent. Cut sections show a moderate injection of the cortical vessels and the cortices are of a dull, cloudy appearance. The mucous membrane of the esophagus is dark in color and appears swollen. Near the upper portion there is a grayish colored ulcer 9 mm. in diameter and a number of smaller ulcers scattered throughout the mucous membrane. The stomach contains considerable mucus, and there are numerous fresh and old hemorrhages. The mucous membrane is pale and mammillated. The pancreas appears normal.

The small intestine shows no dilations nor contractions. The walls are very pale, exceedingly thin, and in places diaphanous. It is possible to read 6-point type through the bowel wall in the thinner areas. The contents of the bowel consist of a granular, fermenting, semiliquid material, with a small amount of mucus and no blood. The mucous membrane is markedly atrophied, soft, velvety, pale and structureless. The folds of the bowel are almost entirely obliterated. The lymphoid structures appear normal. The length of the small intestine from the pylorus to the ileocecal valve is 745 cm. The large intestine is moderately and uniformly dilated throughout and its walls are pale and thin. The mucous membrane is atrophied. There are a few hemorrhages and old pigmented spots in the rectum.

Microscopic Examination.—No parasites could be demonstrated in the intestinal contents. The postmortem urine is negative for albumin and casts. The postmortem blood-serum in 1 to 10 dilution does not agglutinate *Bacillus dysenteriae* nor *Bacillus typhosus*. It shows a moderate reaction with the motile colon from Case XV.

Anatomic Diagnosis.—General condition of sprue (marked anemia and emaciation and atrophy of the intestinal mucosa; ulceration of the mouth, tongue, and esophagus and chronic gastric catarrh). Hyperplasia of the spleen and mesenteric lymphatics; parenchymatous degeneration of the heart muscle, liver, and kidneys; moderate congestion and edema of the lungs, and chronic adhesive pleurisy.

Bacteriologic Examination.—*Streptococcus* obtained from the heart, spleen, liver, gallbladder and intestines. From the intestine a nonpathogenic, nonmotile bacillus was obtained, which did not change litmus milk, ferment sugars, nor agglutinate in the serum of the host. At least two varieties of colon were obtained. More than 200 colonies, on 15 plates, from the intestine were planted on agar slant, litmus milk, glucose agar and bouillon, and the agglutinative reaction tried with the blood-serum of the host in 1 to 10 dilutions, with a 20-minute time limit; only a few of the cultures show definite reactions. The cultures which gave no reactions (and they were in the large majority), were either the bacillus mentioned, or colon, in that they were slowly motile, acidified, and coagulated litmus milk, fermented glucose and produced indol in bouillon.

The colonies which agglutinated, formed in a way a separate class and were very similar in cultural habits. It is a bacillus very actively motile; reddens, decolorizes, and slowly coagulates litmus milk; ferments glucose, and mannite actively; and produces but a bubble of gas in lactose. Indol is not produced in two weeks. It is agglutinated by blood-serum from two out of seven other cases giving sprue symptoms, but is negative with the other five.

In Cases XIV and XVI, there was a definite history of a dysentery attack, which in both was followed by sprue symptoms. When these cases came under observation late in the disease, sprue symptoms were well marked, and serum reactions, bacteriology, and other methods, failed to demonstrate that the disease was dysentery. From previous work, however, it is known that the serum reaction for dysentery is sometimes of comparatively short duration, and that the isolation of the *Bacillus dysenteriae* from the stools or intestine, in chronic cases, is often impossible. The histories of these

cases should place them in the class of chronic dysentery.

Case XV stands alone in history, symptoms, and post-mortem findings, as being apparently a case of sprue. It is very similar to cases of chronic, specific, or bacillary dysentery, but at the time the patient came under observation, it was impossible to say that this disease was present.

MORBID ANATOMY AND MICROSCOPIC PATHOLOGY.

General emaciation and atrophy are constant conditions in these cases. The skin is pale and often has a dry, scrawny appearance. Ecchymosis is occasionally seen, more often over the chest and shoulders. A rule there is a remarkable scarcity of fat throughout the body; this is especially noticed in the abdominal organs. The tissues of the abdominal cavity usually have a peculiar, water-soaked, edematous appearance. The blood-vessels are not usually injected.

Respiratory System.—Congestion and edema of the lungs, of varying intensity, was present in 7 of the 16 cases. Chronic pleurisy was present in 6 cases. There was active tuberculosis in 1 case, and old calcified tubercles in 2 others. In 1 case the right pleural cavity contained part of the contents of an amebic abscess of the liver, which had perforated the diaphragm.

Circulatory System.—In 11 of the 16 cases there were parenchymatous changes in the heart muscle; fatty degeneration in 2, brown atrophy in 3, and cloudy swelling in 10. Small, discrete, punctate, pericardial hemorrhages were present in 4 cases, chronic adhesive pericarditis in 1 case, and atheromatous patches in the larger bloodvessels in 2 cases. In 1 case there was moderate sclerosis of the mitral segments, and hypertrophy of the papillary muscles.

The mesenteric and retroperitoneal lymphatics, either all or in part, were swollen in nearly every case. In some instances they were pale and quite firm, in others they were hyperemic, and still others showed a few small hemorrhages into their substance.

Spleen.—The average weight of the spleen was 250 grams, the smallest 72 grams, and the largest 840 grams. Distinct splenic tumor existed in 3 cases. In 1 case tubercles were present. Small, punctate, subcapsular hemorrhages were present in 1 case, and chronic perisplenitis existed in 1 case. In 2 cases there was a distinct hyperplasia of the connective tissue elements, and proliferation of the endothelial cells lining the lymph channels. In several cases the lymphoid cells were increased.

Kidneys.—The average weight of both organs was 352 grams. Parenchymatous changes existed in 8 cases. Chronic nephritis was present in 3 cases. In several cases there were areas in which the epithelial cells lining the tubules were granular, and in places the nuclei stained poorly, but the condition was not advanced or extensive. A few of the cases showed small hemorrhages, with moderate injection of the cortical vessels.

Liver.—The average weight of the organ was 1,400 grams. In 1 case it weighed 2,100 grams, and in another 920 grams. Parenchymatous changes existed in 10 cases; moderate cirrhosis in 1, fatty degeneration in 7, and cloudy swelling in 2. Multiple amebic abscesses were present in 1 case.

Digestive Tract.—Ulceration of the mouth and tongue existed in 13 of the 16 cases. The ulcers were usually small and superficial, and were located more often on the sides and tip of the tongue. Less frequently they were situated under the end of the tongue beside the frenum, around the corners of the mouth, and on the mucous membrane of the lower lip. Sections through the ulcers, under the microscope, present nothing characteristic, the usual cell-infiltration extending a short distance into the surrounding tissues.

Esophagus.—The mucous membrane of the esophagus was ulcerated in 6 of the 16 cases. In 1 case there

was a large ulcer in the upper portion; in the others the ulcers were small and situated mostly in the lower portion. The ulcers were usually dark in color and superficial; in 2 cases, however, they extended to the muscular coats, which were infiltrated. In a few cases without ulceration, the mucous membrane was roughened and uneven. Microscopic study of sections in these cases, show a catarrhal condition of the follicular type. The follicles and glandular structures are swollen, and glandular cells cloudy or showing fatty degeneration; the mucous membrane and sometimes the submucosa, showing cell infiltration to a moderate degree.

Stomach.—More or less chronic catarrh was present in 9 of the 16 cases. In 5 the mucous membrane was pale, mammillated, and covered with glairy, tenacious mucus. Hemorrhages and superficial hemorrhagic erosions were present in 8 cases. In 3 there was marked atrophy of the mucous membrane. The organ was moderately dilated in 3 and contracted in 2 cases. Microscopically, the changes were those of gastric catarrh, varying in intensity in different cases and in different locations in the same case. Sections under the microscope show connective-tissue proliferation and round-cell infiltration of the mucous membrane. The glandular structures are swollen or cystic. The glandular cells were cloudy, and in places showed fatty degeneration. In most cases there was moderate hyperplasia of the submucous and muscular coats.

Small Intestine.—Dilation was present in 6 of the cases. It was usually moderate in degree and found in areas, but in 2 cases it was extreme and extended almost the whole length of the gut. Thinning of the walls, with atrophy of the mucosa, was present in places in 9 cases. In most cases it was moderate in degree, but in a few the walls were extremely thin, and the mucosa pale and structureless. The Peyer's patches were swollen in 5 cases, and ulcerated in two others.

Microscopic examination of sections from the intestine show in most of the cases changes due to the existing disease. The features in common are those of catarrhal enteritis, varying in degree in different cases and in different locations in the same case; for example, in the small intestine, sections from the jejunum may show the swollen follicles, cloudy cells, and hemorrhagic infiltration of a subacute process, and in the lower portion of the small and upper portion of the large intestine, the changes of an advanced chronic catarrh. In the advanced cases, the mucous membrane is a structureless mass of cells, or hyperplastic connective-tissue. The remaining tubules of the glands are atrophied or cystic, the cysts in places are numerous and usually contain debris and degenerated cells, but in places they may be entirely empty. The infiltration extends to the submucosa, and in places to the muscular coat. In a few cases there was a noticeable eosinophilia around the bases of the glandular tubules. The glandular cells, when present, are in all stages of degeneration, granular with faintly staining nuclei, or showing fatty degeneration. The submucosa shows more or less hyperplasia, and in places may be infiltrated. The serous coats are usually normal while the muscular show atrophic changes.

Large Intestine.—Dilations and contractions were present in 5 cases. The walls were thin and atrophied in 4. Amebic ulcers were present in 3, and small catarrhal ulcers in 3 other cases. The thinning of the walls and atrophy of the mucosa were much less marked than in the small intestine, except in 2 cases. The microscopic lesions, as in the small intestine, were mostly those of the existing disease—those of a chronic catarrhal condition. In Case III a diagnosis of tuberculosis of the intestine was made from microscopic study of sections.

CLINICAL FEATURES.

In the earlier stage, in the majority of the cases, the symptoms were those of the then existing disease.

Many diseases, however, especially those affecting the alimentary tract, of long standing may lose, in certain respects, their identity, and develop into a somewhat similar condition. The most common picture of this condition is described as sprue. It will be seen that in a general way there is considerable in common in the cases described. And yet in the face of the findings, in a more detailed study of the cases, is there enough in common to state that a single pathologic entity (a disease) existed? In all there was some, and in most of the cases, marked emaciation and anemia. Fever was usually absent or slight. In Cases II, XIII, and XIV, there was a moderate intermittent fever at times, but of an indefinite character. In Cases VII and XVI, fever developed a few days before death, due in all probability to terminal infections. In Cases III and IV, and less marked in some other cases, the temperature was subnormal before death; in Case IV it fell as low as 95.5°. In Case V the fever was probably due to the liver abscess; and in Case VIII to streptococcus infection.

In all cases the disease was chronic and of moderately long duration. The shortest period was in Case V, which lasted 6 months, and the longest duration was 18 months. There is at present a case in this hospital (Army and Navy Hospital, Hot Springs, Ark.) of more than 3 years standing. The patient has served for nearly 2 years in the Philippine Islands, and at this time presents a typical clinical picture of sprue. There are large motile amebas and blood-cells in his stools. The mind usually remains clear throughout the course of the disease, and death occurs most often from asthenia. Terminal infections are not uncommon. Frequently there is a dry, hacking cough, with but little or no expectoration. The skin is usually pale, and in long standing cases may have a dry, scrawny appearance. Slight jaundice occurred in 2 cases.

The Blood.—In all well established cases there was marked secondary anemia. The lowest recorded hemoglobin estimate was 48%. Poikilocytosis of a moderate grade was noticed in several cases. Nucleated red cells were not found, and red cells were not found to be less than 2,000,000 in several cases. In all these cases, however, the concentration of the blood, resulting from chronic diarrhea, should be considered. The colorless cells were usually about normal in number and variety. In two cases the eosins were slightly increased (3.5% and 5%).

The Digestive System.—Sore mouth to a greater or less extent is usually complained of. The mucous membrane may be red, and in a well established case often shows small, superficial ulcers, usually situated on the inside of the lips and around the corners of the mouth. The tongue is that of chronic gastric catarrh. It may be large and flabby, marked on the edges by the teeth and covered with a grayish-white fur, or more often it is pointed at the end and of a beefy, raw appearance. Small ulcers along the sides are frequently seen. There is usually an increased flow of saliva. In many cases there is a raw, burning pain along the gullet, increased by sour or solid food. This, as the morbid anatomy shows, is sometimes due to an ulcerated or inflamed esophagus. Nausea is frequent, and in advanced cases may be almost constantly present, and vomiting occasionally occurs. The vomiting may follow the taking of food or may occur independently. Eructations of gas, and water brash may be present. The appetite is variable, anorexia is the more usual, though the appetite may be ravenous at times. Taking food usually aggravates the stomach symptoms, though in some cases with a constant sense of oppression and a gnawing, burning pain in the stomach, a small amount of light food may relieve the distress.

In all cases diarrhea is a constant symptom. It varies in character and in intensity in different cases and at different times in the same case. It is usually very persistent, though at times slight, and may be absent for

days at a time. The stools number from one to several in 24 hours, and are usually passed without pain. They vary considerably in character, but are more often soft, clay-colored, mushy or semiliquid, with little or no mucus, and no macroscopic blood, and are usually most frequent during the morning hours. Microscopically, they contain the products of the catarrh, a few blood-cells, and, in many cases, intestinal parasites. Of the intestinal parasites, amebas are the most frequent of the pathogenic parasites. They were present in three of the 16 cases. Ova uncinaria are frequently seen either alone or in association with other parasites. In fact, many of the known intestinal parasites may be encountered, and it is in just this class of cases that they are most often seen.

The copious, pale, pasty, fermenting stools described by some writers as being all but characteristic of sprue, were often seen, but under conditions too diverse to admit of their being considered of special diagnostic importance. They were often found in undoubted cases of chronic specific dysentery, diagnosed by clinical symptoms and serum reactions, and in some cases diagnosis was confirmed by postmortem examinations. They were associated often with amebic dysenteriae in undoubted cases of amebic dysentery, and also quite often in cases of irregular intestinal disorders. They were found associated with sore mouth and dyspepsia, but more often without the presence of these symptoms, especially the former. The character of the stools in chronic intestinal disorders, in the tropics, is so varied in different conditions at different times, that after considerable experience, one grows very skeptical of attributing diagnostic importance to their macroscopic appearances. Usually careful macroscopic and microscopic examinations of stools will reveal something of the general condition of the bowel, but even this is not constant, as is often evident to the observer who examines the stools of his patients suffering from chronic dysentery.

SERUM REACTIONS AND BACTERIOLOGY.

In 7 of the 16 cases, the blood-serum in dilutions of 1 to 10 gave a positive agglutinative reaction with *Bacillus dysenteriae*, and, with other findings, was considered diagnostic. *Bacillus typhosus* was not definitely agglutinated by serum from any of the cases. In one case there was an indefinite reaction in low dilution. In a few clinical cases, however, the reaction was present and with other studies in the cases, was considered diagnostic. Several stock cultures of colon bacilli were tried with serum from some of the 16 cases and in many clinical cases, without significant results. With colon bacilli from the intestine and serum of the host, however, the results were more significant.

Plate cultures were made from the rectum and from the stools in some of the 16 cases, and in many clinical cases. A large majority of the colonies which grew were tried for agglutinative reaction with the serum of the host in 1 to 10 dilutions. In nearly every case some of the colonies were agglutinated. In some instances the reaction was well marked, in others shading off into all grades of indefiniteness. In every case all the cultures which were agglutinated by the serum of the host, and a few of those that were not, were worked out culturally and tried with the serum from several cases with sprue symptoms. The results were not constant enough for conclusions, except that in a general way, the cultures that were agglutinated by the serum of the host, were also more often agglutinated by the serum of similar clinical cases. Thus in one series of 10 cases with sprue symptoms, colon "a" (agglutinated by serum of the host in $\frac{1}{10}$ dilution in a 20-minute limit) was agglutinated definitely in 3 cases, and partially in a fourth. Colon "b" (not agglutinated by the serum of the host) showed an indefinite reaction in 2 cases. Similar results, however, were obtained when these bacilli were

tried with the serum from other patients suffering with intestinal disorders, not manifesting sprue symptoms, especially in dysentery cases. In patients suffering from diseases other than intestinal disorders, and in healthy persons, this relation was not obtained. Many cases of sprue and other intestinal disorders were studied in this way, and the results may be summarized as follows: The colon bacilli from the bowel, in cases of sprue and in other intestinal disorders, that were agglutinated by the serum of the host, reacted, first, more often with the serum of other cases of intestinal disorders, than they did with the serum of healthy persons, or with serum from patients not suffering with intestinal disorders; second, more often in other intestinal disorders, than did the colon bacilli which were not agglutinated by the host. In diseases not affecting the intestinal tract and in healthy persons, this relation did not obtain.

In working out the colonies from the intestine, it was found that in some cases the cultures that gave reactions with the serum of the host, etc., approached in their cultural habits and pathogenic actions on animals, more nearly the typhoid or hog-cholera groups. They were more actively motile, grew rather more delicately on media, fermented sugars less actively, produced acids more slowly, produced indol slowly or not at all, and were less rapid in coagulating milk. In other words, the more nearly the colon bacilli from the intestine approached the typhoid or hog-cholera groups in their cultural habits, the greater the percentage of agglutinations in the diluted blood-serum of the host.

Bacillus dysenteriae was obtained from the intestine in 2 of the 16 cases. The frequent impossibility to obtain this bacillus in chronic cases, in which it is the accepted etiologic factor, has already been mentioned. *Streptococcus* was isolated from the intestine or other organs in 4 of these cases, and from the stools in several others. Except the colon group, it was the pathogenic organism most often found. In the bacteriologic study of the intestinal flora in intestinal disorders in Manila it was not infrequently found, and while in some cases it may not have affected the intestinal lesions, its presence most certainly adds to the gravity of prognosis from the constant possibility of a general infection. Several other varieties of bacteria were isolated, but no relation to the diseased condition could be established by the usual methods.

CONCLUSIONS.

Sprue symptoms are nearly always found in the presence of other and well-known lesions, discoverable by careful clinical studies, aided by microscopic methods.

Careful studies of these cases by modern methods fails to indicate an additional etiologic factor, and with our present knowledge it is more rational to consider sprue as a state or symptom-group (comparable to the typhoid state), occurring in the tropics in chronic diseases, especially those affecting the gastrointestinal canal.

The following clipping from a recent editorial in the *Medical News* is quoted: "In a word, there seems to be a number of affections, at present considered independent nosologic entities, that are really manifestations of preceding infections. The recognition of the true identity of such symptom-complexes will prove an important step in advance in our knowledge of disease, and will usually furnish valuable hints as to the therapeutics of these conditions. Possible connections of preceding infections with tissue changes that produce symptoms later are always to be borne in mind. It is probable that we have scarcely more than begun this interesting chapter of the parainfectious affections."

In conclusion, I wish to thank Surgeon-General Sternberg, and Assistant-Surgeon Greenleaf, for opportunities to make these studies. Especially do I wish to thank Dr. R. P. Strong, Assistant-Surgeon U. S. Army, for valuable suggestions and assistance.

THE VALUE OF THE UREA ESTIMATION.

BY

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The purpose of this article is to emphasize the value of urea estimations as an aid in diagnosis and also to protest against the careless and indiscriminate method of procedure commonly employed in drawing conclusions as to the general nitrogenous metabolism, from the amount of urea in a small specimen of urine, or even in a given quantity for 24 hours. A consideration of the various factors which make up the study of urinary excretion shows the fallacy of attempting to deduce too much from the analysis of the urine for urea alone. This, however, is the usual practice, and one which is liable to lead to erroneous conclusions. The variation in the amount of urea excreted by healthy individuals is considerable. It ranges from 20 to 40 grams a day and is influenced by a number of things, such as the amount of proteid ingested, muscular and glandular work, previous metabolic activity, etc. Because of this variability no definite standard exists with which the amount of nitrogen excreted by a given individual can be compared. This fact, however, does not stand in the way of our ability to gauge almost exactly the nitrogenous metabolism. It is only necessary to determine a relative standard for the individual, which is not to be measured by the quantity of nitrogen excreted in 24 hours, but by the relation which exists between this quantity and the amount at his disposal for excretion. There are two sources from which the excretory nitrogen is derived: (1) The food. (2) The various tissues and organs of the body. Under ordinary conditions these two sources are variable, but one at least can be made constant, namely, the amount of nitrogen in the food supply. By a rigid diet of easily digested food-stuffs, in which the nitrogen content is determined by experiment, or from one of the numerous tables, such as König's, the daily intake of proteid substances can be controlled. When care is taken that this amount remains constant over a given period of time (three or four days) an average figure for excretory nitrogen is obtained which equals the amount in the food. The nitrogen derived from the tissues and organs is not so readily controlled. To a certain extent, however, exactness can be approximated by placing the individual in a condition of physiologic rest so far as the voluntary muscular apparatus is concerned. In practice, this is accomplished by rest in bed. A state of the body is thus approximated in which the variability of tissue destruction is reduced to the minimum necessitated by the performance of the vital functions. A healthy person whose metabolism is controlled in the foregoing manner soon reaches a state of nitrogenous equilibrium in which the amount of nitrogen ingested is equal to the amount excreted. This fact is well established. No matter how large the amount of nitrogen ingested the body strives to equalize it in the excreta, and will do so if the daily quantity of food nitrogen remains constant. Nitrogen in the feces must also be estimated and subtracted from the food nitrogen, as it represents nitrogen which plays no part in the metabolic processes. Nitrogen excreted in other fluids or gases of the body is not present in sufficient quantities to seriously affect the result.

From the physiologic fact of nitrogen equilibrium we have a tangible basis for researches in pathologic nitrogen excretion. As we have already shown the nitrogen of nutrition equals nitrogen of urine plus nitrogen of feces. Two deviations from the normal are possible: The nitrogen excreted may be (a) in excess of, or (b) less than that ingested. In the former case the excess must come from some other source than the diet and therefore it must be derived from the tissue and fluids of the body.

The formula then reads nitrogen of urine + nitrogen of feces > nitrogen of nutrition, and indicates the breaking down of protoplasmic material. When the formula is reversed there are two possibilities: either the nitrogen of the food is employed in building up proteid tissue, or there is a retention of excretory nitrogen. Since the object of the estimation is to determine a condition of equilibrium, an excess or diminution of nitrogen in the excretions, how may the examination for urea aid us? It has been already stated that the quantitative urea test as ordinarily made is of practically no value, for no attention is paid to the diet, muscular activity and other matters which are of the greatest importance. On the other hand, to carry out an exact and rigid research into the nitrogenous metabolism in any patient demands more time and greater laboratory training than the general practitioner has at his disposal.

There is, however, a method of procedure which, while lacking in the exactness of a complete research in nitrogen metabolism, gives fairly approximate results and will suffice for ordinary clinical purposes.

An example will explain the process. It is desired to determine whether the nitrogenous metabolism of a patient is normal or not. He is placed upon the following diet, which is rigidly enforced: 1½ liters of milk, 6 eggs, 250 grams white bread, 45 grams butter. This represents about 2,250 calories, the quantity necessary to sustain an individual weighing 130 lbs. in a state of rest. The nitrogen in the diet amounts to about 13 grams. The urine is carefully measured and collected each day and the amount of urea estimated by any of the well known methods.

By experience we know that, as a rule, nitrogenous equilibrium is obtained in a healthy person in three or four days. The urea obtained is not, however, a measure of the total nitrogen excreted, but includes about 80%, a percentage which we may allow ourselves in the approximate determination. Since the molecular weight of urea is about 60, the amount present in each molecule is 46⅔%; the total amount of nitrogen in the urine can readily be calculated by this formula

$$\frac{\text{amount of urea} \times .46\frac{2}{3}}{.80}$$

or more simply the amount of urea \times by the fraction seven-twelfths. The amount of urea found in the case above is 21 grams, from which the total nitrogen from the formula is 12.25 grams. This figure subtracted from 13 grams, the amount of nitrogen in the food, leaves 0.75 grams to be accounted for in the feces. In this particular instance then, the body would be in a state of nitrogenous equilibrium, and the nitrogen metabolism regarded as normal. If an increased or diminished amount of nitrogen is found in the urine, as compared to the food nitrogen, the inference would be that the nitrogenous metabolic process is abnormal or pathologic.

In instances in which the urea secretion is found very low or very high, and persistently so under ordinary conditions, we know at once that it is abnormal; and it is usually associated with grave symptoms, the nature of which is generally clear. When difficulty is experienced, it is when the urea estimation lies between 20 to 40 grams, and when some defect in the nitrogen metabolism is suspected.

While criticism may be offered that the use of the urea estimation in this way leaves much to be desired in exactness, it is still, in my opinion, as close an approximation to the more exact methods, as the time and training of the general practitioner will permit. Many considerations arise in this attempt to make use of the physiologic fact of nitrogen equilibrium as an aid in the diagnosis of metabolic disturbance, which experience and training in this special line of work can alone make clear. It is therefore with a keen recognition of the difficulties which surround the entire subject of faulty nitrogenous metabolism, that the foregoing views are submitted.

PEMPHIGUS, WITH A REPORT OF A CASE OF PEMPHIGUS FOLIACEUS INVOLVING THE MUCOUS MEMBRANE OF THE RESPIRATORY TRACT.¹

BY

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In spite of the recent advances made in dermatology, practically nothing has been added to our knowledge concerning the etiology and pathology of pemphigus. Some authorities even yet deny its existence as a distinct disease-entity, and use the term in a purely descriptive sense. What facts we have, however, seem to confirm the commonly accepted view that pemphigus is a disease in itself, bearing no relation whatever to any of the other diseases which, like it, give rise to bullous skin lesions. It is commonly described as being a more or less chronic inflammatory disease of the skin, running an indefinite course, and being characterized by the successive development of various-sized oval or round blebs, associated with constitutional symptoms, and sometimes terminating fatally. Most observers confess themselves ignorant as to its etiology and pathology, and of those who have theories to offer, no two seem able to agree. A nervous origin has been assumed because of its occasional association with retrograde changes in the central and peripheral nervous systems. Opposed to this view, however, are the significant facts that most sufferers from pemphigus have apparently normal nervous systems, and that bullous skin lesions do not commonly develop in the course of any known disease of the brain, cord or peripheral nerves. Frequently recurring chills have been held responsible by some writers. Whitehouse makes special mention of this in the *Twentieth Century Practice of Medicine*. Practically all are agreed that the disease occurs with greatest frequency among those who are much broken in health, the sufferers from chronic visceral disorders being especially predisposed. Further than this no facts bearing upon its etiology have been established.

An almost infinite number of varieties of pemphigus have been described, one author alone having enumerated 97. For practical purposes, however, it has become the custom with dermatologists to recognize but two. Pemphigus vulgaris, the common form, is characterized by the appearance of large, tense, oval or round blebs, which arise from apparently healthy skin, and contain a clear or slightly turbid serous fluid. These lesions appear in successive crops over a series of months or years, and any part of the skin surface or mucous membranes may be involved. In this variety the patient's health may not be seriously affected. Pemphigus foliaceus, the second form, constitutes an extremely grave disease. It always seriously compromises the sufferer's general health, and almost invariably reaches a fatal termination after some months or years. The blebs in this form contain a purulent fluid, are but partially filled and rupture easily. At times the entire body is covered, the patient presenting a most pitiable picture.

The following case, in which involvement of the mucous membranes of the respiratory tract apparently brought about a fatal termination, presents some interesting features:

Mills, a laborer, aged 50, a bachelor, was admitted to the San Antonio City Hospital on June 20. His family history contained nothing of interest. Neither parent, and none of his brothers or sisters, ever suffered from a skin disease. Since boyhood he had been an intemperate user of beer, whisky, and tobacco. He had had several attacks of gonorrhea, but was quite sure he had never contracted syphilis. For ten or more years he had suffered from periodic attacks of malarial fever,

which, at the beginning at least, were probably of the tertian intermittent type, and, in 1899, he had an attack with which he was confined to bed for about three weeks. Since then he had never regained his usual health and strength, and he had suffered most of the time from dyspepsia and from occasional outbreaks of a skin eruption, the latter occurring usually on the abdomen, neck, face, arms, and hands, an accurate description of which he was unable to give. He was even unable to recall how long the outbreak usually lasted. About one week previous to his entrance to the hospital, on becoming sober after a prolonged drunken debauch, during which he slept a part of the time out of doors and in a stable, he found himself ill, and his face and hands covered with an eruption in some respects unlike any of the previous outbreaks. On examination after admission his heart and lungs seemed to be fairly normal, except for an accentuation of the aortic second sound. His arteries were sclerosed, as was evidenced by the condition of the radials and branches of the temporals. His spleen and liver were both somewhat enlarged and tender. His urine was highly colored but normal, except for slight traces of albumin. A careful blood-examination gave a practically negative result. The red blood-discs showed some reduction in number, and the leukocytes were slightly in excess of the normal, but, there was no eosinophilia, as has been reported in similar cases. The patient's temperature varied from 100° to 102°, pulse corresponding. His breathing was labored, and he experienced great difficulty in swallowing. He was evidently very ill. On his forehead, face, neck, forearms, and hands, were numerous various-sized, irregularly outlined, partially filled blebs which contained for the most part, a turbid seropurulent exudate. Some of these were not more than a quarter of an inch in diameter, while the area of some of the largest single lesions more than equaled that of a silver dollar, and showed a marked tendency to spread peripherally. The upper layers of the skin adjacent to them seemed to be infiltrated with serum, and the epidermis had a dead appearance. The covering of all these lesions was exceedingly thin and easy to rupture, being composed, apparently, of only the horny layer of the epidermis. In some places, especially over the eyebrows and on the back of the neck, the lesions had coalesced and ruptured spontaneously; thus were formed large, irregularly, outlined weeping surfaces, partially covered with thin, imperfectly formed, brownish-yellow crusts. The epidermis surrounding these was wrinkled and fissured, and apparently completely devitalized. Examination of the mouth and pharynx revealed large, dark red, ulcerated patches and, judging from the condition of the man's voice and from his labored breathing, it seemed certain that his larynx was also involved. Examination of the contents of the blebs showed nothing of interest. The fluid was alkaline, and contained pus cells, red blood-discs, and some unimportant bacteria. On the second day after admission, the patient began to experience greater difficulty in breathing and swallowing, his mind became clouded, and he began gradually to sink into the so-called typhoid state. Within a short time he became completely unconscious, and lost control over his bowel and bladder sphincters. On the eighth day after his admission to the hospital he died. No postmortem examination was held.

The diagnosis made was *pemphigus foliaceus*. The character of the lesions, their method of development and growth, and the fatal termination of the disease, taken all together, are certainly sufficient to distinguish it from bullous eczema, dermatitis herpetiformis, the bullous syphilid, erythema multiforme, herpes iris, and the numerous other diseases sometimes mistaken for one of the forms of pemphigus. The especially interesting features here presented are:

1. The apparently sudden change in the type of the disease from a mild form of pemphigus vulgaris to a rapidly fatal pemphigus foliaceus.

2. That the development of the disease evidently had its chief etiologic factor in the cachexia resulting from a chronic malarial toxemia, though of course the patient's vicious habits and his entire lack of attention to personal hygiene must have aided materially in reducing his power of resisting morbid influences.

3. The extreme rapidity with which a fatal termination was reached, death having occurred within 15 or 20 days after the development of the symptoms of pemphigus foliaceus. This can only be satisfactorily accounted for by the involvement of the mucous membranes of the mouth, pharynx and larynx, with extension of the disease probably much lower down into the respiratory tract.

An outbreak of smallpox is reported in Jersey City, and a rigid inspection of houses and a system of compulsory vaccination has been established by the health authorities, assisted by the police.

¹ Read before the twenty-fifth annual meeting of the Western Texas Medical Association, at San Antonio, Texas, October 31, 1901.

MODERN TREATMENT OF DRUG HABITUATION.

BY

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Before 1817, when morphin was discovered by Serütnner, the use of opium was less disastrous to life; but it is estimated that there are today in the United States 100,000 persons addicted to the use of morphin. When we consider that the population is 76,000,000, this estimate seems undoubtedly far below the actual number, but if in addition we consider those habituated to the use of cocain and allied drugs, the figures are appalling.

The centralization of population in overcrowded cities where commercial strife keeps every nerve-fiber keyed to the highest pitch in the struggle for existence; and the fact that morphin acts mainly upon the nervous system, affecting first the cerebral convolutions, which are briefly stimulated, then depressed, and this followed by more or less blunting of the perceptive and sensory centers in the higher brain, with paralysis of the vaso-motor centers if large doses are taken, explain why the high-strung neurotic individual is especially susceptible to its influence. In addition, the maintenance of the home amid social obligations, and the ambition to be rich, all constitute an environment which tends, even in the case of those originally endowed with a strong physique, to break down the system, and fosters an inclination to resort to drug-stimulation. This extreme drain on the nervous energy occurs not only in adolescence, but frequently children of no more than 10 years are laying the foundation of neurasthenia because of the mental strain required in the endeavor to master double the number of studies suited to their years.

Causes.—A recent writer alleges that 10% of American physicians are slaves to some form of opium. While the burdens of the busy physician are admittedly heavy, still this statement, I feel, should be accepted with some hesitancy. Physicians fully realize the personal danger of the use of opiates, though to secure a needed night's rest for a patient, perhaps too frequently allow the use of such drugs. Numbers of alcoholic drinkers turn to drugs as a means of relief and become piteous objects under the dual influence. Again, disease is often responsible for the habit, the drug being continued persistently after having been prescribed for only temporary relief.

Treatment.—Sixteen years' experience in the practice of medicine, nearly 10 of which have been spent in intimate association with drug habitues, have taught me that there is no specific for the cure of morphinism. Some patients can be cured, but in a certain proportion of such cases relapses occur. Successful treatment is achieved only when absolute surveillance of the patient can be obtained and his confidence secured at the outset. The physician who would manage drug victims successfully must have innate tact, as these patients are resourceful, keen, scheming, invariable prevaricators as regards the amount of morphin consumed, but generally truthful regarding the contraction of the habit. As the inspiration of confidence is the mainspring of success, the physician should never make a statement intended to mislead or one that cannot be honestly and promptly explained. Study the patient's physical condition and learn if elimination is being carried on promptly. Repeated urinary tests are necessary. Albuminuria may not appear until the habit has been established some time, or if present at the onset may disappear during treatment; most frequently, however, it is transitory, ceasing when the drug is discontinued. Organic disease is frequently detected by the physician.

The different methods of treatment consist in (1) sudden and complete withdrawal, (2) substitution, and (3) gradual tapering off.

1. Few morphin habitues, especially those who have

been using the drug for a long time, can stand the shock of sudden withdrawal. There is danger of hallucinatory delirium and collapse in which the patient may die, the condition here being the same as in other forms of collapse. The class of habitues who make use of the hypodermic needle furnish the most victims, death being frequently caused by an accidental overdose, as well as by weakened heart-action during a too rapid withdrawal of the drug. Such treatment is too radical, other methods entailing less risk are to be preferred.

2. In the majority of cases, substitution does not give satisfaction and seems merely a waste of time. Substituting a derivative of opium as a means of cure, implies merely the replacing of one evil by another, although in a few instances in which I employed codein in the case of patients having a fairly strong cardiac action, the somatic symptoms were apparently less pronounced.

3. So soon as the physical condition of the patient will permit, gradual withdrawal of the drug is the preferable method of cure, but no two patients can stand the same rapidity of reduction. In some cases cutting the dose down one-eighth or one-quarter each day results admirably; in others, a lessening of one-sixteenth is as much as can be effected without signs of depression.

Morphinism is essentially a disease of function. When large doses have been taken for a long period, too sudden lessening of the accustomed amount produces shivering, trembling, pyrexia, delirium, and dysentery. The diarrhea can usually be controlled by combinations of bismuth and the vegetable astringents. Often a blue pill given the night before treatment is instituted, is beneficial. Gastric disturbances should be treated as they arise, though the food should be highly concentrated and such as will be easily assimilated, as broths, thoroughly skimmed, peptonized foods, etc., these lessen the tendency to an irritable stomach. As the amount of morphin is diminished, pushing the bromids, sodium and potassium, in daily increasing doses, in my experience has proved of decided efficiency, as much as 70 to 100 grains being given on the eighth to the twelfth day. When it is not deemed advisable to push the bromids, trional in 30 to 40 grain doses at bedtime is excellent. A hot salt bath the last thing at night acts as a nerve sedative. Sponging in the morning, as cold as can be borne, followed by brisk rubbing, is good. Turkish baths not too prolonged are stimulating, as are also tepid or cool packs. Constructive tonics, of which nux vomica and hypophosphites are examples, must be prescribed liberally.

The heart-action must be watched closely; when its rhythm is uniform, as evidenced by a full steady pulse, there is generally an absence of precordial distress with no craving for the drug.

If the patient continues in a suspiciously good physical condition in the earlier stage of the treatment, it indicates that the drug is probably being used surreptitiously. The pupil should dilate as the daily quantity is lessened.

During the first two weeks the patient should be kept in bed under the care of a trustworthy and experienced nurse. At the termination of this period, in the majority of cases, the drug has been entirely withdrawn, and now exercise in the open air just short of the point of fatigue is requisite, as the euphoria of the patient should never be threatened.

The prime factor in causing relapses is the patient's unwillingness to remain the required time under treatment. No shattered system can be reconstructed, or disturbed functions resumed, in less than three months, six months under the physician's care would be better. The immediate craving for the drug may be destroyed, but this does not constitute a cure. Relapses will occur if the cares and responsibilities of life are resumed before the patient is thoroughly built up. Upon returning home it is extremely advisable to have the apartments formerly occupied by the patient renovated and changed in general appearance. Familiar objects revert their

thoughts to former scenes and conditions experienced while under the baneful influence of morphin. New occupations have good influences, while references on the part of the family to the unfortunate's former habit, should be systematically avoided.

The evidence is indisputable that the only successful treatment results from isolating the habitue in some institution away from friends who are likely to smuggle the drug to them; and where experience can direct the treatment, the dictation from strangers having the desired moral effect.

However strong may be the wish to break away from the habit, a self-conducted attempt at cure results in absolute failure.

THE DIAGNOSTIC IMPORTANCE OF A DIGITAL EXAMINATION IN DISEASES OF THE RECTUM.¹

BY

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There is no portion of the body, anatomically considered, which has greater reflex power than the rectum. Patients suffering with diseases of the rectum very often manifest marked gastric, nervous, and psychic symptoms which are treated frequently by the general practitioner as such *per se*, through failure to detect the real cause of the disease. To illustrate this I will refer to a few cases which have recently come under my observation and which in my opinion are amply sufficient to demonstrate the truth of my statement.

CASE I.—A woman, aged 32, was referred to Professor Hohenegg's clinic in Vienna for treatment. She gave the following history: For the past three years she had suffered with dyspepsia and an agonizing pain during and after defecation, the dread of the pain prevented her from evacuating her bowels. It radiated from the rectum to the back, abdomen, and down the thighs. She also complained of melancholy with suicidal tendencies. She was treated by her physician for uterine trouble and dyspepsia but was not relieved. On examination there was nothing externally around the anus to indicate any disease and even with the sphincter pressed down by a straining effort I failed to detect any pathologic condition in the rectum. By pressing the finger up through the spasmodically contracted muscle toward the dorsal aspect of the bowel, a small depressed and very sensitive spot which caused the most excruciating pain, was felt.

Diagnosis.—Ulcer of the rectum.

CASE II.—A woman, aged 30, colored, came to the rectal department of the Polyclinic Hospital of Philadelphia, complaining of nausea and a constant pain in her abdomen, and extreme nervousness. She also complained of a protrusion from the rectum of a soft mass during defecation. This protrusion of the bowel existed since her childhood and at times there were slight discharges of blood and mucus. She consulted many physicians and was treated for gastric catarrh, nervousness, and piles. She finally came to Dr. Stewart's clinic and he kindly referred her to me for a rectal examination. Introducing the index finger into the bowel I found a pedunculated growth, the size of a walnut, attached to the wall of the gut dorsally, about 2½ inches above the sphincter.

Diagnosis.—Polypus of the rectum.

CASE III.—A man aged 58, apparently in good health, came to St. Mark's Hospital in London about four months ago complaining of a frequent disposition to go to stool but without being able to pass anything except a little mucus and blood. He said he has been constipated for the past two months, and thought his present condition due to the excessive straining efforts to evacuate the bowels. His physician treated him for constipation and bleeding piles, but he was not benefited. Dr. Porter, the house surgeon, and myself examined the man, and found a hard nodular growth about 2 inches above the external sphincter involving the entire circumference of the bowel and extending up for nearly 2 inches.

Diagnosis: Carcinoma of the rectum.

CASE IV.—A gentleman, aged about 28, came to my office complaining of constipation. He said he was treated by a number of physicians, who made him take purgatives but they had

no effect. A digital examination revealed the fact that a stricture existed about 2½ inches above the external sphincter muscle.

I could cite many more cases, but these mentioned are sufficient to demonstrate the imperative need of digital examination. These cases also disclose the fact that the omission to make a local examination is a common occurrence in Continental Europe, Great Britain, and America.

Naturally, the question arises, what can we detect with the finger? All pathologic changes taking place in the rectum may be discovered, except internal hemorrhoids, which cannot be diagnosed with certainty unless the tumors are enlarged and indurated, when they can be easily detected by the examining finger. I always doubted the possibility of detecting the opening of internal fistulas with the aid of the finger, but while at St. Mark's Hospital in London, Mr. Edward, the eminent rectal surgeon, demonstrated a great many cases to me, and I became convinced that the educated finger will overcome this difficulty and a diagnosis can be made readily.

The internal opening of a fistula can be felt as a small pit or slight depression in the mucous membrane, it is generally more or less circular in shape, except when it originates from a tear in the mucous membrane by a foreign body, or the detachment of a polypoid growth when it takes the shape of the torn surface.

Impacted feces and fissure of the anus frequently produce so-called intestinal neuralgia and cystic neuralgia, and unless a digital exploration of the bowel is made the patient will be treated symptomatically, resulting in total failure to obtain relief.

In cases of submucous abscesses, which originate in the submucous tissue usually in the lower three inches of the rectum and which are generally limited to one side of the bowel there is no external indication of abscess. Under these circumstances a digital exploration of the interior of the rectum will show the origin of the supuration, and will enable the surgeon to define the exact limits of the abscess. On introducing the finger into the rectum, a more or less elongated, smooth, tense or semi-elastic swelling will be felt in the rectal wall. When the abscess has been ruptured on examination, the finger when withdrawn will be found covered or streaked with pus. An abscess that has already discharged and is quite emptied of its contents feels like a nodule in the submucous tissue.

In making a digital examination it is advisable to introduce the finger at first only so far as the distal joint, and to examine every portion of the rectal wall within reach, beginning from the lowest part of the bowel and gradually going further. Pathologic conditions close to the anus have often been missed by passing the finger at once to its full length. When a patient presents himself with a history of having felt any abnormal sensation at the anus or in the rectum, a thorough local investigation should be made, even admitting that there are some few cases in which it is impossible to make out the pathologic change or to account for the reflex symptoms. It cannot be too strongly emphasized that a digital exploration should always be made, for in 99 out of 100 cases a diagnosis will be made of stricture of the bowel, ulcer, tumors, impacted feces or foreign bodies, and submucous abscess, or a combination of any of these.

In conclusion, I desire to express my thanks to Dr. L. H. Adler, Jr., for his kindness in permitting me to report the second case.

Smoking Prohibited.—According to a recent order, no smoking will be allowed hereafter in the New York Health Department's building. Nearly all the employees have been smoking during business hours. A policeman has been detailed to enforce the new rule on all visitors. The object of the movement is to further protect the vital statistics against fire.

¹Read before the Philadelphia County Medical Society (North Branch), January 18, 1902.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 8, 1902. [Vol. XXXVIII, No. 10.]

1. The New Era in Medicine: What It Means to Cleveland. P. MAXWELL FOSHAY.
2. Extrauterine Pregnancy. F. F. LAWRENCE.
3. The Role of Certain Nongranular and Granular Somatic Cells in Infection; Technic; The Origin, Significance and Fate of these Morphologic Elements. H. F. HARRIS.
4. The Correction of Deflections of the Nasal Septum with a Minimum of Traumatism. OTTO T. FREER.
5. The Indications for Myomectomy in Young Married Women, with a Report of Four Cases of Strangulation of Fibroids During Puerperal Involution. EDWARD REYNOLDS.
6. Symphysiotomy; Practical Deductions from an Experience in Thirteen Cases Without a Death from the Operation. EDWARD A. AYERS.

2.—Extrauterine Pregnancy.—Diagnosis is easier before than after rupture. The condition occurs more frequently than has been supposed. This should lead to early and thorough examination of every pregnant woman, and to such obstetric education as to cause every woman to suspect every menstrual irregularity and seek advice. Diagnosis and pathology should be made paramount to operative clinics. The history should be carefully taken to develop the fact of previous tubal disease. The early symptomatology and local condition are described. There is a peculiar crepitation in the tumor, like that elicited by feeling the normal placenta, when the membranes are turned externally and entirely distinct from that of a blood clot. No procedure has been so misused and so fatal as exploratory incision. Before rupture of the tube, adhesions form the greatest source of danger in operation, and can be handled much better through the abdominal than vaginal incision. When rupture has been followed by suppuration, if the mass is low down, it should be incised and emptied through the vagina. After recovery from infection, the adhesions may be treated as the case may require. [H.M.]

3.—Nongranular and Granular Cells in Infection.—The tissue for study should be as fresh as possible. Corrosive sublimate solutions are the best for fixing, allowing the various microchemic reactions to be easily obtained, and the morphologic elements are well preserved. Paraffin is preferred for embedding, hematoxylin for the nuclei and anilin stains of the thionin group for the microchemic peculiarities. There is little doubt that plasma cells are derived from lymphoid cells by increase in protoplasm and the formation of basophilic masses around the nuclei. The lymphoid cells, so abundant in old inflamed areas, possibly reach the part by the lymphatics, accumulating because the pressure will not allow them to pass through. It is probable they are the real fibroblasts, secreting collagenous tissue around their periphery. Certain of them branch and remain as fixed connective tissue cells. Endothelial cells are reproduced from their kind. Eosinophilic cells have no significance in connection with infections. The mast cells of Ehrlich, of the lymphatics, of the blood, and of the muscles are described. As the granules stain with specific mucin stains, the name mucinoblast has been suggested. Those of Ehrlich may be derived from the large phagocyte of Metchnikoff, those in the lymph nodes and blood from hyalin cells. These cells tend to disappear in acute inflammatory conditions and frequently increase in chronic processes. This is important in differentiating so-called inflammatory conditions from sarcoma. [H.M.]

4.—Operation for Deflected Septum.—The operation advocated inflicts a minimum of traumatism, while the blunt force of Asch's creates more reaction, devitalizes the tissues more and invites more infection. The supporting function of the septum may be disregarded as contour depends on other factors. Powdered cocaine is employed for local anesthesia. Adrenalin or fresh cocaine may be used as a hemostat. In a deflection far forward an incision is made down the crest of the angle and forward at its base, so as to outline a triangular flap of mucosa, which is pushed away. The exposed cartilage is cut around the border and freed from the opposite mucosa with a spud and removed. Two modifications of Ingals' cartilage knife are described, which have never made perforations. At the posterior cut edge of the cartilage a spud or spatula is

inserted between it and the mucosa of the convex side as far back as can be reached and next on the opposite side. Then the bared cartilage is removed with cartilage knives with blades at right angles to the attachment. The further back the more difficult the work is, but the cartilage may be dissected out to the bony septum. If the deflection extends to the bone the latter is fissured with chisels as a preparation for Roe's forceps. Patients usually are ready for business in one to three days. A perforation of the mucosa will not crust, as no other tissue is exposed. The upright position and cocaine limit bleeding to a minimum. [H.M.]

5.—Strangulation of Fibroids.—Rapid involution decreases the size of the uterus which may be looked on as the pedicle of the tumor. The contractions cut off venous return. The tumor becomes edematous and increases in size thus increasing the strangulation. As the strangulation is functional and intermittent allaying irritability of the muscle fibers by morphia or their complete relaxation by general anesthesia puts an end to the strangulation for a time and the majority of cases recover spontaneously. The appearance of labor-like pains in the puerperium at a definite spot on the uterus followed by symptoms of peritonitis with an irregularity on the uterine wall are diagnostic points. If morphia or anesthesia fail immediate myomectomy is best if the patient's condition is good; otherwise, if the tumor is accessible from below, free puncture and drainage will terminate the attack, myomectomy being postponed till later. [H.M.]

6.—Symphysiotomy.—Ayers reports 13 cases without infection or death due to operation or general disability. The site of the small wound just below the clitoris can be made absolutely aseptic. This is kept open only while severing the joint and protected by antiseptic cotton during delivery. No stitches are required. The knees are brought together, the trochanters rotated anteriorly, the skin drawn to the median line with transpubic adhesive strips and a soft rubber catheter inserted and dropped down behind the thighs. Separation of more than 2½ inches should not be counted on. The fetal head should be palpated to ascertain its size after full cervical dilation. If forceps traction is made with incomplete dilation the soft parts are drawn from postsymphysial attachments leading to lacerations. The disengaged hand should press cervix and bladder back during delivery. To secure the best union there must be constant apposition of the pubic bones, with even coaptation, but no compression, ability to empty bowels and bladder without disturbance, freedom from restraint of the rest of the body and avoidance of bedsores. Swinging of the pelvis in a U-shaped hammock is the only sure method. The application to the various forms of pelvis is discussed. Symphysiotomy should never be determined till the patient is in active labor. The great majority of cases of pelvic contraction beyond the scope of forceps delivery lie within its range. It is justifiable also in certain malpositions. [H.M.]

Boston Medical and Surgical Journal.

March 6, 1902. [Vol. CXLVI, No. 10.]

1. A Case of Severe and Threatening Hematuria from Movable Kidney, with a Discussion of the Causation of this Condition. ARTHUR T. CABOT.
2. Report of Two Cases Operated on for Deformity of the Nose. J. PAYSON CLARK.
3. Contribution to the Study of Spinal Fracture, with Special Reference to the Question of Operative Interference. G. L. WALTON.
4. Adenocarcinoma of Liver; Perforation of Stomach; Death; Autopsy. CHARLES S. WALKER.

1.—Severe Hematuria from Movable Kidney.—Cabot reports the case of a woman of 43 who had noticed at times pain in the abdomen and occasionally the occurrence of blood in her urine. Lately these attacks were more marked than formerly, and during one of them she was seen first by the author in April, 1901. Careful examination of the bladder revealed no cause for the hemorrhage. Palpation of the abdomen showed a swollen, somewhat tender movable kidney on the right side. The hemorrhage, which was constant, causing the patient to become weak, exhausted and anemic, was believed to be due to congestion of the kidney and aggravated by the standing or sitting posture. The patient was put in the reclining position with the hips elevated. Hematuria ceased

at the end of 48 hours. Every attempt to return to the sitting posture was followed by hemorrhage. Six weeks after beginning treatment she consented to operation. The kidney was now almost normal in size. A lumbar incision permitted the anchoring of the kidney, the capsule of which was somewhat thickened. The patient made a complete recovery. The author in discussing the cause of renal congestion attending movable kidney expresses a doubt that it is ever due to torsion. He suggests that since the kidney in this condition slips downward bodily it makes traction and obstructs on the thin-walled vein, with its slow current, more than on the thick-walled artery with its rapid and forceful current. He states that this congestion is almost always observed in the right kidney, and here the anatomic arrangement is such as to favor additional traction on and obstruction to the renal vein, since it is much shorter than its companion artery. [A.B.C.]

2.—Correction of Nasal Deformities.—Clark reports that a man of 31 had an irregular knob-like nose, turning upward and to the right. This was accentuated by a low bridge. The condition was found to be due to an overgrowth of the triangular cartilage. An operation, cutting away a portion of the anterior border of the cartilage, and the application of a splint corrected the deformity. A young woman of 25 had a nose deformed, by a fall, to the excessive Roman type, and deflected laterally. An operation, cutting free the bony nasal septum, sawing through each nasal bone near its junction with the superior maxilla, fracturing, and bringing the nose into position with adhesive strips, greatly lessened the deformity. [A.B.C.]

3.—Operative Interference with Spinal Fracture.—Walton states there are no symptoms which establish (other than their persistence) irremediable crush of the cord. Paralysis, anesthesia with abrupt demarkation, loss of reflexes, retention, priapism, and tympanites, if persistent, point to complete and incurable transverse lesion of the cord, but the onset of such symptoms does not preclude a certain degree at least of restoration of function. The prognosis without operative interference is grave, but the results of operation, while not brilliant, are sufficiently encouraging to warrant it. A delay of some hours is advisable to permit recovery from shock, and to eliminate simple distortion, but it is wise to operate within a few days of the injury at least. There is no infallible guide to the extent of the lesion, hence operation should be resorted to, as it at worst can add but little to the danger, and may greatly relieve the pain, even if it does no other good. The dura should be opened freely; it need not be sutured, and drainage is not necessary. [A.B.C.]

Medical Record.

March 8, 1902. [Vol. 61, No. 10.]

1. The Treatment of Malignant Growths by the X-ray, with a Provisional Report on Cases under Treatment. WILLIAM J. MORTON.
2. Regarding the Infectious Agent of Yellow Fever; A Reply to Dr. Souchon. ALVAH H. DOTY.
3. Pneumonia in the Light of Modern Research. STEPHEN SMITH BURT.
4. Diabetic Coma: Symptoms, Pathology and Treatment. ABRAHAM MAYER.
5. A New Test for Albumin. FLORA C. FUHS.

1.—The Treatment of Malignant Growth by the X-Ray.—William Morton states that the cure of superficial epithelioma by means of the x-rays is established. The author has gone further and treated deep-seated malignant growths by the same agent. Sarcoma of the humerus, cancer of the breast, malignant growth of the sternum, sarcoma of the bones of the head, epithelioma of the face, and cancerous tumor of the stomach are all under course of treatment in the author's hands, and while sufficient time has not elapsed to effect a cure he considers the effect in every case sufficiently promising to warrant a report thereon. He reports 8 cases, all of which promise a cure. The writer states that carcinomatous new growths, not yet broken down and still covered by healthy skin, may be dissipated totally, as has been proved in 2 of his cases. The uncertainties and dangers are: 1. The absence of a definite measure of the "dosage," 2. The possibility of a "burn" or of gangrene. 3. The difficulty of ascertaining when the "danger point" of administration as regards burning and gangrene

is reached. Conclusions: What is accomplished by the x-ray? 1. Relief from excruciating pain and constant suffering, often immediately. 2. Reduction in the size of the newgrowth. 3. Establishment of the process of repair. 4. Removal of the odor, if present. 5. Cessation of the discharge. 6. Softening and disappearance of lymphatic nodes. 7. Disappearance even of lymphatic enlargements not directly submitted to treatment and often quite distant. 8. Removal of the cachectic color and appearance of the skin. 9. Improvement in the general health. 10. Cure, up to date, of a certain number of malignant growths. [A.B.C.]

2.—Infectious Agent of Yellow Fever.—In replying to Souchon, Doty claims that he did not in his previous article introduce theories, but evidence obtained from hospital records. Outbreaks of yellow fever in northern cities show that climatic differences will not explain absence of contagion in the hospitals. Exposure of nonimmunes to fomites in Havana has not produced the disease. In the Norfolk epidemic of 1855, only those who slept in infected districts were stricken; others in daily contact with cases were exempt. As to cases cited occurring after disinfection of vessels, they can be explained by disinfection being done before the incubation stage was completed, or by subsequent exposure of the victims in the port of arrival. [H.M.]

3.—Pneumonia.—While the death-rate from tuberculosis is decreasing, that from pneumonia is increasing. It is undoubtedly infectious, chiefly through the sputum. Preventive measures can accomplish more than seruntherapy. Pneumococci permeate the dust-laden atmosphere of our residences, public halls and streets. These should be exterminated by destruction of the sputum at the time of expectoration. Personal powers of resistance should be increased by deep breathing, general personal hygiene, and better ventilation. The mouth should be rinsed two or three times daily with formalin, 20 drops to one pint of water. Destitution is a large contributing factor to the high death-rate from pneumonia. Municipal authorities should enforce more rigid regulations as to ventilations. Our streets should not only be well swept, but flushed daily. Defilement of the sidewalk by dogs should not be tolerated. Spitting upon any part of the street should be prohibited. [H.M.]

4.—Diabetic Coma.—The symptoms are given at length. But two pathologic hypotheses seem tenable, those of acidosis and specific toxemia. Diacetic and B-oxybutyric acids result from the splitting of fatty acids and require large quantities of alkalies for neutralization. When the system is so depreciated that not enough alkalies can be formed from the proteids, the soda and potassa bases having been seized upon from the beginning, these acids will unite with the lime and magnesia of the bone, hence there is increased excretion of ammonia, lime and magnesia. The toxic theory continues the acid theory by supposing that the acids destroy protoplasm or paralyze the central nervous system. The theory of Kultz's casts is described. At a certain stage fatty foods increase the excretion of acetone and diacetic acid and proteids favor the production of toxins. A rigid diet of proteids and fats should not at that time be continued. The best results are from milk; lactose is better borne than other carbohydrates. Diabetics who excrete 2 to 6 grams of ammonia daily need large quantities of alkalies. Schwarz treated the condition rationally by giving glyconic and sugar acids with decided diminution in acetone and diacetic acid. Another rational treatment would be the introduction of sufficient ammonia to unite with the various acids. Mayer believes he has accomplished this by means of large doses of urotropin, this being a combination of ammonia and formaldehyd. The splitting takes place in the kidney, the ammonia being absorbed by the kidney veins. [H.M.]

5.—A New Test for Albumin.—Equal volumes of non-albuminous urine and a mixture composed of equal parts of carbolic acid and glycerin form an emulsion which clears up on agitation, leaving a transparent and highly refractive liquid. Equal volumes of albuminous urine and this solution when mixed produce a white turbidity which remains in spite of agitation, and does not precipitate. The test will show 0.1% of albumin. [H.M.]

New York Medical Journal.

March 1, 1902. [Vol. LXXV, No. 9.]

1. Cholelithiasis, Cholecystitis, and Cholangitis. WILLIAM H. THOMSON.
2. Some Notes on the Early Diagnosis and Treatment of Pulmonary Tuberculosis. J. EDWARD STUBBERT.
3. A Bougie Removed from the Abdominal Cavity; Ruptured Umbilical Hernia. JOSEPH TABER JOHNSON.
4. Traumatic Rupture of the Gallbladder Without Injury of the Liver; 64 Ounces of Bile in the Abdominal Cavity; Recovery. DE FOREST WILLARD.
5. The Value of the Eosinophile count in the Differential Diagnosis of Human Blood. ORRIN S. WIGHTMAN.

1.—Cholelithiasis.—Thomson concludes that the components of gallstones are not derived from the liver itself, but are generated locally by derangement of the mucosa of the biliary passages and of the gallbladder. Other things may contribute, but the entrance into the biliary passages of micro-organisms is the efficient cause of gallstones, as it is due to them that catarrh of the mucosa is set up. *Bacillus coli communis* entering from the intestine or by some roundabout route through the blood is the most common invader. *Bacillus typhosus* has also been proved to imitate cholelithiasis. In discussing the diagnosis he says if the pain is due to a calculus in the cystic duct, its site is to the right of the rectus muscle, just below the free border of the ninth rib; if the calculus has passed farther on, into the common duct, a painful point on pressure is found from 1½ to two inches to the right of the umbilicus. Jaundice has a varying significance, according to whether it is transient, intermittent, or permanent. Should the fever persist, whether with or without jaundice, and signs of local inflammatory conditions develop, with tenderness to pressure and rigidity of the overlying muscles. Examination of the blood should not be neglected in order to determine the presence of hyperleukocytosis. Thomson regards this procedure as one of our most important modern aids to diagnosis. [C.A.O.]

2.—The early diagnosis and treatment of pulmonary tuberculosis is discussed by Stubbert. He believes that climate influences, hygiene, and diet must form the basis of all treatment, but he does not believe that climate alone will cure many cases of even incipient tuberculosis. There should be a certain amount of medical supervision and treatment of all patients. The upper air passages should always be examined and treated locally when necessary. High altitude, good diet, and outdoor life will remedy anemia to a certain extent, but the administration of iron and arsenic, combined with static electricity, will cause more certain and rapid improvement. If expectoration is present, especially with mixed infection, hot air inhalations, as well as cold sprays from the multi-commuter, are valuable as auxiliary therapeutics, and serve also in a minor degree, as lung gymnastics. Hydrotherapy is also a powerful factor in placing the victim of incipient tuberculosis in a condition to overcome the disease. The author says that diet in the treatment of tuberculosis is a much abused and poorly understood term. In 90% of incipient cases nothing is better than three substantial meals a day. Patients with chronic gastritis and dilated stomachs may be relieved by siphon irrigation of the stomach three times a week, and, if dilation is present, Einhorn's electrode may be introduced and faradization practised. Brilliant results generally follow, not only as to digestion, but indirectly affecting the tuberculous disease. [C.A.O.]

3.—See AMERICAN MEDICINE, Vol. II, No. 23, p. 891.

4.—Traumatic Rupture of the Gallbladder.—Willard reports a case in a boy of 5, without injury of the liver. When he first saw the patient, three months after the injury, there was extreme exhaustion, intense pain in the abdomen and back, marked bulging and tenderness in the entire abdominal zone, and absolute rigidity in the lumbar and lower dorsal regions, with decided kyphosis, the spinous processes projecting in a long curve; the respiration was grunting. The abdomen was tensely distended by an elastic fluctuating mass; the left hypochondriac region was the only area which was resonant, the other three-quarters of the abdominal cavity giving a perfectly flat note on percussion. An incision was made in the right iliac region, and 64 ounces of almost pure bile drained off, with entire subsidence of the abdominal tumor. The wound was closed to await a favorable time for a second operation. The

boy began to improve, and two weeks later 32 ounces was again removed. Later, drainage was used, the flow daily diminished, and complete recovery followed. The literature of the subject is reviewed carefully. [C.A.O.]

5.—The value of the eosinophile count in the differential diagnosis of human blood is discussed by Wightman. He has had counts prepared to determine whether or not human blood can be differentiated from the blood of animals by the relatively high percentage of eosinophile cells present in human blood. The blood of the animals examined showed a high lymphocyte count, a small polymorphonuclear count, and an eosinophile count averaging 3.82%. The eosinophiles fall nicely within the normal human count and could in nowise be distinguished from them. [C.A.O.]

Medical News.

March 8, 1902. [Vol. 80, No. 10.]

1. The Craig Colony Prize Essay—Serotherapy in Epilepsy. CARLO GENL. (Continued.)
2. One Way to Fight Contagion. CHARLES V. CHAPIN.
3. A New Cystoscope, for the Simultaneous Catheterization of Both Ureters, and for Double-current Irrigation of the Bladder. FREDERIC BIERHOF.
4. Congenital Dextrocardia. WILLIAM EDGAR DARNALL.
5. Somnolence and Loss of Memory Resulting from Cholesteatoma of the Middle Ear. FRANCIS R. PACKARD.
6. Urticaria of the Upper Respiratory Tract. LEWIS S. SOMERS.

2.—One Way to Fight Contagion.—The diminution of disease from isolation has not been as great as was hoped. This is due to the frequency of infection from mild and unrecognized cases. The remedy must lie in each one learning to protect himself. In many diseases the virus is contained in the secretions of the nose and mouth. A circular prepared for the schools of Massachusetts containing rules of cleanliness in regard to these secretions is appended. [H.M.]

3.—A New Cystoscope.—Frederic Bierhof has devised an instrument which is described and illustrated in the present article. He says it is designed to permit (1) the examination of the entire bladder; (2) the renewal of the filling fluid, without removing the instrument, should the fluid become turbid during the operation; (3) the catheterization of one or both ureters during the one sitting; (4) the facilitation of the procedure of leaving one or both catheters *à demeure*. [A.B.C.]

5.—Somnolence and Loss of Memory Resulting from Cholesteatoma of the Middle Ear.—Francis Packard reports that a man of 23 had suffered for 12 years from occasional discharge of foul pus from the left ear. No treatment was sought by the patient, and during the past year he had noticed that his memory was failing and that he was subject to attacks of intense sleepiness alternating with occasional headache. His forgetfulness was very annoying, leading him to forget the names of persons and events which he should easily remember. Cleansing the external auditory canal of inspissated pus revealed almost total destruction of the drum. Dead bone was not detected. There was marked bulging of the upper posterior wall of the external auditory canal. Operation was done, the mastoid was opened and much dead bone and huge cholesteatomatous masses were removed. The patient made a good recovery and all the annoying symptoms disappeared. The author thinks the cerebral symptoms were due to a congestion of the meninges and possibly a slight recurring meningitis. Mention is made of a similar case reported by Harland. [A.B.C.]

6.—Urticaria of the Upper Respiratory Tract.—The relative infrequency of involvement of the mucosa may be because it is less exposed to irritation than the skin. The urticaria may be acute or chronic, and may precede or follow the skin eruption. The predisposing cause is unknown. Structural abnormalities may or may not be present. It may result from the usual exciting causes elsewhere. In severe cases distress may antedate the wheals. Changes in pulse-rate and sense of impending evil are due to impairment of respiration. If the esophagus or the pharynx posteriorly become involved there is dysphagia. Burning and pruritus may be present. When the larynx or epiglottis are involved, a condition similar to edema of the glottis results, with suffocation increasing in intensity the more

the air space is encroached upon. The eruption generally lasts only a few hours in acute cases; when following dermal wheals it is apt to remain longer than when primary. In chronic cases patches and soreness may be present for years. [H.M.]

Philadelphia Medical Journal.

March 8, 1902. [Vol. IX, No. 10.]

1. A Study of the Cases of Accidental X-ray Burns Hitherto Recorded. E. A. CODMAN.
2. The Outbreak of Chickenpox among Children Convalescent from Smallpox, with Remarks Upon the Relationship of These Two Diseases. J. F. SCHAMBERG.
3. Microchemic Reactions of Tube Casts. W. M. L. COPLIN.
4. The Identification of the Colon Bacillus by Reactions Produced in Culture Media Containing Neutral Red: Observations on Reactions of Other Bacteria on the Same Media. RANDLE C. ROSENBERGER.
5. Intestinal Obstruction Caused by a Cicatricial Band Compressing the Ileum. JOHN GLENDON SHELTON.
6. The Progress of Knowledge Concerning Venom and Antivenene: A Synoptic Review of the Literature of the Past 15 Years. JOSEPH MCFARLAND. (Continued.)

2.—An Outbreak of Chickenpox Among Children Convalescent from Smallpox.—Schamberg reports an outbreak of varicella among children convalescent from smallpox in the Municipal Hospital, Philadelphia. A child suffering from chickenpox was sent to the hospital under the erroneous diagnosis of smallpox. The true character of the disease was recognized and the child vaccinated. This patient did not contract smallpox, but transmitted varicella to a number of other children in the ward. These in turn infected new patients as they arrived, and in this manner varicella remained in the children's ward for a period of 3 months. [F.C.H.]

3.—Microchemic Reactions of Tube Casts.—Coplin details the technic and results of a series of experiments which he conducted for the purpose of demonstrating something of the microchemistry of tube casts. [F.C.H.]

4. The Identification of the Colon Bacillus by Reactions Produced in Culture Media Containing Neutral Red.—Rosenberger concludes as follows: Though not affording a specific reaction in the case of *Bacillus coli communis*, neutral red agar should be classed as a valuable differentiating medium; the typhoid bacillus, though it does not cause a fading of the color of the medium, never gives rise to the fluorescence noticed in some cultures of *Bacillus coli communis*; and the test medium should not be depended upon as the only differentiating one in the examination of water, as several very common bacteria found in water give the same reaction. [F.C.H.]

5.—Intestinal Obstruction.—Sheldon reports a case of intestinal obstruction caused by a cicatricial band compressing the ileum, and relates the frequency, cause, clinical history and treatment of such cases. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The study of snake venom has a peculiar fascination, and, curiously enough, has chiefly attracted men in communities that suffer but little, if at all, from the effects of viper bites. We find that epoch-making researches have been conducted in Philadelphia, in Edinburgh, and in Lille; while from the distinctly snake-ridden countries comparatively little of real importance has emanated. The name of Dr. S. Weir Mitchell will be forever linked with the history of the subject. His earlier studies, in 1860, and his subsequent researches upon the chemistry of snake venom, in conjunction with Dr. Edward T. Reichert, have added much to our knowledge. Through his inspiration, also, Drs. Simon Flexner and Hideyo Noguchi, undertook the study of the effects of snake venom from modern points of view. This investigation, which has just been published, and of which a summary was given by Dr. Flexner at a recent meeting of the College of Physicians of Philadelphia, concerns itself with the relation of snake venom to hemolysis, bacteriolysis, and toxicity.

The paper begins with a concise review of the sub-

ject of hemolysis and of bacteriolysis in general, and of the relation of hemolysis to agglutination—a phenomenon to which it bears considerable resemblance, although the principle causing agglutination is entirely distinct from that causing hemolysis. For the study of agglutination all the available varieties of venom were employed, and tested with different kinds of blood. Practically all venoms have the power of agglutinating blood-corpuscles. After a variable interval, the agglutination is followed by a solution of the corpuscles. The agglutinating power is destroyed by temperatures of from 70° to 80° C., maintained for 30 minutes. As regards hemolysis, it was found that while all the venoms have the power of producing it, this power differs in degree, cobra venom being the most active. The blood-corpuscles of the dog are most amenable to hemolysis; those of the ox least so. Heat has less effect upon the hemolytic substance than upon the agglutinin.

In no instance were washed red corpuscles, *i. e.*, corpuscles washed free of serum, hemolyzed by venom; if, however, the separated serum was restored to them, lysis took place. This shows that there is in the serum a substance—technically called complement—which is necessary in order that hemolysis may take place under the influence of the venom. The latter contains the so-called intermediary body, by which it is fixed to the corpuscles; thus fixed, it becomes susceptible to the action of the complement, which is normally present in serum. By treating venom with washed corpuscles of different animals, it is possible to abstract from it various intermediary bodies, all of which have specific affinities for those corpuscles, and, in turn, also for the complements of the blood-serum.

Although there is no relation between agglutination and hemolysis, when the latter takes place quickly it will prevent agglutination or render it imperfect. Snake venom not only causes destruction of the erythrocytes, but also of the leukocytes of the blood. This leukolysis was readily demonstrated by procuring an exudate rich in leukocytes, through the injection of *Bacillus megatherium* into the pleural and peritoneal cavities of the rabbit, and treating the leukocytes thus obtained with the venom. The different types of leukocytes, classified according to their granulation, show different degrees of susceptibility to the venom. The agglutinating principle in the venom seems to be the same for the white as for the red cells, but the dissolving principle is different for the two species.

Experiments were made to determine whether the tissues of the body have any neutralizing action upon the venom. It was found that when lethal doses of the venom are mixed with an emulsion of brain tissue and injected, death occurs very much later than in the control animal receiving only the venom. The bactericidal power of normal blood-serum is destroyed by all venoms, the destruction depending upon the fixation of the complements in the serum by the venom. Calmette's antivenin was able to neutralize the toxic power of the venom and to annihilate both the hemolytic and the antibacteriolytic property. In other words, a mixture of venom and antivenin in due proportions is neither toxic nor hemolytic, and unlike venom alone, is incapable of destroying the bacteriolytic power of normal blood-serum.

These researches constitute a valuable contribution to the subject of immunity, of which hemolysis and agglutination are important phases.

Contagious Acute Articular Rheumatism.—Allaria (*Riv. Crit. di Clin. Med.*, November 23, 1901; *British Medical Journal*, January 11, 1902) relates his observations of a small epidemic of acute articular rheumatism of contagious nature. The first case occurred in a girl, aged 16 years, who had had two previous attacks, in one of which a lesion of the mitral valve developed. Her sister had had an attack beginning one

day after the first patient's second attack, and now in the third attack (a classical acute articular rheumatism) the same sister nursed her, and herself developed the disease for the second time. A friend that came to visit the second patient developed acute articular rheumatism. All three cases began with acute tonsillitis. Three nurses whose duty it was to paint the throat of the first patient were attacked in succession within a short time—the third nurse, however, developing merely acute tonsillitis. Bacteriologic examination of the tonsillar exudate from the first three patients revealed two organisms: One a staphylococcus nonpathogenic for guinea-pigs, the other a very small coccus, usually arranged in pairs or in short chains of four to eight, staining deeply by Gram's method, growing readily on agar with blood, but not so well on simple agar. This resembled closely Meyer's streptodiplococcus. A 48 hour culture injected in dose of 1 cc. had no local action in guinea-pigs; the animals languished and at the end of four or five days painful swellings of different joints appeared. Recovery ensued. Some of the animals being killed, their joints were found full of limpid serous fluid, which on microscopic examination was found to be slightly corpuscular. No microorganisms could be detected microscopically, but the cocci were recovered from the exudation by cultural methods. These are extremely interesting observations and constitute merely another link in the chain of evidence that prove that of which there can no longer be any doubt—namely, that acute articular rheumatism is an acute infective disease the result of some bacterial invasion.

The Influence of Light and of Fluorescence on the Malarial Parasite.—As is now well known, some twenty years ago, Dr. A. F. A. King, of Washington, D. C., suggested that the mosquito is an important factor in the causation and propagation of malarial fever. Inasmuch as this is now accepted as a fact, especial interest attaches to the more recent suggestion of Dr. King (*American Journal of the Medical Sciences*, February, 1902) that light is an important factor in the sporulation of successive groups of malarial parasites, and that fluorescence may be the important factor in the destruction of the parasite in the human body. Referring to, and disposing of, the old view that solar heat is of marked significance in the etiology of malarial fever, he suggests that we may explain the undeniable relation between hot climates and malarial fever by eliminating the term "heat" and substituting that of "light." He assumes that the light, not the heat, of the sun determines the sporulation of the parasites in the blood—an hypothesis that he supports by the following statements: (1) The accumulated experience and observations of centuries which have been held to prove the agency of solar heat in causing malarial fever, may be held to prove the agency of solar light; (2) paroxysms of intermittent fever will not, as a rule, take place at night, in the dark; (3) the relative liability and relative immunity of different races of men to malarial fever depend upon the relative translucency or nontranslucency of their skin, and probably of their blood; (4) in places where malarial fever prevails the disease is increased by bright, sunny weather, and lessened by cloudy skies; (5) it has long been a popular tradition that to prevent the occurrence of ague, or to forestall its recurrence when it has once occurred, it is advisable to keep in the shade and avoid sunlight; and (6) the malarial parasite is a naked ameba. Red light promotes the vital activities of ameba, while violet or purple light restricts them. The color of the light diffused through the blood is necessarily red. Elucidating his statements, Dr. King says further that we cannot conceive how external heat can warm the malarial parasite in human blood; but that light can penetrate the skin and act upon the parasite to promote its development—as light is known to act on other ameba—is quite intelli-

gible. And further, that all observers agree that dark-skinned peoples, among whom Welch includes, "Negroes, Arabs, Indians, and Tamils," enjoy a relative immunity—an immunity that has never been explained except by "specific idiosyncrasy" (a term without meaning), or by acclimation. Dr. King suggests that this relative immunity may be due to the relative transmissibility of the skins of different peoples to light—not that the skin of all dark-skinned people is impenetrable to light, but that the skin of some dark-skinned people is more impenetrable than is that of others. Examining over 100 negroes to determine the translucency of their skin, Dr. King was surprised to find that light passed through their skin almost as readily as through the skin of a white man—in three negroes only was the skin absolutely impenetrable to light. From this it is presumed that some negroes are not more immune to malaria than are white people, and the suggestion is thrown out that it may be found that individuals enjoying immunity have skin that will not allow the transmissibility of light. Finally, it is said that if the plasmodium of malaria be a light-loving organism, red light would seem to be its natural requirement while in the blood, and we might expect to find its activities inhibited, like ameba proteus, by light from the violet end of the spectrum, which, it is said, we do find. Prussian blue (an old remedy for ague), and recently methylene blue, seem so far to inhibit protoplasmic movement in the malarial parasite as to prevent its sporulation, a result due, it is suggested, to the producing of the (to the parasite) disastrous violet or purple by the commingling of the blue with the red of the blood. Then it is suggested that possibly the (hitherto enigmatic) curative action of sulfate of quinin may be due to its remarkable fluorescence—the drug in solution intensifies the violet, and even renders the ultra-violet rays of the spectrum perceptible to human vision. This property of fluorescence is possessed also by esculin, the bitter principle of horsechestnut tree bark—a drug that also has been employed successively as an antiperiodic for intermittent fever. Turning to the practical aspect of the question, Dr. King says that if his etiologic suggestions be correct, treatment of malaria is self-evident; that is, keep the patient in the dark, or in rooms with purple or indigo windows, and clothe them with garments impenetrable to light; in the tropics, with white clothing lined with purple or black; and give drugs that darken the blood or render it violet, or lessen its translucency. These observations are very interesting, and indeed suggestive. Their weak point, however, is that they are purely speculative—whence, probably, they will be given but little credence. It must be conceded, nevertheless, that they are scarcely less speculative than appeared 20 years ago his suggestions regarding the role of the mosquito in the propagation of malarial fever. The one has been confirmed; will the other be confirmed?

On the Pathogenesis of Sleeping Sickness.—Van den Corput¹ holds that this affection for which he proposes the names cathypnosis or sleep toxinos, is due to the accumulation in the organism of the ponogenic toxins of Peyer; substances which exert a paralyzing action on the ameboidism of the protoplasmic arborization which establish relations between the center neurones and the peripheral sensitive neurones. In other words, the affection is held to be due to autointoxication by toxins arising from tissue-waste, and not to any specific microbe. [C.S.D.]

More About Glycolysis.—Lépine,² in reply to the criticisms of Bendix and Bickel, says that having carefully guarded against the possible errors they point out, there was found, after one hour, in the normal defibrinated blood of a dog, at 39°: (1) A marked diminution in the power of turning the plane of polarization to the right (or increased left rotation power); (2) great diminution of reduction power; (3) complete or nearly

¹ La Semaine Médicale, January 1, 1902.

² Deutsche medicinische Wochenschrift, January 23, 1902.

complete disappearance of fermentable sugar. In the blood of a dog from which the pancreas had been removed, there was, on the contrary, only a slight diminution of reduction power, but no appreciable diminution of fermentable sugar. The author repeats his previous dictum (1899) that the glycolytic action of the pancreas does not depend on its inner secretion alone, but on its power to destroy in their passage there through substances in the blood that hinder glycolysis; and that already in 1900 he had, in collaboration with Boulud, extracted from the urine of various patients (diabetics and others) a crystallizable substance that when injected under the skin of guinea-pigs or into the kidneys of dogs caused glycosuria. This substance, which hinders glycolysis, is destroyed in its passage through the living pancreas. [J.C.S.]

Influence of Mucin upon the Bacillus of Löffler and upon its Toxin.—Arloing¹ has demonstrated *in vitro* that the mucin obtained from snails has an attenuating action upon the virulence of the bacillus of Löffler. On the other hand, the toxin of diphtheria is not altered by the action of mucin, which points to the action of mucin as bactericidal rather than antitoxic. [C.S.D.]

Blackwater Fever.—Moffat² combats Koch's view that blackwater fever is due to the administering of quinin, and prefers to believe that it is due to a chill acting at a certain stage of the development of the malarial parasite in a patient predisposed by acute or chronic malarial infection. By taking scrupulous care to avoid chilling during the apyretic stages of the disease, he has never seen an attack of blackwater fever develop, although he has used large doses of quinin. In patients that do not take care to avoid chilling, the hemoglobinuria may occur. [A.O.J.K.]

Treatment of Dysentery by Rectal Injections.—Lillie³ advocates the use of rectal injections, consisting of boric acid solution, 10 grains to an ounce of water, which should be used in quantities of not less than a pint and a half two or three times a day. At times other antiseptics are used. It is important that only small quantities, an ounce or two, be permitted to flow into the bowel every few seconds; the flow then should be stopped until the bowel accustoms itself to the fluid and until the pain mitigates, which it does speedily. [A.O.J.K.]

Present Status of Phototherapy.—Bang⁴ contributes a historic sketch of the progress made in the technic of phototherapy, together with the results obtainable by its use, and the indications for its employment. He concludes that as yet this method of treatment is in its infancy, but that it gives promise of great usefulness upon further investigation and development. Hitherto photobiologic investigation has yielded rather meager results, only three fundamental facts being clearly established, viz.: (1) That the most highly refractive rays of light, the violet and ultraviolet produce a specific dermatitis differing in its symptoms from any other form of cutaneous inflammation; (2) these rays have a stimulating effect on the organism (probably due to reflex processes), and (3) they are distinctly bactericide in action. (H.H.C.)

The Etiology and Pathology of Scurvy.—Lamb⁵ refers to the three hypotheses recently advanced to account for scurvy: (1) That of Wright that scurvy is due to an acid intoxication—a condition in which there is a marked diminution in the normal alkalinity of the blood-plasma, the result of a dietary of food stuffs which contains a large excess of mineral acids over bases—a dietary of meats, especially salted meats and cereals to the exclusion of green vegetables; (2) that of Liston who ascribes the disease to infection with *Ankylostoma duodenale*; and (3) that of Jackson and Harley who consider scurvy a condition of ptomain poisoning produced through the eating of tainted animal foods: The third theory is dismissed from consideration after a short discussion, and then are detailed the results of the investigations in 11 cases with reference to the alkalinity of the blood and the character of food ingested, and the presence of *Ankylostoma duodenale* in the stools. The ova of this parasite were not detected in any case. The facts that go to show that the patients suffering from scurvy were not

affected with acid intoxication are: (1) There was no marked deficiency in the alkaline food-stuffs of the dietary before the onset of the symptoms; (2) there was no diminution in the alkalinity of the blood serum when the symptoms were well marked; and (3) there was no improvement in the symptoms either as a result of the giving of a diet consisting of abundant alkaline food-stuffs or on the administration of large doses of sodium lactate. It is believed that though scorbutic symptoms may be associated with acid intoxication, other cases occur quite independently of this condition. There seems to be more than one etiologic factor and pathologic condition underlying the symptoms that are known clinically as scurvy. [A.O.J.K.]

Lateral Hermaphroditism.—Kellner¹ reports the case of a 20 to 22 years old kaffir who was brought in the last stage of typhoid to the National Hospital at Bloemfontein. The patient had been assigned to the female ward by the nurse, as the breasts were those of a woman. Examination, however, disclosed a penis well-developed but for hypospadias, and on the right side a testicle the size of a pigeon egg; on the left a fold resembling a labium majus. No history could be obtained, as the patient was too weak; but the fact of having been circumcised proved that he had been considered by the parents as a boy. Obduction brought to view a normal well-developed ovary and tube on the left side and a rudimentary uterus. The bodily form and features were womanly. No trace of vas deferens or seminal vesicles was to be found. The ovary contained undeveloped or ill-formed corpora lutea, and the microscopic structure of the breasts was normal. [J.C.S.]

The Mental Conditions Associated with Bright's Disease and Uremia.—Hyslop² states that cases of Bright's disease are occasionally met in asylums, that the kidneys of many insane persons are affected with pathologic changes, and that cases of Bright's disease associated with mental disorders have been recorded by many writers (references and some statistics). Renal disease is said to be associated with insanity in two ways: (1) Transient delirious mania, an acute toxemia or uremic insanity; and (2) a progressive cerebral degeneration, with chronic renal disease as the primary cause. In this type the mental symptoms during the earlier stages vary from a mild dementia to mania or delirium. In due course, however, complete dementia results not unlike paralysis of the progressive type known as general paralysis of the insane. In some cases spinal symptoms become marked and changes in the spinal cord are found after death. There sometimes occur cases of mania with excitement, and even delirium, in which the pupils are contracted, reflexes diminished, and muscular tremors, followed later by convulsions. These cases, when extending over a period of two or three years, are likely to lead to the faulty diagnosis of general paralysis. Not infrequently, however, the kidneys are found to be normal, and the symptoms are due to an overproduction of toxic substances in the body and eliminated in the urine. The dyspneic and gastrointestinal forms of uremia are sometimes seen in the insane, but it is with the comatose and convulsive types that asylum physicians have chiefly to do. [A.O.J.K.]

Gout and Goutiness.—Walsh³ reviews the theories of the origin of gout. That of renal origin is supported by the frequent association of kidney disease and gout with lead and other irritant poisoning, and gives a key to the eczema, dyspepsia, diarrhea, bronchitis, etc., associated with the gout, both in its regular and irregular forms. During an acute attack the most valuable drug is colchicum combined with magnesium sulfate and guaiacum. Free purging is essential. Between the attacks sodium salicylate, potassium iodid and guaiacum may be given; the first two drugs increases uric acid elimination by stimulating the kidneys, not by solvent action on deposits of sodium biurate. Overeating and overdrinking are largely responsible for gout. Malt liquors should be prohibited; wine is allowable in enfeebled conditions, otherwise total abstinence is best. As a rule enough water is not drunk. Distilled water is best. Atheroma may possibly be connected with the injection of lime salts in hard water. To drink glass after glass of

¹ La Semaine Médicale, December 25, 1901.

² British Medical Journal, January 25, 1902.

³ Berliner Klinische Wochenschrift, December 9, 1901.

⁴ Lancet, January 4, 1902.

¹ Deutsche medizinische Wochenschrift, January 2, 1902.

² Practitioner, November, 1901.

³ Medical Press and Circular, October 16, 1901.

water through the day is to spoil a good thing by carrying it to excess. [H.M.]

The Influence of Sterile "Daueryeast" upon Bacteria.—Albert having reported good results from the use of sterile yeast (Dauerhefe) in diseases of the vagina, Geret¹ undertook to determine the action of this yeast upon bacteria. Daueryeast is beer yeast treated with alcohol and ether, and dehydrated. Such yeast has lost its power of growth and propagation, but not its property of inducing fermentation. Geret found that it had a bactericidal action *in vitro* when sugar was added. Without the presence of sugar, this power was much weaker. The cause of the bactericidal action was not definitely determined. It may be due to the combined action of zymase, proteolytic enzymes, alcohol, carbonic acid, and the concentrated sugar solution. Diffusion processes may also play a role. Although these researches do not throw much light upon the question, they suggest that daueryeast with sugar solution may be useful in treating bacterial processes in accessible parts of the body. [D.R.]

A Case of Osteomalacia with Tumor Formation.—Feldmann¹ reports the case in a man of 29. His childhood had passed uneventfully, the only point of importance being that from the eighth to the fourteenth year he had lived in a very damp dwelling. At the age of 17 the right leg gradually became deformed and knock-kneed. In 1895, when about 23 years old, he fell and fractured both thighs. Subsequently, he also sustained other fractures. Bony union did not take place in the thighs. In 1896 he had an attack of renal colic and passed a number of small stones. The year before he had had a tooth extracted in the right lower jaw. In 1897 a large tumor formed at this point of extraction. In 1898 a tumor formed on the left upper arm. At his entrance into the hospital he was found to be in a pitiable condition. He had a huge tumor of the left lower jaw and a beginning one on the right upper jaw, a growth on the left arm, and spindle-shaped enlargement of the fingers. The thighs were enlarged transversely, flattened, and curved outward, above, backward and in the middle. Voluntary motion was impossible, and very little passive movement could be obtained. The chest was also altered and deformed. There was marked atrophy of the muscles of the legs. Feldmann considers that in his case there was a combination of osteomalacia, sarcoma, and arthritis deformans. He thinks that the condition is analogous to a type of skeletal disease described by v. Recklinghausen. [It is hardly proper to speak of osteomalacia in this case, since the fractures and deformities could be readily accounted for by the sarcoma. The term osteomalacia is better confined to a distinct clinical entity, and should not be extended to include softening of bone produced by tumor growth. D.R.]

Autointoxication.—In answer to the question why the toxic materials which are permanently present in the organism are in one case active and in another inactive, Kovacs² suggests changes in osmotic pressure. It has been shown that in diseases in which autointoxication is prominent, osmotic pressure of the blood is strikingly increased. In order to decide the relation of the two, urine of chlorotics (having a low molecular concentration) and urine from patients with heart disease (having high concentration) and hemoglobinuric urine was injected into hares. There were no symptoms from the chlorotic urine, but from the others the well-known symptoms of autointoxication were elicited, and it is concluded that osmotic pressure undoubtedly has some connection with urotoxicity. As the symptoms were produced most easily from hemoglobinuric urine, the potassium salts are believed to have great influence. [H.M.]

The Analysis of Motor Disturbances.—From experiments with live animals after the removal of the cerebellum, Bickel³ concludes that the latter represents a link in the chain of the nervous combination apparatus which controls all those muscles and muscle groups involved in maintaining the equilibrium of the body. In this sense the cerebellum is a combination center, but only with respect to the equilibrium of the body. After

extirpation of the cerebellum, however, the higher animals gradually learn, although in a lesser degree than before, to maintain the body equilibrium in different positions, thus showing that they possess other equilibrium centers, the sensor-motor zones of the cerebral cortex, which the lower animals do not possess. [H.H.C.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The Surgical Treatment of Mitral Stenosis.—The past 10 years have seen the successful introduction of many daring operations. The tendency to extend the limits of operation to organs previously considered vital is perhaps a natural consequence of this. But up to the present time no one has had the temerity to suggest anything more radical in the surgery of the heart than the suture of accidental wounds. We would have hardly expected that a medical man would be the first to advocate a coolly-planned operation of the heart, but such is the case, and the advocate of such bold surgery in this case is no less an authority than Sir Lauder Brunton, of St. Bartholomew's Hospital, London. He rightly speaks of mitral stenosis as one of the most distressing forms of cardiac disease, which in severe cases resists all treatment by medicine. "On looking at the contracted mitral orifice in a severe case of this disease, one is impressed by the hopelessness of ever finding a remedy which will enable the auricle to drive the blood in a sufficient stream through the small mitral orifice, and the wish unconsciously arises that one could divide the constriction as easily during life as one can after death. The risk which such an operation would entail naturally makes one shrink from it, but in some cases it might be well worth while for the patients to balance the risk of a shortened life against the certainty of a prolonged period of existence which could hardly be called life as the only conditions under which it could be continued might be to them worse than death." Brunton goes on to say that a year ago he took out a license and certificate, which are now necessary for experimentation on animals in England, and that since that time he has operated experimentally upon healthy valves in the hearts of cats besides trying experiments postmortem in dividing stenosed valves in diseased human hearts. He states distinctly that his paper is only a preliminary note, and that the operation could be properly undertaken by surgeons. He advises exposing the heart by incisions from the left edge of the sternum outward to the left along the edges of the third and fifth ribs connecting the outer ends by a third incision and dividing both the soft structures and the fourth and fifth ribs. The window thus made is forcibly turned back on the sternum; the heart is exposed and the pericardium divided. For division of the valves of the heart a knife like a tenotomy knife is advised, with a cutting edge of about one-half inch. The first question that arises is whether the mitral orifice should be enlarged by elongating the natural opening or whether the valves should be cut through their middle at right angles to the normal opening. Brunton has found the former the better plan of procedure. The valve can be divided with comparative ease, though the thickened edge is firm and resists the knife. He has not yet decided whether it will be best to operate from the auricle or from the ventricle. The ventricle very rarely gives rise to any bleeding, as the knife need not be much thicker than a needle. In many experiments Brunton has been astonished at the way in which the heart went on beating quite unaffected by the pulling, compressing, or handling. In operating on the living heart the knife should be introduced during diastole as one is less likely to wound the opposite side of the ventricle. The pericardium should be left open to allow any blood which might accumulate to ooze out. Brunton believes that the good results which have been obtained in surgical

¹ Münchener medicinische Wochenschrift, November 12, 1901.

² The Medical Press and Circular, September 25, 1901.

³ Deutsche medicinische Wochenschrift, December 12, 1901.

treatment of wounds of the heart emboldens one to hope that before long good results may be obtained in operations for mitral stenosis.

The surgeon can readily see numerous difficulties in this operation. In the first place patients suffering with bad heart lesions do not take anesthetics satisfactorily, and their general condition is not apt to be very good. Even though the hemorrhage be very slight, the dangers of infection of the pericardium with the grave results of suppurative pericarditis would have to be kept in mind. Though Brunton speaks of the good results of the surgical treatment of wounds of the heart, it should be remembered that in these cases although a few lives have been saved, over 70% of the patients have died, and in the favorable cases the wounds have for the most part been very small. We believe that as a medical man he would confer a much greater blessing by devoting his efforts to discovering means for the prevention of mitral stenosis rather than to devising methods for its cure.

Ligation of the Abdominal Aorta for Aneurysm.—

Robert T. Morris¹ reports an operation which is the fourteenth recorded operation of this kind. The patient was a colored woman of 24, who gave no history of syphilis, but was suffering from suppurative nephritis of the left kidney. Necropsy revealed atheroma of the aorta, evidently of a syphilitic character, and the suppurative nephritis was probably caused by ulceration of a gumma of the kidney. The patient had suffered from constant pain in the right epigastrium for four months, accompanied by vomiting, which became so continuous that at the end of two months she was too feeble to walk. About this time she first noticed a pulsating tumor in the epigastrium which increased rapidly in size. On admission the typical signs of aneurysm of the aorta were present. A six-inch incision was made from the ensiform cartilage to the umbilicus. A soft rubber catheter, 12 mm. in circumference, was carried around the aorta with the aid of the aneurysm needle threaded with a loop of silk. The catheter was drawn tightly until the circulation in the femoral arteries ceased, and was held in place by a long clamp to avoid tying. The ends of the catheter and the forceps were brought out of the abdominal wound. The incision was then closed as far as possible. The ligature was placed two inches below the aneurysm, 1½ inches from the bifurcation of the aorta. The operation required 30 minutes. Immediately after tightening the ligature the patient's pulse went to 148, and the respirations to 48; the pulse became hard and throbbing, the skin warm and moist. Nine hours after the operation the pulse had come down to 104, the respirations to 36. There was intense pain and numbness in the legs; 22 hours after the operation expansile pulsation began to diminish and the tumor to decrease in size; 27 hours after the operation pulsation had entirely ceased, and the ligature was removed from the aorta by unclamping the forceps and withdrawing the catheter. Return of pulsation in both femorals showed that the circulation of the extremities was again restored. The patient developed symptoms of septicemia soon after, and died 53 hours after the operation. At the necropsy a small portion of the gangrenous bowel was found. The aneurysm was of the dissecting variety, involving the walls of the aorta from the celiac axis to the mesenteric vessels. It was filled with bloodclots. Morris believes that this case demonstrates the possibility of the formation of clots in an aneurysm by the application of a temporary ligature, and that circulation in the extremities may be reestablished on removal of the ligature. He believes that this operation will be successfully accomplished in the near future. [M.B.T.]

Complete Prostatectomy for Enlargement.—R. J. Freyer² reports 4 additional cases, making 8 in all, upon which he has performed complete prostatectomy within the past year. The patients in the last 4 cases ranged in age from 65 to 76 years, and the removed prostates ranged in weight from 3 ounces to 10½ ounces. Each of the patients was suffering from prolonged use of the catheter and all the evils incident to its use. The

author makes a suprapubic incision opening into the bladder, incises but dissects away none of the mucosa covering the enlarged prostate. He then inserts the finger and with that alone strips back the mucosa and completely enucleates the entire prostate. This, he asserts, is comparatively easy, even to the separation of the lateral lobes, thus freeing the urethra, which with its muscular covering should remain intact. The periprostatic tissue is not liable to infiltration by the urine from the bladder because the gland in its thin capsule is shelled out of a thick heavy layer of fibrous tissue formed by the rectovesical fascia. In one case in separating the prostate from the urethra the latter was ruptured at its junction with the bladder proper. No effort was made to unite the separated ends and the patient made a good recovery. The abdominal wound is closed, leaving in a temporary drainage. All recovered from the operation proper, but one was seized with acute mania about one month after the operation and died. Recovery in the other 7 cases was complete. The operation is attended by very little bleeding, owing to the fact that the prostatic plexus of veins is not disturbed when the fibrous layer formed by the rectovesical fascia is not broken through. Such hemorrhage as there is is easily controlled by irrigation with hot solution. The author states that the small amount of shock for patients of such advanced age is worthy of mention. [A.B.C.]

Inversion of Tunica Vaginalis for Cure of Hydrocele.

—In describing this operation Greene¹ quotes Winkelman's remarks on his method, which consists of an incision down to the sac of the hydrocele, and of the sac for 3 to 4 cm. After the contained fluid has escaped the testicle is drawn out of the scrotum, thus accomplishing a complete inversion of the tunica vaginalis. The incision into the tunica being shortened by 1 or 2 sutures to prevent the return of the testicle, the whole is replaced, the serous surface of the tunica vaginalis proper thus coming in apposition to the connective tissue of the scrotum and the testicle lying between it and the scrotal wall. The operation is concluded by closure of the external wound. No unpleasant sequels are reported. Greene concludes that the operation is simple to perform, that it results in the cure of the hydrocele, and seems, since no reports as to complications are given, quite safe. However, clinical data as to its effects upon the function of the testicle are desirable. [H.H.C.]

Raynaud's Phenomena.—Hutchinson² reminds us that we are all subjects of Raynaud's phenomena in a greater or less degree, being liable to coldness of the extremities not only through exposure, but also through nervous influences. Local asphyxia differs from local syncope, as illustrated in "dead finger," by being due to fulness of the small veins; in both the arteries are more or less affected, being thrown into spasm, but in asphyxia the closure of the lumen is less complete. In studying causes of symmetric gangrene consideration should be given to vital endowments of the tissues which differ in each individual; to disease of the arteries, which increase liability to spasm; to the state of the nervous centers, regulating the amount of blood-supply; and to the heart, which may be too weak to send the blood to the extremities. The juvenile form of Raynaud's phenomena may be induced through the influence of the nervous system. In the old it is the heart and pulse which demand attention. Senile gangrene is related to some forms of Raynaud's phenomena; also diffuse sclerosis of the skin. For intelligent treatment the causes must be understood. Tonics, protection from exposure and long continued administration of opium have proved the most effectual. [H.M.]

Foreign Bodies in the Tympanic Cavity.—Hoelscher³ reports two cases of children of five, in which foreign bodies, in one case a cherry stone and in the other a small pebble, had been introduced into the external ear during play, and, by repeated attempts on the part of the family physicians to extract them, finally pushed through the lacerated tympanic membrane into the tympanic cavity. In both cases a radical operation was necessary for the removal of the bodies. [H.H.C.]

Mesenteric Cyst with Volvulus of the Small Intestine.—Blum⁴ reports the case of a girl of 8 who had been taken

¹ Annals of Surgery, February, 1902.

² British Medical Journal, February 1, 1902.

³ Journal of Cutaneous and Genitourinary Diseases, July, 1901.

⁴ Medical Press and Circular, October 16, 1901.

⁵ Münchener medizinische Wochenschrift, October 15, 1901.

⁶ Wien. klin. Woch., November 28, 1901.

with obstinate constipation 8 days previous to admission to the hospital. At first there was severe abdominal pain and 3 days of vomiting which was never fecal in character. There was rapid loss of strength, some elevation of temperature, but the pain had become less during the few days before admission. A physician had given enemata and purgatives without any result. The patient was in bad condition, her eyes sunken, tongue coated, temperature 37° C. (normal), pulse rapid and small and sometimes not perceptible; respiration superficial and rapid. The abdomen was distended and tympanitic, liver dullness obliterated. In the region of the umbilicus there was an area of dullness the size of the palm of the hand. On palpation a doughy tumor with smooth surface could be felt which was movable and could be pushed toward the right side. Pressure on the tumor was not painful. Rectal examination was negative. The diagnosis of chronic intussusception was made. At the operation, on opening, the collapsed abdomen and distended bowel were found. There was also a tumor the size of a man's fist, of yellowish color, lying between the folds of the mesentery. The tumor fluctuated definitely and was freely movable. In resecting it the wall of the intestine was torn, necessitating excision of a piece of intestine 10 cm. long, and end-to-end anastomosis. The patient rallied from the operation but died the same night. The case is considered one of much importance from a diagnostic standpoint. In cases with repeated attacks of abdominal pain, and symptoms of obstruction, with a tumor in the region of the umbilicus which is soft, fluctuating and freely movable, a mesenteric cyst may be suspected. [M.B.T.]

Subcutaneous Traumatic Abdominal Hemorrhages.—As a result of his observations, Eichel¹ believes that all cases of traumatic subcutaneous hemorrhage should be operated upon when the patient's life is threatened from the loss of blood. Further research is, however, necessary to decide the question as to whether laparotomy is necessary in those cases in which death from hemorrhage is apparently not imminent; although, when the danger of secondary hemorrhage and the liability of secondary infection of the originally sterile blood-clot are taken into consideration, it would seem that even in such cases early operation and possibly exploratory laparotomy are indicated. Eichel reports three cases illustrating his conclusions. [H.H.C.]

Hydrocele.—A. M. Shield² considers the causation, symptoms and diagnosis. Radical cure when dependent on disease of the testicle should not be attempted. Cure by injection should not be tried when the sac is thick or communicates with the abdominal cavity. An objection to iodine is that the epididymis is generally inflamed by it. When used, no hydrocele fluid should remain in the sac to dilute it. Cocain previously injected diminishes smarting. Carbolic acid is more popular, as less painful. Radical cure by excision requires rest for two or three weeks in bed. In operating, twisting of the cord in replacing, and secondary hemorrhage, must be guarded against. In a little child injections of iodine or carbolic may cause sloughing and endanger life. Ordinary hydrocele in infants may disappear if left alone. Slightly irritating lotions may be painted on the scrotum as a placebo. Acupuncture may next be tried and then incision. The sac may extend up the inguinal canal simulating hernia. In encysted hydroceles exploratory incision may be necessary for diagnosis. Owing to their close connections with the epididymus, cutting away of a portion of the sac is the best method. Incongenital hydrocele operation like that for the radical cure of hernia is advised. Hydrosarcocele is often a puzzling condition. Incision will clear up the diagnosis. There is no objection to tapping if care is taken not to wound the enlarged testis. [H.M.]

Deafness from Scarlet Fever.—Perfect drainage and cleanliness are indicated in the ear inflammations that occur in scarlet fever. In each case the nasal passages should be sprayed by alkaline antiseptic solution, followed by a soothing oily lotion, and if active ear symptoms do supervene, hot irrigations 110° F. to 125° F., or tympanic incision and the Sprague ice bag,

will not only relieve suffering, but materially reduce inflammatory action. Chronic discharges may be corrected by minute applications of chronic acid to the stumps of polyps or to granulated areas, but they must be made by a very steady hand and under good illumination, touching only the proper tissues. Snow¹ reports 2 illustrative cases. In one case a false drum, made from a disk of rubber film, was used. This false drum differs from the one commonly used, as a thread takes the place of the steel wire shank, thereby lessening the friction sounds and chances of irritation. In all cases the correction of catarrhal tendencies in the head membranes is emphasized; no artificial appliances will be tolerated, nor will the improvement be permanent if the condition is repeatedly aggravated by inflammation from colds or nasal malformations. [C.A.O.]

Foreign Bodies in the Accessory Nasal Cavities.—Löhnberg² reports two cases of foreign bodies in the accessory nasal cavities. The first is that of a man of 40 who 20 years previously had had his right eye destroyed by a bursting gun, the iron splinter lodging finally in the right ethmoid sinus and giving rise to chronic inflammation and nasal polyps. Both the growths and the iron splinter were easily removed by operation. In the second case, that of a man of 32, a piece of a felt hat band was driven through the outer table of the skull into the right frontal sinus during a street brawl. Subacute traumatic empyema of the cavity ensued, which disappeared after operative removal of the piece of felt and drainage into the nasal cavity. [H.H.C.]

Skin Grafting for Laryngeal Stenosis.—Andrew J. McCosti³ reports the case of a boy of 14 who had undergone operation for removal of multiple papillomas of the larynx. At the time of operation a tracheotomy tube had been inserted and had been constantly worn since. Laryngeal examination showed that the epiglottis was bound down by cicatricial tissue completely closing the larynx. The obstruction extended to the second ring of the trachea. An operation was performed in which the cicatricial tissue was excised and a tampon was inserted to keep the narrow canal open. This was accomplished with difficulty, and one month later it was again necessary to excise the cicatricial tissue. A rubber tube was laid in the new canal after this operation. One week later, after excision of more cicatricial tissue, a Thiersch graft was taken from the thigh and applied from the first tracheal ring to within half inch of the glottis. This section grafted was about three inches in length. The graft took through its entire length, and one month later the anterior wall of the larynx was again formed by freshening and dissecting loose the skin edges of the wound and uniting them by suture in the median line. Since the operation an intubation tube has been worn, and the tracheal wound has been closed by a pad of gauze. The tracheal opening is sufficiently large so that the tube could be dispensed with at present, but it has been thought advisable to allow the child to wear the tube for some months until all danger of contraction of the glottis has passed. Then the tracheal fistula will also be closed. [M.B.T.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Maternal Impressions and Fiction.—The subject of maternal impressions is one upon which learned doctors disagree and decision is difficult. There has always existed a popular belief that peculiar sensations or emotions experienced by a pregnant woman were frequently transmitted to her child and might produce defects or marks upon it. Much has been written for and against upon this theme, and while exceedingly few deformed or malformed children are born, compared with the many perfectly developed ones, yet there is abundant testimony to prove that a woman's unborn babe may be affected by violent emotions or by peculiar sights

¹ Münchener medicinische Wochenschrift, October 15, 1901.

² Medical Press and Circular, September 4, 1901.

¹ Buffalo Medical Journal, November, 1901.

² Münchener medicinische Wochenschrift, November 5, 1901.

³ Annals of Surgery, November, 1901.

experienced during gestation. No law has been formulated or theory advanced which will account for what may be termed accidental coincidences. One argument which has been advanced against maternal impressions, is that the assumed causes are alleged to have operated upon the embryo subsequently to the named period for the evolution of the part which is found to be the site of the malformation, implying, not only a formative process, but a retroformative power. Another argument is that we find no direct nerve connection existing between mother and child. The late Fordyce Barker, in commenting upon this point, has said that although no nerve connection has been demonstrated to exist between mother and fetus, yet the latter possesses nerves, and alterations of the nutrient power of the mother cannot but act upon the nerves that are governing, though it may be only to a slight extent, the growth of the fetus itself. Whatever may be the explanation of these curious coincidences, they manifest themselves clinically in two ways: one is a lack of physical development or some peculiarity in it; the other is evidenced by some abnormal or psychic characteristic noticeable in the child.

It is intensely interesting to note how writers of fiction have utilized these facts to embellish their works. Sir Walter Scott, in "Red Gauntlet," makes one of his characters, Lillias, show her brother, Darsie, the five blood spots upon her arm, "a mark by which mysterious nature has impressed upon an unborn infant a record of its father's violent death and its mother's miseries," and the distinguished novelist, in an accompanying footnote, quotes further incidents to indicate his belief in these maternal influences. The gifted Goethe in that erotic, erratic, psychologic study designated by the exceedingly scientific caption, "Elective Affinities," describes how a husband and wife, each in love with another individual, are the progenitors of a wonderful child, a prodigy with a bright and sunny little face, a well-proportioned, strong and healthy body, and a double resemblance which becomes more and more conspicuous as it develops, the figure and features of the face resembling the man whom the wife loved, while the eyes were those of Otilie, with whom the husband was enamored. The inimitable Dickens, in "Barnaby Rudge," has created a character who was the innocent victim of the shock his mother suffered upon seeing her husband coming redhanded from the murder of his master and a faithful fellow-servant. Her child was born with a feeble intellect and an intense aversion to the sight or the odor of blood. Again the genial Holmes, with skilful and scientific touch, has dealt with this problem in "Elsie Venner," which is probably, with the exception of the narrative of Eve, the greatest snake story of literature. While Holmes was writing this book, he kept a live rattlesnake at hand, and with a long stick, having a padded kidglove at one end and a prodding point at the other, he used to excite the reptile, then watch its coiling and its striking, study its eyes and expression, its ways and its characteristics, and thus was able to create a heroine who, as a psychologic study, is unequalled. He attributed the mental and physical peculiarities of Elsie Venner to a maternal impression. And within the last year the talented daughter of a distinguished father has written a remarkable novel, "Sir Richard Calmady," in which the title role is played by a deformed actor. Early in the period of the mother's pregnancy the father of the unborn child was so seriously injured by a horse as to require the amputation of both lower extremities, death ensuing; and when his posthumous child was born, it was found to have the feet where the knees should have been, thus dwarfing the child by a fourth of its height. The scene portraying the mother's anguish at the sight of her deformed offspring is a masterpiece in English literature, a most vivid picture of the anguish which is experienced by the loving mother of a deformed child.

Illustrations in kind might be further quoted, but as physicians we are more interested in a study of the causes and the prevention of these deformities than in the imaginative conceptions of a writer of fiction. Many of the mental peculiarities and physical defects which have been attributed to maternal impressions are explainable by the existence of some systemic disease, such as syphilis, etc.; by an arrest of development; by mechanical disturbance of the ovum; or, as in case of intrauterine amputation, by the formation of amniotic bands. In a recent contribution, Bankstone (*Alabama Medical Journal*, September, 1901) argues that the blood itself is capable of conveying impressions to the fetus just as the infant is affected by the mother's milk under some psychic disturbance. If the individual mind is capable of autopsychic impressions, why should not the same law be extended to the uterus and fetal life? From the biologic point of view the maternal cell contains every element of life and function, the maternal nourishment conveys not only nutrition to the impregnated ovum, but also psychic impressions as seen in grief, fright, anger, etc., and thus emotions are able to produce alterations in cell-nutrition in the fetus which often result in certain structural changes. Bankstone concludes that direct nerve intercommunication between mother and fetus is not required; that psychic forces are admitted to exist, and that they are potent factors in the formation and development of the child. If his conclusion is true, then it is indeed important that the pregnant woman should live, as far as possible, a calm and equable life, avoiding all intense emotion and great excitement during the period of gestation. Every medical man must feel with Parvin that the more the whole subject of human reproduction is studied with regard to the physical and mental health and the happiness and usefulness of the offspring, the more grave and solemn the responsibility of paternity and maternity will be found.

Cesarean Section According to Fritsch.—Jerowski¹ reports three successful cesarean sections by the Fritsch method with no maternal or fetal mortality. He expresses full approval of the opinion of almost all authors who have seen the results of the transverse incision, that it is a great advance in technic, especially for the reason that it greatly lessens the danger of subsequent adhesions between the uterus and adjacent organs. [W.K.]

Primary Carcinoma of the Urethra.—Brothers² reports a case of primary carcinoma of the urethra occurring in a woman of 59. The tumor was hard, spindle-shaped, immobile, and painful. The urethral canal evidently passed through its long axis. The tumor was removed and a selfretaining catheter placed in the bladder and attached to a tube which drained into a bottle at the foot of the bed. The convalescence was satisfactory and although, when the patient left the hospital there was complete incontinence of urine, four months later she had recovered complete control of the bladder and enjoyed perfect health. Primary carcinoma of the urethra is little mentioned in ordinary textbooks, and is evidently quite rare. According to Ehrendorfer the first authentic case was described in 1844, and since that time the number has reached 29. [W.K.]

Papyraceous Fetus.—Cases of mummified fetus usually occur in double or triple pregnancies. According to Winckel and some other authors, the mummified fetus is generally delivered with the placenta of the second twin; but in the two cases reported by Lichen³ the papyraceous fetus was delivered before the living twin. The cause of fetal death in such instances is difficult to determine; it may be the constriction or torsion of the naval cord, or some unknown cause. In Lichen's cases death was due apparently to the presence of an infarct at the chief point of fetal nourishment. By the use of the Röntgen ray the development of the bones was found to indicate a fetal life of from four to five months. [W.K.]

¹ *Centralblatt für Gynäkologie*, February 1, 1902.

² *American Journal of Obstetrics*, January, 1902.

³ *Centralblatt für Gynäkologie*, February 8, 1902.

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Castor Oil in the Treatment of Neuralgia.—The confidence with which this remedy is recommended by several trustworthy authorities and the great practical importance of the subject appear to justify more extensive clinical observations. The first suggestion is said to have come from a German periodical. In this country the treatment was first introduced to the notice of the profession by Harold Moyer (*Jour. of the Am. Med. Association*, April 21, 1901), who cites 13 cases of trifacial neuralgia that were either cured or greatly relieved by the administration of castor oil, although the patients had presented themselves for operation on the fifth nerve in the hope of being freed from their sufferings. Moyer's cases were seven in number, of which five were cases of trifacial neuralgia. In one of his cases, a typical tic douloureux of 17 years' standing, "the administration of the oil was followed by great amelioration of the pain, and the patient considered himself cured." F. E. Waxham (*Colorado Medical Journal*, December, 1901) reviews the literature, which is very meager, and adds several cases of his own, in only one of which the result was disappointing. While this is a small number of cases from which to draw definite conclusions, the treatment is nevertheless worthy of trial. The mode of action of castor oil in neuralgia is open to debate. It is known that the castor oil bean contains an active poison, ricin, distinct from the fat acid of the oil, ricinolein, to which the purgative action is due. It is possible that ricin or some other principle, not yet isolated, is the active agent that is responsible for the good results obtained in neuralgia, particularly as other cathartics do not produce the same effect. On the other hand, castor oil when given for its purgative effect, appears to relieve the pain of intestinal colic more effectually than any other drug of its class, though of equal purgative power; and there is yet another possibility, namely, that the neuralgia is due to autointoxication which is relieved by the general purging of the system. Only it is difficult to understand how, in that case, the relief becomes permanent, as the advocates of the treatment assert. Medicine, however, has not yet succeeded in freeing itself from the trammels of empiricism, and whether the mode of action of the drug is understood or not, if it is capable of relieving such a distressing affection as neuralgia in its severer forms, in which even a formidable surgical operation does not afford the certainty of permanent relief, it merits systematic trial. It is advised that the drug be given in large doses, one to two ounces three or four times a day; and it is said that after two or three doses the purgative effect ceases, although the latter should be guarded against by means of appropriate doses of opium. The nauseating effect of a dose of castor oil may be overcome by adding a small quantity of syrup of rhubarb or some other aromatic preparation, and giving the mixture in a mouthful of seltzer water. The patient should wipe his lips thoroughly after swallowing the dose.

The Indications for Bleeding and the Role of Potassium Salts in Uremia.—Robin (*Bulletin Général de Thérapeutique*, March 23, 1901) finds that a moderate abstraction of blood causes a general increase in oxidation. He considers that bleeding is indicated under the following conditions: (1) By its mechanic action on the blood tension it may be of value in the stasis of cardiac asystole, in acute edema of the lung, in cerebral congestion and hemorrhage, and in patients having high arterial tension. (2) It may be employed in affections where the nutrition is failing, when this failure does not depend upon an exaggeration of malnutrition, but upon an insufficiency of the nutritive processes characterized by a diminution of the respiratory changes, of the amount of urea, and of various coefficients of oxidation. The pathologic states which indicate bloodletting are those in which the common morbid ele-

ment of insufficiency of organic oxidation is present. (3) In diseases of toxic origin, as pneumonia, the increase in oxidation produced by bleeding acts upon the toxins and thus forms soluble products deprived of toxicity and easily eliminated. (4) In autointoxications, of which uremia is a type, bloodletting is valuable not so much in abstracting a small part of the poison from the system, as by increasing the oxidation and thus transforming this poison into a soluble, nontoxic principle. The theory that the presence of salts of potassium in the blood plays an important role in uremia is disproved by the author, who showed by analysis of the blood in six cases of uremia that the amount of potassium salts was below the normal in all but one case, in which it was nearly normal. [L.F.A.]

Electricity in Treatment of Strictures About the Ear.—Electricity has been used in the treatment of stricture of the auricular canal and also of the eustachian tube. For the auditory canal it is inferior to the surgical methods, except in the rare cases in which the stricture consists of very soft tissues only. In stricture of the eustachian tube the method is somewhat similar to that used in the treatment of urethral stricture by electrolysis. A fine, flexible, silver bougie with a bulbous point and properly insulated is connected with the positive pole of the galvanic battery, the dispersing electrode being applied to the neck. A current of two milliamperes should be admitted, and the bougie gently passed through the stricture. Care should be taken that a false passage is not made.—SCHERFEGRELL.

The Hydrotherapeutic Management of Neurasthenia. Baruch (*St. Louis Medical and Surgical Journal*, November, 1901; *Monthly Cyclopedia of Practical Medicine*, Vol. iv, No. 12, N. S., p. 470) describes several procedures that have the advantage of being readily applicable in private practice. One of the most useful is the dry pack, which consists in snugly wrapping the patient in heavy woolen blankets for about an hour, so as to accumulate heat and intensify the effect of the succeeding manipulations. Successive parts of the trunk are then uncovered and rubbed briskly and rapidly with a bath glove or wash-rag wrung out of tepid water, 85° F. After the patient has been rubbed thoroughly dry, he is sent into the air for gentle exercise. This is repeated every day, the water being reduced two or more degrees daily until 60° F. is reached. After a time, when the patient has acquired good reactive power, more vigorous measures may be employed, such as affusions with cold water (60° F.), while the patient stands in hot water, 100° F., in a warm bath-room. Or, from a foot-tub containing tepid water, 80° F., which may be daily reduced two or more degrees down to 60° F., water is dipped with a large tin dipper and thrown with force on the upper back and successively over each shoulder and the front of the body. If this is done rapidly and followed by rapid drying, dressing and exercise, the patient will not become chilly. Mere chilliness is not an indication for abandoning the treatment, but if the teeth chatter and cyanosis begins to show itself in the face, the procedure must be terminated at once. [R.M.G.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Casein Salicylate.—Salicylic acid unites with casein to form very soluble compounds which are said to be useful therapeutically, as they are readily absorbed and irritate the gastric mucosa but slightly. The suggestion comes from a German pharmaceutical publication. (*Practical Druggist*, Vol. x, No. 5, 1901.)

Agurin.—According to the *American Druggist*, Vol. xxxix, No. 11, agurin, a compound of sodium theobromate and sodium acetate, is recommended as a diuretic in preference to diuretin. A dose of 1.5 grams (24 grains) is said to be followed by distinct increase in the amount of urine passed; the urea is increased, as are also the phosphates and the chlorids. [R.M.G.]

Three new cinchonin salts, the sulphocarbolate, the sulphocresosotate, and the acid hydrochlorid, have been prepared by Tarrozi (*Pharmaceutical Era*, Vol. xxvi, No. 18, 1901). They are all antiseptic in their action, and are said to be more effective as antithermic agents than the free base. [R.M.G.]

DERMATOLOGY

HENRY W. STELWAGON

The Etiology of Purpura.—Much still remains to learn as to the etiology of this malady. It is well known that the disease is not uncommon, and is met in both sexes and at all ages, being most frequent between the ages of 10 and 40. Its subjects, as regards the state of the general health, vary from those in seemingly good condition to those profoundly cachectic. No one cause can, in the state of our present knowledge, be set down as essential in all cases. Various factors seem capable of bringing on that unknown condition which results in hemorrhagic effusion. It is known that the ingestion of certain drugs, notably potassium iodid, the salicylates, and chloral, have provoked it. Malarial poison is not infrequently to be assigned as an important factor, as in cases reported by Tyrrell¹ and others. Syers,² who has had ample opportunities of observing the disease in children, is inclined to consider it somewhat allied to scorbutus and due in many cases to poor, unhygienic life conditions and insufficient or poor food. It is likewise sometimes seen in the course of or following grave systemic disease,³ more especially profound anemia, scorbutus, hemophilia, variola, pyemia, typhus, syphilis, grip, nephritis, etc. Rheumatism has long been discussed as etiologic, but the rheumatic symptoms in this disease are doubtless merely a part of a symptom-complex due to some unrecognized cause. It has also been observed along with gonorrheal rheumatism, in which the latter could scarcely be considered the exciting factor. Doubtless in some of the gonorrheal cases the purpuric manifestation has been the result of drug administration; copaiba has been known to produce it. Nervous disorders, both of a functional and organic character, visceral disease, and other similar factors have all seemed to be of etiologic import in some instances, the eruption occurring in association with hysteria, myelitis, locomotor ataxia, etc. It is probable that circulatory disturbance, especially when associated with debility and cachexia, may likewise be occasionally responsible.

Microorganisms have been also looked upon as the causative agent at least in the more grave cases, and have been found by Martin de Gimard,⁴ Letzerich,⁵ Hanot and Luzet,⁶ Kolb,⁷ Burch,⁸ Howard,⁹ and others, but there is a great deal of diversity in the findings, and in some instances, as in the case of Mossé and Iversenc,¹⁰ several bacterial forms may be found, which may, as they suggest, mean that the primitive infection opens the door to secondary infection. The bacillus described by Kolb, Letzerich and Burch, and some others, however, seems to be closely similar or identical. Most of these investigations have been with hemorrhagic or grave types of the disease. Martin de Gimard, Letzerich, and Kolb all succeeded, in experimental inoculations in animals from pure cultures, in producing the malady. Microbic infection is, therefore, doubtless the causative factor in some of the grave cases; and it is not impossible that the initial sore throat often noted indicates the port of entrance.

Summarizing, I agree with Johnson,¹ who, from a careful study believes that the causative factors may be divided in general into several classes—vasomotor, toxic and infectious; and some of those of toxic origin, as Breton's² observations lead him to conclude, probably arise from an auto-intoxication starting from the intestinal tract. There seems, too, an affinity or connection between certain cases of erythema multiforme and some cases of purpura rheumatica, and Osler is inclined to include with these angioneurotic edema and urticaria, and suggests the possibility of as yet an unknown poison, possibly the result of faulty metabolism, which, according to individual and dosage, may provoke one or the other of these several manifestations.

Idiopathic Multiple Sarcoma of the Skin.—Koehler,³ after a short review of the various classifications suggested for sarcoma of the skin, reports the following case which he regards as belonging to the group of sarcoma multiplex cutaneum durum album. The eruption began on the extremities, and later extended to the trunk and face. The general health was not markedly affected, the only symptoms being muscular pains. The nodules themselves were painless; the extirpation of one of them caused profuse bleeding, but little pain. The eruption was quite generally distributed and symmetric, as shown in the photographs which illustrate the article. The color was a reddish-brown, resembling that of keloid, those in the lower extremities presenting a slight purplish tinge. The tumors were vascular, firm to the touch and elastic. The extensor surfaces were more involved than the flexor surfaces. No ulceration was present, although it was stated that some of the nodes had at one time been ulcerated. The palms and soles escaped. There was no lymphatic enlargement anywhere. In regard to the treatment, sodium arsenate administered hypodermically, although it produced no improvement, at least held the disease in check. The histology is fully described, and the tendency of certain sarcomas to endothelial proliferation is discussed at some length. The conclusions are that the tumor should be classed among the sarcomas, because of the absence of malignancy, such as infiltration, rapid cell-division or any striking departure from adult cell types, and the absence of metastases in lymph nodes or viscera. It is suggested that the failure of the malady to respond to arsenic was due to the predominance of the endothelioid elements, as such tumors do not yield to the drug, and the fact of its inefficacy is the basis for a grave prognosis. [R.M.G.]

Epidermoid Carcinoma, with Some Reference to its Treatment by the Cancer Quacks.—Munro⁴ relates several cases showing, on the one hand, the good results that follow the early use of the knife, and, on the other hand, the criminal practices of the cancer quacks, with their disastrous consequences to health and life. The pathology and methods of operation are briefly discussed. In somewhat advanced cases, with glandular involvement, the author advocates extending the incision across the neck and completely removing the glandular and fatty tissue, as in the operation for extirpation of the mammary gland. The cosmetic results of the operation, even when performed in this radical manner, are comparatively good. A point of great practical importance, and one that should appeal to the patient, is the short period required for treatment by the operative method. The patient is rarely confined to bed more than two or three days, and in many cases is able to be up the day after the operation, while, on the other hand, a course of treatment by a cancer quack invariably extends over weeks or months, and, what is equally important, the fees charged for this "direful work are often excessive." [R.M.G.] [The condemnation of cancer quacks cannot be too sweeping, as they treat all cases of whatever nature or extent in the one manner, often with disastrous consequences. On the other hand, the caustic method, which this paper also inferentially condemns, is capable, in proper hands, in the superficial cases, of obtaining results fully equal to those by surgical methods,

¹ Tyrrell, *Pacific Med. and Surg. Jour.*, June, 1876.² Syers, *Lancet*, February 12, 1898.³ Among recent cases may be mentioned that by Colecott Fox, *London Clin. Society*, *Lancet*, June 3, 1899 (developing toward the end of Bright's disease); Poynton, *ibid.*, October 28, 1899 (with pernicious acute rheumatism); Frankenhäuser, *St. Petersberger, med. Wochenschr.*, 1899, No. 4, and Glendenning, *Philada. Med. Jour.*, vol. III, p. 968, May 6, 1899 (following the grip); Londe, abstract in *Jour. mal. cutan.*, 1899, p. 770 (at the decline of typhoid fever).⁴ Jules L. A. Martin de Gimard, *Du purpura hemorrhagique primitif*, Paris, 1898.⁵ Letzerich, *Untersuchungen über die Aetiology und die Kenntnis des Purpura hemorrhagica*, Leipzig, 1889.⁶ Hanot and Luzet, *Arch. de Méd. exper.*, II, No. 6, 1890.⁷ Kolb, *Arbeiten aus der Kaiserlichen Gesundheitsamte*, VII, 1891, p. 60 (with references and four plates, presenting 13 cuts of bacillus cultures and inoculated animal tissue sections).⁸ Burch, *Medical News*, vol. LXXIV, p. 427, 1899.⁹ Howard, *Jour. Exper. Med.*, vol. IV, 1899, No. 2.¹⁰ Mossé and Iversenc, *Jour. mal. cutan.*, November, 1898.¹ Johnson, *N. Y. Med. Jour.*, October 7, 1899.² Breton, *Jour. des Praticiens*, 1899, No. 3.³ *Journal of Cutaneous and Genitourinary Diseases*, January, 1902.⁴ *Providence Medical Journal*, January, 1902.

while no one can question that the proper treatment of deep-seated and malignant carcinomas is by the knife, when it comes to the milder superficial forms the subject is by no means so one-sided, as the experience of all dermatologists shows. In great measure it is owing to the failure of many surgeons to recognize the latter fact the cancer-quack establishments exist and flourish. The caustic method, in such instance, has a field of usefulness, which cancer quacks have appreciated but over-rated and abused. It is time for the profession to take it into its own hands, where it properly belongs, and where its proper use can be scientifically directed. H.W.S.]

An Extraordinary Case of Quinin Susceptibility.—Stelwagon¹ gives an entertaining account of a most remarkable case of quinin susceptibility in a middle-aged gentleman of robust health. He has had in all about 20 to 25 attacks of scarlatiniform erythema, followed by desquamation with more or less itching, and lasting several weeks. It will be interesting to enumerate a few of the mixtures, and the doses of quinin-compounds that sufficed to bring on an attack. In one instance $\frac{1}{2}$ gr. of the elixir of calisaya was sufficient; another time it was a few sips of a bitter wine of iron. Compound syrup of hypophosphites, though containing only an infinitesimal amount of quinin, produced the usual results. On one occasion it was the ubiquitous rhinitis tablet, which contains $\frac{1}{2}$ gr. of quinin, that temporarily disabled him, and, remarkable as it may seem, on another occasion a tablet containing, among other ingredients, only $\frac{1}{16}$ gr. of quinin sufficed to bring on another attack. A striking feature of the malady is that the patient feels a flush over the entire surface of the body coming on a few minutes after he has taken the drug and knows at once that he is in for an attack. [R.M.G.]

Local Treatment of Acne.—This important subject is summarized by Burnside Foster.² When comedones are present in large numbers, and the skin is thick and grayish, with little suppuration, thorough scraping with a dull curet is of the greatest service. The skin should first be thoroughly disinfected and, after the operation, washed with very hot water and soap. Sulfur-camphor-balsam-of-Peru soap is one of the best. At home the patient may apply a mild sulfur cream or powdered sulfur during the night. If there is much suppuration the pustules should be opened with an acne knife under strict antiseptic precautions and their contents evacuated; squeezing without preliminary incision leaves a worse scar than when the knife is used. If there is much hyperkeratosis, and the patient's consent can be obtained, an ointment consisting of resorcin and zinc paste, equal parts, may be applied constantly to the skin for four days. At the end of this time the skin is washed with starchy water, and cold cream or glycerin jelly applied. The skin peels off in large flakes, bringing away the horny layer, and in a week the improvement is very marked. This treatment is of course temporarily disfiguring, and compels the patient to retire from view for ten days. A novel remedy suggested for cases with excessive oiliness is gasoline; it removes the fatty matters and diminishes the amount of secretion of the sebaceous glands. Electricity may be used either to remove deep-seated papules by the introduction of the needle attached to the negative pole, a weak current being passed for a few seconds, or in the form of surface galvanism, applied 15 minutes at a time, to stimulate cutaneous circulation in cases characterized by a thick and anemic skin. [R.M.G.]

Two Cases of a Rare Papular Disease Affecting the Axillary Region.—The cases are reported by Fox.³ The eruption which consisted of numerous small, firm and rounded papules, was distributed mainly in the axillary region and, to a slight extent, in the pubic region. The surrounding skin was deeply infiltrated and slightly fissured. There was very little reddening, although the itching was extreme and of a paroxysmal character. In one case the disease lasted over a year. Both were extremely refractory to treatment; such remedies as silver nitrate, oil of peppermint, tar, chrysarobin, ichthyol, zinc ointment and carbolated vaselin being in turn tried without the smallest benefit. The histologic changes, as

summarized by Fordyce, consisted in: hyperkeratosis, involving chiefly the sweat-duct orifices and the orifices of the hair-follicles; consecutive hypertrophy of the stratum spinosum (acanthosis) surrounding the altered sweat-ducts and hair-follicles; mechanic dilation of the sweat-coils with resulting changes in their epithelial lining; and inflammatory changes of a more or less chronic character in the derma. The intense itching, Fordyce believes, may have been due to irritation of the terminal nerve-fibers in the epidermis, or to the retention of fatty acids or other irritating substances in the sweat. The article is illustrated with three photographs of histologic sections. [R.M.G.]

The Treatment of Chronic Eczema.—Eddowes¹ points out that the object of all treatment is to bring back the diseased condition, no matter how complicated, to a healthy physiologic state and keep it there; therefore, the first step in treatment consists in making as clear and comprehensive a diagnosis as possible. Is a patch of eczema chronic and dry? We must moisten and grease it. If too wet, we must dry it. If swollen, we must raise or support the part; if hot, we must cool it; if painful, we must soothe it, and so on; if due primarily to microbes, we must kill or check them; but care must be taken that our antiseptics do not become a source of aggravation afterward to parts already prone to congestion. If there is great cell-proliferation we must excite absorption; if dead scales cover the surface and prevent our remedies reaching as deeply as we wish, and possibly form a nidus for germs, they must be removed or at least saturated with suitable remedies, and converted into a harmless and perhaps useful protective material for an irritating surface. If injury is being done by scratching or other form of friction, the part must be soothed and protected, or otherwise treatment may be almost useless. [A.O.J.K.]

Dermatitis Exfoliativa Following an Abdominal Operation.—Brackett² reports a unique case of this disease coming on about the twelfth day after an operation for the removal of an ovarian cyst, the recovery in other respects being quite uneventful. The first indications consisted in a multitude of minute vesicles exactly resembling sudamina, except that there was no fluid in them either then or at any subsequent time. There was no fever or pain, and only slight itching. The vesicles gradually coalesced until large spots an inch or more in diameter, were formed, successive portions of the body being invaded day by day until the entire cutaneous surface was involved. Later the skin began to peel in huge strips, 5 to 7 inches long by 3 to 4 inches wide, and this continued until the patient literally shed her skin from scalp to toes. The peeling process lasted between 10 days and 2 weeks, and at no time was there any constitutional disturbance, although she was closely watched, and the temperature and pulse were recorded every 3 hours. Nor did the epidermal condition affect the healing of the wound in any way. No treatment was applied except cold cream and, around the eyes, zinc oxid. After three or four weeks all discomfort and sensitiveness of the skin had disappeared and the patient was perfectly well. [R.M.G.]

The Action of Condensed Light Upon the Skin as a Therapeutic Agent.—Ravogli³ reports his experience with the Lortet-Genoud lupus lamp, described in AMERICAN MEDICINE, Vol. iii, No. 6, 1902. One case of tuberculous ulcer on the skin of the back, of three years' standing, was treated for fifteen minutes twice a week. The second case was one of lupus of the cartilage of the concha and auditory canal, the auricle having already been destroyed when the patient came under treatment. In this case which had lasted 15 years, cicatrization was complete after six applications. The third case, lupus erythematosus of nine years' standing, was treated with one or two applications daily with entire success, except for a remaining pigmentation. An enlarged submaxillary gland, which was observed when the treatment was begun, is stated to have disappeared after the first sitting. Ravogli insists on the importance of pressure to empty the cutaneous bloodvessels, as the blood interferes with the action of the light. The treatment is

¹ Journal of Cutaneous and Genitourinary Diseases, January, 1902.

² Northwestern Lancet, December, 1901.

³ British Medical Journal, February 15, 1902.

¹ Northwestern Lancet, January, 1902.

² Journal of Cutaneous and Genitourinary Diseases Vol. xix, No. 231, 1901, page 569.

painless and unattended by unpleasant after effects. The sittings should not be longer than ten or fifteen minutes. Some vesication is usually produced and requires the application of a simple ointment. The work of Finsen, which comprises 353 cases treated by this method, is reviewed, and the further study of this promising therapeutic measure in other skin affections is earnestly recommended. [R.M.G.]

Recent Views on the Origin and Nature of Herpes Zoster.—Van Harlingen¹ states that under the designation herpes zoster is to be understood a specific infectious and possible contagious exanthem, characterized in its invasion by lassitude, general malaise, chills, increased temperature, and more or less digestive disturbance; that following this, in most cases, neuralgic pains develop along certain nerve-paths or metaneuric areas, together with the development of enlarged lymphatic glands; and that several days later the characteristic exanthem shows itself and runs through a fixed cycle of development, acme, and decrudescence. In some cases visceral complications accompany the disease—paralysis of sensory or motor nerves, inflammations of the pleura, peritoneum, articulations, or viscera. The infection attacks chiefly the posterior (sensory) ganglia of the cord and the gasserian ganglion. Thence the inflammation and degeneration may extend along the nerve-trunks and fibers. Zosteroid eruptions are not infrequently observed in cases of poisoning from coal-gas, after the ingestion of arsenic, following injuries to the nerves, as a result of moral shock, as grief, or in hysteria, and probably under other conditions, but these are to be distinguished from the true herpes zoster. [A.O.J.K.]

Hydroa Gestationis.—Holmes² reports a case of this affection which occurred at 3 consecutive confinements. The day after confinement the patient had an itching of the extremities and parts of thighs and chest. There was redness of the palms of the hands and soles of the feet, and on the backs of the hands, wrists, and parts of the forearm, a thick, confluent rash, with elevated papules the size of peas with hardened bases. The rash on thighs, chest and back was either isolated, confluent and semicircular, or clustered in round patches the size of a florin. A bacteriologic examination of the fluid from some recent bullas was made and a pure culture of staphylococcus was found. The patient improved daily, and the infant, which took the mother's milk from birth, was quite free from any rash. The treatment consisted of the local application of a tar lotion internally a saline mixture with liq. arsenicalis, and later sulfur tablets only were prescribed. There has been no return of the rash after 6 months. [W.K.]

Psoriasis Following Tattooing.—Bettermann³ reports the case of a man of 29, who was tattooed on the right forearm three years ago, without any especial sequels. Recently he had his left arm also tattooed, and two weeks later he developed psoriasis, which primarily was circumscribed to the tattooed area, but subsequently spread over the entire body. In connection with this case, which would point to an infection, the author takes up the infectious theory of psoriasis, and comes to the conclusion that it has not been proved. [D.R.]

The Treatment of Skin Diseases by Static Electricity.—Winkler⁴ summarizes the mode of action of static electricity or franklinization. The effect is exerted exclusively on the vasomotor nerves, and accordingly the methods of applying static electricity are as follows: The application of the brush causes cutaneous anemia; Morton's currents, better termed the franklinic interrupted current, produces hyperemia of the skin, while between the two as regards the intensity of the impression is the spark which after a short application causes cutis anserina, and after a longer exposure, erythema and vesication. Local franklinization is therefore indicated when an intense effect on the vasomotor nerves is desired, as in passive congestions and in diseases characterized by dilation of the vessels, such as pernio, varices, acne rosacea, erythema nodosum. The interrupted current is useful in the treatment of scars, to improve the tone of an anemic and scaly skin, to remove folds and wrinkles, and in the treatment of keloid.

The sedative and anesthetic effect of the breeze is utilized in eczema, painful scars, fissures of the nipple, urticaria and herpes. The author reviews a great number of skin diseases in which static electricity has been used with reported good results, but warns against too enthusiastic an appreciation of the method which is in need of further study. The good effects obtained in eczema by various investigators are especially emphasized. [R.M.G.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended March 8, 1902:

SMALLPOX—UNITED STATES.			Cases	Deaths
Arizona:	Naco.....	Feb. 23.....	12	
Arkansas:	Mississippi County.....	Feb. 18.....		100
California:	Los Angeles.....	Feb. 15-22.....	6	
	San Francisco.....	Feb. 16-23.....	18	
Colorado:	Denver.....	Feb. 15-22.....	5	
Illinois:	Chicago.....	Feb. 22-Mar. 1.....	2	
	Danville.....	Feb. 22-Mar. 1.....	8	
	Galesburg.....	Feb. 15-Mar. 1.....	4	
Indiana:	Evansville.....	Feb. 22-Mar. 1.....	8	
	Michigan City.....	Feb. 17-Mar. 3.....	1	
	Indianapolis.....	Feb. 15-22.....	7	
	Terre Haute.....	Jan. 11-Mar. 1.....	12	
Iowa:	Clinton.....	Feb. 22-Mar. 1.....	2	
Kentucky:	Covington.....	Feb. 23-Mar. 2.....	6	
	Lexington.....	Feb. 15-22.....	3	
Louisiana:	New Orleans.....	Feb. 15-Mar. 1.....	2	
Maine:	Durham.....	Feb. 15-19.....	12	
	Freeport.....	Feb. 19.....	1	
	Portland.....	Feb. 8-Mar. 1.....	9	
	Sanford.....	Feb. 19.....	1	
Maryland:	Baltimore.....	Feb. 22-Mar. 1.....	2	
Massachusetts:	Boston.....	Feb. 22-Mar. 1.....	40	5
	Cambridge.....	Feb. 22-Mar. 1.....	9	
	Everett.....	Feb. 22-Mar. 1.....	1	1
	Haverhill.....	Feb. 23-Mar. 1.....	1	
	Holyoke.....	Feb. 22-Mar. 1.....	9	
	Malden.....	Feb. 22-Mar. 1.....	1	
	Newburyport.....	Feb. 22-Mar. 1.....	1	
	North Adams.....	Feb. 22-Mar. 1.....	1	
	Quincy.....	Feb. 22-Mar. 1.....	1	1
	Somerville.....	Feb. 15-Mar. 1.....	6	
	Waltham.....	Feb. 22-Mar. 1.....	1	
	Weymouth.....	Feb. 15-Mar. 1.....	3	
Michigan:	Detroit.....	Feb. 22-Mar. 1.....	2	
	Grand Rapids.....	Feb. 22-Mar. 1.....	2	
	Ludington.....	Feb. 22-Mar. 1.....	6	
Missouri:	Hannibal.....	Feb. 1-23.....	6	
Montana:	Butte.....	Feb. 16-23.....	6	
Nebraska:	Omaha.....	Feb. 22-Mar. 1.....	55	
New Jersey:	Camden.....	Feb. 22-Mar. 1.....	5	1
	Jersey City.....	Feb. 23-Mar. 2.....	19	
	Plainfield.....	Feb. 22-Mar. 1.....	1	1
	Newark.....	Feb. 22-Mar. 1.....	24	2
New York:	Binghamton.....	Feb. 23-Mar. 2.....	10	1
	New York.....	Feb. 22-Mar. 1.....	56	11
Ohio:	Cincinnati.....	Feb. 22-23.....	7	
	Toledo.....	Feb. 22-Mar. 1.....	1	
Pennsylvania:	Allegheny.....	Feb. 22-Mar. 1.....	8	
	Philadelphia.....	Feb. 22-Mar. 1.....	62	17
	Pittsburg.....	Feb. 22-Mar. 1.....	6	
	Scranton.....	Feb. 15-22.....	1	
Rhode Island:	Providence.....	Feb. 22-Mar. 1.....	4	1
	Warwick.....	Feb. 22-Mar. 1.....	4	
South Carolina:	Charleston.....	Feb. 22-Mar. 1.....	2	
	Greenville.....	Feb. 15-22.....	3	
Tennessee:	Memphis.....	Feb. 22-Mar. 1.....	24	
	Nashville.....	Feb. 22-Mar. 1.....	1	
Texas:	Houston.....	Feb. 22-Mar. 1.....	32	
Utah:	Salt Lake City.....	Feb. 8-22.....	2	
Vermont:	Burlington.....	Feb. 15-22.....	17	
Washington:	Spokane.....	Feb. 15-22.....	26	
	Tacoma.....	Feb. 16-23.....	14	
Wisconsin:	Fond du Lac.....	Feb. 22-Mar. 1.....	6	
	Green Bay.....	Feb. 23-Mar. 2.....	10	
	Milwaukee.....	Feb. 22-Mar. 1.....	2	
SMALLPOX—FOREIGN.				
Austria:	Prague.....	Feb. 8-15.....	10	
Colombia:	Cartagena.....	Feb. 15.....		8
	Panama.....	Feb. 17-21.....	50	10
France:	Paris.....	Feb. 8-15.....		3
Great Britain:	Cardiff.....	Feb. 1-8.....	1	
	Dublin.....	Feb. 8-15.....	3	
	Dundee.....	Feb. 8-15.....	4	
	London.....	Feb. 8-15.....	1,185	64
India:	Bombay.....	Jan. 27-Feb. 4.....	3	
	Calcutta.....	Jan. 11-Feb. 1.....	3	
	Karachi.....	Jan. 19-Feb. 2.....	94	8
	Madras.....	Jan. 25-31.....	1	
	Rome.....	Dec. 27-Jan. 4.....	2	
Mexico:	Mexico.....	Feb. 8-16.....	1	
Russia:	Moscow.....	Feb. 1-8.....	20	6
	Odessa.....	Feb. 8-16.....	1	3
	St. Petersburg.....	Feb. 1-15.....	14	3
Uruguay:	Montevideo.....	Jan. 11-18.....	65	5

¹ American Journal Medical Sciences, January, 1902.

² British Medical Journal, January 11, 1902.

³ Münchener medizinische Wochenschrift, October 8, 1901.

⁴ Monatshefte für Praktische Dermatologie, Vol. xxxiii, No. 10, 1901.

YELLOW FEVER.

Mexico:	Vera Cruz.....	Feb. 15-22	1	1
West Indies:	Curacao.....	Feb. 1-8.....	1	1

CHOLERA.

India:	Bombay.....	Jan. 27-Feb. 4.....	1	
	Calcutta.....	Jan. 11-Feb. 1.....	159	
	Madras.....	Jan. 25-31.....	1	

PLAGUE—UNITED STATES.

California:	San Francisco.....	Feb. 22.....	1	1
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PLAGUE—INSULAR.

Hawaii:	Honolulu.....	Feb. 18.....	3	
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PLAGUE—FOREIGN.

China:	Hong Kong.....	Jan. 11-18.....	1	
	Shantung.....	Jan. 18 Increasing.		
	Yeuug Keong.....	Jan. 18.....	60	
India:	Bombay.....	Jan. 27-Feb. 4.....	538	
	Calcutta.....	Jan. 11-Feb. 1.....	193	
	Karachi.....	Jan. 19-Feb. 2.....	107	90
	Madras.....	Jan. 25-31.....	1	
Russia:	Batoum.....	Feb. 5.....	1	

Changes in the Medical Corps of the U. S. Army for the week ended March 8, 1902:

BRANCH, Captain FREDERICK D., assistant surgeon, is relieved from duty in the department of South Philippines and will report on the transport Lawton for duty as transport surgeon, relieving Captain Allen J. Black, assistant surgeon, who will report to the commanding general, department of South Philippines, for assignment to duty.

MANLY, First Lieutenant CLARENCE J., assistant surgeon, is relieved from duty on the transport Ingalls, and will report to the chief surgeon of the division, for instructions.

PATTERSON, EDWIN W., contract surgeon, is relieved from duty in the department of South Philippines, and will report on the transport Ingalls for duty as transport surgeon.

RICHARDS, ROBERT L., contract surgeon, now at San Francisco, Cal., will report for transportation to the Philippine Islands, where he will report for assignment to duty.

The following changes in the stations and duties of contract surgeons are ordered: James H. McCall, now in Washington, D. C., will proceed to San Francisco, Cal., and report for assignment to duty at the United States general hospital, Presidio. James B. Hallwood is relieved from duty at the United States general hospital, Presidio, and will proceed to Fort Leavenworth for duty.

The following named contract surgeons will proceed from the places designated to San Francisco, Cal., and report for transportation to the Philippine Islands, where they will report for assignment to duty: Everett A. Anderson, from Devil's Lake, N. D.; R. King Cole, from Dallas, Tex.; Bonaparte P. Norvell, from St. Louis, Mo.; Joseph R. Parke, from Philadelphia, Pa.; Joseph J. Shafer, from Washington, D. C.

The following changes in the stations and duties of officers are ordered: So much of par. 11, S. O. 15, January 18, 1902, this office, as assigns Major Marlborough C. Wyeth, surgeon, to duty at Fort Trumbull, is amended so as to direct Major Wyeth to report at Fort Ethan Allen for duty at the latter post, to relieve Captain William W. Quinton, assistant surgeon. Captain Quinton will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

The following changes in the stations and duties of officers are ordered: Major William B. Banister, surgeon, having reported his arrival at San Francisco, Cal., will repair to Washington, D. C., and report to the surgeon general of the Army for duty as attending surgeon, to relieve Major Edward C. Carter, surgeon. Major Carter will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

BANNISTER, Major WILLIAM B., surgeon, is granted leave for one month.

The following named officers will report in person to Colonel Calvin De Witt, assistant surgeon general, president of the examining board at the Army Medical Museum building, Washington, D. C., for examination for promotion: Captains Euclid B. Fricke, Frank R. Keefer, Thomas U. Raymond, assistant surgeons.

MILLIKIN, JOHN D., contract dental surgeon, now at San Francisco, Cal., will report for transportation to the Philippine Islands, where he will report for assignment to duty.

ALLEN, ULYSSES S. G., hospital steward, Army general hospital, Washington Barracks, is transferred to Fort Keogh, to relieve Hospital Steward Henry C. Senecal. Steward Senecal will be sent to Fort McDowell, and thence to Manila, P. I., for assignment to duty.

So much of orders of February 4, this office, as direct First Lieutenant Charles E. Marrow, assistant surgeon, to proceed to Fort Totten for duty, is amended so as to direct him to report to the commanding general, department of California, for assignment to duty as surgeon on the transport Hancock, to relieve Contract Surgeon William H. Spiller, who will proceed to his home, New York City, for annulment of contract.

MANLY, First Lieutenant CLARENCE J., assistant surgeon, upon his arrival at San Francisco, Cal., will proceed to Fort Caswell for duty. Upon the arrival of Lieutenant Manly at Fort Caswell, Contract Surgeon Erwin I. Shores will proceed to his home, West Bridge-water, Mass., for annulment of contract.

So much of orders of January 4, as direct First Lieutenant Walter D. Webb, assistant surgeon, to proceed to Fort Totten, is amended so as to direct him to proceed to Fort Hamilton for duty. Upon the arrival of Lieutenant Webb at Fort Hamilton, Captain Palmer H. Lyon, assistant surgeon, will comply with the requirements of orders of February 7.

IRELAND, Captain MERRITTE W., assistant surgeon, upon his arrival at San Francisco, Cal., will proceed to St. Louis, Mo., and assume the duties of attending surgeon and examiner of recruits in that city.

CARTER, Major EDWARD C., surgeon, is granted leave for one month, from April 1, with permission to apply for an extension of one month.

Orders of February 28 are so amended as to direct that the relief of Major Edward C. Carter, surgeon, from duty in Washington, D. C., shall take effect May 1.

The following named assistant surgeons, upon the completion of the course of instruction at the Army Medical School in Washington, D. C., will proceed to San Francisco, Cal., and report not later than April 28, 1902, for transportation to the Philippine Islands, where they will report for assignment to duty: First Lieutenants Charles C. Geer, Ernest L. Ruffner, George P. Heard, Arthur M. Line, Kent Nelson, Lloyd Le Roy Krebs, William P. Woodall, Charles A. Ragan, George A. Jean, James F. Hall, Raymond F. Metcalfe, James M. Phalen.

The following named assistant surgeons, upon the completion of the course of instruction at the Army Medical School in Washington, D. C., will proceed to San Francisco, Cal., and report not later than April 15, 1902, for transportation to the Philippine Islands, where they will report for assignment to duty: First Lieutenants Conrad E. Koerper, Robert H. Patterson, Roderic P. O'Connor, Roger Brooke, Jr., Verge E. Sweazey, Matthew A. DeLaney, Paul S. Halloran, Robert Smart, William R. Eastman, Perry L. Boyer.

The following changes in the stations and duties of contract surgeons are ordered: Contract Surgeon Walter K. Beatty is relieved from duty at Fort Grant, and will proceed to San Francisco, Cal., and report for assignment to duty at the United States general hospital, Presidio. Contract Surgeon James K. Ashburn is relieved from duty at the United States general hospital, Presidio, and will then proceed to Fort Grant for duty.

McDERMOTT, FRANK E., contract dental surgeon, now at Webster, Mass., will proceed to Omaha, Neb., and report for assignment to duty at Fort Crook.

LYON, WILLIAM H., hospital steward, is relieved from further duty at the headquarters artillery defenses of Havana, and will proceed to Hamilton Barracks, Mantanzas, Cuba, for duty.

GLENNAN, Major JAMES D., surgeon, is assigned to duty in San Francisco, Cal., as a sanitary inspector for the camps at the Presidio and Angel Island, Cal., for incoming and outgoing troops, vice Major Robert J. Gibson, relieved.

RANSBOTTOM, IVAH J., contract surgeon, will proceed to his home, Wabash, Ohio, for annulment of contract.

SMITH, CHARLES F., contract surgeon, will proceed to his home, Whitehall, Mich., for annulment of contract.

ROBINS, Major R. P., surgeon, is granted leave for 30 days, with permission to apply for an extension of 30 days.

Changes in the Medical Corps of the U. S. Navy for the week ended March 8, 1902:

CARPENTER, D. N., passed assistant surgeon, detached from the Illinois, ordered home, and granted sick leave for one month—March 1.

GRIFFITH, W. E., appointed assistant surgeon from February 20, 1902.

WILSON, H. D., passed assistant surgeon, ordered to accompany a detachment of marines, March 8, to the Asiatic Station.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended March 6, 1902:

SAWTELLE, H. W., surgeon, leave of absence for seven days from February 27, 1902, under paragraph 179 of the regulations.

PERRY, T. B., surgeon, granted leave of absence for 23 days from February 23—March 4, 1902.

CLARK, TALIAFERRO, assistant surgeon, directed to report to chairman of Board of Examiners at Washington, D. C., for examination to determine his fitness for promotion to the grade of passed assistant surgeon—March 6, 1902.

HASTINGS, HILL, assistant surgeon, directed to report to chairman of Board of Examiners at San Francisco, Cal., for examination to determine his fitness for promotion to the grade of passed assistant surgeon—March 6, 1902.

LAVINIER, C. H., assistant surgeon, directed to report to chairman of Board of Examiners at Washington, D. C., for examination to determine his fitness for promotion to the grade of passed assistant surgeon—March 6, 1902.

McMULLEN, JOHN, assistant surgeon, directed to report to chairman of Board of Examiners, at Washington, D. C., for examination to determine his fitness for promotion to the grade of passed assistant surgeon—March 6, 1902.

GRUBBS, S. B., assistant surgeon, directed to report to chairman of Board of Examiners at Washington, D. C., for examination to determine his fitness for promotion to the grade of passed assistant surgeon—March 6, 1902.

THORNBURY, F. J., assistant surgeon, relieved from duty at Port Townsend, Wash., and directed to proceed to Honolulu, T. H., and report to medical officer in command for duty—March 6, 1902.

BOARDS CONVENED.

Board convened to meet at Washington, D. C., March 17, 1902, for the purpose of examining assistant surgeons to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the Board: Surgeon L. L. Williams, chairman; Surgeon R. M. Woodward; Passed Assistant Surgeon H. D. Geddings, recorder.

Board convened to meet at San Francisco, Cal., March 24, 1902, for the purpose of examining Assistant Surgeon Hill Hastings to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the Board: Passed Assistant Surgeon W. G. Stimpson, chairman; Passed Assistant Surgeon H. S. Cumming; Assistant Surgeon C. W. Vogel, recorder.

American Medicine

FOUNDED, OWNED, AND CONTROLLED BY THE MEDICAL PROFESSION OF AMERICA

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The Increase of Smallpox.—Except where vaccination is compulsory, as in Germany and Japan, smallpox is everywhere increasing. In our country there were 22,263 cases of smallpox during the last week. For the same period last year only 9,406 cases were reported. The deaths from smallpox during the past week have been 661, as against 136 for the same week of last year. The New York Board of Health has refused to support the movement for compulsory vaccination, although its public acts are certainly based upon the theory that compulsion would be wise if it were practicable. This kind of compromise in England has resulted in a terrible increase of the disease. We do not think the American people are so blind to their own self-interest as to allow the antivaccinationists to defeat a thoroughgoing attempt to enact laws making vaccination obligatory.

The Medical Department of the Navy.—Surgeon-General Rixey will have the hearty support of every American physician in his attempt to arouse Congress to a sense of the nation's duty to the navy and to its medical corps. In four years the navy and marine corps has increased 87%; enlistment examinations, 115%; tropical disease and injury 66%; the number of patients treated in naval hospitals, 111%. Moreover, the ships under construction will soon require 58 more medical officers. The men are now overworked, have insufficient leaves of absence, and have no time for study and research. Scattered as they are, in all parts of the world, the physicians of the navy have exceptional opportunities for research work, and for aiding in professional and scientific progress. There can be no question that it has been a most unwise policy of the past to deny them the leisure, the esprit de corps, the literature, the instruments, etc., which would enable them to become a far greater honor to their science, their country, and their fellows. In appealing to congress Dr. Rixey has shown his recognition of the great duty and opportunity, and we earnestly hope he will persist until the corps has been increased to a proper number. The best medical books, journals, instruments, etc. heretofore conspicuous by their absence, should be supplied, and in every way professional and scientific pride stimulated, so that this branch of the service may become what it should be. If we had a united profession we could undoubtedly give Dr. Rixey efficient help in bringing about the highly desirable

reform. Let each, therefore, do what is individually possible to this end. This is a kind of "ship-subsidy" which all physicians would favor.

The Social Halls Association is an organization formed in New York, with a capital of \$100,000, after the model of the successful *Central Public House Trust* of England. The object is to establish model saloons, where if alcoholic liquors are asked for they shall be served, but where other attractions of a sanitary and ethical character shall be the chief. The English associations pay 5% to the owners, and are of the greatest social benefit to the customers. The New York organization plans to have a roof-garden and a dance hall in connection with each of its buildings to be erected in New York City. The fundamental object of the philanthropic capitalists is, of course, to reduce drunkenness and encourage temperance, but the fact that there is no large license fee in England, and that the number of saloons is restricted by law, renders the financial success of the undertaking with us more problematic. In the long run and in general, temperance reform must be made to pay, *i. e.*, it should not be solely philanthropic, but must be founded upon the element of profit. In Sweden and Norway the "Gothenburg" system, and in England the Public House Trust have not neglected this necessity, and have therefore been able to reduce greatly those social and medical evils which the unrestricted traffic in alcohol is sure to bring. A wise combination of benevolence and of shrewd common sense is as necessary in this as in every reform.

The Prophylaxis of Suicide.—With the present increase of suicides there comes the important question of the duty of the physician as to prevention. Every person committing suicide, or attempting to do so, is a sick person mentally, morally or physically, usually in all three ways. With him, therefore, the physician has to do. In young patients particularly, unless there are distinct signs of melancholia, it is not the custom to think of the possibility of suicide. Undoubtedly many of the youthful planners of suicide if once frustrated in their intention would become converted to the idea of living on. The reasons for which suicide is often committed are so trivial that it would not require much persuasion to show the irrationality of the procedure. Often there seem to be no warnings of the sad event to

come, yet very seldom will it be found that some at least of the signs of hebephrenic melancholia have not been present for some time before the suicide. Young people are liable to rapid and paradoxical changes of disposition, changes that cause the obtrusion of "depressed ideas in the midst of even boisterous gaiety," or of unseemingly jocularity in the midst of depression. There may be added the paradoxical facial expression, solemn in mirth, joyous at moments of otherwise apparent melancholy. These symptoms may be enough to arouse suspicion and cause insistence on precautions that will save life. If a suicidal history exists in the family there is need of the greatest watchfulness. Familiarity with the idea of suicide thus closely brought home to them readily engenders a contempt for death. One of the most striking things about suicide statistics, and it has been especially brought out by the recent suicide of a widely-known gambler, who was the fourth in his family to make away with himself, is the well-recognized tendency to suicide that runs in certain families. In one carefully investigated series of cases there were 22 suicides in the same family in 50 years. Among the suicides reported last year in New York City no fewer than six occurred in families in which there was a history of previous suicides. In one recent case it is said that the suicide was the last of a family of nine, all of whom had committed suicide. The necessity for special precautions under such circumstances is evident. In general, however, more suspicion of the possibility of suicide even in young adolescents must be impressed upon the minds of physicians and nurses than has been the case heretofore. Unwarranted suspicion is better than remorse, even though blameless.

An antivaccination insurance company is the only logical outcome of the antivaccination crusade. In England insurance against smallpox is fashionable, the usual rates, if recently vaccinated, being 2s. 6d. percent, and if not recently vaccinated 3s. 4d. But in infected localities the rates are higher, while for physicians 5s. is asked. If the physician attends smallpox cases 50s. is demanded. All this, it appears, is based upon the absurd idea that smallpox is contagious, that recent vaccination prevents, and incidentally it assumes that Spanish fly is inferior to vaccine as a preventive. But according to the creed of the antis this is not true, is, indeed, the reverse of true. There necessarily follows the suggestion which we make to the antis, and which they should adopt instantaneously: "Faith without works" in these degenerate days does not count. If you have the courage of your convictions demonstrate it by backing them with your money. Our insurance companies are dead against your theory, and will not take the risks of the unvaccinated and exposed except at greatly increased prices. You know all that is based upon sham, lie and error. Prove it by forming insurance companies for insuring the poor upon whom we would impose our cruel and filthy vaccination. Make Dr. Pfeiffer the president of your company and Drs. Still and Rodermund first and second vice-presidents, and do not fail to have on your board the Philadelphia antivaccinationist physicians who vaccinated their patients, themselves,

and their families, "by the mouth," but who failed to protect them in this way. Then, too, the premium need be only a trifle, merely enough to pay clerk hire, etc., for if your theory is true there will be no policies to pay. If a reasonable premium is asked, the business must yield millions of profit. But as vaccination is more deadly and harmful than smallpox itself the premiums can be less for the unvaccinated than for the vaccinated. It is a great, a splendid opportunity! There is no other way whereby you can so instantly and utterly rout the whole army of the vaccinationists. Dr. Pfeiffer knows the relative values of talk and action. Out upon the Philistine and smite him hip and thigh!

A strange association, with a strange name, is made known to us in the *Journal of the American Animal Therapy Association*. The number before us is dated a year and one-half ago, although it has just been received, and is numbered 4 of Volume 1. Having a deep interest in the study and treatment of animal diseases, we welcomed the bulky magazine with such a promising name. There were 28 titles of original articles listed in the table of contents, all by Doctors of Medicine. It was most encouraging, we thought, to find 28 physicians so deeply interested in animal therapy as to prepare papers and attend a convention in Chicago, traveling for this purpose from all parts of the United States. But *surgit amari aliquid!* The 28 learned articles were all on one subject, and that had nothing whatever to do with zootherapy or veterinary medicine. (The term animal therapy is merely an Anglicization of a good word long in use—zootherapy, which means, of course, veterinary medicine.) It was apparent that all these men had not only no concern for animals, but that, on the contrary, they were all at least indirectly killing one kind of poor animal—the goat—to get his "lymph" for human therapy. This "lymph," if we read correctly, is good, and preeminently good for almost every disease that prevails, but it is especially commended as a "cell-tonic" (the word *cell* is distinctly spelled with a c.). It is also praised in "Sub Normal temperature." At the inevitable banquet, there was much said on "the duty of physicians toward innovations in therapeutics," the demand being made that we drop our suspicions of new things, especially "lymph," and that we should encourage "inventive genius" in therapeutics. The most applauded of the postprandial speeches was by the editor of what is described as the *Chicago Sunday Inter Ocean*, by which name, as in the case of "sub" and "animal therapy," we are filled with philologic wonder. (In fact, we are not certain whether the object of the newspaper is to inter the Chicago Sunday in the ocean, or whether the paper itself is designed as a sort of ocean-cemetery for the interment each Sunday of all things treated, advocated or advertised in it.) The burthen of this editorial moralist was "The Bogey of Professional Ethics," and there was, we trust, nothing strabismic in the denunciation and scorn squirted and splashed upon us and the charge of injury done to poor suffering humanity by our failure to advertise in the newspapers. We trust the "lymph" is well advertised in the Chicago Ocean Inter.

City Nuisances.—When President Lederle, of the New York City Board of Health assumed the duties of his office, he found that, during 1901, there were on record over 1,000 cases of violation of the laws as to nuisances which had not been abated or been brought to trial. The politicians of the preceding regime had allowed complaints to go without attention and the violators of the law to continue their nuisances unpunished. If there were 1,000 complainants who were ignored how many thousands must have concluded to endure in silence instead of wasting effort. Dr. Lederle now declares that within three weeks at least, any complaint will be investigated, settled, and the nuisance, if possible, abated. "I welcome information and want more. Without it progress toward reforming matters would be slow." That is the difference between a politician and a conscientious officer. In the majority of the cities of our country complaints of the most outrageous abuses are ignored, especially if the complainant is without political or financial influence to bribe or to command attention. The average American has an exceptional indifference to the suffering he may cause a neighbor by noise, and the injury to health and the prevention of recovery from illness, by reason of unnecessary noise is far greater than most of us imagine. The barking of dogs, the singing, playing pianos, etc., the whistling, loud talking, bawling of drunken men, and a hundred such things during the night, are nuisances which it is nobody's duty to make the callous police authorities stop. So as to dirty streets and alleys, garbage gathering and disposal, the smoke nuisance, insanitary plumbing, and many similar evils, the health of the community is too often at the mercy of the negligent officers whom negligent citizens allow to rule over them. May the example of New York reach to neighboring, and finally to all, American cities.

Lay Editors With Fads.—That is a curious twist in the mental make-up of some lay editors which makes them abuse their official privilege and advocate some hobby wholly unrelated to the object for which their periodical was established. Thus the editor of the humorous paper, *Life*, feels himself justified in solemnly devoting a large part of his periodical to antivivisection, to believe in which requires as great a dearth of humor as of reason, and about which, of course, the editor knows nothing. The bad journalism is doubled by the bad ethics. Another example has been reported to us by Dr. John A. Koch, of Quincy, Ill. *The Review* is a Catholic periodical published at St. Louis, whose editor goes out of his way to indulge in a rabid antivaccinationist crusade, even against Catholic archbishops who advocate vaccination. "Humbug," "crime," "fiendish inhumanity," etc., are the customary epithets applied to doctors. The editor of the periodical absurdly called *Vaccination*, but which is really devoted to extinguishing vaccination, is allowed to edit the department given over to the craze. To a remonstrant he replies that every scientist who has investigated the subject in the last fifty years has condemned vaccination; that nobody knows what it is; that all medical men confess it does not prevent smallpox, only mitigates it; that it causes

many deaths and ills; that all who oppose it have made a careful study of it, and they are the greatest physicians of the age; and, finally, that the medical profession have never been unanimous in anything except when it was unanimously wrong. We hope this egregious trumpery will arouse sensible church officers and subscribers to put an end to such prostitution of journalism.

The Church and Preventive Medicine.—When we find helpers in other callings we should show our grateful recognition. A parish priest in London who recognized the tremendous influence for evil of disease among his congregation preached upon the subjects of sanitary reform, and found that he had results from his sermon which he had never had before. Over 8,000 copies of the pamphlet containing his sermon have been sold. He began with the following words:—

"In the town of Gloucester there is a beautiful cemetery and in one corner of the cemetery there are the graves of no less than 280 little children, all under 10 years of age, all of whom died seven years ago when a terrible attack of smallpox visited that town. Of these 280 children who died of smallpox, 279 were unvaccinated and only one was vaccinated."

Stuffing Children's Minds With Undigested Knowledge.—Mark Twain has issued a pamphlet entitled, "English as She is Taught," which makes a needed protest against the attempt to cram the memories of school children with information far beyond their power of assimilation. The result often is that the poor little minds have a sort of indigestion which is to the true pedagog more pathetic than it is amusing. Twain gives some of the answers in *physiology* by pupils in public schools:

Physillogigy is to study about your bones stummick and vertebry.

Occupations which are injurious to health are carbolic acid gas which is impure blood.

We have an upper and a lower skin. The lower skin moves all the time, and the upper skin moves when we do.

The body is mostly composed of water and about one-half is avaricious tissue.

The stomach is a small pear-shaped bone situated in the body.

The gastric juice keeps the bones from creaking.

The Chyle flows up the middle of the backbone and reaches the heart where it meets the oxygen and is purified.

The salivary glands are used to salivate the body.

In the stomach starch is changed to cane sugar, and cane sugar to sugar cane.

The olfactory nerve enters the cavity of the orbit and is developed into the special sense of hearing.

The growth of a tooth begins in the back of the mouth and extends to the stomach.

If we were on a railroad track and a train was coming, the train would deafen our ears so that we couldn't see to get off the track.

John Bright is noted for an incurable disease.

The rabbit-eye transplantation report is at present going its customary cyclic round. In open-eyed amazement the newspapers, even in serious editorials, are misinforming their open-mouthed readers that "Mr. S.'s eye was removed and the eye of a Belgian hare put in its place"; then follows a disquisition on the removal of the human stomach and the wonders of

modern surgery, which "is able to remove the liver, the kidney, and even the brain without fatal results," and "doubtless will soon be able to replace them by the better organs of animals." Ostrich stomachs, and eagle eyes are urged as superior to the poor things of this kind we have at present. Was the reporter, we wonder, invited to be present at the operation when the Belgian hare's eye was transplanted? The curious fact is that the newspaper and the great surgeon are the foolish ones, the most ignorant of the public being able to "see through" the rabbit's eye better than the poor patient. It is certain that the cheap newspaper will never learn the wisdom of having a medical adviser to save it from the follies to "which it is by nature predestinated."

The Asylum Treatment of Inebriates.—Chapter 230, Section 3,690, of the General Statutes of Connecticut reads as follows:

"The managers, trustees or directors of any inebriate asylum established by the laws of this state may receive any inebriate or dipsomaniac who shall apply and be received into such an asylum, retain him one year, and treat and restrain him in the same manner as if committed by the Probate Court."

By this provision a person may make voluntary application for care and treatment as a patient who is a dipsomaniac, or addicted to drugs, giving up his liberty for one year, and agreeing to obey the rules prescribed by the institution. The large number of quacks and quack institutions in the country living upon the profits of unscientific treatment of these double victims is a disgrace to us. The Connecticut law should serve to prevent this scandal, and it would be in the interest of good sociology and good medicine if similar laws should be enacted in all the states.

Human Vivisection at the Walking Matches.—If the antivivisectionists had not long ago shown the world that they care nothing for logic or for human suffering, we should wonder that they fail to interfere with the brutality and torture of the so-called walking matches. As described by the newspapers, there is no greater outrage possible against the human body than for six days is committed in these matches. One has to hunt up the tales of medieval cruelty to find anything similar. That it is all done with the consent of the sufferers is no excuse, because almost every form of vice, especially the worst, finds consenting victims. The gladiators, we believe, were willing fighters. We have legally disallowed that subterfuge by a thousand laws and decisions.

Who was the "Nameless Medical Hero" whose death is described in the *British Medical Journal* of March 1, 1902? It must be possible to learn something more of this American who, for others, gave his life without a thought of self. Dr. Gordon Sharp, of Leeds, writes of this medical student, 22 years of age, who was at the siege of Metz. No surgeon or nurse was found willing to be shut up with the 1,800 typhus patients in the square. Where the French surgeons would not go, the American went and did all he could to relieve their sufferings until he was seized with the disease, died and

was buried undistinguished in the heaps of corpses thrown indiscriminately in the trenches.

The Unification of Medical Interests in Cleveland.—In a recent issue we announced the consolidation of the medical journals of Cleveland. This has been followed by a strong movement for the consolidation of the two medical societies of Cleveland—the Cuyahoga County Medical Society and the Cleveland Medical Society. In his inaugural address as president of the Cleveland Medical Society (*Journal of the American Medical Association*, March 8, 1902), Dr. P. Maxwell Foshay made a plea for the union of the societies, in the interest of broadened and more effective medical organization. In reality, his plea was for the merging of the existing societies into a new and strong organization that should approach as nearly as possible the ideal. As a result both societies have accepted the principle of union, and at present committees from each are engaged in studying exhaustively the forms of organization in other cities preparatory to drawing up a constitution and by-laws that shall provide for the most effective society work that is at present attainable. There is good reason to believe that the resulting organization will be one that may serve as a model for the physicians of other communities. Not content with these projects, those Cleveland physicians who are connected with the two medical colleges—the medical department of Western Reserve University and the Cleveland College of Physicians and Surgeons which is the medical department of the Ohio Wesleyan University, are engaged in admirable efforts to combine the schools. This praiseworthy endeavor has not reached completion, but all who are interested in higher medical education and in perfected professional attainments will wish well for the successful outcome of these final efforts at the complete and harmonious unification of the medical interests of a great western city.

Notice.—It has been brought to our attention that attempts have been made to use the confidence of the profession in this journal and its management to induce investment in commercial undertakings having no relation to medical journalism. We warn physicians that this use of our name or company is entirely unauthorized, and that if such investments are made it must be irrespective of any reference to AMERICAN MEDICINE, its editor, or its publishing company.

GEORGE M. GOULD, *President Board of Directors.*
G. C. C. HOWARD, *Treasurer.* WILMER KRUSEN, *Secretary.*

EDITORIAL ECHOES

Concerning Professor Matthews' Ionization Theory.—To publish unsettled propositions in science for the supposed benefit of the public is to vulgarize, not popularize, science. Only certain and well-demonstrated scientific truths should seek to be popularized. Sensationalism and genuine scientific advance are hopelessly opposed to each other.—[*The Independent.*]

BOOK REVIEWS

Lectures on Chemical Pathology in Its Relation to Practical Medicine.—By C. A. HERTER, Professor of Pathologic Chemistry, University and Bellevue Medical School, New York; visiting Physician to the City Hospital; Late Consulting Physician to the Babies' Hospital; Consulting Pathologic Chemist to the Craig Colony for Epileptics, etc. 461 pages. Lea Brothers and Company, Philadelphia, 1902.

These lectures are devoted to a consideration of the chemie defences of the organism against diseases; the chief food stuffs—carbohydrates, fats, proteids, water, and inorganic salts—and their fate in the body in health and disease; the iron of the food and its fate in the body; alcohol; the organic acids of the food; tea and coffee: excessive fermentation and putrefaction in the digestive tract; the chemie pathology of the gastric digestion; the chemie pathology of intestinal digestion; the chemie pathology of hepatic disease; jaundice; diabetes; starvation; under-nutrition; and obesity. Although Dr. Herter has "aimed only to sketch the leading characteristics of the physiologic and pathologic processes that have come under discussion, without describing these processes fully or systematically," he has, nevertheless, produced a book that is a real addition to medical literature, a book that will be read with a sense of lively satisfaction by all, and a book that being eminently practical should appeal especially to the practical physician. There can scarcely be any doubt that, as hoped by the author, the book "will prove useful to students and practitioners of medicine who have not had the opportunity to keep in touch with modern research in the field of chemie pathology."

Photographic Atlas of the Diseases of the Skin.—By GEORGE HENRY FOX, A.M., M.D. J. B. Lippincott Company, 1901.

The first eight numbers comprising half of the work have now appeared. In addition to the five colored plates each number contains an introductory article on treatment. The diseases have been arranged in alphabetic order and without reference to the illustrations the number may happen to contain. The opening pages of the first number contain an essay on the treatment of skin diseases in general and in this the author strikes the keynote of the entire work, which is purely a practical objective study of skin diseases and their treatment. The pathology is accordingly left out. While defending specialism against the charge of narrowness so frequently brought against it, and insisting on the necessity of special study and the great gains to general medicine derived therefrom, the author himself insists on the necessity of breadth in the treatment of skin diseases and adjures the physician to treat not merely the patient's skin but the patient himself. The paragraphs on diet, exercise, and bathing are distinguished by common sense, and are not without originality, trite as these subjects are. It may be an unpalatable truth that the man who earns his bread literally by the sweat of his brow and is not given to over-indulgence in the matter of bathing is possessed of a skin that is in fact cleaner on account of this very process of sweating, which is one of nature's ways of cleansing the skin and keeping it in good condition, than the fastidious bather who cannot rest easy without scrubbing his person with soap and water, and hot water at that, at least once a day. The skin is an organ, not an integument only, and insists on being treated with the consideration due to its rank as one of the important organs of the body. The plates, which are of course the feature of the work, are not only excellent in themselves and compare favorably with work of the same kind by German artists; but, what is equally important, they are well chosen and accompanied each by a page of excellent descriptive matter, with here and there a concise therapeutic direction. The collecting of a suitable list of illustrations in the great variety of pictures presented by skin diseases, is by no means an easy task. There is danger of omitting the important because it may appear too common, and there is also the difficulty of securing equally important pictures, which on account of their clinical rarity are necessary in a work designed for practical use. When it is advisable to

contrast the appearances of two or three conditions for purposes of differential diagnosis, they have been grouped together on the same, or on adjoining plates, so as to facilitate comparative study.

The Peritoneum, by BYRON ROBINSON, B.S., M.D., Chicago, Ill. Part I, Histology and Pathology, with 247 illustrations. Second edition. Chicago Medical Book Co., 1899. Price \$4.00.

This work is of interest alike to the physiologist and pathologist, the physician and the surgeon. It is a carefully exhaustive and accurate treatise upon the pathology and physiology of that great lymphatic sac, the peritoneum, representing years of personal labor and experiment by the author and a thorough study of the investigations of many predecessors whose works have been consulted and credited. In this work a historic sketch tells the story of almost continuous effort along this line from Erasistratus to Virchow, and sifts truth from error, leaving in available form the present-day knowledge. Chapters are devoted to the histology of the peritoneum; to a study of the endothelia of the free peritoneal surface; the subperitoneal tissue; and to the bloodvessels, the lymphatics and the nerves of the structure. An especially valuable division of over 100 pages deals with the physiology of the peritoneum. All honor to the laboratory worker who has time, inclination and ability to watch the secret workings of nature, to formulate conclusions, draw deductions and present to the clinician results as useful and practical as are found in this treatise. The book contains 247 illustrations, is well bound and printed, and deserves a place in the library of every abdominal surgeon and medical teacher. The bibliography of more than 100 pages will be found invaluable to every man who in the future writes upon the peritoneum or the abdominal viscera.

Personal Experience in Pelvic and Abdominal Surgery.

A contribution by R. STANSBURY SUTTON, A.M., M.D., LL.D., Ex-President of the American Academy of Medicine, of the Mississippi Valley Medical Association, and of the Pittsburg Obstetrical and Gynecological Society; Ex-Vice-President of the American Gynecological Society; Associate Fellow of the Philadelphia Obstetrical Society; Non-Resident Member of the Washington Academy of Sciences; Ex-President of the Section of Obstetrics and Gynecology of the American Medical Association; Fellow of the British Medical Association; Member of the International Gynecological Society, Etc.

To those interested in abdominal surgery, and in gynecologic procedures in particular, this little volume of less than 400 pages will prove interesting and instructive. It embraces the author's experiences in 400 to 500 cases, and records his successes and failures in an interesting manner, beginning at the time when he first established a private hospital, in 1883, and coming down to the present. It thus links the old methods in abdominal surgery, and gynecologic operations in particular, to those of the latest and most approved kind. The work amply proves the author to have been an active pioneer in the United States—and particularly in Western Pennsylvania—in the field of abdominal surgery. Probably in no work could one find a better recital of the gradual evolution of abdominal and gynecologic methods and procedures. It is not a treatise on this specially, but rather a recital of the author's own personal experience.

Atlas and Epitome of Diseases Caused by Accidents.—

By DR. ED. GOLEBIEWSKI, of Berlin. Translated and edited with additions by PEARCE BAILEY, M.D., Attending Physician to the Department of Corrections and to the Almshouse and Incurable Hospitals, New York. With 40 colored plates, 143 text illustrations, and 600 pages of text. Cloth, \$4.00 net.

The original German edition of this book was published to meet the wants of practitioners in that country where practically every employer is obliged by law to insure his employees against accident, and where in consequence of this law malingerers are very common. All the pathologic conditions which may result from every conceivable form of injury are discussed, with special reference to the results following such injuries. The book contains reports of many unusual and interesting injuries to various parts of the body, and is pro-

fusely illustrated. The colored cuts, many of them, are more showy than valuable. For instance, we fail to see the necessity of illustrating such conditions as fracture of the clavicle or of other bones of the body, contractures, ruptured muscles and knock knee from injury, by colored cuts which add materially to the cost of a book, but in this case not to its value. The book is no doubt better adapted to the needs of German practitioners where the question of accident insurance is a matter of much more importance than to the average American physician. This is specially true as the question of treatment of injuries, which is the most important consideration from the American standpoint, is not discussed in this book. Those interested in a study of injuries of any special part of the body would do well to consult this book, however, as it contains reports of numerous unusual injuries.

International Clinics, Volume IV, Eleventh Series (J. B. Lippincott Co., Philadelphia, 1902) contains a number of interesting articles, of which that by Professor A. Jacobi, of New York, upon strychnin heads the list. H. C. Wood, Jr. gives an interesting description of the methods of investigating the action of drugs. Possibly the last article written by the lamented Charles H. Burnett, details the result of a mistake in putting up a prescription of adrenalin chlorid to be used as a nasal spray. Thomas D. Coleman writes interestingly of the Climatology of Augusta, Ga., and James J. Walsh has a timely paper upon Winged Insects and Their Larvæ as Parasites of Man. Richard Cole Newton and Elizabeth Mercelis describe and illustrate a case of that rather uncommon affection pulmonary osteoarthopathy. To John Madison Taylor's talk upon Deformities of Children, graphically illustrated by the talented author, the section on pediatrics is well devoted. The volume contains a number of other contributions of great merit.

A Practical Treatise on Diseases of the Skin. By JOHN V. SHOEMAKER, M.D., LL.D. Fourth edition. D. Appleton & Company: New York. 1901.

The liberal amount of space devoted to treatment is a gratifying feature of the book; in fact, the suggestions of so many writers are enumerated with apparent impartiality, that one is sometimes inclined to wish the author had used his critical blue pencil a little more freely. Among the important therapeutic advances of recent years, phototherapy and radiotherapy justly find mention, although incidentally in connection with epithelioma, lupus, and similar affections, in which their value is already firmly established. The methods are, it is presumable, regarded as being still in the experimental stage, since a full discussion of the underlying principles and mode of application is not found in the article on general treatment. If the subject of treatment has been elaborated to the verge of superfluity, the same cannot be said of the pathology and bacteriology of the skin. The questions that are occupying the attention of laboratory investigators at the present time are, for the most part, passed over in silence. He is clinical and comprehensive, rather than philosophic and didactic. The large collection of formulas, arranged under the names of diseases in alphabetic order, greatly adds to the practical usefulness of the book. The illustrations, while few in number, are nearly all taken from nature and faithfully show the morphologic features of the diseases they represent without, fortunately, attempting the thankless task of committing to paper the elusive element of color.

Diphtheria: Its Definition, Pathogenesis, Diagnosis, and Prophylaxis.—By Professor Doctor E. V. BEHRING, with two illustrations in the text. Berlin, 1901.

This extremely interesting and valuable contribution to the literature of an important subject is well worth careful study. A brief survey of the clinical and pathologic history of the subject is followed by careful exposition of the present state of etiologic and pathologic knowledge, together with a good description of diagnostic methods, particularly those pertaining to bacteriology; and the monograph concludes with an account of modern immunization and therapeutic methods and a refutation of the criticisms against the prophylactic and curative use of antitoxin.

AMERICAN NEWS AND NOTES.

GENERAL.

Laundry at Manila.—The army medical department has established a large laundry plant at Manila, at which all clothing soiled in the large hospitals at Manila and the convalescent hospital on Corrigedor Island is cleansed. Good results, especially in a sanitary line, are reported.

Opium and Liquor.—It has been reported that negotiations are in progress between the American and British governments looking toward extending an invitation to all commercial nations to forbid the sale of opium and all alcoholic liquors to savage and aboriginal peoples.

Assistant Surgeons.—There are 54 medical college graduates who have announced their readiness to compete for appointments as assistant surgeons in the army. The first class will be ordered up for examination April 7 and there will be classes of 12 each week thereafter. The number of vacancies in the corps is 62.

Examining Board for Navy Applicants.—Applicants for admission to the medical corps of the navy are at present examined at the Naval Hospital, in Brooklyn, but in view of the fact that Congress is expected to authorize an increase in the number of naval surgeons, this board is not considered adequate. Surgeon-General Rixey proposes to establish an additional examining board at San Francisco.

Seeking the Nobel Prizes.—In a report to the State Department made by the United States Minister Thomas at Stockholm it is learned that the American legation there is constantly in receipt of letters from persons asking to have their names presented for a Nobel prize and attention is called to the fact that the American Minister is not permitted in any way whatsoever to present names for any of the Nobel prizes.

Health of the Army.—A report for the military division of the Philippines for the month ended January 15, states that the percentage of sick is steadily decreasing, the total number of sick being 2,534 cases. There were 59 deaths, 25 of which were not due to disease. Three cases of plague, with one death are reported. There are about 500 rats a day turned into the pathologic laboratory of the army. Up to January 1, 5% of all rats investigated were found infected with plague but now less than 1% are found thus infected.

The Metric System.—The bill to adopt the weights and measures of the metric system as the standard for the United States has been ordered favorably reported by the House Committee on Coinage, Weights and Measures. It provides:—"That after January 1, 1904, all the departments of the Government of the United States in the transaction of all business requiring the use of weight and measurement, except in completing the survey of public lands, shall use only the weights and measures of the metric system, and after the first of January, 1907, the weights and measures of the metric system shall be the legal standard weights and measures of and in the United States."

Receiving Ships and Disease.—Consequent upon the abandonment of the Vermont as a receiving ship at Brooklyn Navy Yard the Navy Department has transmitted information to Congress that unsanitary conditions prevail to a marked extent on these old, decaying vessels, which are saturated with human emanations and poorly ventilated, and, though unusual precautions are taken, it is impossible to keep the sickrate among the naval recruits aboard at a reasonable figure. The deathrate on board the Vermont, during the five years prior to its abandonment, was more than double that for the entire service for all causes. The navy is of the opinion that modern barracks should supplant these receiving ships.

Warning Against American Hospitals.—To counteract the favorable impression made on the Filipinos by the good work at the American hospitals established by our military surgeons in the Philippines for the relief of the sick and suffering natives, a number of insurrection chiefs recently issued a circular importing that these institutions were established for the purpose of coercing the sick there for treatment, and that these sick died very soon. In other words, that the Americans in this way "meant to kill off all their enemies." Another circular calls attention to the fact that the Americans now have a chaplain with each regiment. This is necessary, so the circular says, because the previous number of chaplains was insufficient to administer to the Americans killed in battle and dying in hospitals of disease.

Medical Clerk and Translator.—Announcement is made by the United States Civil Service Commission that an examination for the position of medical clerk and translator in the Bureau of Animal Industry, Department of Agriculture will be held April 22, 1902. The examination will consist of the subjects mentioned below, which will be weighted as follows: (1.) Translation of medical German, 25; (2.) Translation of medical French, 25; (3.) Translation of medical Italian, 10; (4.) Transla-

tion of medical Spanish, 10; (5) Technical bibliographic work in medicine and zoology, 10; (6) Medical and zoological terminology and nomenclature, 10; (7) Experience, 10. The age limit will be 20 years or over and the salary \$720 per year. The examination is open to all citizens of the United States who comply with the requirements and the candidates will be rated according to the qualifications shown in their papers and those eligible will be certified in strict accordance with the Civil Service regulations. Persons desiring to compete should apply to the United States Civil Service Commission, Washington, D. C.

EASTERN STATES.

An epidemic of measles among the 60 half-breed inhabitants of Malago Island, in Casco Bay, Maine, is reported by two fishermen, who found these people in wretched plight and without medical aid.

A college for working girls, which is about to materialize in Boston, and for the establishment of which John Simmons, of that city, left money in trust for 30 years, when, by his calculation, the sum would have accrued to \$500,000. The term has now expired, and the property amounts to \$1,500,000. The curriculum, which embraces business training, library work, domestic management and horticulture, also includes preparation for medical practice and nursing.

NEW YORK.

The Cross of the Legion of Honor has been conferred by President Loubet, of France, on William H. Tolman, of New York, for his work in behalf of the poor of that city.

Gift to New York Post-Graduate Medical School and Hospital.—Mrs. H. N. L. Sherman, of Lawrence, Long Island, has given \$25,000 to the corporation, for the endowment of five beds for the care of patients suffering from nervous diseases. Including this sum, more than \$60,000 has been received by the institution since last June.

Supervisor of Charities.—The bill providing for a State Supervisor of Charities has been reported by the Senate Committee at Albany, and encountered no opposition whatever. As it is in accordance with Governor Odell's desires, its passage is looked for as soon as is compatible with the execution of legal forms, and the good or ill results of the enactment will depend upon the caliber of the man appointed to the office.

Failure to Report Smallpox.—The Board of Health of New York recently passed a resolution publicly censuring Dr. H. E. Walker, of Staten Island, for failure to report a case of smallpox, which came to his attention last January. It has been intimated that the names of other physicians, similarly negligent, will also be published. The authorities are determined to prosecute vigorously all cases of failure to report contagious disease.

Birthday Celebration.—Dr. Herman Knapp, the distinguished ophthalmologist of the College of Physicians and Surgeons of New York, celebrated his seventieth birthday recently. At his suggestion the New York Ophthalmic and Aural Institute, of which he was the founder, is to be removed and equipped after modern methods. The trustees have already subscribed \$100,000 for this purpose, and about \$400,000 more are needed to build the new institute.

Public Baths.—The Association for Improving the Condition of the Poor in New York recently presented a plan to the municipal authorities for the establishment of 16 new bath-houses distributed through the densely populated districts throughout the city, and not located exclusively on the river front, as heretofore. The necessity for public baths, especially in the lower East Side of New York, caused the Citizens' Union to call a mass meeting recently, at which resolutions were passed urging the city officials to build them. This question of public baths had been an issue at the late election.

Against Compulsory Vaccination.—At a recent meeting of the Board of Health of New York City, its three members, Dr. Lederle, Dr. Doty and Police Commissioner Partridge, adopted a resolution declaring against compulsory vaccination in any form, as, in the opinion of the Board, the passage of any bill by the legislature requiring compulsory vaccination was unwise and uncalled for, as very little serious opposition is encountered in their efforts to vaccinate the people, and that the enacting of a compulsory law would be a powerful weapon in the hands of the antivaccinationists, and would disturb the harmonious relations existing between the Board and all classes in the city. The action of the Board is in line with that taken by many medical societies.

PHILADELPHIA, PENNSYLVANIA, ETC.

Smallpox Appropriation.—The sum of \$225,000 has been appropriated by Councils to defray the expenses incurred in the suppression of the smallpox epidemic. It is estimated that \$82,000 will be required to compensate the 33 regular and 80 auxiliary vaccine physicians.

Medical License.—During the past year the New Jersey State Board of Medical Examiners, which dates from 1890, examined 87 applicants for medical license; of these 63 obtained licenses, and 24 were refused. Examinations of 23 for midwifery license resulted in 16 being licensed, and the other 7 being rejected.

Philadelphia Polyclinic.—J. Alison Scott has been elected Professor of Clinical Medicine and Therapeutics, to succeed S. Solis Cohen, who resigned a month ago. Dr. Scott instructor of clinical medicine at the University of Pennsylvania, and physician to the Pennsylvania Hospital and to the Church Home for Children.

Public Baths.—The Mayor of Jersey City, Mark M. Fagan, has planned for the erection of public baths in various parts of that city at an expenditure of \$50,000, and also for an appropriation of \$20,000 for the establishment of free dispensaries. Bills providing for these improvements have been formed, and their passage is looked for confidently.

Against Pigeon Shooting.—A bill prohibiting shooting of live pigeons in marksmen's competitions is now pending before the New Jersey Legislature. The supporters of the bill assert that the practice prevails to a great extent in the state, and that there will be more, consequent upon the recent restriction in New York. The opponents of the measure contend that it will endanger the legitimate industry of raising pigeons for target practice.

SOUTHERN STATES.

Against Limburger Cheese.—The Health Officer, Dr. M. K. Allen, of Louisville, Ky., has placed an embargo upon limburger cheese as dangerous to health and announces that anyone who makes or sells the article will be prosecuted.

Appropriation for Medical Colleges.—A bill now pending in the Maryland Legislature provides for an annual appropriation of \$15,000 for the Baltimore Medical College, Maryland University, and College of Physicians and Surgeons.

An isolation hospital for smallpox cases in process of erection a mile distant from Burgin, Ky., was blown to pieces with dynamite recently by unknown parties, and a warning conspicuously posted threatened the workmen with death if the work should attempt to proceed.

Hygiene for the Negroes.—An effort to lower the death-rate of the negroes in New Orleans is being made and to this end a committee has been appointed to teach the negroes hygiene, and to see that the sanitary laws are rigidly enforced in the sections of the city occupied by the negroes.

The Columbian University of Washington, D. C., E. A. de Schweinitz, Dean, has just completed plans and let contracts for the erection of a new hospital building and a new medical and dental school. Large new laboratories thoroughly equipped for modern work, well-lighted lecture and reading rooms, will afford excellent facilities.

Against Vivisection.—A bill to regulate the practice of vivisection has been introduced into the Maryland Legislature. It expressly forbids operations on dumb animals. Operations on human beings for the advancement of science, and not for the cure of injury or disease, is prohibited, except with the consent of the person to be operated upon. When such operation is contemplated, application must be made to the health department, stating the place where the vivisection is to be performed and giving full particulars respecting the subject to be operated upon.

Spitting Nuisance.—A bill now pending in the Maryland Legislature makes it unlawful for any person to spit on the floors, sides, seats or platforms of any railroad or railway passenger cars in the state. It provides a penalty of \$3 and costs, or imprisonment for not more than five days. When the fine is paid one-half of it goes to the person furnishing the evidence upon which the offender is convicted. Conductors and brakemen are given the authority to arrest offenders and take them before the nearest justice of the peace at the end of their run, and such justices are given final jurisdiction in the case.

WESTERN STATES.

Smallpox at Des Moines, Ia.—The number of cases has been reduced fully 50% by strict quarantine of all cases and the appointment of special physicians to vaccinate free of charge.

An epidemic of diphtheria is reported among the Pueblo Indians. The superintendent of the United States Indian School in New Mexico has telegraphed for a supply of antitoxin to be used in 20 Indian villages.

Chicago and Smallpox.—While there has been an increase 162% in the total number of smallpox cases reported for the whole country since February 8, over the number reported during the corresponding period last year, there has been a reduction of a little more than 4% in the Chicago territory in

which the active campaign by the railroad companies and health authorities is being carried on.

The Chicago Board of Health warns school teachers that much of the spread of contagious diseases is due to the unrestricted habit of school children in exchanging pencils and other articles that have been put in the mouth; a mild or unrecognized case of diphtheria or scarlet fever, for example, may thus readily convey the infection to others in a severe or even fatal form. School teachers should be required to suppress this practice among their pupils as rigorously and persistently as they enforce any other necessary rule.

CANADA.

A woman house surgeon will be appointed each year on the staff of the Toronto General Hospital, it is announced. Two women physicians will also be appointed as registrars.

An amendment to the Ontario Medical Act, which would debar representation of the Toronto University on the Medical Council will be combated vigorously by the Medical Faculty of the University. In a lengthy protest prepared for the government it is stated that the amendment removes from the Council those who are specially qualified to determine the standard of medical education and to prescribe the proper curriculum of studies, and instead vests the absolute control of such education in a practically irresponsible body, creating a close corporation or guild. Further, it provides that universities and colleges will have to adopt a curriculum of medical studies as imposed by the Council without having a voice in framing it. It also violates the compact by which colleges are allowed representation on the Council in consideration of their having the right to issue diplomas and confer degrees in medicine and surgery which enables their possessor, upon obtaining a license or registering, to practise medicine without further examination.

Medical Council.—Dr. Roddick's bill establishing a Dominican Medical Council was given its second reading in the House March 13, and was referred to a special committee. This bill, which is heartily endorsed by the profession, aims to establish uniform qualification for medical men in Canada. As matters now stand, it is practically impossible for a graduate in medicine to obtain license to practise in more than one province. The barriers are so strong and high, the frontiers so closely guarded, that if a physician steps across the boundary line of a province to alleviate physical distress or to save life, he does it at the risk of being fined or imprisoned, though the line of demarcation ran through his dooryard; a condition of affairs as was shown in the discussion existing in no other country in the world. Even between the unfriendly nations, Germany and France, there is by arrangement a neutral territory of 15 miles wherein a medical man may go with impunity to the assistance of the sick or wounded of either nationality. Another aim of the bill is to obtain reciprocity with Great Britain, which can only be done when there is a central examining board for the Dominion, as the British medical authorities do not undertake to recognize the license of any provincial body, and until this central council is formed in Canada, a Canadian physician cannot register in Great Britain unless he pass the examination there. This has led to much injustice in the South African campaign, debarring Canadian medical men from serving with British regiments. The bill provides that the provinces shall be represented on the council in proportion to the number of medical men in each province, one representative for every 100 medical men, these to be elected by the provincial local council. The Dominion government would have the appointment of one for each province, and each one of the 10 universities engaged in the active teaching of medicine would be represented by one member. This would give to Ontario 8 representatives, to Quebec 4, to Nova Scotia 4, to Manitoba 3, to New Brunswick 3, to British Columbia 3, Territories 4, and Prince Edward's Island 2, which, with the homeopathic doctors, would make a board of 39 members.

FOREIGN NEWS AND NOTES

GENERAL.

Strange Epitaph in Moreton, in Marsh Churchyard.—

Here lie the bones of Richard Lawton,
Whose death, alas! was strangely brought on;
Trying one day his corns to mow off,
The razor slipped and cut his toe off.
His toe, or rather what it grew to,
An inflammation quickly flew to,
Which took, alas! to mortifying,
And was the cause of Richard's dying.

—From Gloucestershire (England) Notes and Queries, Vol. II, p. 6.

GREAT BRITAIN.

Public Baths.—Tokio, Japan, has 800 public baths and 300,000 daily bathers in a population of a little over 1,000,000.

The British Child Study Association has established branches in ten of the principal towns of the kingdom. The association was instituted with the view of obtaining useful information concerning the life and proper training of children. The work is advanced by means of formal lectures and psychologic and practical studies carried on by local centers and circles which meet in 16 different localities in the metropolis. The studies are compared periodically and discussed at general meetings. *The Paedologist*, a journal which is issued three times yearly by the association, treats of child study.

Promoting Medical Research.—A Liverpool shipowner, William Johnston, has given £25,000 to the University of Liverpool for furthering research work in pathology and physiology. The fund is so divided that the sum of £10,000 is devoted to founding a chair of chemical biology; £6,000 at 5% interest is allotted permanently to endow three Research Fellowships of £100 a year each. One of which will be held by a medical graduate of a colonial university, a second by a graduate of medicine of the United States, and a third by a research student in gynecology. The remaining £9,000 will be spent in the erection of a laboratory to accommodate the Tropical School, the professors of chemical biology, experimental medicine, comparative pathology, and the serum research department.

CONTINENTAL EUROPE.

Camphor smoking is reported as the latest fad among Parisian neurotics. The habit is begun under the belief that it produces a beautiful complexion, but it soon becomes a passion, producing somnolence, apathy, and weakness.

Medical Research.—The Prussian Government has made an appropriation of 10,000 marks for cancer research and 53,000 marks for the establishment and support of a cancer ward and laboratory in connection with the Charité Hospital in Berlin. For further study of means of prevention and early diagnosis of typhoid fever the sum of 20,000 marks has been appropriated.

A memorial Festschrift in honor of the centennial celebration of the birthday of Josef Skoda is under preparation by the Vienna University. The committee in charge appeal to all who have studied with him at any time to lend any records of him that may be found in notebooks, etc., and guarantee the safe return of such material. The appeal is signed by Nothnagel, Schrötter, Benedikt, Neuburger and v. Töply.

Vivisection.—A bill before the Norwegian Storting provides that the King or some person to whom he has delegated the authority may have power to confer on certain persons at certain places permission to perform painful experiments on animals for scientific purposes. As the daily press demanded the total abolition of such experiments a number of leading physicians presented a memorial to the justice committee of the Storting demonstrating the necessity of vivisection as means of increasing scientific knowledge and the art of healing.

Draining the Pontine Marshes.—The Italian Government, it is reported, has accepted the offer of a German syndicate to drain the Pontine marshes in Latium, lying between the sea and the Volscian mountains and extending 31 miles from Terracina to near Velletri and having a varying breadth of 6 to 11 miles. The reclaiming of these marshes will free Rome from malaria; from antiquity it has been notoriously pestilential. The cost is estimated at \$1,000,000. The syndicate exacts a 30 years lease of the reclaimed land, which will be used for farming and gardening purposes.

New Cure for Malaria.—M. Armand Gautier announces in the *Comptes Rendus* that he has found that injections into the blood of minute amounts of sodium methylarsenate is a cure for malarial fever. He reports the complete recovery of 9 patients who had contracted in Africa malaria of so severe a type as to be refractory to large doses of quinin. Blood-tests were made and the disappearance of the specific hematozoa always followed the treatment; it also suppressed the anemia associated with malaria. The best dosage and means of administration, whether by mouth or hypodermically, must be determined by further research.

OBITUARIES.

J. Baxter Upham, of New York, March 17, aged 82. He was a native of New Hampshire, was graduated from Dartmouth College and from the Harvard Medical School, and practised medicine in Boston until the outbreak of the Civil War, through which he served as surgeon-major under General Burnside. In 1880 he came to New York and became a partner in the Corbin Banking Company.

R. E. L. Morton, of Courtland, Cal., drowned while pursuing his professional duties March 9, aged 26.

William Fontaine Lippitt, of Charleston, W. Va., March 11, aged 71.

Peter Cooper, of Wilmington, Del., at Blue Bell, Ariz., aged 44.

John H. Christian, of Baltimore, March 13, aged 58.

Lee Barron, of Sweetwater, Ala., March 7.

CORRESPONDENCE AND CLINICAL NOTES

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

NOTES ON THE ANALGESIC EFFECTS OF X-RAYS.

BY

SEABURY W. ALLEN, M.D.,

of Boston, Mass.,

Not infrequently, patients whom I have subjected to x-rays for one cause or another, have spoken of the relief of the pain or discomfort which previously existed in the part exposed. Only lately, when a patient with varicose ulcers of the leg, emphasized the fact, was the subject thought worth looking into. Other cases, similar to the following, might be mentioned, but are not, for insufficient evidence that the x-light was the only new factor in the treatment.

CASE I.—Mrs. S., aged 36. Two skiagraphs of the hands were taken for diagnosis of chronic rheumatic arthritis. On her next appearance, five days later, she said that since the exposure was made her hands had been comfortable, and that she had been able to resume practise on the piano, which she previously had had to abandon.

CASE II.—Mrs. H., aged 62. The patient was from the Boston Dispensary. She was treated therapeutically for epithelioma of the nose. Three days after the first treatment she said that all the smarting and irritation had disappeared, that this smarting had been very severe, especially on going out of doors in cold weather. About 10 days later the ulcerated area showed the first signs of healing.

CASE III.—Mr. S., aged 59, a patient of Dr. F. M. Briggs. He had a discharging sinus of the shoulder of eight months' standing, following operation for removal of fragments of bone. Skiagraphed for diagnosis preparatory to operation. Several days later he said that not only was there freer motion in the joint but that it felt quite comfortable. On this account the operation has been temporarily abandoned.

CASE IV.—J. L., aged 32, a patient of Dr. Hubbard, Carney Hospital. Skiagraphed to confirm diagnosis of Pott's fracture. His wife, who came for the negatives 48 hours later, was skeptical about the existence of the fracture because "the ankle felt so much better since he was here." During this time no treatment had been given.

CASE V.—Mr. F., aged 24, a patient of Dr. F. M. Briggs. Skiagraphed for possible foreign body from an old punctured wound of the foot which had healed three months previously. The pain was so severe that an exploratory operation was being considered. When the negatives were delivered, three days later (no foreign body having been found), he said that it did not make much difference any way, for, with the exception of a slight tingling for an hour and a half after the exposure, the pain had been entirely relieved. Consequently the operation was abandoned.

CASE VI.—Mrs. R., aged 28, a patient of Dr. H. P. Mosher. She was treated therapeutically for varicose ulcers of the legs. On her second appearance, four days later, she said that she had no pain either in the ulcerated area or in the hip-joint; that before the first exposure she had suffered greatly with pain in both these places.

CASE VII.—F. P., aged 12, a patient of the Boston Dispensary. Treated experimentally for bilateral tuberculous sinus of the neck of one year's duration. On his second visit, three days afterward, he said he felt more comfortable than at any time in the past year, and that for the first time this winter he had been able to throw snowballs, because his shoulders felt so much stronger."

CASE VIII.—Mrs. R. (negress) about 85 years old, patient of St. Monica's Home. She was treated therapeutically for chronic ulcer of dorsum of foot of over 50 years standing. Three days after the first exposure she said that she "knew it would heal, for it had stopped burning and paining." No effort at healing could be seen, however, until a week later.

With regard to Cases II (epithelioma), VI (varicose ulcer), and VIII (ulcer of foot), the relief of pain preceded any effort toward healing of the ulceration; at least as far as could be seen macroscopically. In Case II, it was 10 days before; in Case VIII it was eight days before; and in Case VI there has been no effort at healing at all. Furthermore, in Cases I (rheumatism), and V (punctured wound), there was nothing to heal. Therefore it would seem that the disappearance of pain was neither coincident with nor in any way related to the formulation of granulation tissue. The contrary is generally believed.

With regard to Cases No. 6 (ulcer) and No. 7 (tuberculous sinus) another point of interest may be mentioned. In the first, although only the lower leg was exposed, the pain in the

hip-joint was relieved, and in the second, although only the sides of the neck were exposed, there was improvement in the shoulders. In seeking for an explanation of this, the nerve supply of the parts in question, suggests itself. In the former case, branches of the anterior crural nerve supply the skin where the light was directed, and also partly supply the hip-joint; and in the latter, the rays penetrated the roots of the brachial plexus, which also supplies the shoulder muscles. In other words, there was in each case a beneficial effect noticed, in a region at a distance from the one exposed, but supplied by the same nerves that were subjected to the light. In neither of these instances did the distant region receive the rays, as they were protected by clothing and lead screens. While nothing can, of course, be proved by two cases, it seems reasonable to suspect that x-rays may influence distant parts, either reflexly, or through some electric phenomena along the course of the nerves.

It is not asserted that in any of the cases reported, analgesia followed immediately the application of the rays, but that it did in each instance within 48 hours. This effect cannot have been due to suggestion, for not only was the question of pain not discussed previous to the exposures, but its presence was not even realized until the patients volunteered the information, and spoke of the subsequent relief.

These reports are made in the hope of stimulating others to investigate further along these lines.

A CASE OF ARTHRITIC PURPURA.¹

BY

W. CLINTON KELLOGG, M.D.,

of Syracuse, N. Y.

The disease described by Osler as arthritic purpura, and also known under the name of Henoch's purpura, is so extremely interesting and of such clinical importance that to omit reporting a case when recognized, would certainly seem an error. I will therefore describe in detail a case which I now have under my own care:

John M., aged 14, has the following history: As to his family there is no history of specific disease on either the paternal or maternal side. The father was an alcoholic and died suddenly about one year ago after a prolonged debauch. The mother is in good health. Three of her sisters, however, have died from pulmonary tuberculosis. Other members of the immediate family, a brother and sister of the child are, so far as I am able to learn, free from disease.

From birth until the age of two years my patient showed no signs of ill health, having had no sickness except one attack of acute diarrhea at the age of 18 months. He recovered from that, grew well, but the mother states that he was backward in learning to walk. After the second year of his life he began to manifest signs of failing nutrition, and gradually developed a rachitic condition. He did not learn to walk until three years old. He remained delicate and at the age of seven he contracted scarlet fever which was complicated by acute nephritis during which he nearly lost his life. He was ill nine weeks. In the summer of 1900, at which time he came under my care, he began to develop gastrointestinal derangements. He suffered from attacks of intestinal colic and diarrhea, lasting a few days, subsiding under treatment, but reappearing at frequent intervals; and associated with this were outbreaks of urticaria, most manifest on the flexor surfaces of the forearms. He also had frequent attacks of nose-bleed. During the succeeding fall and winter the gastrointestinal disturbance and skin lesions, while subsiding to a marked degree, did not wholly disappear. In March, 1901, he contracted acute catarrhal pneumonia and was ill three weeks. The following August the boy was brought to me for the relief of a skin lesion which assumed the type of erythema multiforme. This was distributed quite generally over trunk and limbs, but more especially over the flexor surfaces of the latter. The mother informed me that the child had had frequent attacks of abdominal pain and diarrhea during the preceding summer; that at one time the stools contained a substance resembling tar; that he had suffered from pain and soreness of his joints, more especially of the knees and ankles, which made it difficult for him to walk. Under treatment the child made little progress toward recovery. Dr. H. C. Baum was asked to see the case with me. He made a diagnosis of Henoch's purpura and gave an unfavorable prognosis.

At present the child presents the following conditions: He is spare of flesh, pale and anemic; head large; receding lower jaw, enlarged joints. He walks with a stumbling gait, and

¹ Read before the Syracuse Academy of Medicine, January 21, 1902.

manifests many symptoms of rachitis. The heart is increased in size; lungs normal; spleen slightly enlarged; kidneys diseased, as the report will show; tongue clean; distaste for food; frequent attacks of diarrhea, but not always associated with abdominal pain. The skin manifestations are those of the erythema type, with many minute points of blood extravasation scattered here and there over the surface of the body. The face frequently presents a puffy appearance and there is slight swelling and pitting of the lower extremities.

The blood examination, made by Dr. William H. May, shows the number of red cells to be 4,000,000; white cells 5,500; hemoglobin 70%; no leukocytosis, but the eosinophiles are increased to 7%.

Examination of the urine shows the amount secreted in the 24 hours to be 14½ ounces; sp. gr. 1.030, acid in reaction, trace of albumin, no sugar, urea normal. Microscopic examination shows granular casts, red blood-cells, amorphous urates and bacteria.

PRIORITY IN TENOTOMY.

BY

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of Philadelphia.

To the Editor of AMERICAN MEDICINE:—In reply to the inquiry of L. D. Sheets, M.D., in your issue of March 8, 1902, I desire to quote as follows:

Lectures on Orthopedic Surgery, by Lewis A. Sayre, M.D., edit. 1888, page 6, "Dr. David L. Rogers, of this city, was the first to perform tenotomy in this country; he divided the tendo-Achillis in 1834, assisted by my colleague, Prof. James R. Wood. Dr. Richardson, of Kentucky, wrote an elaborate and instructive essay on the subject in 1838. Dr. Detmold, who is now a Professor of Orthopedic Surgery in the College of Physicians and Surgeons in this city, a German himself, and who had enjoyed the advantages of Prof. Stromeyer's instruction in Germany, introduced among us subcutaneous myotomy in 1837, three years subsequent to the introduction of tenotomy by Dr. Rogers, and made zealous efforts to render us conversant with its technicalities and therapeutic efficacy." Orthopedic Surgery, by James K. Young, M.D., edit. 1894, page 370: "To Stromeyer (1831), however, belongs the credit of having first accomplished tenotomy as it is now performed. The success of the operation spread rapidly, and Dieffenbach, Bouvier, Pauli, Duval, Jules Guerin, Bonnet, and Scoutenten quickly adopted it. Into England it was introduced by Whipple (1830), and Little (1837), and later into this country by Rogers (1834), Dickson (1835), Detmold (1837), and Mutter (1844)." Orthopedic Surgery by James E. Moore, edit. 1898, page 23: "Tenotomy was first performed in America in 1834, by David L. Rogers, of New York. In addition to those already mentioned, the names of Buckminster, Brown, Buck, Detmold, Davis, Sayre, and Taylor stand out in bold relief."

Other references are unnecessary to show that my statements were based upon reliable authorities and I take pleasure in referring to the above and trust that Dr. Sheets will find them convincing.

ACUTE SUPPURATIVE HEPATITIS.

BY

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After reading my report of a case of Acute Suppurative Hepatitis in AMERICAN MEDICINE for February 15, 1902, Dr. John C. Munro, of Boston (to whom I am a total stranger), very kindly wrote to me on the subject, in which he is, apparently, particularly interested. The case was an obscure one, no cause being found for the condition, which the autopsy showed to be an acute suppurative hepatitis, the liver being uniformly filled with minute abscesses no larger than the head of a pin. Dr. Munro says "it is perfectly typical of cases of portal pyophlebitis from appendicitis," of which he has reported a number of cases, some of them almost the exact counterpart of my own. He kindly sent me an article on "Lymphatic and Portal Infections Following Appendicitis," read before the Philadelphia County Medical Society, and published in the *Therapeutic*

Gazette for January 15, 1901, and referred to a report of more recent cases in the *Boston Medical and Surgical Journal* for January 9, 1902. After reading Dr. Munro's article, it seems to me very probable that the case I reported was one of the same character as he describes, though careful examination failed to find anything to suggest appendicitis, and nothing at the partial postmortem examination (at which I was not present) was found to indicate a previous appendicitis or a resultant portal pyophlebitis; though, on account of the incompleteness of the autopsy, it is quite possible that such a condition might have been overlooked. The uniform distribution throughout the liver of the minute collections of pus would certainly suggest a circulatory origin; in fact, it is hard to conceive how the condition could have been produced in any other way. This being the case, the most probable seat of infection is the portal vein, in which a previous phlebitis had been set up, this being more commonly the result of a preexisting appendicitis than of any other condition. The symptoms in this case seemed to point to obstructing cholelithiasis, which was the diagnosis at the time of operation. Hepatic abscess had, of course, been considered, but the conditions present did not seem to point in that direction.

In the light thrown on the subject by Dr. Munro's article, and in the absence of any other more probable cause, it seems altogether likely that the condition of acute suppurative hepatitis in the case I reported was the result of an infection carried through the portal vein from a preexisting undiscovered appendicitis.

RUPTURE OF UTERUS DURING LABOR.

BY

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CASE.—On January 7, Y. W., a Polish woman, aged 38, an octipara, was at full term. A Polish midwife was in attendance, and labor began about 5 p. m. Patient had strong pains and about 6 p. m. the head was born. After this there was apparently no further progress for some time, although the expelling force was good. Between 7 and 8 o'clock the midwife ligated and severed the umbilical cord. Soon afterward the family became alarmed and determined to call a physician. I received the call at 8.30 and at 9 I was present.

When I arrived the head was fully born. I cleansed my hands very hurriedly. Upon examination I found the cord severed, and inferred that the midwife had just finished doing this and that her excitement was due to apprehension for the life of the child. This inference later on proved to be wrong, at least partially, as before stated. Thinking to hasten labor in behalf of the child, I attempted to deliver immediately by traction on the head, but was unable to accomplish this at once. The woman was having no more pains. Traction was continued with intervals of rest for about 10 minutes, when the child was born at 9.20 p. m., dead. The birth was followed by a moderate gush of blood and amniotic fluid. With my left hand I gripped the uterus through the abdominal wall and secured fairly good contractions. Twenty minutes later the placenta was in the vagina and was withdrawn. I now injected 60 minims of fl. ext. ergot into the thigh. The uterus was still firmly held and apparently good contraction maintained. At no time was there any hemorrhage visible after the gush following the end of the second stage, but very shortly afterward the woman showed symptoms of collapse, and in 15 minutes after the end of the third stage she expired.

The child was a male and well formed, had a large circumference around the shoulders and weighed 12 pounds. Examination of the perineum showed no lacerations whatever. Vaginal examination, which had been omitted until this time on account of my doubts as to the aseptic condition of my hands, showed a laceration beginning in the lower uterine segment to the left anteriorly extending upward well into the fundus and involving the entire thickness of the uterine wall with its peritoneal covering. The examining hand found ample room to pass through the rupture into the peritoneal cavity, which was filled with blood. The bony pelvis was normal.

The etiologic factors in the case are: A woman who had had eight previous labors at full term and in none of them had she been attended by a physician. The second stage following the expulsion of the head was quite prolonged and attended by strong pains. The child presented normally but was large around the shoulders. The management and manipulations of the midwife certainly aggravated the conditions present, even if they were not the sole cause.

ORIGINAL ARTICLES

ON THE DIAGNOSIS OF BILATERAL CYSTIC KIDNEY.

BY

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of Baltimore, Md.

Professor of Medicine, Johns Hopkins University.

The condition of bilateral cystic kidney is more often recognized at autopsy or discovered by the surgeon than diagnosed during life by the physician. In Montreal and Philadelphia I had dissected four cases of the kind in children or in adults, and it always seemed to me that the cases presented clinical features distinctive enough to enable one to make the diagnosis during life. Yet this, I believe, is very seldom done. Of the two cases which have been in my wards in the Johns Hopkins Hospital, in one the diagnosis was easily made.

CASE I.—A. W. N., male, aged 59, admitted October 3, 1893, with dyspnea. He had been a hard worker, with no history of any special excesses. He had been ill on and off for 10 years, chiefly with dyspnea and recurring attacks of shortness of breath. These had increased of late very rapidly, so that he had become incapacitated for work.

On admission he was orthopneic and cyanosed, with a rapid, feeble pulse. The heart was dilated and the impulse feeble and diffuse. On auscultation there was a gallop rhythm, but no murmur. There was marked sclerosis of the superficial vessels, and the case was thought to be one of general arteriosclerosis with secondary hypertrophy and dilation of the heart. The abdomen was enlarged and tense. The liver was greatly enlarged, reaching nearly to the navel. The spleen could not be felt. There was no note whether or not the kidneys were palpable. The abdomen was sodistended and the liver was so large that it is quite possible they might not have been felt. The urine had a specific gravity of 1.016, a slight trace of albumin, and numerous granular casts; no blood. He had no history of hematuria.

For a week he remained in very much the same condition, with a marked gallop rhythm and shortness of breath, and signs of beginning effusion in the chest and abdomen. On the thirteenth he died suddenly.

Autopsy, No. 461.—There were found marked hypertrophy and dilation of the heart, general arteriosclerosis and emphysema. The kidneys were greatly enlarged, measuring 21 by 11 cm. They were universally cystic, the cysts ranging in size from a pea to an egg, containing clear yellow, and in some places turbid, material. There was no dilation in either pelvis, and the ureters were normal.

CASE II.—Florence S., aged 28 (Med. No. 9,479), admitted January 21. Her parents were dead. She had one sister and two brothers, living and well. She had one sister, aged 30, who had had, so the doctor said, hemorrhages from the kidney. There was no history of tuberculosis in the family.

She had never had any serious illness. Nine years before she had chills and fever for a couple of weeks. She had always enjoyed good health. For three or four years she had been troubled with headaches, chiefly frontal. Once she had bleeding from the nose. She had had no shortness of breath. As a child and young girl, she took part in games without any trouble. Appetite and digestion had been very good. The abdomen had never been swollen. She did not have to rise at night to micturate; no increase in frequency during the day. Her menstruation had been regular. She had always had a somewhat sallow complexion.

Present Illness.—About a year ago patient noticed that for nearly a week the urine was of a blood-red color. There was no pain, no fever, no chills. She did not go to bed, and did not stop work. She had no further trouble until Monday, December 6, when at 10 p. m. she had a severe attack of pain in the right side, which was very sharp, and lasted until 3 o'clock the next day. She did not have a chill, and does not think she was feverish. The doctor thought she was passing a gallstone. The day previous to this attack she noticed that the urine was bloody; and it remained so for nearly two weeks. She did not notice that there were any clots in the urine. She remained in bed for nearly three weeks on account of the prostration and weakness following the loss of blood. The pain in the left side persisted at intervals, coming on in paroxysms. She thinks she was yellow for some days at this time. On December 6, she noticed for the first time that there was some distention of the abdomen, and she thinks that for some time she had felt the waistband to be tight. Since the attack there had been increasing frequency in micturition during the day, sometimes every hour and a half. She did not think that she passed more urine at one time than at another. She had not had headaches for nearly a month before the attack. When the pain was very severe she had vomiting with it. The week after she got out of

bed, she noticed that her feet were a little swollen, and that the eyelids were puffy. The bowels had been regular.

Condition on Admission.—She was a healthy looking, well nourished woman, skin rather sallow, mucous membranes a little pale, no edema. The pupils were equal. The pulse was 76, of good volume, tension plus. The radials and temporals were sclerotic. The thorax was well formed, expansion good; the lower left axillary region appeared fuller than the right.

There was slight general pulsation over precordia. In fifth interspace the impulse could be felt in the anterior axillary line. The point of maximum impulse was in the fourth interspace, 9 cm. from the midsternal line. The relative cardiac dullness began at the upper margin of the third rib, did not pass to right of midsternal line, and at the fourth rib extended $\frac{3}{4}$ cm. from the midsternal line. There was a soft systolic murmur at the apex. The second sound was sharply accentuated. The diastolic shock was well felt.

Abdomen.—The skin of the lower part of the thorax and abdomen generally was decidedly more pigmented than the other parts of the body. There was fullness in both flanks, more in the right than in the left. The respiratory movements were slightly diminished; no peristalsis. The right flank was occupied by a large tumor which could be grasped between the hands, and which descended slightly with deep inspiration. It was a little irregular on the surface, not at all sensitive. In the left flank a second tumor could be made out, feeling rather larger and fuller than the one in the right. It reached a point $\frac{3}{4}$ cm. to the left of the middle line, and below to about 3 cm. above the crest of the ilium. It was irregular, and presented numerous nodular bodies on the surface. It felt much more superficial than the tumor on the right side. It descended very slightly with inspiration. The percussion note over both tumors had a dull tympany. Both tumors became much more prominent and could be much more readily felt when the patient assumed the knee-chest position. The spleen was not palpable. The liver flatness began on the middle of the sixth rib in the parasternal line, and extended to the costal border. The gallbladder could not be felt.

Blood.—Red blood-corpuscles, 2,400,000; hemoglobin, 40%; leukocytes 6,000.

Urine.—On admission 900 cc., straw-colored, specific gravity 1.007, distinctly acid, slight trace of albumin; the catheterized specimen after centrifugalization showed a few red blood-corpuscles, no casts. Urea, 7.2 grams. A daily analysis was made of the urine during her stay in hospital. The specific gravity was persistently low. In the 19 examinations of the urine made during her stay, in only one did the specific gravity reach 1.009, usually it was 1.007 and 1.008. There was always a slight trace of albumin, and as a rule a few red blood-corpuscles. Once, on February 6, a hyaline cast was seen. An exceedingly interesting point was that on February 5, cholesterol crystals were seen in the urine. The amount of urine rarely reached above one liter; on February 2, she passed three liters. The urea ranged from between 5 and 6 grams the lowest, to 19 grams the highest. She had no fever.

A diagnosis of bilateral cystic kidney was made on the basis of the presence of the tumors in the flanks, recurring hematuria, with the cardiovascular and urinary changes of a sclerosis of the kidneys. The patient left the hospital February 11, 1899, feeling very comfortable.

She was readmitted on February 27, 1900, in a condition of urgent dyspnea. From her friends it was learned that she had remained well and had been at work. She had at times passed bloody urine. For four days she had only been able to speak in a whisper, and had great difficulty in getting her breath. She said that it hurt her when she swallowed, and the trouble was altogether in the throat. She had frequently had attacks of vomiting, and on the morning of admission spat up thick blood clots. She had no fever, no chills.

The patient was in great distress, and it was rather difficult to get an answer. When admitted she was breathing 20 to the minute, very labored and loud and noisy. The alae nasi were dilated, and all the accessory muscles of respiration were in action. The heart's impulse was visible and forcible. She had a very bad night and became cyanosed. The thorax was clear. There was nothing to be seen on careful examination. Examination of the throat showed a few small patches of exudate, but there were no diphtheria bacilli in smears, and subsequently none grew on the cultures. At 6 p. m., on February 28, she became so cyanosed, and there was such distress that Dr. Baer performed tracheotomy. The difficulty in respiration was not at all relieved; the respirations were as full and labored, and there was the same retraction of the lower sternum and interspaces. The tube was perfectly clear, and a large volume of air passed in and out, apparently without obstruction. As it was thought that possibly she might have laryngeal diphtheria, antitoxin had previously been given.

She sank gradually and died at 5 a.m. on March 1. The urine examined during this admission showed a specific gravity of 1.013, many red blood-corpuscles, no casts, urea 3 grams to the liter. The examination of the abdomen showed the presence of 2 large tumor masses, and Dr. Fletcher thought that the left had increased in size, and in comparison with the charts previously made it evidently had increased a good deal.

Autopsy No. 1,498, performed by Dr. McCallum: Before opening the abdomen a mass was felt on the left side extending to the level of the crest of the ilium, and centrally to within 2

fingers' breadth of the navel. On the right side the mass was not so large, but it could be felt in the right hypochondriac and in the right epigastric region.

The abdomen was opened with a crucial incision. The stomach was vertically placed and the lesser curvature made an acute angle reaching nearly as low as the navel. The edge of the left lobe of the liver reached 8 cm. below the costal margin. The cecum bulged in the right iliac fossa. The transverse colon was below the level of the navel, and had a pear-shaped fold reaching to the pubes. Neither kidney could be seen. On lifting the splenic flexure of the colon an enormous cystic kidney was seen. The cysts were plainly seen through the peritoneum. On the right side the hepatic flexure of the colon turned directly over the kidney and was attached to the duodenum. When the intestines were turned to the right the lower end of the left kidney was seen to extend to within 3 cm. of the promontory of the sacrum. The relations of the duodenum to the kidneys were interesting. On the right the first portion of the duodenum lay directly upon the cystic kidney. The terminal portion of the duodenum was in direct contact with the left kidney for 6 cm.

The left kidney was 22.5 cm. long by 9.5 cm. wide, and reached above to the sixth interspace in the mammary line. The pancreas lay directly over it for most of its length. The spleen was above it, but was not adherent. The organ consisted of a congeries of cysts, some with clear, others with dark-colored contents. It weighed 1,400 grams. The ureter was normal. The upper end was formed of one large cyst nearly 9 cm. in diameter.

The right kidney was 16 by 9.5 cm. and reached upward to the level of the seventh interspace in the nipple line. It weighed only 950 grams. It had the same contents. The mucosa of the pelvis and ureters was normal.

There was marked hypertrophy of the heart and general arteriosclerosis.

These two cases illustrate very well the general features of polycystic kidney, and one of them the facility with which the diagnosis can be made in the presence of a characteristic combination of symptoms. These are: First, the presence of bilateral tumors in the flanks. Polycystic kidney is rarely unilateral. Of the 88 cases collected by James Ritchie (Laboratory Reports, Royal College of Physicians, Vol. IV), in all of the cases except two both kidneys were involved. Of the 62 cases tabulated by Lejars only one was unilateral. The tumors are often unequal in size, as in Case II here reported. There is no difficulty in recognizing that the tumors are renal. In Florence S. the tumors could be readily grasped bimanually, and the situation and mobility left no question at all that they were enlarged kidneys. This circumstance alone should at once arouse suspicion, as other forms of bilateral renal tumor are excessively rare.

Secondly, the cardiovascular changes of interstitial nephritis. In Case II these were very pronounced—the sclerosis of the arteries, the dislocation of the apex beat to the left and the accentuation of the aortic second sound.

Thirdly, the condition of the urine, which is that of advanced interstitial nephritis. In Case II it was very characteristic—the low specific gravity, the slight trace of albumin, a few red blood-corpuscles and scanty tubercasts. An exceedingly interesting feature in her case, which I do not see mentioned, was the presence of cholesterol crystals in the urine.

Fourthly, hematuria, which in Case II had recurred in attacks for more than a year. It was present in 19 out of 78 cases (Morris). It may recur in paroxysms, as in Case II, and be associated with much pain.

While the local symptoms, such as pain and tumor, may be well marked, it is the cardiovascular, gastric and pulmonary features of interstitial nephritis which attract attention. That the diagnosis has been made so rarely, in only 5 out of 62 cases, according to Lejars (quoted by Morris) is owing to the fact that the patients are seen (as was Case I) with signs of cardiac insufficiency and dyspnea, and no attention is directed to the kidneys; or they are attacked with sudden coma or uremia. Once the attention of the physician is called to the characteristic combination of symptoms, the diagnosis is very readily made.

In these operative days the question of diagnosis has a very practical aspect. At a medical society I saw a

surgeon exhibit a very large cystic kidney, which he had just removed. I asked whether the other kidney had been examined, as the condition was almost always bilateral, and he replied that he had not had his attention called to it. The patient died in a few days with symptoms of uremia. As a rule, in polycystic disease operation is contraindicated, since removal of one kidney simply takes away one-half of the already reduced kidney tissue available for excretory purposes. Even in unilateral cases it is stated that the remaining kidney may become cystic after a few months. Mr. Henry Morris, in his recent treatise on *Surgical Diseases of the Kidney and Ureter*, states that he has operated on three cases of unilateral disease, and in two of them the patients were alive and well several years after, and he states that "when the opposite kidney has been ascertained, either by inspection or palpation, to be unaffected, we are not justified, in my opinion, in refusing a patient the relief from severe pain or hemorrhage, or from the dangers of infection from suppuration of the cysts, which nephrectomy affords."

SKIN ERUPTIONS IN MALARIA, WITH THE REPORT OF A CASE OF URTICARIA.¹

BY

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Although malaria cannot be classed as an eruptive fever, skin changes are by no means infrequent. They are, however, neither uniform nor constant. Unquestionably, the best known is herpes; but as to the frequency of this, opinions are decidedly at variance. Griesinger saw it 117 times in 390 cases (30%), and Kelsch and Kiener also think it present in one-third of the cases of malaria. Plehn, however, observed it but once in 714 cases of malaria treated by him on the west coast of Africa. Laveran says that it is common, without giving any figures. Verneuil and Merklen consider it the most frequent eruption in malaria; on the other hand, both Thayer and Christiani state that it is less frequent than urticaria. From my own experience in hospital work, I have received the impression that it occurs in not quite half the cases. Unfortunately, I have, at present, no statistics at hand to support this belief.

The favorite seats of the herpetic eruption are the lips, the wings of the nose, the cheeks, and the eyelids. It may occur on the cornea and on the tongue; Laveran has observed it on the soft palate; Kelsch and Kiener, on the scalp; and Mannaberg, on the hand. As a rule, the lesions are discrete; sometimes they are confluent. The old literature contains references to black vesicles and black crusts. According to Ornstein, this feature is ominous of an impending pernicious attack.

Herpes has considerable diagnostic value, since, barring pneumonia, it is more common in malaria than in any other disease. It is particularly of value in the differential diagnosis between malaria and typhoid fever; furthermore, in cases of coma of obscure nature its presence may give the correct clue. As an illustration of this I will cite the following case:

A man of about 70 years was brought into the Philadelphia Hospital in an unconscious state. Finding a trace of albumin in the urine, the resident physician diagnosed uremia and practised venesection and sweating. The man reacted imperfectly, and when I saw him he was still somewhat stuporous. The most striking feature about him was a profuse herpetic eruption in the crust stage, covering a large portion of the face—the lips, the cheeks, the nose, and the eyelids. There was no fever at this time, but the pulse was full and bounding. The presence of the herpes, which could in no

¹ Paper read at the meeting of the Section in Medicine of the College of Physicians of Philadelphia, December 9, 1901.

way be connected with uremia, suggested the existence of malaria. Within a day or two the man had a typical malarial paroxysm, and made a complete recovery after the administration of quinin, the albumin even disappearing from the urine.

There seems to be a difference between the herpes of malaria and that of ordinary colds. This difference was pointed out to me by Dr. Alfred Stengel. The malarial herpes is more in clusters and generally more abundant than that of colds. This was true in the majority of cases that I have seen.

In the opinion of some authorities, herpes has also a prognostic value; thus, Powell, who has had an enormous experience in Assam, where he had about 100 cases of malaria daily for nine years, states that if herpes shows itself during a paroxysm the attack is over. In illustration of this he cites seven cases, and remarks that this significance of herpes is common knowledge in Assam. In some cases he found an eruption of herpes to take the place of the malarial paroxysm; of this he had proof in his own person. There are in such cases the prodromes of an attack, but only herpes appears and not the chill. The natives call herpes "the feces of the fever."

As far back as 1828 Nepple made similar observations. He thought that in untreated malaria the paroxysms augmented in intensity until the fifth one. During the sweating stage of this herpes appeared, and deserved to be looked upon as part of the critical discharge. He had, however, known the fever to continue after the appearance of the herpes. Later observations show that herpes is not associated in this regular manner with any particular paroxysm; sometimes it appears in the first, sometimes in the subsequent ones. It may manifest itself during the chill, during the sweat, or during the febrile stage. Sometimes it even sets in after the administration of quinin has cut short the paroxysms; and, as Powell believes and as Verneuil and Merklen hold, it may be a manifestation of larval malaria.

Next in frequency to herpes is urticaria. So far as my experience at Blockley Hospital is concerned, this eruption must be looked upon as a rare complication of malaria. In a service covering three summers, during which numerous cases of malaria were observed in my wards, there were but two instances of urticaria; nor did I hear any of my colleagues mention the occurrence of such an eruption in their wards. Personally I saw only one of the two patients; his history is as follows:

R. G., aged 36, a native of Canada, single, white, and a tinsmith by occupation, was admitted September 14, 1901, with a history of chills and fever extending over four days. Nine days before admission he had been struck on the head with a club and had received two gashes on the scalp that required suture. He had had the diseases of childhood, including scarlet fever, and also mild rheumatic attacks, but not for the last four years. Twelve years previously he had had gonorrhea; and for years he had been addicted to the abuse of alcohol. In the beginning of September he had an eruption upon the back of the hands and forearms, upon the arms, and upon the dorsum and outer aspect of the feet; it took the form of small vesicles and itched severely. The largest of the vesicles was no bigger than the head of a pin. The patient could squeeze water out of them. At night, when he was under the covers, the itching was worse. The rash remained out about three days and then disappeared suddenly. It was followed by a scaly desquamation on the palms of the hands. The malaria set in September 10, with chilly feelings, weakness, and vertigo, which were followed by fever and sweat. After that time he had these paroxysms on alternate days until his entrance into the hospital.

Beginning with the first attack, he had an eruption, apparently during the hot stage of the paroxysm, covering especially the face and arms, and accompanied by itching. The eruption would last a few hours and then disappear. On the day of his admission he had a malarial paroxysm, preceded by a chilly sensation, and followed by fever and sweat. During the fever he had an extensive eruption of large and small wheals, some reaching the size of five-cent pieces, and varying in color from white to red.

I saw him on September 16, two days after his entrance, at 11 o'clock a. m. He had had a chill that morning at 9.30. After its subsidence he felt hot and thirsty, and drank some water, which he vomited. He was somewhat delirious, but afterward went to sleep. About noon, when he awoke, the rash was out. He was in the acme of the fever when I saw him. The entire body—the trunk, the arms, the legs, and

to a less extent the face—was covered with a peculiar eruption of irregular wheals, mainly of a yellowish-pink color. In some places the wheals were discrete; in others, they seemed to be confluent, forming huge, zigzag patches, one of which measured seven inches in length by one and a half in width. The color was not everywhere the same, being influenced by the distribution of the blood and other factors. On the inner surface of the arms and the anterior surface of the forearms the patches were reddish; on the trunk, more of a yellowish hue; on the anterior surface of the thighs, yellowish; over the knees, red. The skin around the patches was of a pale rose-color, the color readily disappearing upon pressure. When thus dispersed, the skin became yellowish. Over the back, the patches were smaller and of a deeper red; on the forehead they were crescentic and closely resembled the eruption of measles. On the trunk, the lesions were so thick that scarcely any normal skin was visible. There were not many patches on the face or neck, and none on the backs or palms of the hands, or on the soles. The anterior surface of the right forearm was also nearly free. No patches could be seen on the mucous membranes, nor was there any dermatographia; the application of cold water did not seem to modify the appearance of the skin in any way. The patient was intensely thirsty, and said that he was burning up. His temperature was 104.8° in the axilla; the pulse was small, irregular, and 108. I immediately examined the blood, and found typical pigmented tertian parasites. An attempt was made to take a photograph of the patient, but on standing up he became weak and had to be put back into bed.

On September 18 he had chilly feelings at 7 o'clock in the morning; at 8 his temperature was 102°, but by 11 it had gone down to 98.8°. There was no sign of any rash; there was some perspiration. The administration of quinin was begun on that day.

On the twentieth he had no chill, but again there was a rise of temperature, this time to 103°, with great thirst, but without rash. The patient felt perfectly well, except for the thirstiness, but did not perspire until nightfall. The quantity of quinin was then increased, and thereafter he remained well.

As he had had no quinin before the eruption appeared, and as the urticaria coincided with the paroxysms, it is fair to assume that it depended upon the malaria.

Most observers have found that the urticaria appears during the febrile stage and subsides with defervescence, but it may usher in the attack. The eruption may recur again and again, with each paroxysm; and in a case reported by Zeissl it appeared no less than 14 times. The majority of the patients have never had urticaria before, but Laveran has met several who had previously suffered with the affection, and who evidently had a predisposition to such skin lesions. The eruption may or may not be accompanied by intense itching. In my own case there was nothing but a slight sense of burning and tension. After the disappearance of the eruption no trace of anything is left behind, except perhaps some scratch marks. The most common seats, according to Christiani, are the abdomen, the trunk, and the joints, especially the anterior external aspect. The face and neck are rarely involved. Christiani has seen it only once upon the face. In my own case there were patches upon the forehead. The lesions are sometimes ecchymotic, as in cases reported by Warschauer and by Guelliot. Some observers have found malarial urticaria more frequent at certain seasons and in certain years than in others. The reasons for this variable frequency are not apparent.

It is possible to distinguish three types of urticaria in malaria:

1. That accompanying the malarial paroxysm, and usually appearing during the febrile stage, as was the case in my own patient—the febris intermittens urticata of older writers.

2. That replacing the chill, an example of which has been recorded by H. C. Wood; the urticaria substitutes the chill, the other features of the paroxysm remaining.

3. That taking the place not only of the chill, but of the entire paroxysm. The occurrence of this so-called *intermittent urticaria* has been pointed out by Verneuil and Merklen, Scorezewski, and others. Ordinarily it presents a distinct periodicity, but not rarely it is more or less irregular in the time of its appearance.

The diagnosis of the malarial nature of the condition is to be based upon its intermittent character, upon the

discovery of the plasmodium in the blood, and upon the effect of quinin. Neither the urticaria accompanying the paroxysm nor that substituting it has anything in its clinical manifestations to distinguish it from urticaria occurring under other circumstances. We may perhaps draw a therapeutic lesson from this, viz., that when we cannot find an unmistakable cause for urticaria, it is wise to try quinin.

It is important to remember, as is emphasized in a recent paper by H. C. Wood, Jr., that quinin is, of itself, capable of inducing an urticarial eruption, but there is no warrant for the opinion, that has at times been expressed, that so-called malarial urticaria is always due to quinin. My own patient had not had any of the cinchona preparations before the urticaria appeared, and the same is true of numerous cases recorded in the literature. The malarial toxin, it appears, shares with many other substances the power of so influencing the vasomotor system and the vessel walls as to induce limited effusions into the cellular tissues of the skin. It is not improbable that sometimes these effusions also occur in the mucous membranes, and this may account in part for the intense thirst and burning that were present in my patient.

By the side of herpes and urticaria, the other skin affections occurring in malarial fever sink into quantitative insignificance. There is, for instance, *herpes zoster*, which is seemingly much more common in malarial districts than elsewhere. Sometimes the zoster accompanies malarial neuralgia; at others, it follows it; but it may also occur independently. Winfield reports eight cases of herpes zoster in malarial subjects, and claims to have found the plasmodium in four out of the seven examined for it. He is of the opinion that zoster is an infectious disease of malarial origin, and that when it is epidemic malaria is also prevalent. Lesser also admits the possibility of malaria producing herpes zoster.

Brocq mentions a case of *eczema nummularis* of the nose that proved so rebellious to treatment that cauterization was finally determined upon. Before it was undertaken, however, the periodic increase and wane of the eruption attracted attention. Quinin was given and a cure followed; but whenever the administration of that drug and of arsenic was neglected, the eruption returned. Brocq concludes that in all rebellious dermatoses paludism should be thought of and quinin administered.

Miliaria and *sudamina* have been noted, but do not appear to be common. A *scarlatinaform erythema* has been observed in children with malaria. According to Thayer and Ségard, there is sometimes an eruption closely resembling measles. It proceeds to desquamation, but is unaccompanied by conjunctivitis. *Erythema nodosum* is occasionally met, particularly in children; but the possibility always exists that it may have been produced by drugs. *Edema* of the extremities is not uncommon in malarial cachexia. Sometimes a diffuse edematous swelling accompanies urticaria, and disappears promptly with it. It is evidently angioneurotic and coordinate with the urticarial eruption. *Purpura* and *furunculosis* are occasional concomitants of malaria. *Jaundice* is not uncommon. It occurs especially in the remittent form, but may be met in tertian malaria, as in a case reported by Jackson. It is a urobilin, and not a bilirubin jaundice. In chronic malaria, pigmentation of the skin—so-called *melanoderma*—is occasionally observed.

Sensini and Vignoto-Lutato report a case in which multiple *ulcers*, especially of the lower extremities, occurred in a woman of 25; they had a marked tendency to recurrence. As the woman had malaria, and as no other cause could be found, they were attributed to this disease. *Taches bleuâtres* or *taches ombrées* may occur in malaria as in typhoid and other fevers, and are due to the same cause, viz., pediculosis.

Gangrene has been repeatedly observed. Petit and

Verneuil, who have collected the reported cases, recognize two kinds of gangrene: associated and idiopathic. In the first, the gangrene manifests itself as a sequel to injuries and wounds, in persons suffering from malaria. It is evidently accidental, and is connected with adventitious factors. The second, or idiopathic, form, of which Osler has reported two cases, seems to be directly and causally connected with the malaria. It may be dry, of the Raynaud type; or it may, as in Osler's case, be moist.

CONCLUSIONS.

From this brief study we may draw the following conclusions:

1. Skin eruptions are not rare in malarial infection.
2. The most frequent are herpes and urticaria.
3. Neither of these presents any specific characters.
4. Both may occur in any stage of the malarial paroxysm, although urticaria is most frequent in the febrile, and herpes in the sweating stage.
5. In obscure cases, herpes and urticaria, especially the former, may have considerable diagnostic value.
6. Three types of urticaria are recognizable: That accompanying the paroxysm, usually the febrile stage; that taking the place of the chill; and that substituting the entire paroxysm.
7. In their appearances, these three do not differ among themselves, nor from urticaria due to other causes.
8. In cases of urticaria of obscure etiology, the blood should be examined for plasmodia. Whether found or not, quinin is worthy of a trial.

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Against Muscle Spasm.—The discovery of a method of checking spasms in muscles and preventing pain due to the pressure of tumors upon the nerves is attributed to Dr. Leonard J. Corning. He injects solidifying oils in and about the tumor and arrests its growth by shutting off the blood supply. The oil remains in the tissues permanently without inconvenience. The muscle spasms are checked also by solidifying oils.

Against Pure Food Bills.—A protest forwarded by the drug section of the New York Board of Trade and Transportation against pure food bills (Senate Bills Nos. 336 and 497) requests that the subject be referred to a commission or chemist connected with the Department of State. They claim that hasty legislation, which is an injustice to both producer and consumer alike, is apt to result from unscientific investigation. For instance, in the first bill, constant disagreements as to what constitutes "harmful substances" would open the way to endless litigation. The second bill does not explain clearly what is injurious to health, and therefore its enforcement would be based on individual opinions which would also lead to disagreements. Exception is also taken to such legislation because the bills conflict with the laws of many of the states with which New York exchanges products.

A SIMPLE EXPLORATORY LAPAROTOMY AS A PALLIATIVE, AND PERHAPS CURATIVE, MEASURE IN INOPERABLE CARCINOMA OF THE BREAST. PRELIMINARY REPORT OF A CASE.

BY

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In view of the recent literature on Beatson's operation, and Dr. Robert Abbe's report of his experience with this new measure, a brief preliminary report of a case now under observation is interesting, and offers much food for thought.

Nearly 10 years ago I removed the left breast of a negress aged 45, doing but the partial operation. There was no return for nine years, when, immediately following a vaccination four months ago, pains started in the neck on that side, spreading over the old scar and extending to the right side, followed rapidly by the appearance of hard nodular tumors in and under the skin of the entire chest. When she came to me the skin over the chest was bound down in a firm mass. The right breast was enormous, containing several hard tumors. The nipple was not retracted. The skin had the typical pigskin appearance, so much dwelt upon by Banks. Both axillas and supraclavicular spaces were full of secondary growths. It was a typical picture of *cancer en cuirasse*.

The subjective symptoms were equally pronounced. There was great dyspnea, especially at night, the patient spending most of the time in a chair by the fire. There were burning, lancinating pains through the affected area. The face showed pain and air-hunger. The patient walked bent over.

Recognizing the case as inoperable, I decided to try the Beatson operation, and sent the patient to our colored hospital, the Georgia Infirmary. On opening the abdomen I found a fair-sized uterine fibroid, with tubes and ovaries and bowels adherent to the uterus. The liver was examined for secondary growths, but none found. Just as I started to break up the adhesions the patient stopped breathing, and only after much effort was she resuscitated. Fearing to continue the anesthesia, the abdomen was closed without any further interference.

One of the skin tumors removed under cocaine has been examined by Professor V. A. Moore, of Cornell University, and pronounced carcinoma.

At the end of 48 hours a very marked change was evident in the right breast and in the skin over the old scar and over the entire chest. This was admitted by the four physicians who were present at the operation and who have seen the patient since then. The right breast had gone down one-half; the pigskin appearance was gone, and the breast lay wrinkled and flabby on the chest. The subjective symptoms had disappeared with the objective ones; the pains and the dyspnea were gone, and the woman could sleep all night on her back. The facial expression had changed to one of comfort and contentment. The patient declares that the relief to the subjective symptoms came soon after she recovered from the anesthesia. But three weeks have gone by since the operation, and each day an improvement is visible in the skin, which is becoming movable and soft. The supraclavicular and axillary growths are movable and are somewhat smaller; the former seemed to feel first the retrograde movement.

Of course, the outcome in this case is yet to be seen, but the following thoughts naturally suggest themselves:

That the value of the Beatson operation is not from the removal of the ovaries, but simply the effect of opening the abdomen, as in the case of tuberculous peritonitis. And, again, it is not unlikely that the beneficial effects of opening the abdomen and letting in the atmospheric air is greater when the peritoneum is not disturbed. I have a feeling that the retrograde process in my patient is probably greater than if I had removed the tubes and ovaries, as I started out to do, and disturbed more the peritoneum. When there is much injury to the peritoneum, probably much of this stimulation of the recuperative powers is expended in healing the local lesion.

That even if this measure is not curative, its palliative action well recommends it as an operative procedure. Any one who saw the pronounced condition and distress of this woman, and the rapid and startling change in the subjective and objective symptoms following this simple exploratory incision, would not hesitate to do the operation again on the next case presenting itself.

If one exploratory laparotomy can produce such a change, why not repeat the operation when the improvement comes to a standstill. The abdomen can be opened repeatedly, if need be. If it is simply a question of letting air into the peritoneal cavity, a very small hole and a very insignificant operation will accomplish the purpose. We can open the window and air the house once a week, if necessary.

Any one who has opened the abdomen and seen the parietal and visceral peritoneum studded with tubercles, or, again, has opened the abdomen to find a tumor to all appearances sarcomatous, and has seen these conditions disappear after the exploratory laparotomy, is somewhat prepared to believe in the possibility of the change so quickly wrought in my patient.

This rapid relief of the infiltrated tissues by the end of 48 hours, points to the lymphatics as the channels of escape. May not the opening of the peritoneal cavity, the great lymph sac of the body, and the introduction of air, stimulate the great lymphatics of the abdomen, and cause a current that carries everything along with it, inciting a similar current in the lymphatics of the chest? A proper solution of this problem must aid us in the solution of the greater problem before us. It seems to me that the physiologic laboratory can help us here. Experiments on animals can be made to show the effect of exposing the peritoneal cavity upon the abdominal lymphatics and the current in the lymphatic duct. The current can be studied in the smaller vessels under the microscope, and measured in the lymphatic duct, by those skilled in such work. If we can hope ever to cure cancer which has gone beyond the knife, it is to the lymphatics we must look. Granting that we cannot expect a permanent cure in this case, such a rapid and marked change for the better in a malignant condition so pronounced, must increase our faith in the potency and promise of the recuperative and resistive powers, and in the ultimate solution of this great problem before the profession. Tilt's expression, written not so long ago, "No temporary relief but in opium; no permanent rest but in the grave," does not hold good today, thanks to the early radical operation, to the Coley method, to the Finsen method, and latterly to the x-ray; and now, perhaps, to the simple operation of opening the abdomen.

SOME NEW FACTS IN THE CHEMISTRY OF THE STOMACH, WITH SPECIAL REFERENCE TO THE QUALITATIVE AND QUANTITATIVE ANALYSIS OF ORGANIC ACIDS IN THE STOMACH.

BY

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of New York City.

The original object of the experiments, the description of which here follows, was to determine whether my floating method as a test for lactic acid (*N. Y. Med. Jour.*, August 10, 1901) was characteristic solely of lactic acid. These experiments led me to the discovery of very important data as regards the chemie examination of the gastric contents. So important are these data that possibly the etiology of some of the diseases of the stomach will have to be modified to agree with the facts discovered. I wish especially to refer to the easy method of detecting succinic acid, which, when present in certain proportion, gives rise to a great deal of human misery. Let me say a few words about this acid before describing the tests.

Succinic acid in the stomach, unless introduced as such, means but one thing—presence of mold. This statement is borne out by these two facts: 1. Whenever I have found a large quantity of mold in the stomach-contents the reaction for succinic acid was positive. 2. The ether extract of a culture of mold gave the

positive reaction for succinic acid. The mold can be recognized macroscopically, microscopically and chemically by the test for succinic acid. Macroscopically, mold is recognized by the yellowish-green appearance of the stomach-contents, something always mistaken for bile, or by yellowish-green clusters in the chyme, or by very thin red-brown threads, which again are mistaken for blood streaks. The microscopic appearance I will not consider here. Mold in small microscopic quantities, or their spores, are rarely absent in the aspirated chyme, but only when the quantity is excessive or illy-proportioned to the hydrochloric acid does the patient have symptoms. From my experience I would state there are many sufferers from this cause. Nevertheless, the presence and diagnostic value of the discovery of this acid has seemingly escaped the attention of even the most eminent men. This acid has been found, but those who mention it as being present occasionally in the chyme speak of it as rather a curiosity. Riegel says (Edition 1897, page 165): "Little admixtures of bile . . . are not rarely seen in the fasting stomach . . . can be recognized without trouble by looking at the chyme. The chemical proof is mostly superfluous." Riegel then accepts the yellowish-green color as macroscopic evidence of bile, being so sure of it that he even does not consider it necessary to apply any bile test. I also considered the yellowish-green contents of the stomach as being bile; but, after recognizing the presence and characteristics of mold, I did not blindly and religiously accept what has come down to us, but applied the tests for bile. In several experiments, using both Gmelin's and Pettenkofer's test, the characteristic bile reaction was absent. Aside from mentioning the fact that mold is also found in the stomach, nothing else is said by Riegel. Leube, in his book on "Specielle Diagnose der inneren Krankheiten," does not mention anything about the presence of mold. The same is true of Fleiner ("Lehrbuch der Krankheiten der Verdauungsorgane, 1896). Von Jaksch says of mold that he not infrequently found it in vomited matter. With this little introduction I simply want to lay stress upon the significance of the presence of succinic acid, which is the chemic expression of the existence of some mold variety. From the investigations I have made it seems that even the several parts and phases of mold life may give different chemic reactions. I would again say that the presence of succinic acid plays a great part in the relative feeling of the patient. Unfortunately, the study of pathologic chemistry of the stomach has been confined mainly to HCl, pepsin, lactic acid, and in a less degree to the study of rennet.

The qualitative test for succinic acid is made in the same way as the test I published for lactic acid (*New York Medical Journal*, August 10, 1901) and for butyric and acetic acids (*New York Medical Record*, November 16, 1901). One cc. of filtered chyme is extracted in a separatory funnel with 5 cc. of ether and the clear ether extract is floated on the iron solution (1 drop of a 10% ferric chlorid to 2 cc. water in a narrow test-tube). Succinic acid gives at once a mahogany red ring at the junction of the ether layer with the iron solution, the top of the ring being very sharply defined and very dark.

In the experiments, the reports of which follow, I have used such organic acids as are liable to be found in the stomach. I also took care that the solution of the chemicals I used were only of such acidities as corresponded with the acid values found in the stomach. That is, the acidities of the solutions with which I experimented did not exceed 100.

In these experiments I have used, as before, 1 drop of a 10% solution of ferric chlorid to 2 cc. of distilled water in a narrow test-tube, upon which was floated the ether extract of the acid solution. The ether extract was made by putting 1 cc. of the acid solution into a Strauss separatory funnel, adding to it 4 cc. of ether,

shaking it well, allowing the lower layer to escape by opening the stopcock, and then floating the clear ether extract on the iron solution.

The acid solutions used were: Citric acid, acidity 100; formic acid, acidity 65; malic acid, (a) acidity 92, (b) acidity 42, (c) acidity 26; oxalic acid, acidity 40; propionic acid, (a) acidity 40, (b) acidity 74; succinic acid, acidity 62; tartaric acid, acidity 75.

The result was as follows: Citric acid, no noticeable reaction; formic acid, no noticeable reaction; malic acid, acidity 92, sulfur-yellow ring, unchanged by the addition of 0.3 alcohol (95%); at an acidity of 42 the sulfur ring was faint, and at the acidity of 26 there was no reaction. Oxalic acid gave a scarcely noticeable sulfur-yellow ring. Propionic acid, acidity 40, no reaction; acidity 74, no reaction. Succinic acid, dark mahogany, jasper-red ring. Tartaric acid, slight sulfur-yellow ring.

In the same way (1 cc. of the solution to 4 cc. ether floated on the iron solution) I floated the following solutions of acid phosphates: Calcium monophosphate, acidity 80; potassium monophosphate, acidity 55; sodium monophosphate, acidity 40; magnesium monophosphate, acidity 100.

None of these acid phosphates gave the sulfur-yellow ring, but the monosodium and monomagnesium phosphates gave milky rings. For comparison I floated lactic acid of as low an acidity as 14 and the result was very positive. Even with such a low acidity there was a very marked sulfur-yellow ring at the line of contact of the ether extract with the iron solution.

From the results of these experiments it is evident that my test for lactic acid, *i. e.*, the sulfur-yellow ring at the line of contact between the ether extract and the iron solution, is a very positive one, and equaled by no other method, known heretofore. The only other acids, that were used in these experiments and that gave the sulfur-yellow ring were: Malic, oxalic, and tartaric. In these the yellow color was never so beautifully expressed and, furthermore, much higher acidities were required. The deduction would consequently be that whenever we want to test for lactic acid the acidity of the agent to be tested should be lowered by dilution with distilled water to an acidity of 20. When so reduced, the agent to be tested, should then be extracted with ether in the proportion of 1 cc. of the first to 4 cc. of the latter, this to be shaken in a Strauss separatory funnel and then floated on the iron solution which consists of one drop of a 10% ferric chlorid solution to 2 cc. distilled water. If now a sulfur-yellow ring appears it would indicate lactic acid. Thus the superiority of my floating test is certainly proved.

Some differentiation can be made between tartaric and lactic acids. If we look at the test-tube with the light in front of us, the ring of tartaric acid is opaque and appears Nile green, when looking with the back turned to the light and a white sheet of paper held behind the test-tube the color of the ring appears sulfur-yellow. In lactic acid the sulfur-yellow ring is perfectly transparent in both of these positions. Furthermore, if 0.3 alcohol (95%) is added to each test-tube (tartaric and lactic acid) and the test-tube shaken, the ether columns of each remain clear, but the iron column of the tartaric acid becomes cloudy; the iron column of the lactic acid, however, remains clear. The sulfur-yellow rings of the malic and oxalic acids soon fade, the lactic acid ring remains. As I have learned to attach much importance to the detection of succinic acid, I will give still another test for it. If a solution of succinic acid is boiled with a few drops of concentrated sulfuric acid in a test-tube, the odor of celery is given off. Another test experiment with propionic acid (cross between butyric and acetic acids) resulted as follows: Four drops of propionic acid were added to 3 cc. of ether in a Strauss separatory funnel and floated on the iron solution as before described. A chocolate colored ring appeared. The addition of 0.3 alcohol (a little less than 1 cc. of ether extract was used

here as in all the preceding experiments) turns this chocolate ring into a pinkish, with a saffron yellow ring above it.

The general deduction to be made from these experiments, as bearing upon the chemico analysis of the chyme is: Whenever the ether extract of the chyme shows a ring, yellow or reddish brown, organic acids are present. Lactic acid must never be assumed unless the chyme still gives a sulfur-yellow ring after the acidity of the chyme has been brought down to 20 by dilution with distilled water. When testing for lactic acid no alcohol must be added, as this in itself gives a yellow ring. (This would, however, require a very strong or a large quantity of alcohol).

The knowledge of the presence of organic acids is sufficient for practical purposes. When we have given Ewald's test-meal (roll and water), and upon analysis find the acidity of the free organic acids to be very high, 30, 40, and more, we certainly have to deal with a pathologicochemico condition of the stomach. I am absolutely certain that this pathologicochemico condition will surely effect a pathologicoanatomic condition in the course of time. It is the presence of organic acids which give rise to symptoms and produce misery. It is the volatile nature of many of them, especially the butyric and succinic acids, that are very disastrous in the long run, affecting not only the stomach but also other organs: the esophagus; the pharynx; the middle ear through the eustachian tube; the nose through the posterior nares; the eyes through the lacrimal ducts, and the frontal cells through continuity from the nose.

My next experiments were made with a view of finding a good indicator for free HCl, to be used for volumetric analysis. I found the best to be a saturated alcoholic solution of tropæolin 00. It is true that the tropæolin does not mean HCl alone but for chyme analysis it is sufficient. Sulfuric, nitric and phosphoric acids react on tropæolin the same as on HCl. Guinzbarg's reagent, which is expensive and unsuitable for rapid volumetric analysis has proven to be no better than the tropæolin. Like tropæolin, Guinzbarg's reagent reacts with other free inorganic acids besides HCl.

In the experiments now to be reported I employed the same acids, both the free organic and the acid phosphates, in the same degree of acidity as before mentioned. The indicators experimented with were methyl violet, congo, dimethylamidoazobenzol, and tropæolin 00. The claims for these indicators are that free inorganic acids turn blue when methyl violet or congo are added and that they turn red on the addition of dimethylamidoazobenzol or tropæolin. The first one, methyl violet (0.01 gm. to 50 cc. water), did not give a blue color with acetic acid (acidity 50), butyric acid (acidity 40), citric, formic, lactic, malic, propionic or succinic acids, but did give the blue color with oxalic and tartaric acids. Furthermore this indicator is not readily suited for volumetric purposes. Congo paper reacted more or less on all these acids in the acidities mentioned and when a deeper colored paper was used the reactions on all became very prominent. This would certainly not recommend a congo solution to be used as indicator of free HCl in volumetric analysis although it is advocated by some. What is true of congo paper is also true of dimethylamidoazobenzol. Like congo this reacted not only on the free organic acids enumerated above but also on the acid phosphates of magnesium (acidity 40) and of calcium (acidity 50); the acidities of 40 and 50 are certainly not excessive for the chyme. The saturated alcoholic solution of tropæolin 00 failed to give the characteristic reaction (purplish, cherry red) with the following organic acids (acidities as above): acetic, butyric, citric, formic, lactic, malic, propionic, succinic and tartaric, but it did react on oxalic acid. Repeated and successful experiments with the saturated alcoholic solution of tropæolin 00 justify me in recommending very strongly this indicator

for the volumetric determination of the free HCl. From the fact that dimethylamidoazobenzol also reacts on free organic acids (proven contrary to the accepted belief) we can see that by a combination of tropæolin, dimethylamidoazobenzol and phenolphthalein we can estimate the several acids of the chyme. I use the first indicator for the estimation of the free HCl, the second for the free organic acids and the last for determining the general acidity. My method of procedure is as follows: To 5 cc. of the filtered chyme, in a beaker, are added two drops of the saturated alcoholic solution of tropæolin 00, this is titrated in the ordinary way with the decinormal solution of caustic soda until the purplish-red color has entirely disappeared and the contents in the beaker have the appearance of an ordinary tea infusion, somewhat of an amber color. This is the end reaction for tropæolin. Now two drops are added of a .5% alcoholic solution of dimethylamidoazobenzol which turns the contents in the beaker red, in the presence of organic acids. The titration is further continued until the chyme turns a lemon color. Now two drops of a 1% alcoholic phenolphthalein solution are added and the titration resumed until the beaker contents turn red. The buret reading at the end of each titration is noted and the calculations are made accordingly.

This method has a great advantage over all other methods. First, we need but 5 cc. of chyme for all determinations; and second, we have an easy way for the qualitative and quantitative estimation of organic acids. The first titration gives the quantity of the free HCl; the second the possible quantity of the organic acids. I use the words, "possible quantity of organic acids," advisedly, first, because dimethylamidoazobenzol ceases to indicate after a certain dilution of the acid. This can readily be verified by titrating any free acid with phenolphthalein and the dimethyl, the latter giving the lower acidity; secondly, the presence of acid phosphates must be eliminated, as the acid phosphates of magnesium and of calcium also react on dimethylamidoazobenzol. For the determination of the general acidity we calculate from the buret reading of the beginning of the first titration until the end of the last. For example, if the buret reads at the beginning 3.5; at the end of the tropæolin titration 4.8; at the end of the dimethyl titration 6.3, and at the end of the phenolphthalein titration 7.2, the calculations will be for the 5 cc. of chyme used; 26 for the free HCl; 30 for organic acids, and 74 for the general acidity.

To corroborate my claims for the tropæolin I have employed two methods. First, I have taken a mixture of inorganic and organic acids, the acidities of each of which I ascertained previously and titrated first with tropæolin and then with the dimethylamidoazobenzol. The titration of this mixture gave me results corresponding with the acidities of the two component acids. Secondly, I sought to verify by the method of Martius and Lütke, the free HCl acidity determined previously with tropæolin. As we know, this method of Martius and Lütke, which I slightly modified, is the most exact for the quantitative, volumetric analysis of all the chlorides and of the free HCl. The only drawback to this method is the time it consumes. Three times have I thus corroborated the tropæolin titration. My modification consisted in not using a decinormal silver solution but a solution which contains 29.075 gm. of silver chlorid to 1 liter of distilled water. One cc. of this solution equals 0.1 gm. sodium chlorid or 0.00607 of Cl. The titrating agent was a solution of 7 gm. rhodan ammonium (ammonium sulfocyanid) to 975.6 cc. distilled water. These two solutions are so proportioned that 2 cc. of the latter neutralize 1 cc. of the first.

It might be well to give the exact method of procedure. To 46 cc. distilled water are added 4 cc. nitric acid (specific gravity 1.2), then are added 10 cc. of the filtered chyme, 10 cc. of the silver solution, 5 cc. of a saturated solution of ferri sulfate, the indicator, or any other salt

of iron, ferri chlorid excepted, and then distilled water added to make 100 cc. After the precipitate had settled, we filter. When this is done, 50 cc. of the filtrate are very carefully titrated with the rhodan solution from the buret until the filtrate just turns from white to a yellowish-pink. This is the end of the first titration, and the buret reading is taken. This titration determines all the chlorids present, from which the organic chlorids are yet to be deducted. To the determination of the latter we now proceed. Ten cc. of the filtered chyme are evaporated in a platinum crucible over a Bunsen flame between which and the crucible a sheet of asbestos is placed to prevent any loss of the chyme by spattering. When completely evaporated, the asbestos is removed and the platinum crucible comes in direct contact with the flame. The contents in the crucible ignite, and just so soon as no more flame issues from the crucible it is removed. Too long glowing of the ashes will cause loss of the chlorin by volatilization. The ashes are now rubbed with a glass stick, a little warm distilled water having been added. The complete extraction of the chlorin of the ashes is done by means of about 100 cc. of warm distilled water. This chlorin containing water is passed through a filter. To make sure that all chlorin has been extracted, the last drop from the funnel is tested in a test-tube with AgNO_3 ; the absence of a white precipitate proves the absence of Cl. The warm filtrate is cooled, and for the estimation of the Cl it contains, 10 cc. of the silver solution, 4 cc. HNO_3 and 5 cc. ferric sulfate solution are added, and all titrated with the rhodan solution until the white turns to a yellow pink. The buret is now read. The calculations are made as follows. Every 2 cc. rhodan solution used corresponds to 1 cc. AgNO_3 solution, so that if 5.5 cc. of rhodan has been used for the first titration it would mean that just so much of the 10 cc. silver solution was added in excess. Consequently, only the difference between the 10 cc. AgNO_3 originally added and the 5.5 found as excess (4.5 AgNO_3) were required to bind all the Cl of the chyme. (That it should not mislead it will be remembered that only half of the first quantity was used for titration, consequently the 5.5 rhodan for 50 cc. would mean 11 cc. for the 100 cc., which would again mean 5.5 AgNO_3). If, now, the second titration showed that 17.7 cc. rhodan solution was used, it would correspond to 8.85 cc. AgNO_3 used in excess. Consequently, of the 10 cc. AgNO_3 added the second time, only the difference between 10 and 8.85, that is, 1.15 cc. of the AgNO_3 , were actually required to bind all the Cl of the ashes. The difference of the 4.5 of the first titration, and 1.15 of the second titration gives the number of cc. AgNO_3 required to bind the Cl present in the chyme as free HCl. In this example the difference is 3.35. As 1 cc. of the AgNO_3 solution equals 0.00607 Cl, this number is multiplied by 3.35, which gives 0.0203345 Cl present as free HCl in the 10 cc. of the chyme. As 36.5 cc. HCl equals 35.5 Cl, the 0.0203345 will equal 0.0209073 HCl. From this last number the acidity of the chyme can be calculated, inasmuch as 0.3 HCl to 100 cc. water gives an acidity of 40.

According to this absolute method I ascertained the free HCl in three specimens of chyme. Compared with the acidity obtained from titration with tropæolin, the first specimen gave free HCl 22 with tropæolin and 26.6 with the AgNO_3 method. The second gave free HCl 30 with tropæolin and 30.26 with the AgNO_3 . The third gave free HCl 34 with tropæolin and 37 with AgNO_3 . The slight differences can certainly be overlooked in colorimetric analysis.

These experiments certainly qualify the saturated alcoholic solution of tropæolin 00 to be recommended as an excellent indicator for the free HCl determination, standing in no way behind the Guinzburg reagent which is more expensive and has no superior qualities over the tropæolin 00.

The next question I want to touch on is the determi-

nation of the presence of acid phosphates. The presence of these acids is usually assumed. Since, however, I discovered a test for phosphoric acid and the acid phosphates of sodium, potassium, magnesium and calcium (this might be true also of other acid phosphates) I recollect having seen acid phosphates but once. The reagent for the phosphoric acid and the acid phosphates is the red ferricyanid obtained from ferric chlorid and ammonium sulfoeyanid. Phosphoric acid and the acid phosphate decolorize the red solution. The red ferricyanid solution can be made of 5 cc. water to which are added two drops of a 10% solution ferric chlorid and five drops of a 5% solution of ammonium sulfoeyanid. To test the chyme for acid phosphates one cc. of the red solution of ferricyanid is put into each of two test-tubes. To one test-tube is added chyme and to the other a like amount of water. In the presence of acid phosphates the red ferricyanid is either entirely discolored or it markedly pales. Comparison of the two test-tubes will be of great value. The question might arise that possibly the composition of the chyme although containing acid phosphates would hinder the reaction of the ferricyanid test. To this I will say that whenever the chyme gave no reaction with the ferricyanid the addition of scarcely more than a trace of an acid phosphate to the chyme prior to the application of the test gave a positive result. This conclusively shows that whenever acid phosphates are present in the chyme they react on the ferricyanid, and when the latter does not react there are no acid phosphates.

Dr. Einhorn's article "The Occurrence of Mold in the Stomach and its Probable Significance" (*Medical Record*, June 16, 1900) attests to his great observing power. He likewise notes the presence and the significance of mold in the stomach, but he associates this with hyperchlorhydria. Of course if one takes the dimethylamidoazobenzol as the titrating agent for free HCl, the acidity value, reached by such titration will be high. But my experiments, related in this article, disprove the qualification of dimethylamidoazobenzol as a reagent for free HCl only. The cases reported as hyperchlorhydria evidently were not cases of hyperchlorhydria but of organacidia gastrica. My attention was directed to Dr. Einhorn's article, however, too late to make any further abstracts.

RESPIRATORY GYMNASTICS: METHODS.

BY

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In the discussion of this subject, I will limit myself to the citation of only a few of the various methods of lung development. These are as follow: (1) By action on the cutaneous sensory nerves; (2) by forced voluntary breathing; (3) by developing the muscles of respiration; (4) by converting costal into diaphragmatic breathing and conversely, diaphragmatic into costal breathing; (5) by eliminating a definite group of synergistic muscles concerned in inspiration.

1. *Action on the Cutaneous Sensory Nerves.*—Recalling the brief reference made to the lung and heart reflexes, we know that these phenomena may be evoked by cutaneous stimulation. This can be best accomplished by cold water ablutions aided by vigorous friction. This stimulates the nerve centers presiding over the functions of respiration, circulation, digestion, nutrition and excretion. The flux and reflux of blood between the periphery and viscera are facilitated and leukocytosis is produced. The stimulation of the respiratory center is greater through the cutaneous nerves than through the vagus branches to the respiratory organs. In animals which have been made apneic, cutaneous stimulation (cold water) induced strong respiratory movements. We

must therefore regard cutaneous stimulation as a simple and powerful stimulant of the center of respiration.

2. *Forced Voluntary Breathing*.—I believe we are justified in protesting against prolix methods for securing lung development. Such methods accomplish little and defeat their object by their monotony which causes them to be relinquished soon. I am a strong advocate of simple deep inspirations with forced expirations unaided by "breathing tubes" or constrained postures. The Röntgen rays have furnished me with the indisputable proof that this method is correct. It is well known that the lungs in health appear in the fluoroscopic picture as light areas. The lungs appear brighter during inspiration than expiration; in fact, the greater the lung inflation the brighter the reflex. I have examined patients with the fluoroscope during the time "breathing tubes" were used, and while different postures and exercises were practised, as advocated by various writers. I was unable to demonstrate that any method was superior to that of forced breathing. In fact, in some of the advocated methods, the fluoroscope demonstrated the lung phase to be really that of expiration, whereas the object supposed to be attained was lung inflation. To enhance the value of forced inspiration with the object of attaining hyper-ventilation of the lungs, the simple expedient of holding the breath after full inspiration will be found of great value. After a little practice patients are able to hold the breath fully two minutes. If during this maneuver regional percussion is made, it will be found that the position of the lung borders extend beyond the limits attained by forced inspiration alone. The principle involved in explanation of the foregoing phenomenon is one relating to pneumatics, by raising the temperature of a gas we increase the volume. Another simple maneuver is to direct the patient, after taking a forced inspiration, to count slowly. With a little practice 80 can be counted without difficulty. This is an exercise both for the inspiratory and expiratory forces. For rapid lung development inhalations of compressed air by the aid of the pneumatic cabinet is unquestionably the best method. After a limited course of treatment the thoracic capacity may be increased 2%, with a corresponding development both of chest measurements and chest expansion.

3. *Developing the Muscles of Respiration*.—I do not believe in exercises tending toward individual development of the thoracic muscles. Whatever the character of the exercise, it should include the general muscular system. While it is undoubtedly true that expansion of the lung is most evident when the movement of the overlying chest wall is most pronounced, it is equally true that over-development of the thoracic musculature conduces to fixity of the chest. Feebly developed thoracic muscles do not indicate a diminished vital capacity, for after all, chest mobility is more easily influenced by expansibility of the lungs than by the action of the thoracic muscles. I have made many spirometric measurements, and find that when the thoracic muscles are excluded in the chest expansion, as far as possible, the spirometer shows results nearly as good as when they are actively engaged in lung expansion. Breathing exercises do not necessarily influence respiratory action directly. The results achieved are due in the main to the removal of peripheral resistance, thus increasing the arterial circulation, to relief of venous congestion owing to the increased quantity of blood in the arteries and to diminished work of the heart owing to free circulation of blood in the arterial system. The heart is the mainstay of lung development. Like any other muscle, it owes its vigor to the activity of respiration. The exceptional muscular strength of insects is no doubt due to the fact that they respire from nearly every part of the body. Inordinate muscular exercise cripples the heart, while judicious exercise strengthens it. Whatever the nature of the muscular exercise, we must always bear in mind that

the slightest evidence of dyspnea or palpitation is a signal of danger and demands interdiction of the exercise. The ideal exercise, to my mind, is swimming, which conduces to equal development of the muscular system, limits the danger of over-exertion, and secures the tonic influence of the water on the skin.

4. *Reversing the Type of Respiration*.—Thoracic enlargement is attained by elevation of the ribs and descent of the diaphragm. In ordinary breathing, the respiration is chiefly abdominal and the rib movement is slight, especially in the upper chest. In women, the type of respiration is reversed: diaphragmatic descent is inhibited, while the upper chest becomes more expanded and very mobile. It is within reason to regard the diaphragmatic breathing of man as well as the costal breathing of women equally unnatural in certain instances of poor lung development. In women, it is easy to develop the lower lung regions by instituting dress reform, but in men, the remedy must be sought in another direction. The type of breathing may easily be reversed by means of a rubber bandage. If, for instance in women, we wish to restrict the movements of the upper chest, we apply the bandage to the upper bony case, and conversely to the base of the chest when respiratory activity is to be encouraged in the upper part of the chest. The influence of such maneuvers calls forth excessive lung expansion as may be seen in the accompanying illustrations. I need not at this time comment on the extraordinary possibilities of this simple method which I have used for a length of time sufficient to demonstrate its value.

The stethographic tracings (Figs. 1 and 2) were taken over the upper chest, before and after the application of the rubber bandage to the lower chest. The individual

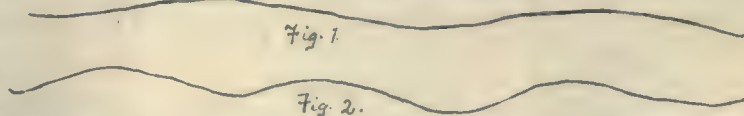


Fig. 1.—Stethographic tracing before application of the rubber bandage to the lower chest. Fig. 2.—Tracing after the application of the bandage, shows exaggerated costal breathing with increase in the respirations.

from whom the tracings were taken showed very little chest mobility.

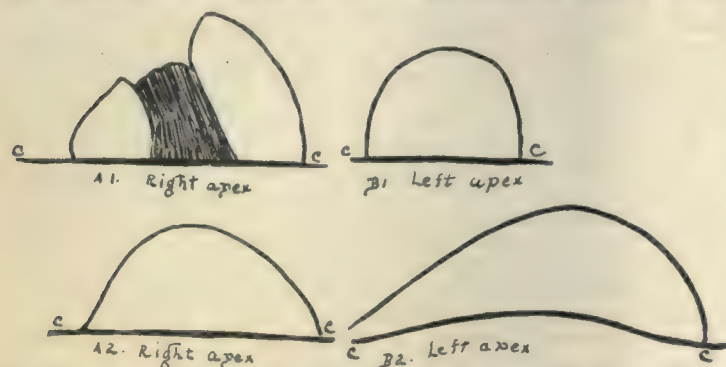
The following tracings (Fig. 3) taken directly from the fluoroscope show the effects of bandaging on the position of the diaphragm. They illustrate more fully than words can describe the possibilities of the elastic bandage in influencing respiration in definite lung areas.



Fig. 3.—Position of the diaphragm after application of the rubber bandage. 1, normal position. 2, position after application of the bandage to the abdomen and lower chest. 3, position after the bandage is wound around the upper chest.

Figures 4 and 5 show the ballooning effects of the apices consecutive to application of the rubber bandage to the lower chest. They are tracings taken directly from the fluoroscope. The practical value of this maneuver is exemplified in tuberculosis implicating the apices when it is desired to concentrate the action of the compressed air. I owe much of my success in the treatment of tuberculosis to what I have called the ballooning process of acrotherapeutics. We know that the parts

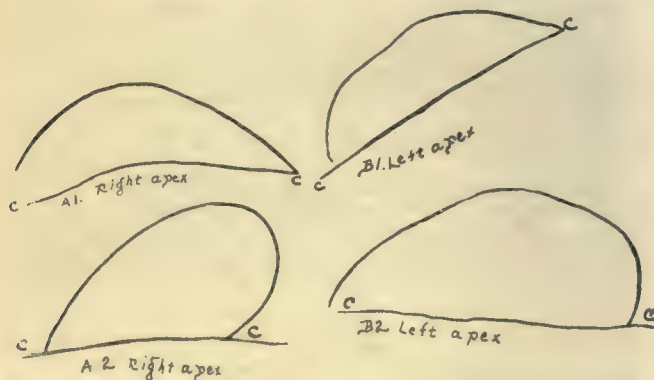
adjacent to tuberculous infiltration represent the points of least resistance and are therefore likely to become emphysematous. In developing an artificial local emphysema by this process, we are but anticipating nature. The good results achieved in tuberculosis by compressed air are essentially due to mechanic action, viz: Dilation of the collapsed lung, readmittance of air,



Tracings from the fluoroscope. Fig. 4.—A1, B1, apices before application of the rubber bandage to the lower chest; the right apex casts a distinct shadow in its middle; case of incipient tuberculosis; tubercle bacilli in the sputa. A2, B2, apices after application of the rubber bandage to the lower chest; ballooning of the left apex is specially pronounced. C, in the cuts represents the clavicle.

and the expulsion of products due to retrograde metamorphoses.

5. *Eliminating Groups of Synergistic Muscles.*—Not infrequently we are called upon to eliminate certain muscle groups for the purpose of evoking respiratory activity in definite lung areas. Here again we may have recourse to the rubber bandage or to the use of strips of adhesive plaster. The ordinary adhesive plaster is exceedingly irritating to the skin and for this reason



Tracings from the fluoroscope. Fig. 5.—Case of incipient tuberculosis; slight physical signs and hemoptysis; no tubercle bacilli in the sputa. A1, B1, apices before application of the rubber bandage to the lower chest. A2, B2 apices after application of the bandage to the lower chest. Ballooning of the left apex very marked. C, clavicle.

I use Johnson's zinc oxid adhesive plaster. The latter will be found unirritating and sufficiently adhesive for all practical purposes.

RESPIRATORY EXERCISES IN THE TREATMENT OF DISEASE.

Pulmonary Tuberculosis.—The greatest gift which the phthisiologist has conferred on medicine is recognition of the curability of tuberculosis. No disease in our nosology is more amenable to treatment. Its successful treatment postulates its early recognition. Manifold are the methods advocated for its early diagnosis, but one and all espouse the application of procrastinated signs for a disease already ingrafted on a soil propitious for its development. The development of lung tubercles is an advanced manifestation of tuberculosis. The time is fast approaching when the diagnosis of pulmonary

tuberculosis will be made by the pathologist and not by the clinician. The time was when the presence of tubercle bacilli in the sputum constituted one of the earliest signs of tuberculosis, but in our present state of knowledge it must be regarded as a late sign. One really questions whether Koch's discovery of the tubercle bacillus has been of benefit to the phthisiologist, for it is true that the majority of physicians delay diagnosis, and consequently treatment, until the tubercle bacilli are demonstrated in the sputum. In the prebacillary period of tuberculosis, scientific diagnoses may have been less frequent than now, but tuberculosis was more often treated at an earlier period in the disease, and if not successfully, it was because our modern hygienic methods were not then recognized. The portrayal of the physiognomy of tuberculosis, so marvelously described by Galen and Hippocrates, was to them good presumptive evidence of the disease, not a tendency to tuberculosis, but the disease itself. If reliance were more often reposed on the Hippocratic physiognomy than on the presence in the sputum of tubercle bacilli, then phthisis would be recognized, treated and cured, and tuberculosis anticipated and prevented. The distinction here made between phthisis and pulmonary tuberculosis is purely an arbitrary one; it is the recognition by a

clinician of a pulmonary condition preceding tuberculosis which the pathologist cannot hope to recognize. I would strongly urge the use of the terms phthisis and bacillary phthisis to designate respectively the pretuberculous and tuberculous stages of phthisis. The stages of phthisis adopted by the pathologist are strictly anatomic and are of no clinical value. In no other disease is the conflict between the clinician and the pathologist more in evidence. The latter strives to establish definite histologic anomalies, while the former should content himself with the recognition of functional anomalies. The service rendered to the clinician by the pathologist is incalculable, but it should not impose upon the former the penance of blind submission. The trend of my argument is in favor of the patient and not science. In all suspected cases of phthisis the patient is entitled to the benefits of the doubt and should be regarded as phthisical unless proven otherwise. It is criminal to usurp the functions of the pathologist by waiting for the demonstration in the sputum of the tubercle bacilli. It is no reproach to the diagnostician if he suspects syphilis and treats the patient in accordance with the supposition. Is not the average physician remiss in the early recognition of phthisis? We circulate literature instructing the laity relative to the prevention of tuberculosis. Why not institute a crusade against physicians for their carelessness? Not more than 10% of the phthisical patients coming to me have ever had their sputum examined for tubercle bacilli, and not more than 20% have had a systematic examination made of their lungs. In this regard I make no mention of advanced methods of examination such as the use of the Röntgen rays. Errors in diagnosis are not so much due to ignorance as carelessness. Sir William Savory tersely remarks: "Consciousness of one's ignorance may do much to avert the errors of carelessness, and he who has confidence in his own judgment should of all men be most careful in inquiry." The treatment of phthisis is based on hygienic methods which will benefit the sick and well alike. The tuberculin test and the Röntgen rays are only applicable when structural changes in the lungs have followed functional anomalies and therefore furnish late evidence of tuberculosis. Loomis¹ in an exhaustive and erudite paper proceeds in the right direction when he strives to collect evidence of a vital condition which predisposes to the development of the tuberculous stage of phthisis. If this evidence were at the command of every physician and applied, a formidable preventive inoculation against

phthisis would be effected. The correction of the chest conditions peculiar alone to the phthisically predisposed would be practically nothing else but vaccination against the disease. Such methods should be advocated with the same stringency as is inoculation against variola. Each school should have an attending physician who would incorporate this duty with his other functions. One of the signs recognized by Loomis as a symptom of the pretuberculous stage of phthisis is chloranemia, which is practically the condition of the blood to which reference has already been made, viz., pulmonary anemia. We must not forget that phthisis, like pneumonia, is a constitutional disease. In both affections the lungs are merely the stage on which the tragedy of somatic infection is played.

The prevention and treatment of tuberculosis is best attained by the "open air" treatment. Fresh air is a specific in tuberculosis. Its specificity is demonstrated with the same certainty as is mercury in syphilis and quinin in malaria. No climate has any special curative quality. To give the patient merely a fresh air environment suggests the privations of Tantalus; he must breathe it; it must enter every lung alveolus; such ventilation is equivalent to aseptic drainage. Bearing these facts in mind, we will no longer regard climate as that indefinite, mysterious and subtle factor which is too often an accommodating haven for the physician's delinquencies when he wishes to transfer his proprietorship of the patient, to death. Among the many reasons adduced why tuberculosis more frequently attacks the apices than any other part of the lungs, one above all others appeals to reason, viz.: the apices move less on respiration than the other parts of the lungs.

Now, any prolonged quiescence of a part destined by nature for activity necessarily represents the *locus minoris resistentie*. As an aid to pulmonary gymnastics of the apices, I would suggest the constant use of the rubber bandage encircling the lower chest.

Bronchitis.—Respiratory gymnastics are of undoubted value in this affection. There is no better expedient for dislodging accumulated secretions in the bronchial tree than forced voluntary inspiration and expiration. Such exercises also encourage the pulmonic circulation, which in itself is a decided step toward resolution.

Bronchopneumonia.—I have described elsewhere a variety of this affection, under the term of septic bronchopneumonia, which gives practically the same clinical picture as is obtained in the second stage of tuberculosis, the only difference being that no tubercle bacilli are demonstrable in the sputa. If untreated, a case of septic bronchopneumonia soon becomes a case of pulmonary tuberculosis. There are, to my knowledge, only two ways of averting this calamity. The first is to trust to the *vis medicatrix nature* which is usually in this affection not responsive to our desires; the second is to dislodge the unresolved exudate mechanically, by aid of compressed air inhalations, with results which are immediate.

Bronchiectasis.—Inhalations of compressed air, which mechanically dislodge the stagnated sputa, is the only palliative measure of avail in these cases. I have treated many such patients, but have never cured them.

Asthma.—For asthma depending on bronchial catarrh, treatment of the latter by compressed air inhalations is practically a specific. In true nervous asthma, the results with the same method of treatment are encouraging. As an adjunct to other methods of treatment in asthma, I regard respiratory gymnastics as indispensable. I employ inhalations of compressed air. The objects which I hoped to achieve by so doing are to readjust the mechanism of the perturbed respiratory apparatus and coincidentally the heart, and to make the respiratory mucosa apathetic to the insults which provoke a paroxysm. My own experience does not tally with the results achieved by perhaps more acute observers, notably Campbell,² who, for instance, regards the

effects of respiratory exercises as often little short of miraculous. It is well to remember that in asthma, as well as in emphysema, the costal type of breathing is only slightly manifest, most of the work being performed by the diaphragm. Here the application of the rubber bandage to restrict diaphragmatic breathing is indicated for the purpose of encouraging costal breathing. In the medicinal treatment of asthma we have much to hope from the observations of the rhinologist who deals with a mucosa, which in function is not unlike that lining the respiratory tree.

Emphysema.—This disease, when complicated with bronchitis, is very amenable to treatment by aid of compressed air inhalations. Treated with the cabinet, the air within the cabinet is condensed with the act of exhalation. In this affection, the difficulty in breathing is at the time of expiration. Theoretically, breathing compressed air would appear to aggravate the lung dilation, but the contrary is often the case, as I have satisfied myself frequently. Deep inspirations increase the capacity of the pulmonic circulation, and thus diminishing the extra work thrown on the right heart, gives almost immediate relief to the dyspnea so frequent in emphysema. There are two other methods of mechanic treatment which I would suggest as extremely serviceable: One method is to facilitate the defective expiratory force by wearing constantly the Martin elastic bandage, which encircles the chest in its entirety; and the other is by the transference of water from one bottle to another by aid of the expiratory effort of the patient. The bottles should hold a gallon of water each, and the arrangement of the tubes is similar to that in the Wolff's bottle.

Arrangement of bottles for aiding expiratory exercises.



Fig. 6.

Osler³ recommends this method for expanding the lung after withdrawal of the fluid in chronic pleurisy. I believe that the effect of such exercise is to promote collapse and not expansion of the lung; at any rate, skiagraphy of the chest during the time this method of exercise is practised, shows the lungs to be in a condition of expiration. Regional percussion also demonstrates retraction of the lung borders. The same exercise is applicable in asthma, the lungs in the intervals of the paroxysms being in a partial emphysematous condition.

Pneumonia.—One of the most egregious errors committed by the internalist is to neglect the after treatment of pneumonia. The treatment of croupous pneumonia prior to the crisis is admittedly expectant; its course being in no wise influenced by drugs. Lung consolidation after pneumonia may exist for months owing to delayed resolution. The recognition of this condition is often difficult owing to persistent pleural thickening over the

involved lung area. It is unnecessary for me to point out the sequels of delayed resolution; the point to which I wish to direct attention is the importance of removing and facilitating the absorption of the exudate. Aside from the presumable existence of an exudate, the lungs after pneumonia, are always crippled and means tending toward restoration of the lung in either condition can only be effected by aid of aerotherapy.

Pleuritis.—In the acute form of this affection rest rather than exercise of the affected side is indicated. It is only when pleural exudates resist absorption that lung gymnastics are indicated. Experiments prove that when fluid is introduced into the pleural sac, artificial respiration will facilitate its absorption. I have seen pleural effusions which had resisted all methods of treatment, including repeated paracentesis, which only yielded to inhalations of compressed air in the pneumatic cabinet.

Ankylosis of the Lung.—I have employed this phrase to designate the formation of pleural adhesions from a previous pleuritis, approximating the visceral together with the lung to the parietal layer of the pleura, a condition analogous to the ankylosis which occurs in joints. Pleural adhesions are exceedingly common and their presence leads to a group of symptoms of which pain and dyspnea chiefly on exertion, are prominent. The objective diagnosis is difficult and is often solved only by treatment. Subject such individuals to a series of treatments with the cabinet or institute a course of lung exercises and one hears such expressions, as, "I couldn't take such a deep breath for months," or, "I feel this side move which it never did before."

Heart Disease.—Twelve years ago,⁴ I urgently recommended pneumatic differentiation by means of the pneumatic cabinet, as one of the most efficient agents then at our command, in overcoming the symptoms of cardiac failure, especially those dependent on an embarrassed pulmonary circulation. Time has in no wise moderated my views, in fact, I regard it as a more efficient measure for restoring disturbed compensation of the heart than the methods of Schott which are now in vogue. In the absence of a cabinet, results nearly as good may be attained by breathing exercises systematically and persistently pursued under the same restrictions that govern the Schott resistance movements. So competent an authority as Quimby⁵ avers, "There is no therapeutic measure (referring to valvular lesions) whose action is so definite or constant." The action of respiratory exercises in heart disease practically amounts to nothing more than the recognition of the fact, "that pulmonary resistance is in inverse ratio to pulmonary capacity" (Campbell). The more completely the lungs are distended, the more capacious is the pulmonary vascular system, hence the less resistance to the right heart and diminution of its work. In conclusion let me add that respiratory exercises have been highly extolled in the treatment of nervous and digestive disturbances, obesity, cholelithiasis, etc., but in such affections, the personal equation as well as suggestion can not wholly be disregarded in the elements of success.

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¹ Loomis: Medical Record, December 10, 1898.

² Campbell: Respiratory Exercises, p. 170.

³ Osler: Practice of Medicine, p. 571.

⁴ Abrams: Diseases of the Heart, p. 81, and Sacramento Medical Times, September, 1888.

⁵ Quimby: Boston Medical and Surgical Journal, August 31, 1899.

Damages for Autopsy.—A verdict of \$500 against the Presbyterian Hospital of New York has been awarded by the Supreme Court to Mrs. Annie Botsford. Suit had been brought against the hospital authorities for performing an autopsy upon her husband's remains without her consent. It was claimed that a brother of the deceased had given the necessary permission to perform the autopsy, but the court barred this evidence on the ground that the widow was the only one who had authority. The verdict is said to be the first of its kind ever given in New York.

PNEUMOGALACTOCELE OF THE BREAST, WITH AN UNIDENTIFIED ORGANISM.*

BY

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Pneumogalactocoele, a term the Greek derivation of which is sufficiently simple, is a tumor containing gas and milk. It might seem superfluous to add the qualifying phrase "of the breast," but I find that the term *galactocoele*¹ was also applied by Vidal de Cassis to a tumor produced by effusion of a white fluid into the *tunica vaginalis*, which he considered to be true milk. The qualifying phrase will also secure more definite indexing. The allied term, *pneumohydrometra*, is defined by Dunglison as "a condition in which gas is generated in the uterus by the decomposition of fluid." With this as a precedent, though not literally indicating the generation of gas, the term *pneumogalactocoele* is chosen in preference to *mastitis aerogenes* as being sufficiently definite, whereas the latter term would unduly emphasize the idea of inflammation, at the same time failing to indicate that the accompanying fluid is of a *lacteous* rather than of a purulent character.

The term *galactocoele* is preferable to *mastitis* for the reason also that it has been generally adopted for a condition of the breast similar in every respect to that now under consideration,² with the exception that the presence of *gas* in such a tumor, so far as I have been able to ascertain, has never before been recorded. The case which I desire to report is probably unique in this respect. The fluid also contained an apparently hitherto unrecognized organism. Dr. Harlow Brooks, corroborating Dr. Berry, has been entirely unable to identify it from the bacteriologic report.

CASE.—The patient, K. L., a primipara, aged 20, was delivered at the New York Infant Asylum, February 7, 1899. It was recorded on that date that her breasts were normal both as to glandular structure and nipples. Labor had been tedious, ending with laceration of the perineum and retained secundines, delivered artificially. There was no excessive hemorrhage and no special evidence of exhaustion other than a rapid pulse (120) which had been of the same frequency early in the first stage. The house physician, Dr. Lawrence T. Royster, decided to do immediate perineorrhaphy under chloroform. The woman sank into a state of syncope requiring abandonment of the operation and a resort to active measures for resuscitation, including free administration of stimulants hypodermatically, and saline infusion under both breasts and into the right median cephalic vein. The location of the mammary punctures afterward seemed to indicate that the injection-needle has passed through the outer margins of the mammary glands instead of beyond them, as had been intended. The patient developed febrile symptoms, commencing almost immediately after delivery, and the treatment included two vaginal douches daily, one of sterile water and the other a bichlorid solution (1:5,000). From the subsequent history, however, the inference seems justifiable that the fever may have been related chiefly or entirely to the mammary complications which supervened. Of these the first was an ordinary suppurative mastitis of the left breast, which required incision on the eighth day and progressed favorably thereafter. The temperature came down to normal on the same day, and remained so. (See chart.)

In the meantime the right breast had been constantly distended from the third day after delivery and had been subject to considerable massage and expression. The infant had never nursed. The general distention gradually subsided and at the end of the third week the tumor which is the subject of this paper had become distinctly localized in the upper and outer quadrant. It was larger than a flattened goose-egg, measuring 4 x 2½ inches, the long diameter corresponding more or less closely with the radius of the breast. The skin over it was cool and natural, and the feeling was that of a rather thin-walled cyst. As the patient had been free from fever for nearly two weeks, it was natural to assume that the contained fluid would be a milky secretion and the tumor therefore an ordinary galactocoele.³ But, to our great surprise, percussion elicited tympanitic resonance over an area measuring about 2 x 2½ inches. This tympanitic percussion note was always obtainable over the uppermost accessible portion of the tumor, changing its location according to the position of the patient. We were evidently dealing with a sac containing gas as well as a liquid.

* Read before the Medical Society of the State of New York, January 29, 1902.

And lastly among the physical signs, active shaking of the breast produced perfectly typical succussion sounds which could be heard at a distance of several feet. Among those who saw the patient at this stage were Dr. E. B. Cragin and Dr. E. A. Tucker, as well as several of my colleagues on the staff of the Infant Asylum, including Dr. E. E. Tull and Dr. G. T. Harrison.

The treatment of the patient is of little interest. On March 1, aspiration drew off about 6 drams of clear, colorless gas, which was collected in an inverted tube under water and sent to a laboratory. But we were informed that the quantity was insufficient for identification as to its composition. A coarse aspirating needle became repeatedly clogged by the coagula contained in the fluid, and after securing a specimen for examination the

ously with 2 cc. of 24-hour broth culture: Result showed no apparent effect.

Guinea pig inoculated in peritoneal cavity with 2 cc. of 24-hour broth culture: Result showed no apparent effect.

Rabbit inoculated in peritoneal cavity with 2 cc. of 24-hour culture: Result showed no apparent effect.

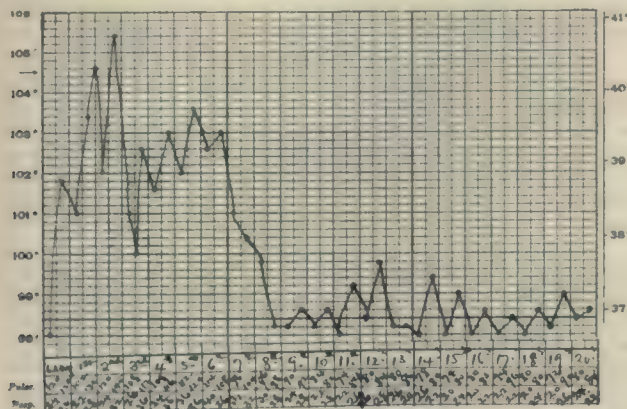
The result of the above experiments would indicate that the germ found was a nonpathogenic organism, or at least one devoid of any pathogenic properties since the inoculations made were productive of no effect upon the animals. A further series of experiments had been planned, by which it was intended to prove this point more definitely and also to decide the question of the identity of the organism with one of the known forms, but by an unfortunate accident the cultures were destroyed and no further tests were possible.

J. L. BERRY, Bacteriologist.

Further material was unobtainable, a new house physician having promptly cured the patient without saving a second specimen of the fluid. By incision, irrigation, and packing, the galactocoele was rapidly obliterated. Anaerobic cultures might have exhibited another microbe with gas-forming propensities. The clinical history suggests the *Bacillus mucosus capsulatus* as being most probably responsible, unless the organism described may hereafter be proved to belong to the aerogenous class. For reasons which will immediately occur to bacteriologists, Dr. Berry considers this extremely unlikely, if not impossible.

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patient was simply kept under observation for another month. The tumor remained in *statu quo* and there was no reaccumulation of gas after the aspiration. All who saw the patient, however, were of the opinion that the gas had been generated in the sac and not injected during the hypodermoclysis.

Concerning the fluid, a detailed bacteriologic report from Pediatrics Laboratory, under date of May 27, 1899, is subjoined. To Dr. Dillon Brown, director of the laboratory, and Dr. J. L. Berry, bacteriologist, I desire to acknowledge myself deeply indebted.

BACTERIOLOGIC REPORT.

Character of Specimen.—Fluid from breast: It consisted of about two drams of smooth, creamy fluid of alkaline reaction and showing under the microscope partly degenerated cells resembling colostrum corpuscles and milk globules, fat drops, motile bacteria, and a mass of granular debris.

Cultures.—Broth cultures of 24 hours showed very active growth with diffuse cloudiness of medium, no pellicle formation. Examination of hanging drop showed a medium-sized exceedingly active bacillus.* Smears stained with methylene-blue showed a pure culture of the same organism. In 48-hour culture there was a very active spore formation, about three-fourths of the bacilli showing large central spores, while the remainder had developed into remarkably long, slender threads, with very pointed extremities and still actively motile.

Glucose broth: Same results as in plain broth, with rather larger proportion of long threads.

Agar: Rapid development, surface of slant covered in 24 hours with thick, moist, yellowish-white growth showing under microscope the same characteristics as in 24-hour broth cultures, except that bacilli were smaller, and in cultures of longer growth spore formation was somewhat less active and the development of long forms much less noticeable than in corresponding broth cultures.

Serum tubes: Growth less abundant than on agar, and bacilli very much smaller.

Agar plates: Pure culture of bacillus, colonies tending to coalesce and cover surface of plate.

Stick culture in glucose agar: Active growth both on surface and along line of puncture but no evidence of gas formation.

Gelatin: Growth slower than on agar, with slight liquefaction in old cultures.

Fermentation-tubes of glucose broth: Growth produces no gas after long incubation.

Flasks of Dunham's solution with strips of lead paper suspended above fluid: No blackening of lead paper, no H₂S produced.

Growth produced no change of reaction in any of the media employed.

Animal Inoculations.—Guinea pig inoculated subcutane-

*The term bacillus is used tentatively, the organism remaining unclassified.

SPECIAL ARTICLE

NOTES OF AN ARMY SURGEON IN THE RECENT WAR.

The Devitalization of the Fifth Army Corps.

BY

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Late Major and Surgeon, U. S. V.; Twice A. A. Surgeon, U. S. Army; Formerly First Lieutenant and Assistant Surgeon, U. S. A.

Early in 1898, when the United States declared war with Spain and the invasion of Cuba took place, yellow fever was the most dangerous foe that confronted us. While the Surgeon-General's prophecy in regard to the number and severity of the cases was not fulfilled, yet yellow fever was a large factor in the breaking down of the Fifth Corps. With the exception of three or four regiments of volunteers—much lauded in newspapers and magazines, to the exclusion of the regulars—the Fifth Army Corps was the finest lot of well-trained regular troops that ever took the field. Within the short time of one month these men were physical wrecks, with nothing left but dogged determination to fight or die of disease. There is probably no other instance on record of so magnificent a body of soldiers going to pieces in so short a period. This was due to the hard work, hard fighting, lack of food and shelter, and depression from loss of friends and comrades. Men, there for the first time in their lives, found their limitations, and have never since had the same confidence in themselves.

Thanks to the quick, sharp campaign, the readiness of the Spaniards to surrender Santiago province, and the early appreciation of the dangers of keeping the Fifth Corps longer in Cuba, its total extermination was prevented.

After the surrender of Santiago I requested a bright Spanish army surgeon to diagnose a lot of my fever cases. He called some paludal fever, others acclimation fever, some yellow fever, and the remainder "malaria." A Cuban doctor called some cases "ground fever," and others he designated miasmatic fever. With the exception of yellow fever, I believe all the others were malarial fevers.

In 1898, Cuba meant filth, disease and indolence. While

dysentery and tropic malaria cause the greatest mortality in Cuba, it is yellow fever in particular that is feared by foreigners. Thanks to the work of the Yellow Fever Commission, under Major-Surgeon Reed, yellow fever is a disease we now know how to handle, although its immediate cause still remains in doubt.

Typhoid Fever.—Under normal modes of life, typhoid fever is a reproach to our civilization; in times of war, when large bodies of green troops are brought together, it becomes a scourge. As "a little leaven leaveneth the whole lump," so the first cases of typhoid fever, if unrecognized or improperly handled, spread the infection throughout camp.

I will merely confirm the testimony as to the abundance of flies in our camps, and their probable role in carrying infection.

It takes a well-trained soldier to live in camp or barracks without injuring himself or others. It should be a golden rule that every case of continuous fever be considered typhoid until proven otherwise. When not shown to be a malarial fever, treat as a typhoid. The failure of the doctors in the large military camps in the States, within reach of well-equipped laboratories, to recognize typhoid fever seems almost inexcusable.

Typhoid fever should be treated in isolation, barred and screened, by a special corps of nurses and attendants. These patients should have their own kitchen and utensils. There is not sufficient personal prophylaxis among nurses. Hot and cold water, soap, germicides, and sterilizers should be abundant. All attaches should wear special wash-clothing while on duty, and should not then come in contact with others.

It was remarkable to note the special complications of typhoid in the different camps. Some groups had hemorrhages, others femoral thrombosis, still others abscesses without particular reason. Soldiers who first had malaria and then contracted typhoid, often had a recrudescence of malaria during the typhoid convalescence; their blood giving a positive Widal reaction and showing the malarial parasites at the same time—so-called "mixed infection." These cases were apparently typhomalarial fever, a position we now know to be untenable. Our troops are comparatively free from typhoid in the Philippines. Although Manson says typhoid is common in the tropics, I am inclined to think it is a disease of temperate climates.

Malarial Fevers.—Malarial fevers are the most common diseases in our insular possessions. Malaria in the tropics is a serious disease, and a fatal termination is no rarity. Severe and prolonged cases leave lasting changes in the tissues of the body. The pathology of malarial fevers has never been fully presented.

Tropical cases of course, give us a larger percentage of the estivoautumnal type than we get in the states.

In 1898-99, soldiers returning from the south coast of Cuba presented a larger proportion of estivoautumnal cases than those from the north coast of Cuba. In a number of instances these estivoautumnal cases exhibited tertian fever after a short residence at home. I have observed the same thing in the Philippines upon troops changing station; an observation based upon hundreds of blood examinations. Were these cases due to new infection or to a change in type brought about by a different environment? Present knowledge would favor the former view, but I have seen so many cases of sudden change that I would not be surprised if the latter were true. This would mean that there is but one malarial organism which changes its form, period of development, and toxicity, under different conditions.

In the Philippines I believe the quartan type is more common than generally stated.

Patients from Cuba invariably got up a recurrent paroxysm after experiencing a cold spell at home. In the Philippines, a wet, cold night after an exhausting hike in the sun provoked an attack. I have seen it stated that in the Philippines there is more malaria in the hills than in the lowlands. This is due to the cooler weather in the hills exciting an outbreak of an infection contracted in the lowlands where the mosquitos are quite plentiful.

In my own regiment we suffered least in the hill-country, as in the province of Union, and most in the lowlands, as at Muntinlupa, on the Laguna de Bay.

The Filipinos fear the night air, and shut their houses and rooms tightly, supposing that the air in itself is hurtful, when it is either the lowered temperature which induces the chill, or the night-flying mosquitos which infect them. The natives appear just as susceptible to malaria as our soldiers.

So far as I know, there has been no study of the Philippine Culicidae, but we know that malaria and elephantiasis are prevalent, the former being transmitted by anopheles, and the latter by the culex. Now, if the intermediary host of yellow fever (*Stegomyia fasciata*) should be present in the Philippines, it would take only one case of yellow fever, or one infected mosquito, to introduce the disease. This is not so improbable if we recall the travels of plague from its natural habitat.

Malarial seizures occurring in the field were usually severe and difficult to handle, as the patients could not march, and to desert them meant their death. Cases with marked onset are readily differentiated from typhoid fever, but not from heat-stroke, in the absence of a microscope. Malarial cases of gradual invasion resemble typhoid, and it is in these cases that the microscope is so valuable to the army medical officer.

I wish to emphasize a sign which is pathognomonic of malarial fever, and that is the tongue. The malarial tongue is a large, flabby, blunt tongue, heavily coated, with deep indentations along the sides. These indentations are very characteristic, and due to both enlarging and softening of the organ. The tongue is tremulous and appears too large for the mouth. The only mention of these indentations, of which I have knowledge, is by Major-Surgeon Blair D. Taylor, U. S. A., in an article published a number of years ago. This tongue is quite different from the sharp-tipped, red-edged tongue of early typhoid. Of course, a typhoid occurring in a malarious subject will present an uncertain atypical tongue.

Though favoring the application of ice to the head, I do not approve of cold baths to reduce malaria l pyrexia. They increase arterial tension and congestion of the viscera, especially of the kidneys and stomach, increasing the pain over the spine in the one instance, and favoring hematemes in the other. In the absence of a Widal test or a microscopic examination of the blood, it is not always well to give quinin in a routine sort of way. The common method of prescribing quinin, gr. v., t. i. d., or small and repeated doses, accomplishes nothing and is harmful. Very large doses are equally harmful. After a considerable experience with malarial fevers I have come to the conclusion that it is never necessary to give more than 2j of quinin at a dose, and rarely more than one dose per diem. I generally give gr. xij. Quinin should be given with reference to the age of the parasite, and this should be determined by the microscope. It is useless to give quinin in tablets or capsules, and then go away, because, if the attack is a severe one, the patient will probably vomit it in a short time and no good will have been accomplished.

If the patient is in a distinct paroxysm, or looks as if he might have one soon, administer a gentle emetic, like ipecac. This will clear the stomach, relieve the headache, relax the system, start perspiration, and set the bile flowing. Then give xii or xv grs. quinin in an acid solution, and it will be retained and absorbed and affect the young parasites. Keep up the liver action and quinin, and the patient will make a speedy recovery. Always aim to catch the organisms during sporulation. Emesis relieves us from giving phenacetin or similar drugs for the headache alone.

A threatened attack of malaria, known from the history or blood examination, can be averted at times by emesis without quinin; and this sometimes takes place involuntarily. I have no doubt that, in the old days, venesection accomplished the same purpose, besides abstracting myriads of organisms from the system and starting leukocytosis to antagonize those remaining.

By giving quinin in the manner I have indicated, it will seldom be necessary to administer it hypodermically. When the latter method is called for, abscesses can be avoided by surgical cleanliness, and making the injection in muscle or under loose skin. In cases attended with hyperpyrexia and unconsciousness, give the quinin both hypodermically and by the bowel, in order to insure a quick result, as delay is dangerous.

Idiosyncrasy to quinin is extremely rare if all the emunctories are at work.

A small dose of quinin in a malarious subject will often provoke an outbreak. It simply stirs the animals up.

I do not believe any other drug than quinin acts specifically upon the malarial parasites. Most of the other remedies do good as tonics, and it should be remembered that many cases of malarial fever will finally recover under rest in bed, good food, and hygiene.

Dysentery.—Dysentery is by far the most serious disease we have to contend with in our tropic possessions. In addition to the catarrhal and amebic forms, there is an acute specific, bacillary type, which, though at present the most fatal, promises in time to be the most tractable.

The laboratory for the study of tropic diseases established in Manila by the Army Medical Department, is working on specific dysentery with hopeful outlook.

Of dysentery in general, the treatment is not satisfactory. The calomel, ipecac, and magnesium sulfate treatments give inconstant success. I got the best results from calomel, opium, salol, camphor, and bismuth, with medicated colon flushings.

Skin Diseases.—Various forms of skin diseases are encountered in the Philippines, particularly the ringworms of the microphyton and microsporon classes, the most common of which are grouped under the general term Dhobie itch. This term is in general use throughout the Orient, and the disease is usually ascribed to infection of the clothing in the laundry, this being the nearest water-course, which is also an open sewer.

It generally begins as a patch of erythema, but in its chronic course passes through every form of skin eruption, often terminating in furuncles. The scars resulting from destructive skin lesions are apt to become pigmented. Dhobie itch is prone to attack the feet, axillas, and parts about the pubes. It has as many remedies as eczema. Chrysophanic acid ointment and Vlemineck's solution are in great repute, but I found nothing better than bichlorid dressings. Many men are rendered unfit and must be carried on sick reports simply because of sore feet.

Owing to enervation and relaxation of the tissues from the continuous heat and moisture and from chafing of the clothing, the skin becomes very tender and sensitive. Ordinary prickly-heat becomes a serious disorder. Even surgical dressings of ordinary strength often excite an intense dermatitis. For the same reason dressings should be changed more frequently than in cooler climates.

Appendicitis.—I encountered so many cases of appendicitis among the soldiers that there was surely some cause for it aside from the predisposing age of the men and hardships incident to active service.

I believe the cartridge belt to be the cause. It frequently causes diarrhea and thus favors all bowel troubles. The fault is both in the weight of the belt and the way in which it is retained. The present fastening requires the belt to be worn tightly in order to stay fastened, and the adjustment is troublesome. A harness-buckle would be infinitely better. A belt full of cartridges, with bayonet and scabbard, weighs 9 pounds.

Ammunition should be carried in a bandolier, and when not in formations the soldier should be allowed to carry it around his waist or over his shoulder at will.

Gunshot Wounds.—Prior to the Spanish-American war the modern rifle had been used but little in actual fighting. Deductions had been drawn from experiments made upon living animals, human cadavers, and cans of fluid, mostly at short ranges.

As a result of the Santiago campaign it was a surprise to find so many lodged bullets, over 10%, possibly due to defective or subcaliber ammunition on the part of the Spaniards, or to the long ranges. Many of our wounded never saw the source from which the firing came. Many of the wounds were practically aseptic, and, thanks to the first-aid dressing, remained so.

The frightful explosive action, so much dreaded, was noticeable by its absence, except in a small percentage of cases, and then it was marked. This effect is seen principally at short

ranges (under 600 yards) and is probably due to the high velocity and wobble of the bullet.

The big Remingtons, particularly the brass-jacketed kind, also made ugly wounds. I believe it was these brass-jacketed bullets which gave the impression that the enemy was using explosive bullets. This was caused by the jackets stripping and tearing and lacerating the tissues.

In the Philippines we face the Mauser, the Remington (made in Germany), the Mahratta (the Japanese rifle), and a variety of obsolete firearms, which, though of short range and low velocity, are still very effective at short distances. The insurrectos have acquired some of our own rifles, the Krag, mainly by theft. In addition to a few modern pieces of artillery, the Filipinos have also innumerable iron and brass cannon, introduced by Spain during the last 300 years. These are filled with slugs, and make formidable weapons, but, fortunately for us, they generally desert their well-made trenches about the time we get within the danger zone.

The first-aid package is invaluable, and is usually the only dressing available in the field. The portion of gauze directly applied to the wound should be thoroughly impregnated with a sterile antiseptic powder in order to more thoroughly seal the wound. I think Nicholas Senn has advised the same. If a piece of sterile rubber plaster were also included in the package it would help to keep the wound from getting soaked with rain which so often happens. These additions to the package could be made without increasing its present weight or bulk. The dressings should be enclosed in a pasted waterproof envelope, and the whole covered with stout cloth, which should be sewed together. Just where it should be carried is still unsettled. I should say either in a special pouch attached to the belt or securely fastened in the shirt.

A number of surgeons have discouraged laparotomy in the field for penetrating gunshot wounds of the abdomen. I believe this is a mistake. They should be operated upon as soon as possible, if the absolute essentials of an operation are at hand.

The Pits and Traps of Samar.—In this country very little is heard of the pits and deathtraps which the insurrectos lay for the American soldiers, and even in the Philippines they are only encountered in a few places, many of our commands never having seen any. They are universal in the Island of Samar, where most of the fighting is now going on.

While chief surgeon of the district in which Samar is included I saw many of these traps and the wounds resulting therefrom.

The traps meet you upon the very threshold of the island. Every bit of beach where troops are liable to land is undermined. They dig numerous pits, generally rectangular, 4 to 6 feet deep, and of all sizes. The bottom of the pit is planted with stout spears of sharpened bamboo and the top overlaid with matting or the immense leaves of palm or banana, and these covered with sand in which footprints are made to make it look perfectly natural. Our soldiers stepping on these places are precipitated into the pits and impaled on the spearpoints, often transfixed. While rarely poisoned, they generally produce septic wounds.

The same pits are met in the streets of towns, and in every semblance of a road or trail. Another form is the trap made by a spring-pole of bamboo or other wood, which is released by the foot striking against an innocent-looking vine in the trail. This is followed by a shower of arrows, driven by the pole. Again, a regular deathfall will be constructed on the same principle: even an entire house will be so arranged that, upon entering it, the whole structure will collapse, or a flight of spears follow. Hence we made it a rule never to enter a deserted shack until after a careful inspection.

In marching, or rather hiking—because our progress was nothing like a march as ordinarily understood—the point of the advance guard was armed with poles to sound the trail; or, we would catch a few natives and make them walk in advance; and, at other times, drive a carabao or pony ahead of the column in order to develop the traps.

When at the same time we often had to cut our way through the jungle with bolos; scale precipitous mountains, and cross swift, deep rivers from which the boats had been removed, it is

not surprising that we caught so few Filipinos; and when we did overtake them they had hidden their guns, and were a servile, humble lot of laborers who welcomed us with *viva los Americanos*—as innocent a lot of villains as ever cut a throat.

These traps, with the bolomen, are more dangerous than the riflemen.

Bolos and Bolomen.—The Filipinos, and more particularly the Moros, are experts in knifemaking, manufacturing numerous special forms, but the bolo is the all-purpose knife in the archipelago. It is a long, heavy sword-knife adapted both for chopping and thrusting. The fine ones are works of art, embellished with silver, gold, jewels, and ivory. The ordinary bolo is the common tool or agricultural implement of the Filipino. With it he cuts his rice and grass, opens coconuts, fells trees, chops wood, and builds his house of bamboo. He carries it in a scabbard attached to his belt, as we do a sword, or the Cubans a machete. For each victim he files a groove in the base of the blade. We cannot consider the bolo an arm and take it from him, as it is necessary for his very existence. Thus he always has a formidable weapon on his person. I remember reading a captured Filipino proclamation in which it stated that "the bolo was the natural arm of the Filipinos and the deadliest of weapons." Such we have found to be the case, but it is due rather to the nature of the assault and the spirit animating the bolomen.

The most ignorant natives, those who have no knowledge of firearms, and those who are reluctant to aid the insurgents and not to be trusted with rifles, are rounded up and armed with bolos. After being harangued by their leaders they are given the "Anting-Anting," which is a charm or hoodoo to be swallowed or worn upon the person, which will make them invulnerable to American bullets. If any further stimulation is required to make them fight, they are filled up with vino, the native whisky. For fear of disaffection, the bolomen are placed in front of the native riflemen who make them fight us *notens volens*.

"Who fights finds death,
And death finds him who flies."

Thus placed "between the devil and the deep sea" they rush on with fanatic fury. Hundreds of bolomen will suddenly spring out of the tall grass or jungle, or a small garrison will be attacked by an entire town, as in the recent case of Balangiga on Samar. They generally get a few of our men, but are themselves mowed down by hundreds.

The riflemen, who have been careful to stay in the rear, skedaddle before we can get at them, while their general proclaims a victory and repeats the performance elsewhere. Several natives are assigned to each rifle, and to go back without it means death. Thus we can kill a lot of them but seldom capture their rifles, and so long as the leaders have rifles, they can compel a following, as they do not hesitate to kill and torture their own people.

At this time, I believe the best Filipinos are friendly to the Americans, while the great mass of the people are indifferent. Active opposition is carried on by but a small number of natives, who have all the rifles. They have a few brainy, unscrupulous leaders who fight us, not from patriotic motives, but for personal gain. They collect or loot all the money they can, which they bank in their own names in Hongkong or other safe places.

Other Matters.—The limits of this paper will not permit me to more than mention other interesting conditions which I encountered in the Philippines.

The climate is favorable to the development of pulmonary tuberculosis, and a number of our men succumbed to that disease.

Dengue appears to be endemic in places, affecting our soldiers and natives alike.

Tropical neurasthenia renders a few Americans absolutely unfit for service. This disorder is largely due to insomnia.

I saw a number of cases of plague, and many of beri-beri among the natives. There is no reason to fear an invasion of plague in this country, and, even in Manila, it has been readily controlled. The actual cause of beri-beri is evidently associated with eating rice, possibly, of diseased rice.

To those who feel the need of it, I believe a reasonable allowance of alcohol is beneficial in the tropics.

I wish to go on record as favoring the post exchange.

The recruit should be vaccinated, circumcised, have his teeth repaired, and be operated upon for varicocele, if he has one.

The cholera-belt in the field soon becomes a wet, dirty string, and is unnecessary. Most of our troops wore none, and fared as well as the few who did. So long as we have the blue flannel shirt—the best article of our uniform—a cholera-belt is simply a nuisance.

I will state here that our soldiers have never been supplied with a proper campaign shoe. Napoleon said, "Armies travel on their stomachs;" they don't; they travel on their feet—men, horses, and mules. No expense should be spared to obtain a lasting and fitting shoe (no joke).

A great deal has been written about the ration in the tropics:

In a communication to the War Department, I said:

"I advise against any reduction in meat, and any increase in the rice component in the tropics. A slight increase in sugar is advisable, and a decided increase in the allowance of soap."

The Filipinos have no character, and need control and discipline like children. They are cleanly in their persons, and the women are remarkably chaste. The natives, away from the seaports, are comparatively free from venereal diseases. Our soldiers get most of their troubles in Manila. Several fermented drinks, and the distilled liquor "vino" are in general use among the Filipinos, but drunkenness is extremely rare. The invasion of our home markets by Malay labor is a phantom dream.

In closing, I cannot fail to pay a brief tribute of respect to the Philippine Volunteers created under the Act of March 2, 1899. Though hastily organized, they were a picked lot of men. Their varied service increased their versatility and manliness, and they returned home better men and better Americans. They were the finest lot of volunteers that Uncle Sam ever mustered out of service. I am proud to have been one of them, and to have shared in their hardships and victories.

Physical Culture.—Senator Mason, of Illinois introduced a bill in Congress recently providing for a department of physical culture, with a member of the cabinet as its head. It further provides that each state shall have a commissioner of physical culture at a salary of \$1,000, to furnish plans for parks, gymnasiums, baths, and playgrounds, and to have general control of all facilities for physical culture within the confines of the state.

Increase of Navy Medical Corps.—Surgeon-General Rixey has recommended that the Medical Corps of the Navy be increased by the addition of 15 surgeons, 25 assistant surgeons, and expresses an opinion that this addition should affect the higher as well as the lower grades. His recommendation has been approved by the Secretary of the Navy and forwarded by him to Congress, with recommendation for necessary legislation.

St. Joseph's Sanatorium, established last fall at Silver City, N. M., has outgrown its present quarters, and work is about to begin on an extensive addition; when completed the whole will form four sides of a court in the old California mission style. The management of the institution is entirely vested in the advisory board; the immediate care of the patients is entrusted to Dr. W. T. Williams, with Dr. E. S. Bullock as pathologist and diagnostician. The plan of treatment is the careful application of the Brehmer principles, in an ideal climatic environment.

The State Charities Aid Association, in its twenty-ninth annual report just issued, announces that it has visited during the past year through its local committees the almshouse and public hospitals in 47 out of the 61 counties of the state. The Association has operated through its 1,000 volunteer workers residing in various parts of the state in connection with the paid service at the central office, which directs the whole system. A committee of the Association acting with a similar committee of the Association for Improving the Condition of the Poor, took charge of 99 motherless babies received from Bellevue and the King County Hospital during the year, with the result that the appallingly high rate of mortality among such infants was reduced to 17%. Last October 1,063 children who had been placed with families, or with their mothers in situations, were under the observation of the Association.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 15, 1902. [Vol. XXXVIII, No. 11.]

1. Medical Education. JOHN B. DEEVER.
2. A Case of Brown-Sequard's Paralysis, from Stab in the Cervical Region, with Complete Hemiplegia, Crossed Monoplegia and Crossed Hemianesthesia. ARTHUR R. EDWARDS.
3. Dermatomycoses in Their Relation to Allen's Iodin Test. JACOB SOBEL.
4. The Origin of Carcinoma of the Stomach from Chronic Round Ulcer of the Stomach. G. FUETTERER.
5. Pneumatic Differentiation in the Treatment of Organic Disease of the Heart. CHARLES E. QUIMBY.
6. Acute Intestinal Obstruction. Report of a Rare Case of Probable Syphilitic Origin. CLARENCE L. WHEATON.
7. Modified Treatment of Typhoid Fever. T. B. GREENLEY.
8. Medication of the Respiratory Tract by Antiseptic Nebulæ. HOMER M. THOMAS.

2.—Brown-Sequard's Paralysis.—Edwards reports a case and reviews the literature of the subject. The case was atypical in the bilateral lesion, the crossed and persistent monoplegia, the shallow respiration and bladder and rectal disturbance, and was typical in that the contralateral anesthesia was for all varieties of sensation. The failure of the other side to assume the functions of the severed half of the cord pointed to bilateral lesion, but the homolateral anesthesia was slight, arguing for involvement of one side chiefly. An early favorable prognosis had to be changed owing to the development of symptoms of myelitis. The lack of correspondence between hemispinal sections in certain animals and in man is due to anatomico-physiologic conditions. Variations from the original type occur from the character of the numerous etiologic factors and from the frequency with which lesions affect more or less than one exact half of the cord. [H.M.]

3.—Dermatomycoses and the Iodin Test.—On application of Lugol's solution a deep mahogany discoloration is strong presumptive evidence that the lesion is parasitic. At the outset or in the retrogressive stage the stain will appear lighter than in the active stages. Surrounding healthy tissue stains light yellow. In tinea versicolor, when patients present themselves just after a bath with a puzzling pale-pink eruption, Lugol's solution will clear up the diagnosis. Recurrences in this disease are often due to overlooking patches in the suprapubic region, improper care of the underclothing and lack of proper treatment. The patches being perifollicular, or perhaps intrafollicular, penetrating agents must be combined with desquamating ones. The disease sometimes occurs synchronously with the macular syphilid and can be differentiated by the iodine reaction, as can also pityriasis rosea. The etiology of the latter is still mooted. The reaction to Lugol's solution points to parasitic origin. In doubtful cases of tinea circinata, eczema marginatum and mycotic eczema it may be used. It is an excellent method of treatment as well as an aid to diagnosis. It is not of service in diagnosing one parasitic disease from another. [H.M.]

5.—Pneumatic Differentiation in Heart Disease.—The maintenance of the circulation and the preservation of the vascular mechanism demands the continuance of differential blood tensions and their rhythmic alterations, and also the restriction of tension below an established limit. Highest nutritive activity is determined by quantitative blood-supply rather than by tension. Pneumatic differentiation lowers absolute tension, while increasing tension ratios, thus developing increased flow. The result of cardiac lesions is a change in absolute tension and tension ratios. The primarily lowered vascular tension increases tension in some cardiac cavity. With lessened flow and diminished nutrition there is arterial contraction to restore blood-pressure. In response, compensatory cardiac hypertrophy results, involving persistent excess of force expenditure, and finally degeneration. Hence the indications are to decrease vascular tension and increase cardiac nutrition. When we speak of pressure as so many millimeters of mercury the absolute tension is that plus barometric pressure. In the pneumatic cabinet the air can be rarefied and compressed at will, and an equivalent amount of reserve tension made dynamic. Relative pneumatic differentiation between the cutaneous and pulmonary surfaces is brought about by means

of a stopcock and a tube through which the patient's lungs are connected and disconnected with the outside air. The rhythmic alternations of the tension ratio between the pulmonic and systemic circulations produces augmented flow under lowered vascular tension. The author describes the applicability of the treatment in the various valvular lesions and its superiority to the Oertel and Nauheim treatments. Sphygmographic tracings and clinical histories verify the theoretic conclusions. [H.M.]

Boston Medical and Surgical Journal.

March 13, 1902. [Vol. CXLVI, No. 11.]

1. The Value of Alcohol as a Therapeutic Agent in Medicine. HENRY F. HEWES.
2. A Clinician's Estimate of Alcohol as a Therapeutic Agent. F. C. SHATTUCK.
3. The Therapeutic Value of Alcohol. E. N. WHITTIER.
4. The Influence of Alcohol on the Human Organism. ELBRIDGE G. CUTLER.
5. Practical Experience with Hydrotherapy. J. J. PUTNAM.

1.—Alcohol in Therapeutics.—The only stimulant effect of alcohol on the heart is the initial reflex one, increasing work momentarily. The total effect is depressant. When diluted to avoid irritation and the patient is kept quiet no acceleration of heart action occurs nor increase in pulse or blood pressure. The two opposing theories held today concerning the generic effect of alcohol upon the nervous system—one that alcohol incorporated into the blood first stimulates, then depresses the nerve centers, the other that it depresses the centers from the start—merge in the conclusion that the final effect of the alcohol is depression. The reaction time of simple motor innervation is slightly shortened with subsequent depression. The initial increase is probably a reflex of ingestion as it follows ingestion of sodium bicarbonate, silver nitrate or sugar. Experiments with typesetters and soldiers have proved reduced capacity for work. In psychical processes reaction time is increased with all doses. The rational use of alcohol is as a narcotic. The nervous excitement of acute disease or fatigue is quieted. This explains the effect in shock. The total effect in digestion is in controversy; 94% to 96% is oxidized; alcohol thus acts as a tissue sparing food. There is an increase in nitrogenous waste at first, the inoxidized alcohol acting as a poison. It is not rational to use a substance with poisonous properties as food except in diseased conditions when the patient cannot utilize ordinary food. As regards therapeutic value clinical experience must be the supreme guide. Alcohol may have an antitoxic action in pneumonia and sepsis. Among competent men the attitude varies. Hewes' clinical experience does not warrant its use in pneumonia. [H.M.]

2.—A Clinician's Estimate of Alcohol.—Shattuck sees no sufficient proof of the usefulness of alcohol to warrant us in running counter to the mass of evidence on which belief in its value rests. [H.M.]

3.—The Therapeutic Value of Alcohol.—Whittier is profoundly convinced of its value in the form of absolute alcohol, anhydrous, deodorized, defuselized. The distaste of patients is due to useless and harmful diluents in brandies, whiskies, etc. [H.M.]

4.—Influence of Alcohol on the Human Organism.—It impairs resistance to extremes of heat and cold, and has been almost discarded in the preparation of the athlete. Animal experimentation has shown that during its use immunity to infection is difficult to obtain. Alcoholics oftener sicken of infectious diseases, and the course is more pernicious than in abstemious persons. Alcohol can to a certain extent take the place of carbohydrates and fats, and when diet is insufficient will save these. When food is ample the combustion of alcohol prevents the complete combustion of ordinary foods, which are lost to the organism, or being retained, favor fatty degeneration. Moderate doses favor digestion through increased secretion and absorption. With a percentage above 15 these effects are counteracted by lessened ferment action. Alcohol is not an excitant of the circulation. Since Cutler has withheld it in cardiac disease he has had to use digitalis less and cardiac pain and oppression have been less frequent. In gastric disease it is rarely useful. It is temporarily useful after profusely diarrheal. [H.M.]

5.—Hydrotherapy.—The marked changes in pulse under varying bath temperatures suggest correspondingly marked variations in blood-pressure, since both are expressions of nerve reaction in control of the heart's rapidity and force, and of vasomotor changes in the vessels. Benefit is shown by increased strength and slowness of the pulse, and diminution in size of the heart in dilation. Many of the benefits can be gained by use of the domestic, but especially if supplemented by the portable cabinet. There are few physicians, however, who feel able to maintain in the home the standards of well-managed establishments. Marked clinical differences are perceptible between different sorts of baths classifiable as "tonic." Cases offering especially interesting fields for study are the tuberculous, diabetic, anemic, neurasthenic, rheumatic and cardiac. Moderate friction should be used during the bath, but when the latter is ended it is best to dry oneself as quickly as possible. The colder the water the shorter the time required for stimulation, but a certain length is required for best results. The writers describe modifications of the bath for those too delicate for very low temperatures. [H.M.]

Medical Record.

March 15, 1902. [Vol. 61, No. 11.]

1. Specific Medication. ANDREW H. SMITH.
2. Melancholia Simplex and Melancholia Transitoria Simplex. RALPH LYMAN PARSONS.
3. A Few Remarks on Diseases of the Skin, with Relation to General and Special Therapy. S. SHERWELL.
4. A Case of Otitic Brain Abscess, and the Lessons Which It Obviously Teaches. ROBERT LEWIS.
5. Apparent Cure of Malignant Ulcer of Breast after Oophorectomy. WM. H. SIMMONS.

1.—Specific Medication.—The prospect is favorable for an increased number of remedies available as specifics. The field has been confined, except as to myxedema, to diseases in which a foreign morbid agent has been introduced. What we aim at is not destruction of the germ, but inhibition of its activity. Attenuation of an antigermic solution is compensated for by longer exposure to its action, and conditions under which remedies are employed usually favor this exposure. The relation between disease and remedy is rather vital than chemic, differing from open-wound disinfection. It is difficult to see why any one should insist that there cannot be more than one specific for each disease, or that the antiseptics and germicides must bear definite relation to the mass of blood. Pneumonia is a promising field, because the microorganism is not hardy, the exudate supplying the medium is separated directly from the blood, and the lung circulation transmits all the blood of the systemic circulation, thus bringing concentrated influence to bear. Sodium salicylate has accomplished most. Smith has found creasote carbonate nearly as efficient as the former. It may be selected when sweating makes the salicylate objectionable. He quotes an array of testimony in its favor. The value of large doses of carbolic acid in influenza and scarlet fever is favorably discussed. It can be pushed far beyond the point of carboloria with safety. The use of mercuric chlorid internally as well as locally in urethritis is suggested. [H.M.]

2.—Melancholia.—Early and judicious treatment of simple melancholia may be successful in 90% of the cases. That suffering is more intense than in other forms of alienation is because brain deterioration is less. The physical distress is hardly less than the mental. Every one who is greatly depressed has not lost his reason. It is improbable that the majority of suicides are insane, but undoubtedly a large number are in the early stage of simple melancholia, or in a stage of transitory melancholia. The term melancholia transitoria simplex should be added to the nomenclature. These transitory attacks are liable to occur in those who have suffered severe shock. There are undoubted cases of extreme depression with suicidal impulses which are sudden in onset and of limited duration. Many cases of simple melancholia are not legally insane, being quite competent to transact business while failing to take proper care of their own persons. Certain kinds of delusions are of no weight in determining insanity. Those which are pathognomonic originate in the subject, for the most part concern the subject and are held by the subject alone. There is no fixed line between simple and delusional melan-

cholia. In the simple forms removal from home is usually advisable. Rest at first with occupation later, especially in the open air, is indicated. Traveling is rarely advisable. The patient must be watched to prevent suicide, the impulse being stronger at certain times than others. Sleep must be procured, and the physician should endeavor to inspire hope. [H.M.]

3.—Skin Diseases.—The ordinary medical man generally indulges in excessive treatment. Diathesis and unhealthy mental and bodily functions can be factors. This is too often forgotten. A purge is needed at the beginning of almost every treatment. In eczematous affections the lesions should be cleansed daily with soap and water or an ununction of olive or almond oil. Almost all topical pharmacopoeial preparations are too strong. Even zinc ointment should sometimes be diluted. Vaseline is irritant to 10% of the community. It is injudicious to use glycerin on account of its affinity for the water of the tissues. It tends to make the skin harsher and more irritable in the long run. Furuncles and carbuncles often indicate diabetes. Nine-tenths of irritative eczemas of the nucha are due to pediculi. [H.M.]

4.—Otitis Media and Brain Abscess.—Robert Lewis reports the case. A young woman had suffered from chronic otitis media since a child. During the past year there were several periods when the suppuration and discharge ceased, and these periods were marked by pain in the region of the affected ear. In the month of January the discharge ceased and constitutional symptoms supervened. For several successive days there were chills, followed by sweating and rise of temperature. There was partial facial paralysis, amnesic aphasia, but no other paralyses; nor were there optic symptoms. When seen by the author the case was pronounced one of middle ear disease, mastoid involvement, and cerebral abscess. Operation was done; the mastoid and middle ear regions were found filled with purulent material, an extradural abscess was disclosed beneath the squamous portion of the temporal, and a cerebral abscess was found. The abscess cavity was at the depth of three-quarters of an inch, and was the size of a walnut. Syringing was not used, but gauze drainage instead. The patient made a good recovery. The author insists the middle ear disease does not receive the prompt attention which it merits. This is especially true of chronic middle ear disease, which is always a menace to the life of the individual. [A.B.C.]

5.—Oophorectomy for Malignant Ulcer of the Breast.—Mrs. A. B., about 45, first noticed a hardening of the left breast in 1897. This gradually increased and had formed an extended ulcer when first seen by Simmons in April, 1900. The ulcer was gangrenous, with a profuse fetid discharge. In view of the depth of the ulcer and the extensive infiltrations an operation was not deemed advisable, and the breast was treated with injections of some preparation of phenol presumably, which was supposed to be a certain remedy for cancer. But as it grew continually worse, in September, 1901, the patient underwent oophorectomy. This was followed by a decided relief and eventual healing of the deep ulcer, partial filling up of the cavity, and flattening of the elevated indurated edges. At the time of writing this scirrhous carcinoma of more than three years' standing is apparently cured. [W.K.]

New York Medical Journal.

March 8, 1902. [Vol. LXXV, No. 10.]

1. Nævus Verrucosus Associated with Certain Anomalies of Pigment. H. TAYLOR.
2. Again the Rectal Valve and Obstipation. THOMAS CHARLES MARTIN.
3. The Care of Incurable Cases of Chronic Pulmonary Tuberculosis. HENRY L. SHIVELY.
4. The Civilized Indian, his Physical Characteristics and Some of His Diseases. A. D. LAKE.
5. The Sideroscope. THOMAS R. POOLEY.
6. The Severing of the Vasa Deferentia and Its Relation to the Neuropsychopathic Constitution. H. C. SHARP.
7. On Gonorrheal Arthritis. A. HERZFELD.
8. The Treatment of Habitual Constipation. W. L. CALLAWAY.
9. A Case of Acute Anterior Poliomyelitis—Recovery. DAVID DAVIDSON.

1.—Nævus Verrucosus.—A case is reported by Taylor in a lad of 19, over whose right pectoral region there is a dense crop of pigmented, nonhairy warts, extending into the axilla; and,

though somewhat thinning out, half way down the inner aspect of the right arm. At about the level of the nipples the warts reach the median line of the body, then, gradually disappearing, are replaced by a line of reddish-brown pigment which is continued down to the umbilicus, where again a few growths appear. The condition is congenital. [C.A.O.]

2.—See AMERICAN MEDICINE, Vol. II, No. 13, p. 478.

3.—**Incurable Cases of Chronic Pulmonary Tuberculosis.**—Shively grants the superiority of sanatorium methods for the treatment of the tuberculous when they can be properly carried out, but he maintains that a greater field for useful effort exists in the education and treatment of these individuals at home. He advocates improved tenement dwellings and more stringent laws regulating unwholesome occupations and child labor. Advanced cases should not be sent to distant health resorts, and experimental serum treatment and drugs which disturb the stomach should be avoided. For a time codein or heroin, in increasing doses, may suffice to make the patient comfortable, but in the last stages hypodermics of morphin should be given freely. A moderate amount of alcohol is probably always useful in cases in which there is no contra-indicating kidney lesion. Inhalation of oxygen may be used for urgent dyspnea. Champagne is excellent when the stomach is irritable or nausea present. When gastric digestion is weak, forced feeding is inadvisable. Peptonized foods may be tried, or rectal alimentation may be necessary for a time. [C.A.O.]

4.—See AMERICAN MEDICINE, Vol. III, No. 7, p. 256.

5.—**The Sideroscope.**—The purpose of this instrument is to demonstrate the presence of particles of steel and iron in the eye. A glass tube has a magnet suspended within it by a very fine fiber of silk. In front of this and attached to the magnet is a concave mirror. The reflex of this mirror is thrown upon a graduated scale, and a deviation from zero points to the presence of a fragment of iron or steel. The eye must be brought as closely as possible to the glass tube in which the magnet is inclosed. [C.A.O.]

6.—**The Severing of the Vasa Deferentia.**—Sharp offers this as a rational means of eradicating from our midst a most dangerous and hurtful class, and urges that the legislatures be prevailed upon to enact such laws as will restrict marriage and give those in charge of state institutions the authority to render every male sterile who passes its portals, whether it be almshouse, insane asylum, institute for the feeble-minded, reformatory or prison. He has severed the vasa differentia in 42 patients, whose ages range from 17 to 25, and he speaks most favorably of the operation. He states positively that it does not impair the sexual power of those operated upon, that they improve mentally or physically, in that they increase in flesh, feel that they are stronger, sleep better, their memory improves, the will becomes stronger, and that while prior to the operation they made no advance in school, their advance is now fairly satisfactory. Lately he has followed the English method of operation, which selects the scrotal region as the site of operation. He clasps the vas between the thumb and index finger, makes a longitudinal incision about three-eighths of an inch in length, and severs the vas. The scrotal wound is not closed. [C.A.O.]

7.—**Gonorrheal Arthritis.**—A case is reported by Herzfeld in which irrigation and dilation of the posterior urethra, under all antiseptic precautions, was followed in about 36 hours by a violent chill, a temperature of 104.2° F., pulse 96, and severe pains in all the joints of the arms and legs. Later there was profuse night sweats. About 1 week after the initial chill the right knee-joint was filled to its maximum with fluid. Paracentesis of the joint was made twice and the joint thoroughly washed each time with a 4% carbolic acid solution. Finally the joint was opened and drainage tubes passed through it. Eighteen months later there still remained a restriction of movement. The author calls attention to the fact that, in the presence of gonococci, the dilation and irrigation treatment of gonorrhea is one that should be employed with great caution, and that before resorting to this treatment the gonococci should be destroyed by proper antiseptics, or at least be reduced to a minimum. [C.A.O.]

8.—**Habitual Constipation.**—Calloway begins the treatment of this condition with pill or tablet containing

Aloin	$\frac{1}{16}$ to $\frac{1}{8}$ grain.
Extract of belladonna leaves	$\frac{1}{16}$ to $\frac{1}{8}$ grain.
Strychnin sulfate	$\frac{1}{320}$ to $\frac{1}{50}$ grain.
Extract of cascara sagrada	$\frac{1}{2}$ to 1 grain.

If hepatic torpor is present he combines with this podophyllum resin, $\frac{1}{16}$ to $\frac{1}{8}$ of a grain, instructing the patient, if the bowels are hard to move, to take 2 such pills at bedtime, and 1 or 2 the succeeding night as may be required. He gradually decreases and omits the dose as regularity is established. Another favorite prescription, especially when the appetite needs stimulating and tonic must be given to the stomach is:

Tincture of nux vomica	1½ dram.
Solution of potassium arsenite	1 dram.
Extract of cascara sagrada	1 ounce.
Essence of pepsin, q. s. ad	3 ounces.

M. sig.—One teaspoonful after meals in half a glassful of water, gradually decreasing and omitting the dose as regularity is established. [C.A.O.]

9.—**A case of acute anterior poliomyelitis in a man of 28** is reported by Davidson. The disease, which was of specific etiology, had progressed so far that he was unable to ascend stairs, or to attend to his business, or to his personal care. Potassium iodid in increasing doses was administered, and Turkish baths were given to increase the emunctory power of the skin. Strychnin sulfate, grain $\frac{1}{50}$, with arsenious acid, grain $\frac{1}{50}$, t. i. d., was also administered for their special stimulating action on the nervous system. At the end of three months the symptoms had entirely disappeared. [C.A.O.]

Medical News.

March 15, 1902. [Vol. 80, No. 11.]

1. The Medical Department of Tulane University of Louisiana.
2. The Craig Colony Prize Essay—Serotherapy in Epilepsy. CARLO CENI.
3. Acute Influenzal Nephritis in Childhood. B. K. RACHFORD.
4. A New Method of Locating Foreign Bodies by Means of the X-Ray. LEWIS GREGORY COLE.
5. The Rate of Growth of Epithelium of Ulcers: Observation of 100 Cases of the Vanderbilt Clinic, New York. SIGMUND DEUTSCH.

2.—**Serotherapy in Epilepsy.**—Ceni gives a brief account of experimentation with epileptic serum on hens' eggs and laboratory animals leading up to its therapeutic use in ten severe cases of epilepsy, with two cures, six cases markedly benefited, and two made worse. Autoserotherapy was used in some of the cases. In some of the improved cases there was an accommodation reaction in which the patients were temporarily made worse. This stage was absent when autotherapy was practised. The antitoxic theory in the chemic and neutralizing sense as maintained by Ehrlich, as well as in the biologic immunizing sense as maintained by Bouchard and others can not explain the negative results. The opinion that the serum contains a stimulating principle which acts on cells concerned in metabolism, cells which are in physiopathologic conditions, helps to explain both positive and negative results. The serum receives its stimulating property only at the moment it ceases being a physiologic vital humor, and comes in contact with the external air. Researches demonstrate that in epileptic blood there are two active principles. One circulates in a free state and is endowed with toxic properties only when injected into the organism of another epileptic. The other circulates in a latent state. It is endowed with properties which have a stimulating power on metabolic cells which are concerned with the elaboration of epileptogenous toxic agents. These stimulating properties appear only after repeated injections resulting in remarkable increase in body weight, improvement in organic functions, and psychic and local life. [H.M.]

3.—**Acute Influenzal nephritis in childhood** is not infrequent, and occurs not as a sequel, but as part of the attack. The influenzal poison produces a violent acute nephritis coming on more quickly than in scarlet fever, diphtheria and other acute infections. The worst symptoms occur six or seven days after the kidney is attacked, and if complete suppression and profound uremia do not destroy life within the first week a steady improvement begins, which leads to complete recovery. In

the adult the picture is different. Rachford reports several cases. [H.M.]

4.—A new method of locating foreign bodies by the x-ray, given by Cole, deals so largely with geometric figures and formulas that it cannot be justly abstracted. Reference is made to the original. [A.B.C.]

5.—Rate of Growth of Epithelium of Ulcers.—The ulcers tabulated are divided into (1) the varicose and eczematous variety, (2) syphilitic, (3) traumatic. Ulcers at the malleoli, heel or arch of the foot are most difficult to treat, while one on the arm will heal more quickly than one on the leg. Depth is the greatest obstacle to healing. Hot weather and age must be taken into account. Tables are given showing the result of various applications in stimulating the growth of epithelium. When an ulcer is surrounded by a tender, painful area of inflammation, balsam of Peru should not be used. Red wash is milder. Creolin is most efficient for gangrenous or sloughing ulcers. Ichthyol is both stimulating and irritating. It may be applied in combination with zinc or boric acid ointment to the inflamed skin surrounding the ulcer. Lycopodium is valuable if the ulcer is accompanied by a wet eczema. For syphilitic ulcers blue ointment, red wash, creolin and alum acetate in saturated solution are advised. If a traumatic ulcer is suppurating, stimulating ointments should be abandoned and a wet dressing applied. The rate of growth of epithelium in traumatic ulcers is 5 mm. per week; in others 2 to 3.5 mm.

Philadelphia Medical Journal.

March 15, 1902. [Vol. ix, No. 11.]

1. Medical Education. JOHN B. DEEVER.
2. The Report of a Case of Obliterative Pericarditis with Hepatic Enlargement and Ascites. EDWARD W. BECKER.
3. Cerebral Apoplexy. EDWARD D. FISHER.
4. Hepatic Insufficiency. H. RICHARDSON.
5. The Progress of Knowledge Concerning Venom and Antivenene. A Synoptical Review of the Literature of the Past 15 Years. JOSEPH MCFARLAND. (Concluded.)
6. A Study of the Cases of Accidental X-Ray Burns Hitherto Recorded. E. A. CODMAN. (Concluded.)

2.—Obliterative Pericarditis.—Becker reports a case of obliterative pericarditis with hepatic enlargement and ascites. After reviewing the data from the cases in literature, and from his own case, he concludes as follows: Pseudocirrhosis of the liver due to pericardial adhesions is a distinct entity; in all cases of this condition at autopsy the pericardial sac has been found obliterated; autopsies have shown in all recorded cases that the ascites is due to passive congestion of the liver, causing a connective tissue formation with subsequent contraction and obstruction of the portal circulation, the result of obliterative pericarditis; in all cases of enlarged liver with ascites without edema or enlarged spleen, a very careful examination should be made of the heart to determine whether the symptoms are not due to chronic pericarditis; and the presence of ascites with enlarged liver and systolic retraction of the precordium, together with absent or later appearance of edema of the ankles, is of great diagnostic value in determining the presence of chronic pericarditis. [F.C.H.]

3.—Cerebral Apoplexy.—Fisher refers to the more unusual symptoms, especially those in the prodromal and final, or at least later stages of the disease. [F.C.H.]

4.—Hepatic Insufficiency.—Richardson strongly advocates the use of sodium glycocholate in hepatic insufficiency in which other remedies fail. It is better than *fel bovis* on account of its being pure, and is a useful rational hepatic stimulant. [F.C.H.]

5.—Venom and Antivenene.—McFarland has concluded his excellent article on the progress of knowledge concerning venom and antivenene, and has given an exhaustive review of the literature of the past 15 years. [See editorial, p. 441, AMERICAN MEDICINE, March 15.] [F.C.H.]

6.—A Study of the Cases of X-Ray Burns Hitherto Recorded.—Codman concludes his investigations of these x-ray accidents as follows: The frequency of x-ray injuries has been much exaggerated by the medical press, owing to the wide publicity given to many early cases, he has collected less than 200 cases, half of which were serious, and about one-third of which occurred in x-ray workers; it is safe to say that not one patient in 1,000 has been injured

in the past five years by an x-ray examination, and in the past year not one in 10,000; more than two-thirds of the injuries occurred in the first two years of the use of the x-ray, and only one mild case is reported in the current year; the cause of the injuries is not known; the primary injury is to the nerves controlling the nutrition of the skin; the static machine is less likely to produce injury than other forms of apparatus; no burn has been produced by an exposure equal to or less than the equivalent of five minutes at ten inches; soft tubes produce a more intense effect on the tissues than hard; in cases of injury the time before the appearance of the first symptom has varied from a few minutes to three weeks, five cases have remained latent for over three weeks, two of these cases for five months; it is impossible to predict the severity of the lesion from the time of its appearance after exposure; the writer suggests ten minutes at six inches from the platinum terminal as a standard therapeutic exposure; in the ordinary x-ray examination with fluoroscope or skiagraph, the operator takes the entire responsibility of injury, and in exposures for therapeutic purposes the patient shares the responsibility. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Adiposis Dolorosa.—Three almost simultaneous publications—one in Italy, by Giudiceandrea,¹ one in France, by Oddo and Chassy,² and one in America, by Dercum,³ have added considerably to our knowledge of this interesting affection. Most happily named—there is a great deal in the naming of a disease—it has received frank recognition in practically all parts of the world, and is forever linked with the name of its discoverer, Dercum.

Giudiceandrea's case is interesting because the patient, a woman 22 years of age, presented two types of distribution of the fat. She had circumscribed lipomatous tumors, symmetrically disposed and painless, as well as a diffuse painful infiltration of fat, over which the integument presented diminished tactile and thermic sensibility. There was also a large pigmented area over nearly the entire surface of the abdomen. The thyroid gland, the blood, and the internal organs presented nothing abnormal.

The author classifies adiposis dolorosa into three forms: the nodular, in which the fat is accumulated in the form of true tumors, often pendulous; the diffuse, in which the fat forms tumefactions with indistinct limitations; and the mixed. He also calls attention to the relations existing between Dercum's disease and other conditions affecting the fibrofatty tissues. A comparative study of these related affections leads to the following classification:

1. A morbid condition in which the fatty tissue is the seat of multiple new formations, generally symmetric, circumscribed or diffuse, at times associated with an overgrowth of the fibrous tissues. Under this head may be distinguished:

(a) Adiposis dolorosa, characterized by subjective or objective pain.

(b) Multiple symmetric lipomas, in which sensation remains normal or in which there are occasionally spontaneous pains, either in tumors or along the trunks of the nerves.

(c) The adiposis analgesica of Carducci, in which, with the presence of fatty masses, there is a diminution of the pain sense, although there may be spontaneous suffering.

2. A condition in which, with clinical symptoms similar to those in the preceding, the glandular, as well as the adipose tissues undergo hyperplasia; this condition is designated as symmetric adenolipomatosis.

3. A condition in which the clinical symptoms have many points of contact with those of adiposis dolorosa,

¹ Il Policlinico, February 8, 1902.

² Revue Neurologique, 1902, No. 2.

³ Philadelphia Medical Journal, March 1, 1902.

but in which the fibrous tissues are principally involved, being the seat of multiple, more or less symmetric tumors. This is the syndrome known as neurofibromatosis or Recklinghausen's disease.

Oddo and Chassy's patient was a highly cultured woman of thirty-four years, the daughter of an ambassador, in whom the adiposis dolorosa developed after a sudden reversal of fortune. One of the characteristic features of the disease—the contrast between the small face, hands, and feet, and the great fat accumulations of the trunk, arms, and legs—was most conspicuous. Painful nodules and pronounced mental depression were present. The peculiar features were: (1) a scleroderma, existing in the lower limbs and, to some extent, in the arms, and affecting only the adipose parts; and (2) the presence of vasomotor disturbances over the legs, consisting in varicosities, cyanosis, and dermatographia. The blood-count showed a reduction in the polymorphonuclear leukocytes. (There must be an error in the hemoglobin, which is given as only 10%). The patient improved under thyroid treatment. The authors believe that the scleroderma was due to the same cause as the adiposis dolorosa.

In Dercum's two cases just reported, there was epilepsy in the one—a man of thirty-nine—and in the other—a woman of thirty-three years—circinate retinitis was found. De Schweinitz, who had made the ophthalmoscopic examination, did not think that the retinitis bore any relation to the adiposis dolorosa, but Dercum inclines to the view that both conditions were probably dependent upon the same cause.

The pathology of the disease is still a mystery. Dercum and Burr found interstitial inflammation of the nerves passing through the fatty masses, and striking changes in the thyroid gland. The improvement secured by Oddo and Chassy in their case by means of thyroid medication is suggestive in this connection.

Cyclic Albuminuria, and New Points of View in the Treatment of Albuminuria.—The elimination of albumin in cyclic albuminuria is characterized by the peculiarity that the albumin disappears from the urine when the patient is in the horizontal position, while when in an erect position albumin may be present in varying amounts. In the study of several cases, Edel¹ found the most marked diminution or disappearance of the albumin in the afternoon, and thought that this was connected with the ingestion of the noon meal. The quantity of albumin varied inversely with the quantity of urine, and conditions which stimulated diuresis—such as potassium acetate—brought about diminution in the albumin. These facts are best explained upon Heidenhain's view that the velocity of the blood in the kidney is of chief moment in the secretion of urine and the amount of albumin that may pass over. In the horizontal position there is an increased flow of urine, and this accounts for the diminution in the albumin. Further studies showed that the albuminuria depends upon the quality of the pulse. Certain exercises, particularly walks and mountain climbing, executed with military precision, brought about improvement in the pulse, and diminution of the albumin in the urine. These facts are suggestive in the treatment of cyclic albuminuria, as well as in that of Bright's disease. The treatment consists in systematic strengthening of the heart and in diet. Rest in bed is of value only when there is an acute exhaustion of the heart. In chronic nephritis the albuminuria is also subject to cyclic influences. Here, too, the careful and definitive strengthening of the heart is of value. In carrying out further investigations upon the lines suggested by the author, it is necessary to have the urine to be examined voided at short intervals. [D.R.]

Hoarseness.—P. W. Williams² says that hoarseness which commences or persists without adequate and obvious cause should never fail to receive careful consideration, including a thorough inspection of the larynx. Hoarseness from chronic catarrh may be due to constipation, dyspepsia, hepatic derange-

ment, or gout. It may be the precursor of the more tangible evidences of tuberculosis. It is only necessary to mention syphilis, and a malignant growth may first declare its presence in this symptom. Paresis of the vocal cords resulting in hoarseness may be due to inflammatory or other conditions causing ankylosis of the cricoarytenoid joints, peripheral paralysis of the motor nerves of the laryngeal muscles, or affections of the central nervous system. In the latter, however, hoarseness generally comes too late to be of diagnostic import. Peripheral paralysis may be due to causes intracranial, intrathoracic, or in the neck. [H.M.]

Concerning a Previously Unobserved Cause of Unilateral Recurrent Paralysis and a Contribution to the Symptomatology and Diagnosis of Patulous Ductus Arteriosus (Botalli).—Schrötter¹ mentions the generally accepted causes of paralysis of the recurrent laryngeal nerve—aneurysm, mediastinal tumor, mitral stenosis and insufficiency (the paralysis the result of pressure from the dilated left auricle (Ortner)—doubted by Schrötter), compression between the left branch of the pulmonary artery and the ligamentum arteriosum (Kraus), etc. He reports a case of heart disease, in which a positive diagnosis had not been made, though mitral stenosis and insufficiency, and patulous ductus arteriosus and defect of the ventricular septum, and pulmonary stenosis had been considered. The necropsy revealed insufficiency and verrucose endocarditis of the mitral and tricuspid valves, thickening and verrucose endocarditis of the pulmonary valves, dilation of the pulmonary artery, patulous ductus arteriosus, eccentric hypertrophy of the right ventricle and right auricle, compression of the left recurrent laryngeal nerve between the dilated arterial duct and the aorta, etc. Microscopic examination of the compressed portion of the nerve (about 1 cm.) revealed marked degeneration. Schrötter suggests that, excluding mitral stenosis and insufficiency, paralysis of the recurrent laryngeal nerve may be a valuable diagnostic sign in the differential diagnosis between ventricular defect and patulous arterial duct, indicating the last. [A.O.J.K.]

Tuberculosis of the Trachea, with Accompanying Varicosities. Death.—Gidionsen² reports the case of a woman of 41 who died apparently of pulmonary hemorrhage preceded by emphysematous symptoms. The necropsy revealed a tuberculous ulcer about the size of a cent piece in the posterior tracheal wall just above the bifurcation. Around this lesion were numerous varicosities. No further signs of tuberculosis were observed in the other organs examined. [H.H.C.]

The Action of Alcohol Enemas Upon the Secretion of the Gastric Juice.—From study upon human subjects, Spiro³ concludes (1) that absolute alcohol and alcoholic beverages stimulate the secretion of the gastric juice when used in rectal injections; (2) that the effect is noticeable after the administration of from 7 cc. to 10 cc. of absolute alcohol, or of beverages containing this amount of alcohol; (3) that the highest degree of acidity is observed an hour after the clyster. In achylia and in one case of gastric cancer, no effect was noticed. [D.R.]

Hernia in Childhood.—G. Heaton⁴ gives statistics to show the great preponderance of young infants among the ruptured. The natural tendency to spontaneous cure becomes less each year. Umbilical hernias are the most amenable to treatment. An india rubber belt with pad which can be laced round the abdomen is advised. Femoral hernias are the least curable by truss. The majority in girls are inguinal. Factors in maintaining the hernia are flatulence, cough, worms, acid urine, a tight prepuce, small meatus, or anything which makes the child cry or strain. With removal of these conditions a large percentage can be cured by a truss, which should be worn night and day, and while being changed for a clean one, a finger should be held against the hernial ring to prevent descent. Very little pressure is necessary, and the truss must be smooth and unirritating and easily cleansed. After the age of 5 or 6 cure by truss occurs in not more than 8% or 10% of cases, and after trial operation is advised. When reasonable pressure will not prevent descent, when adhesions prevent reduction, or

¹ Zeitschrift für klinische Medizin, xliii, 160, 1901.

² Münchener medizinische Wochenschrift, October 15, 1901.

³ Münchener medizinische Wochenschrift, November 19, 1901.

⁴ Liverpool (Eng) Quarterly Medical Journal, August, 1901.

¹ Münchener medizinische Wochenschrift, November 19, 1901.

² Bristol Medico-Chirurgical Journal, September, 1901.

when there is a partially descended testicle, operation must be done. The simplest is all that is necessary, and is described. The patient should be kept horizontal for five weeks until the scar is firm. Relapse is less frequent after operation in childhood than in adult life. The aim of all treatment should be cure, not palliation. [H.M.]

The Present Status of the Doctrine of the So-called Fatty Heart.—Hirsch's¹ conclusion is that fatty heart as a disease *sui generis* does not exist. He prefers with Leyden the phrase "cardiac troubles of the obese," to fatty heart. If in an obese patient under 40 with weak musculature, signs of cardiac weakness develop, the thought that they may be dependent upon a disproportion between the size of the body and the power of the heart should suggest itself. In obese persons with large muscular power and cardiac insufficiency, the first thought should be the probable existence of anatomic or grave functional disease, particularly arteriosclerosis, including coronary sclerosis, renal changes, sclerosis of the splanchnic vessels, and chronic myocarditis. If the disturbance in the cardiac function depends solely upon a disproportion between the body mass and the heart's strength, cure is possible. The functional troubles of obese persons with powerful musculature must be judged with a view to the existing complications. In the treatment it is important to differentiate between obese patients with a competent heart muscle and those with a weakened heart muscle. Antifat cures are applicable only to the first class. If the condition is a mere disproportion between the size of the body and the strength of the heart, exercise in the form of resistance movements, and dietetic treatment are indicated. The use of thyroid preparations by the obese with cardiac troubles is inadvisable. This is also true of the restriction of fluid, suggested by Ertel. In the other class of cases with organic or grave functional changes, restriction of body activity and even absolute rest is indicated. In those cases in which there is a heightened blood-pressure, probably connected with sclerosis of the splanchnic vessels, the Carlsbad, Marienbad, or Tarasp waters are taken with advantage. The anemic obese primarily require rest and iron. [D.R.]

The Bacteriologic Diagnosis of Actinomycosis.—In referring to the bacteriologic examination of actinomycosis cultures, Silberschmidt² calls attention to the fact that the actinomycoses closely resemble in many ways diphtheria bacilli, although they are somewhat thinner, stain less distinctly and show branching more frequently than *Bacillus diphtheriae*. [H.H.C.]

Pulmonary Regurgitation.—Cautley³ refers to the rarity of pulmonary regurgitation and to the fact that it is due usually to infective endocarditis or is associated with pulmonary stenosis. He reports a case occurring in a girl of 15, secondary to pulmonary stenosis and associated with acute endocarditis of the pulmonary valves. The case presented all the classical signs of the disease: The apex beat was displaced downward and outward; there were marked hypertrophy and dilation of the right ventricle and epigastric pulsation; a diastolic murmur was heard in the third and fourth left intercostal spaces close to the sternum. This resembles the murmur of aortic insufficiency, but the water-hammer pulse was absent. The murmur was intensified on expiration and in the upright posture. Emboli were carried to the lungs and produced frequent attacks of hemoptysis. [A.O.J.K.]

The Treatment of Anthrax with Intravenous Injections of Soluble Silver (Collargolum).—Fischer¹ reports the successful treatment with collargolum of a case of anthrax in a sheep-keeper of 35. The existence of anthrax had been proved bacteriologically. The injection consisted of 5 cc. of a 1% solution, and was made directly into the cephalic vein. Three injections were given. [D.R.]

Human Filariasis in Trinidad.—Vincent,⁴ who made observations of 500 patients with reference to the prevalence of filariasis records that 5% were found to be infected with the filaria, and 6.6% to have elephantoid disease. The infecting agent was *Filaria nocturna* in all but one case, in which it was

Filaria Demarquaii. Reference is made to the results of a number of experiments undertaken to estimate to what extent the observations made in other tropical countries on the metamorphosis of filaria in mosquitos coincide with the conditions in Trinidad. The species of mosquitos employed were *Culex fatigans*, *Culex taeniat* and *Anopheles albimanus*. It is stated that inasmuch as it has been proved that filaria is transmitted to man by the mosquito, protection from infection practically means protection from mosquitos. In view of the difficulty attending the ridding of a locality of mosquitos, the only safeguard available at present consists in the habitual use of netting, especially when in the neighborhood of known filariated subjects. [A.O.J.K.]

The Use of Danysz' Bacillus in the Extermination of Rats.—Abel¹ has carried out a series of laboratory and practical experiments with agar cultures of Danysz' bacillus, and finds that although this method of exterminating rats is not without promise of good results, further experimentation is necessary in the way of perfecting the technic before positive results may be counted upon with any degree of certainty. [H.H.C.]

The Theory of the Antibodies. 1. Concerning Antitoxin Immunity.—In an interesting article, Gruber² endeavors to demolish the lateral-chain theory of immunity promulgated by Ehrlich. Perhaps the most important conclusion reached by the author is that the antitoxin is made in an entirely different part of the body from that upon which the toxin acts. Ehrlich's theory postulates that the antitoxin is derived from the same cells that fix the toxin. [D.R.]

The Frontal or Supraorbital Reflex.—Overend,³ referring to the reflex recently described by McCarthy, states that he himself described it in 1896, and demonstrated it as far back as 1889. He believes that it is a true skin-reflex, and further that it is not only the supraorbital, but also the cutaneous and periosteal terminal twigs of the supratrochlear, infratrochlear, nasal, and lacrimal, in fact, all the end branches of the opthalmic nerve that are concerned in its production. He suggests therefore that it be called the "ophthalmic" reflex. He has found the reflex exaggerated and obtainable over an increased area in chorea, supraorbital neuralgia, and hysteria, and absent in chloroform narcosis, and in facial paralysis. It has been difficult to obtain in paralysis agitans. In a patient with hemiplegia hemianesthesia it was absent on the paralyzed side for several days after the attack, but when the skin of the normal half of the forehead was tapped both orbiculares could easily be made to respond. [A.O.J.K.]

Myiosis Intestinalis.—According to Schlesinger and Weichselbaum,⁴ who report a case which terminated fatally after one and a half years' illness, the larvae of many different species of flies may live and possibly multiply in the intestinal canal, causing at times grave lesions, ulceration, perforation, thickening of the wall of the intestine with resulting stenosis, etc.; and, while most cases run a mild course, we should always be guarded in our prognosis, even after all the larvae have been gotten rid of. The treatment should aim at the early destruction and expulsion of the parasites; purgatives, calomel, santalin, naphthalin and felix mas, with enemas, to which menthol or thymol have been added, and even emetics being indicated when the larvae are in the colon. Enemas of silver nitrate, tannin or castor oil are useful. As prophylactic measure, raw meat must be excluded from the diet, and flies should be rigidly kept from coming in contact with food of any kind. [J.C.S.]

Splashing Sounds, Atony and Gastroptosis.—Kuttner⁵ commenting on the discussion of Stiller and Elsner regarding the diagnostic value of splashing sounds and their relation to gastric atony, states his belief that the former, even when elicited by mere contact, constitute a pathologic phenomenon, since they are largely dependent upon the tonicity of the gastric musculature. Splashing sounds indicate gastric atony if elicited during digestion; if brought out subsequently, they

¹ Münchener medicinische Wochenschrift, November 19, 1901.

² Deutsche medicinische Wochenschrift, November 21, 1901.

³ Lancet, January 25, 1902.

⁴ British Medical Journal, January 25, 1902.

¹ Deutsche medicinische Wochenschrift, December 12, 1901.

² Münchener medicinische Wochenschrift, November 19, 1901.

³ Lancet, January 25, 1902.

⁴ Wiener klinische Wochenschrift, January 2 and 9, 1902.

⁵ Berliner klinische Wochenschrift, December 16, 1901.

indicate motor insufficiency of the stomach. If capable of elicitation in a fasting stomach, only the stomach tube and an examination of the gastric contents can determine between parasecretion and motor insufficiency. Atony and motor insufficiency are not to be regarded as synonymous terms. In the former condition the motor function of the stomach may be normal as far as the usual test-meals are concerned, although motor disturbances are usually present. These latter are ordinarily very slight. Marked motor insufficiency in cases of simple atony is a transient condition. Chronic atonic ectasia occurs only when gastric atony is accompanied by complications (parasecretion, etc.). Gastroparesis often develops from atony. The displaced stomach may functionate normally, but like the atonic stomach, is not capable of much extra exertion, motor disturbances being the immediate result. [H.H.C.]

Observations on Tuberculosis.—W. Zahn¹ gives an analysis of 6,320 autopsies made in the pathologic institute at Geneva during the 25 years ended September 30, 1901. Of these, 3,743 (59.2%) were males, and 2,577 (40.8%) females; 2,058, or 32.56% (36.5% of the males and 27.2% of the females) were tuberculous, the disease being latent in 165 or 8%, 59.4% of whom were males and 40.6% females, and active ("florid") in 1,893, or 92%, of whom 66.5% were males and 33.5% females, classified as follows: Acute miliary tuberculosis, with or without primary infection of lymphatic glands, 181, or 9.56%, of whom 64.1% were males and 35.9% females; chronic pulmonary tuberculosis, 1,528, or 80.73%, of whom 66.7% were males and 33.3% females; primary tuberculosis of bones and joints, 71, or 3.75%, of whom 59.2% were males and 40.8% females; primary tuberculosis of genitourinary organs, 41, or 2.22%, of whom 71.4% were males and 28.6% females; primary tuberculosis of suprarenal bodies, 21, or 1.11%, of whom 80.9% were males and 19.1% females; primary tuberculosis of brain, 7, or 0.36%, of whom 71.5% were males and 28.5% females; primary tuberculosis of intestine (infection through mucous membrane), 43, or 2.27% of whom 69.7% were males and 30.3% females. That primary intestinal tuberculosis was so rarely observed the author thinks may be due, in part, to the small number of children obduted, and as principal cause he regards the ingestion of tuberculous milk. Secondary intestinal tuberculosis was observed 966 times, or in 63.22% of all "florid" ulcerous tuberculous invasions of lung tissue, and 627 (64.9%) of these were men and 339 (35.1%) women. The swallowing of tuberculous expectorate the author regards as the principal cause of secondary infection of the intestinal tract, and as important predisposing cause organic or functional gastric disorders. No account was kept of laryngeal infections. Coexistent with tuberculosis were found carcinoma 76 times, or in 3.7% of all, and sarcoma 6 times, i. e., 0.3% of all. Amyloid degenerations were observed in 105 cases (1.66% of all autopsies), 98, or 93.3% of these in "florid" tuberculosis, 79 (80.6%) occurring in pulmonary and 19 (19.38%) in articular tuberculosis, while 7 (0.16%) occurred in the nontuberculous. [J.C.S.]

The Metabolism of Convalescents.—Svenson,² with a view to ascertain whether the marked and rapid gain in weight commonly observed during convalescence is due solely to increased food or to a limitation of the metabolic processes, such as is observed in chronic malnutrition, conducted a large number of experiments. He found that in the early stages of convalescence from typhoid the respiratory quotient is low, but that with increase in the values of O and CO₂, the respiratory quotient increased considerably so that it often was over 1.0. Then it gradually returned to the normal. Similar though less marked changes were observed during convalescence from pneumonia. With the onset of convalescence the organism begins to retain N in amounts larger than is observed in any other physiologic process. In some cases, however, in consequence of the absorption of edemas or other inflammatory exudates there may occur a large N-output, so that there seems to be an N-balance or an N-loss. This is especially common after pneumonia. The increased O-consumption after typhoid fever was much greater than in health, but after pneumonia it was about normal. An intercurrent disease causes a recurrence to the conditions of an earlier period of convalescence. The

investigations disclose the rather surprising fact that the increase in weight of convalescents is not the result of limitation or economy of metabolic processes, but is due to the increased amount of food, partaken of, and that the healthy man, if he took the same amount of food, would increase still more in weight than does the convalescent. [A.O.J.K.]

Jez' Antityphoid Extract.—Markl¹ publishes the results of his experiments with this extract, which is obtained from the thymus gland, spleen, bone-marrow, brain and spinal cord of rabbits immunized by repeated inoculations with cultures of typhoid bacilli. This extract is triturated with a solution of sodium chlorid, alcohol, glycerin and a minute quantity of carbolic acid, to which peptone was later added, it is left on ice and then filtered. Jez had conceived the idea that in animals immunized with typhoid bacilli the antitoxin does not collect in the blood-serum, but in certain organs, and from the hypothesis he began his investigations, which were published in 1899. In 18 typhoid patients treated with the extract he obtained positive results. From comparative tests of the extract and of typhoid immune serums the author concludes that the extract of Jez' contains substances that are protective against typhoid bacilli, but to a less degree than the corresponding serums; that these protective substances are specific bodies which are not found in normal rabbits, and that their action is anti-infectious and not antitoxic. [J.C.S.]

Gastric Atony.—Stiller² claims that gastric atony is the earliest and most constant symptom of enteroptosis, that it is due to a congenital asthenic condition, and is dependent upon the neuromuscular apparatus of the stomach. Cases of purely muscular or local nature are exceptional. Simple atony represents only a decrease in the neuromuscular tonus, which tends to produce temporary insufficiency, rarely permanent injury to the peristalsis and still more rarely stagnation. Simple or peristaltic atony is only facultative insufficiency. Ptosis, atony and nervous dyspepsia are in general identical. The anatomic equivalent of those functional disturbances summed up in the word atony is ptosis, and their infallible clinical expression is ptosis and its product, splashing sounds. The latter, when easily elicited, indicate, at the height of digestion, simple peristaltic atony; after digestion motor insufficiency or peristaltic atony and in a fasting stomach, stagnation or atonic ectasia—all stages of one and the same diseased condition, and gradually merging one into the other. [H.H.C.]

Hemoglobinuria.—Otto³ records successive attacks following the administration of $\frac{1}{2}$ to 1 grain doses of quinin during the course of an obstinate quartan fever in a man of 42, residing in Hamburg, who had never been south of 47° north latitude, nor ill since he was 18, when he had typhoid fever and took large quantities of quinin without evil results. Between July 7 and 13, 1901, he visited Krakan, staying with a relative whose house was near a swamp in a region swarming with mosquitos. On August 16 he had a chill followed by fever and a sweating stage, followed by another attack three days later. He was ordered 1 grain quinin per day in divided doses, which produced no improvement. The chill and fever recurred with regularity. Another physician diagnosed gastric catarrh, and prescribed pepsin and phenacetin, under which treatment the patient continued to grow worse. September 13, when another chill was expected in the afternoon, he took $\frac{1}{2}$ grain quinin in the morning. In $\frac{1}{2}$ hours severe pains, great mental anxiety, dyspnea and vomiting set in and the urine had the color of cherry-juice, but became clearer toward evening. Daily grain doses of quinin per rectum produced neither improvement nor evil effects, probably because but little was absorbed. October 27 he took 1 grain quinin in wafer, when large amounts of hemoglobin again appeared in the urine. With $\frac{1}{2}$ grain doses daily per rectum improvement now set in. This case strengthens the theory of Koch and others that quinin is an important etiologic factor in the genesis of hemoglobinuria—in fact, that while malarial anemia and other changes in the blood, rather than climate, are predisposing causes, the exciting cause is quinin. [J.C.S.]

¹ Wiener klinische Wochenschrift, January 16, 1902.

² Berliner klinische Wochenschrift, December 16, 1901.

³ Deutsche medizinische Wochenschrift, January 23, 1902.

¹ Münchener medizinische Wochenschrift, January 14, 1902.

² Zeitschrift für klinische Medizin, xliii, 147, 1901.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

Carcinoma of the tongue is fortunately one of the less common forms of malignant disease, for the disturbance of speech and taste, and presence of foul disease in the mouth make it one of the most loathsome and terrible forms of cancer. Of recent years noteworthy advances have been made in the treatment of these cases which have been brought before English speaking surgeons specially through the writings of Butlin. A very good statistic paper on this subject has recently appeared from Czerny's Heidelberg clinic by Roediger (*Beitrag zur klin. Chirurgie*, 1901, Vol. 31). He bases his paper on a study of 31 cases which were treated in the Heidelberg clinic from 1888 to 1900. The results are compared with the statistics of the clinic from 1878 to 1888, during which time 26 patients were treated and results were reported by Steiner (*Beitrag zur klinische Chirurgie*, Bd. 6). Recent statistics from Kocher's clinic at Berne, reported by Sachs (*Arch. f. klin. Chirurgie*, Vol. 45) from Krönlein's clinic at Zürich by Binder (*Beitrag f. klin. Chirurgie*, Bd. 17) and Bergmann's clinic at Berlin reported by Braun (*Inaugural Dissertation*, Berlin, 1898 and those reported by Butlin in his recent book show very similar results. Carcinoma of the tongue appears to occur rarely in women, various statistics showing that it is about five times more common in men. There is some difference in the results of study of various series of cases as regards the age of patients, but it is most frequent between 40 and 60 years of age. In Roediger's series of cases the maximum number occurred in patients between 50 and 60 years of age. Irritation from carious teeth is the etiologic factor which he considers of greatest importance. This is mentioned as a probable factor in 11 cases. Smoking, psoriasis of the tongue, papilloma and chemical irritants are mentioned as other predisposing causes. There is a hereditary history of carcinoma in about 6% of the cases which have thus far been reported. The affection most frequently begins as a small nodule. The early appearance of pain is quite characteristic. This is frequently not felt in the tumor itself, but shoots through the lower jaw or the gums, often radiating to the ear and the back of the head. The pain in the ear is explained by the transmission of the irritation from the lingual nerve to the facial nerve by the chorda tympani. Salivation is also frequently an early symptom. The left side was affected in 19 cases, as against 12 cases in which the right was affected. The size of the tumor varied from that of a pea to an involvement of nearly the entire organ in some cases, together with the surrounding tissues. In 15 cases of the series the tumor was at least half the size of a hen's egg. In 22 cases the lymphatic glands were involved, the involvement occurring most frequently in the submaxillary and submental glands. The average duration of the disease at the time of operation was five months. Special stress is laid upon the unfavorable influence of the use of caustics. Attention has been called to this by Butlin. Caustics are usually used in the cases in which a wrong diagnosis has been made, and they influence the progress of the growth most unfavorably. Without operative treatment the result is of course absolutely fatal, and the earlier the operation the more favorable the prognosis. In the Heidelberg clinic no typical form of operation has been followed in every case, but the character of the operation depends upon the extent of the growth. In eight cases the growth was removed through the mouth without any other incision. In other cases the cheek was split, and in several cases a preliminary ligation of the lingual artery was performed to prevent hemorrhage. Of late years Czerny has frequently used the thermocautery in the extirpation of the growth as was warmly recommended by Langenbeck in 1881, and

Roediger believes that the permanent results will show the advantage of this method of operation. In this rather limited series of cases the percentage of recurrences in cases treated by the thermocautery was 16.7 against 35.3 removed with knife and scissors. In most of these cases the growths were extensive, but in spite of this the proportion of recoveries is over twice as great as in the cases removed by knife and scissors. The after-results of operation are also considered more favorable. There were no complications: no fever, edema or secondary hemorrhage. In all cases the glands of the upper part of the neck were removed preliminary to operation on the tongue. The incision for removal of the glands was either closed immediately or in the case of extensive operations it was tamponed and irrigated daily with mild antiseptic solutions. In no case was there any complication from the wounds in the neck. The immediate mortality of the operation is considerable. In two cases the patients died from lung affections following the operation. The immediate mortality was 13.3% from all causes, as compared with 15.4% in the first series of cases reported by Steiner. Two of the patients left the hospital with recurrence, five suffered from recurrence at a later date, two died from other causes and in three cases the cause of death is unknown. Seven of the patients are known to be permanently cured, the patients remaining well; in one case 11 years, one case 5½ years, two cases 4½ years, one case 3½ years, and two cases 3½ years after the operation. This Roediger rightly considers a very favorable showing; 30.5% of permanent healing, as compared with 19.6 (Butlin) and 24.2% (Binder) which have been reported from other clinics. In spite of the great defect which was left by the operation, the function of the stump of the tongue was very good in nearly all of the cases. The patients spoke well enough to be readily understood, and were able to swallow without difficulty. Even in cases in which recurrence followed there was a considerable gain in length of life as a result of the operation. Estimating the average length of life in cases not operated upon at 12 months, the average length of life in the series of cases in which recurrence followed was 17.3 months, a gain of about 5.3 months probably in most of the cases.

While the prospects of cure for a patient suffering with carcinoma of the tongue are not bright, the recent statistics from various sources, show that a cure is possible in certain cases. A comparison of later statistics with those of some years ago show, as in the statistics of the Heidelberg clinic, a decided improvement, both as regards the immediate mortality from operation, and specially as regards freedom from recurrence. The fact that even seven patients have remained free from disease from 3½ to 11 years is quite encouraging. The same general principles hold good in the treatment of carcinoma of the tongue as in the surgical treatment of other forms of malignant growths; success depends upon early diagnosis and prompt and thorough removal of the entire disease. This routine removal of affected lymphatic glands, even when there seems to be no very definite evidence of involvement, is particularly important. The favorable results which have been obtained in Czerny's clinic with the use of the thermocautery, indicate that this method should be given a trial elsewhere. No doubt, in the coming 10 years, we may see further improvement in the statistics as the result of more general adoption of thorough methods of treatment and the education of general practitioners in early diagnosis, though of course we cannot hope for a large percentage of cures.

The Technic of Nephropexy: Combination with Lumbar Appendicectomy and Exploration of the Bile Passages.—Edebohls¹ calls attention again to the relation of movable kidney to appendicitis, which he first pointed out in 1895. The simultaneous removal of the diseased appendix and anchoring the movable kidney, he considers a natural corol-

¹ Annals of Surgery, February, 1902, Vol. 35, No. 2.

lary. Occasionally lumbar appendectomy is not an easy operation. Edebohl has attempted the operation in 56 cases, and has failed four times. In two cases the appendix could not be found. In a third it was impossible to deliver it so far as to operate upon it, and in the fourth case the presence of pus led to the abandonment of the removal through the lumbar incision. The removal of the appendix by lumbar incision is never indicated except when the operation is combined with right nephropexy. In recent times the conviction is gaining ground among a number of clinical observers that there exists an intimate association between the movable right kidney and cholecystitis, cholelithiasis and their sequels. In four successive nephropexies recently performed, Edebohl discovered, by lumbar exploration, two cases of chronic cholecystitis, and two cases of gallstones. He has explored the bile-passages in over 30 cases through the lumbar incision. In the average case this may be done as satisfactorily as through the usual anterior incision in the abdominal wall. As to the feasibility of operative procedures on the gallbladder and gallducts through the lumbar incision, this is a different and still unsettled question, but in the future a modified incision may be devised through which it will be possible to operate upon the bile-passages and anchor the kidney. An extensive description of the various methods of nephropexy and the steps of the operation is given. In his own cases, Edebohl uses the lumbar incision, nicking the outer margin of the quadratus lumborum muscle near its insertion into the crest of the ilium, if necessary. He has never found it necessary to extend the incision downward and forward onto the abdomen. In all recent operations he has entirely removed the fatty capsule of the kidney. He makes a straight incision along the outer border of the erector spinae from the last rib to the crest of the ilium, removes the fatty capsule, nicks the capsule proper of the kidney, and separates the capsule from the kidney-substance by blunt dissection, exposing about half of the posterior surface of the kidney. He then passes four fixation sutures of catgut through both the reflected and attached capsule close to their line of junction. If exploration of the appendix is considered necessary, it is performed before the operation upon the kidney, the peritoneum being opened on the outer side of the kidney. The ascending colon is drawn up through this opening, and one of the longitudinal bands is followed down to the appendix, which may then be inverted into the cecum or amputated. After replacing the intestines, the gall-passages may be explored. The peritoneal wound is then closed by suture, and the kidney is prepared for anchoring as has been described. The external wound is closed by catgut sutures of the muscle and fascia. Edebohl has performed in all 261 nephropexies upon 186 patients. His mortality has been 1.55%. In 108 cases the right kidney alone was anchored, in 68 cases both kidneys were operated upon. He has used the kidney air-cushion, which he devised, since 1893. Ether, or ether preceded by nitrous oxid gas, has been used in all of his operations except four. The patients are kept in bed three weeks after the operation. Lumbar hernia has followed in nine cases out of the series. In not a single case in which the kidney has been anchored has it again become detached. [M.B.T.]

Surgical Treatment of Obstructive Jaundice.—Mayo Robson² affirms that in dealing with obstructive jaundice the most difficult question is often the diagnosis. The following causes must be taken into consideration: Common duct cholelithiasis, chronic pancreatitis, simple stricture of the common bile-duct, inflammatory adhesions causing pressure on or stenosis of the hepatic or of the common bile-ducts, hydatid disease of the liver, gummas implicating ducts, chronic catarrh of the bile-ducts, cancer of the common bile-duct, cancer of the head of the pancreas, cancer of the liver, cirrhosis of the liver, and other rare causes such as aneurysm of the hepatic artery or of the aorta, and other tumors of the liver, gallbladder, pylorus, kidney, intestine, etc. Very valuable suggestions are given in the discussion of the differential diagnosis and attention is called to the fact that inflammatory adhesions of the omentum, intestines, etc., in the vicinity of the gallbladder may produce a tumorlike mass which may be mistaken for

a distended gallbladder or cancer. An enlarged and firm head of the pancreas does not necessarily mean malignant disease of that organ—it may be only a chronic pancreatitis, which drainage of the gallbladder will cure. The author says he has operated on 212 patients suffering from obstructive jaundice dependent on one or other of the causes mentioned; of these, 183 recovered, showing a mortality of 13.6%; 60 were the subjects of malignant disease either of the liver, bile-ducts or pancreas, and of these 46 recovered from operation and lived for various periods, some of them being well at the present time, thus showing a mortality of 23.3%. In support of the third proposition, 152 out of the 212 cases were operated on for obstruction dependent on gallstones in the common duct or on other non-malignant causes, with 135 recoveries. Many of these patients were extremely ill at the time, and operation was undertaken as a last resort; but none of these almost moribund cases have been left out of the list, which shows a mortality of 9.8%. A careful study of the causes of mortality in the whole series of cases shows the two greatest dangers to be hemorrhage and shock, and the two next serious causes exhaustion and sepsis, the accidental causes of death, heart disease, syncope, kidney disease, apoplexy, and other accidents being such as may follow any operations in patients so extremely ill as all cases of obstructive jaundice must be. The study of the unsuccessful cases is perhaps the most instructive, and from them we can derive lessons that will tend to diminish the mortality very considerably. This is already occurring materially in his own practice, for the statistics of the cases up to December, 1899, show the mortality as 16.4%, whereas those since January 1, 1900, though equally serious, have only had a mortality of 14.2%, but in the cholecotomies the difference is as 14.5% to 7.4%. The heroic administration of calcium chlorid for at least two days prior to the operation is an efficient means of modifying the coagulability of the blood. This should be continued in nutrient enemata for three or four days after the operation. The prevention of shock and rapid operation the author considers very essential to a successful operation. [A.B.C.]

Early Intervention in Injuries of the Liver.—Mercade¹ emphasizes the importance of early operation in cases of injury to the liver. He states that of 543 cases of this kind which have been collected from the literature more than one-half have died from hemorrhage within 24 hours. He reports a case in which a man received two stab-wounds with a knife, the first in the right hand, the second in the epigastric region exactly in the median line about 5 cm. above the umbilicus, extending obliquely downward from the left to the right. A piece of bloody omentum was protruding from the wound. The patient was very pale, his extremities were cold, his pulse very feeble. He had not vomited. There was no abdominal distention and slight tenderness on palpation. The fact that the omentum was protruding left no doubt as to the injury. The abdomen was opened, the injured omentum was tied off and excised, but it was at once noticed that the hemorrhage did not cease. A more careful exploration was then made, the blood being rapidly sponged away, and a wound 7 or 8 cm. long was found on the convex surface of the left lobe of the liver, from which blood was rapidly escaping. The wound was sutured with three catgut stitches. A large gauze compress was packed against the side of suture compressing the wound, and drains were carried into the right iliac fossa. After the operation, which lasted only 30 minutes, a subcutaneous injection of 300 grams of serum was given. The patient's condition improved rapidly after operation. For a few days there was escape of bile from the abdominal wound, but a complete recovery followed. In a second case rupture of the liver occurred from abdominal contusion caused by the patient's being run over by a wagon. On entrance to the hospital he was very pale and suffering severe abdominal pain. Respiration was entirely thoracic and rapid, there was vomiting, rapid pulse, coldness of the extremities and other symptoms of severe shock. The abdominal muscles were held very rigidly. Physical signs of effusion of blood into the peritoneal cavity were present. A diagnosis of ruptured spleen was made and the abdomen was opened between the ensiform cartilage and the umbilicus. Considerable blood was found in

¹ British Medical Journal, January 18, 1902.² Revue de Chirurgie, January 10, 1902, Vol. 22, No. 1.

the abdominal cavity. The spleen was palpated and inspected and found perfectly normal. On enlarging the wound to explore the liver a large rupture was found about 10 cm. long extending along the lower surface from the hilum of the organ forward and to the right toward the gallbladder. The rent in the liver was approximated by silk stitches, a tampon was placed so as to make pressure against the line of suture, and drains were placed in the pelvis and right iliac fossa. After the operation 800 grams of serum were given subcutaneously. The patient's condition was much improved, and that evening he was considered out of danger. Rapid recovery followed. [M.B.T.]

Deaths From Chloroform.—At a meeting of the Surgical Society of Paris, January 2 and 29, 1902, this subject came up for discussion. Gerard-Marchant¹ reported seven deaths from chloroform anesthesia, five of these occurring during his service as intern and chief of clinic, and two since he has had charge of the surgical clinic. These latter two cases occurred during intrathoracic operations. He states that he could add a large number of other fatalities which he has seen simply as spectator. This large number of deaths has led him to use ether anesthesia exclusively since 1895 during which time he has had no accidents. Chaput has had three deaths from chloroform. At present he frequently employs mixed anesthesia, beginning with ether to avoid syncope which he believes is more likely to occur at the beginning of the anesthesia, and later changing to chloroform. Reynier reported five deaths from chloroform. He believes that there were fairly good reasons to account for nearly all of these deaths. The causes which he mentioned were the administration of atropin and morphin in one case; the fact that the patient had a full meal before anesthesia in another case; the weakness of the patient in a third case. He believes that deaths under chloroform are extremely rare, and chloroform anesthesia should not be considered dangerous. Lucas-Championnière has seen a considerable number of deaths under chloroform, three of which he believes could be attributed solely to the anesthetic. Hartmann and Guinard advise preceding the administration of chloroform by inhalation of ethyl bromid and think that this gives absolute security against a fatal result. [M.B.T.]

Recovery After Operation for Diffuse Peritonitis from Perforation of the Appendix.—Morton² reports two cases in a woman of 26 and a man of 21 suffering from diffuse peritonitis. By diffuse peritonitis he does not mean general peritonitis, but an infection far beyond the limits of an appendix abscess. In these cases it was probably confined to the lower abdomen. Operation was performed in each case, and both patients recovered. [A.B.C.]

Treatment of Inoperable Cancer.—Cooper³ discusses various methods, including inoculation with *Streptococcus erysipelatis*, subcutaneous injections of anticancerous serum, and of Coley's fluid (the mixed toxins of *Streptococcus erysipelatis*, and *Bacillus prodigiosus*), oophorectomy, thyroid and lymph gland feeding, Röntgen rays, Finsen's light treatment, irritating injection, the production of aseptic suppuration, electricity, and drugs. The review leads to the following conclusions: That in inoperable sarcoma, especially spindle-celled, the patient should have the option of the Coley's fluid given to him. In women of about 40 oophorectomy should be proposed for cancer of the breast, and may be combined with thyroid feeding. In superficial malignant ulceration, Röntgen rays give good hope of improvement. Celandine is worthy of trial; also parenchymatous injections of acetic acid. Morphin should be pushed in hopeless cases. [H.M.]

Pancreatic Calculus.—Coe,⁴ of Seattle, reports the removal by operation of a pancreatic calculus weighing 72 grains. The patient, a married woman, aged 36, a stage dancer by profession, had suffered for 4 years from intense pain to the left of the median line and about 2 inches below the ensiform cartilage, with irregular pulse, slight jaundice, increase of saliva, fickle appetite, and extreme constipation. Recovery was rapid and perfect, the patient feeling well and able to return to her occupation. The composition of the stone was: Water, .98%;

silica, .18%; calcium phosphate, 53.18%; magnesium phosphate, 15.98%; calcium carbonate, 13.21%; magnesium carbonate, 8.28%; fat, 6.32%; organic matter, 1.97%. [J.C.S.]

Sanatorium or Surgical Treatment for Scalled Surgical Tuberculosis.—Sprengel¹ believes that it has come to be a question of considerable importance as to which cases of tuberculosis formerly considered suitable for surgical treatment shall be subject to operation, and which cases shall be treated in sanatoriums. At present there is a tendency in the sanatoriums of Germany to receive all cases of tuberculosis without any effort to determine whether this treatment is best suited to the individual case, and this is giving disastrously bad results. The results of surgical treatment in these forms of tuberculosis are so satisfactory that climatotherapy should not supplant surgical methods. On the contrary, it is probable that wider experience will show that a combination of surgical treatment with suitable sanatorium treatment will give better results particularly in the conservative treatment of certain forms of tuberculosis. Sprengel endeavors to divide cases of tuberculosis into groups. Group 1, cases which may be treated surgically without important disturbance of function or growth or deformity. In this group he classes: (1) Glandular tuberculosis; (2) tuberculosis of the long bones, including the metacarpal and metatarsal bones and phalanges of the hand and foot; (3) tuberculosis of the knee or ankle in children and young persons; (4) tuberculosis of the short bones of children and young persons, with exception of the vertebrae; (5) tuberculosis of ribs and the sternum at whatever age; (6) tuberculosis of the bones of the face and skull. All of these patients should first receive surgical treatment. In the second group of cases recovery by purely surgical means is uncertain and accompanied with decided disturbance of function and growth. In this class belong the cases of spondylitis, tuberculosis of the hip in children, tuberculosis of the bones of the upper extremity. These patients should first be given the benefit of sanatorium treatment before adopting operative methods. A third group of cases may be cured by operation which may result in more or less deformity. In this class belong (1) bone and joint tuberculosis in elderly persons; (2) bone, joint and glandular tuberculosis accompanied by sinuses in young persons; and (3) genital tuberculosis. These cases should also first have the benefit of surgical treatment. In a fourth group of incurable cases he includes: (1) Tuberculosis of the hip in persons over 25 years of age; (2) spondylitis accompanied by sinus, and (3) most cases of multiple tuberculous affection. This latter class of cases he believes are usually treated most advantageously in sanatoriums. By co-operation between the sanatoriums and the general hospitals suitable cases being transferred from the one to the other, Sprengel believes that much good may be accomplished. [M.B.T.]

Partial Nephrectomy.—B. G. A. Moynihan² cites three cases upon which he did a partial nephrectomy. The first was a woman of 42. A smooth, spheric tense, fluctuating and extremely movable tumor, the size of a cricket ball, could be felt in the right side of the abdomen. An opening by the Longenbuch's incision showed the tumor to be a cyst attached to the lower pole of the right kidney. A wedge-shaped portion of the lower end of the kidney was removed with the cyst. The kidney wound was closed with six deeply buried catgut sutures and recovery was uneventful. The second case was a solitary cyst in the connecting band of a horse-shoe kidney. The band connected the lower poles of the kidneys. The growth of the cyst produced symptoms very like obstruction at the pylorus, due to pressure upon the duodenum. Operation by a median incision was performed, and the entire band, together with the cyst, was removed. A wedge-shaped piece of kidney substance was removed from the lower pole of each kidney where the band was attached. The wounded kidneys were sutured as in the first case, and recovery was complete. The third case was a myxosarcoma of the lower pole of the right kidney, occurring in a woman of 21. Operation was by lumbar incision; partial nephrectomy was done, a wedge-shaped piece of the kidney removed with the tumor, the wounded kidney treated as in the above cases, and recovery was complete. [A.B.C.]

¹ La Semaine Médicale, February 5, 1902.

² British Medical Journal, February 8, 1902.

³ Medical Press and Circular, October 23, 1901.

⁴ Transactions of the Washington State Medical Society, 1901.

¹ Berliner klinische Wochenschrift, December 23, 1901, Vol. 38, No. 51.

² British Medical Journal, February 1, 1902.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Antepartum Crying of the Child.—Man is born to trouble as the sparks fly upward; even the unborn child must at times enunciate its cry of distress before it has escaped its normal habitat. It is a well known fact that the fetus may swallow amniotic liquid and that efforts at respiration may cause the liquor amnii to be sucked into the respiratory tract. This is particularly true if anything diminishes the supply of oxygen to the fetal blood. If the head is in the vagina, or if air is admitted to the uterus after rupture of the membranes, respiration may begin long before birth; and although many of the cases on record of children crying in the uterus during pregnancy are undoubtedly fabulous, yet occasionally audible cries may be heard before the complete expulsion of the head from the os uteri. McLean¹ describes a case in which he states positively that the child cried lustily in utero during application of the forceps. He compared the sound to a voice from the cellar. This child was in the uterus, not in the vagina, and continued crying during the whole of the five minutes occupied by its delivery. The cry is more apt to be heard during certain cases of dystocia. One of the most recent cases is that reported by Reidhaar,² who also notes several instances mentioned within the last ten years. Thorn, six years ago, recorded that after using Barnes' dilator he heard three fetal cries; and Schaller speaks of a fetus being heard to cry for over 15 seconds after an attempt at version by an inexperienced operator. Reidhaar's patient was a woman, aged 21, who suffered from an attack of enteric fever in August, 1900, followed by septic endocarditis and hepatic, pulmonary, and renal embolism. She was pregnant, and as her general health grew worse and worse, induction of labor was decided upon on November 23, in the thirty-fourth week of pregnancy. At the first introduction of the dilator the waters at once escaped. An hour later, as no pains had set in, the instrument was removed and a larger one introduced. The maneuver being difficult caused crampy pains in the uterus; the patient became excited; and seven distinct fetal cries were heard, not very shrill, but audible in the next room. When a few minutes later Reidhaar caught up the anterior lip of the cervix with a volsella, distinct cries were again heard. Subsequently a dilating bag was introduced, expelled after a few hours and reintroduced; then the labor pains became strong, the os uteri dilated, and the child was delivered with forceps about 16 hours after the cries were heard. It was in an asphyxiated condition, but was speedily resuscitated. The mother's puerperium was normal and she and the child both left the hospital in a good condition. Reidhaar thinks it is impossible for a child to cry without breathing, and that such instances occur only when air has been admitted to the uterus by some manipulation, such as attempted version, the use of dilators, forceps, etc. The fact that in this instance the child lived, controverts the idea that the infant's cry in utero is like the fabled song of the swan, a herald of its approaching death.

Vaginal Hysterectomy During Pregnancy.—J. H. Carstens³ describes the case of a woman of 26 with an enlarged uterus about the size of four to five months' pregnancy. There was a nodule where the cervix had been, evidently the recurrence of a cancerous growth which had been removed about a year before. The uterus was absolutely closed, but the symptoms indicated a clear case of pregnancy. Prompt operation was decided upon. The patient was anesthetized, scissors were plunged in where the os should have been, the fetus delivered and vaginal hysterectomy performed. The whole operation was performed in 15 minutes, the woman made a splendid

recovery and now seems perfectly well. Carstens has collected 32 similar cases reported by various authors, and this table shows that operations are very successful and are indicated in all cases of uterine cancer complicated by pregnancy. [w.k.]

On the Determination of the Sex.—Kuester⁴ has made accurate observations for a number of years regarding the possibility of influencing the sex in conception, and has also done some experimental work in the families of friends. He considers the production of a female child to be the rule in all cases in which sexual congress takes place frequently after the cessation of the menstrual flow, and fecundation occurs then; on the other hand, if the intervals between coition are longer, impregnation occurring from 10 to 20 days after the cessation of the menses, a male child is the rule. In addition to his own observations, he bases these statements upon the frequency of the first-born being a male child, explaining this by the fact that marriages are solemnized about the middle of the period; by the frequency of boys being born in reigning houses, in which marriages are usually the result of politics and convenience, and by the frequency of girls when love is the main factor in the marriage. Cases to which this rule is not applicable, he explains by the differences in age of the couple, the possibility of an old ovum becoming impregnated instead of the one recently shed, etc. [E.L.]

Eclampsia.—Braitenberg⁵ reviews the statistics of eclampsia in the Innsbruck hospital, showing that 46 out of 8,408 women delivered therein suffered eclampsia, 5.47%. In 4 cases the eclamptic attacks occurred before the beginning of labor. In 24 during labor, and in 18 after delivery. The earlier the attacks began the greater they were in number and the greater the mortality. The writer discusses various theories of the etiology of eclampsia and reports some cases in which he is convinced that the eclamptic convulsions were due to carbolic acid poisoning and others in which there was cerebral hemorrhage, which may have been the cause, or the result of the eclampsia. [w.k.]

Labor Complicated by Previous Operations.—The case reported by Dr. F. Stahler⁶ was that of a woman of 28 at her second confinement. After the first delivery a bad cervical laceration had been repaired, resulting in large callosities; a firmly fixed retroflexed uterus had been mobilized by severing a number of premetritic attachments, and held in position by a high vaginal fixation; and two fibromyomas of the uterus had been enucleated. The scars thus produced all acted to impede the second delivery, which was further complicated by breech presentation. The cervical walls were so hard and inelastic that all attempts at dilation were without avail, and Ruhl's anterior uterovaginal progressive incision was made. Thus the foot was extracted, and by tension on the foot the body also, but the head could only be delivered after perforation. The uterus contracted well, there was no postpartum hemorrhage, and the patient ultimately recovered. Stahler thinks it is clear that the chief difficulties in this case were due, not so much to the high vaginal fixation of the uterus as to the cicatricial callosities left by the other operations. He also believes that in such cases Ruhl's procedure is best for the mother, unless in case of an unusually large and vigorous child, which cannot be delivered by the vaginal way, when preference should be given to cesarean section, as in this way a sufficient passage-way or opening can be secured without injury to the bladder, and this can be closed again after emptying the uterus. [w.k.]

Intestinal Anastomosis.—For intestinal anastomosis, which is usually performed by means of the Murphy button, O. H. Allis⁷ prefers suturing through the entire thickness of the abdominal wall. In cases of resection of a portion of the bowel when end-to-end anastomosis is required, the operation is performed as follows: The ends are placed side by side, the serous surfaces together, held in position temporarily by tenaculum forceps used as women use pins, then one-half the circumference is sutured securely through both mucous and serous membranes. It does not matter what stitch is used—the whip stitch, through-and-through stitch, or over-and-over. All

¹ American Journal of Obstetrics, xxii, 166.² Centralblatt für Gynäkologie, No. 6, 1902.³ American Journal of Obstetrics, January, 1902.⁴ Klinisch-therapeutische Wochenschrift, January 5, 1902.⁵ Wiener klinische Wochenschrift, February 18, 1902.⁶ Centralblatt für Gynäkologie, February 15, 1902.⁷ American Journal of Obstetrics, January, 1902.

that is essential is that the approximated bowels be securely united. Having firmly sutured one-half the circumference, he removes the forceps, and, turning the partly united structures half around, seizes the seam with the tenaculum forceps, and with a pair holding the work a little further on, the through-and-through suturing can be continued almost around the entire circumference. When near the end the intestines assume the end-to-end position, the mucous edges are turned in for the remaining part, and the serous surfaces held in place with serrated forceps until sutured. The rule that the serous coat only must be pierced is no longer entertained, and the operator will act wisely if he penetrates the thickness of the intestinal wall. In this way every possible intestinal anastomosis can be accomplished, viz., end-to-end, lateral, and insertion. Allis has used this method successfully in cases in which the Murphy button had proved a failure, and considers it as an improvement upon that procedure. [w.k.]

Tumor Complicating Labor.—F. W. Kidd¹ gives the history of a woman of 34, whom he saw when 4½ months pregnant and found she had a fibroma about the size of a hen's egg springing from the posterior wall of the cervix. As it encroached very little upon the cervical canal, it was deemed inadvisable to attempt any interference until the beginning of labor, when that time arrived, it was apparent that the tumor had so increased in size as to prevent the descent of the head, or the dilation of the cervix. Accordingly the tumor was enucleated through the vagina, and three days later a living child was spontaneously delivered. The mother was able to leave the hospital in four weeks with the child doing well. [w.k.]

Pelvic Fracture During Labor.—The rarity of pelvic fracture during labor lends interest to a case reported by Bird.² During a hard pain accompanied by violent movements, while the nurse and physician held the patient's right thigh and leg, a distinct snapping sound was heard on the right side. After delivery there was found on examination a slight displacement of the fragments of a diagonal fracture, with mobility and crepitus, in the right horizontal ramus of the pubes. A seven-inch rubber adhesive plaster was passed snugly around the pelvis, so as to make necessary pressure and avoid soiling, and she was kept without change of position as far as possible. She was catheterized every six hours for two weeks, and great care was exercised as to cleanliness. The plaster bandage was removed the fifth week, by the seventh she was walking about and in three months had fully recovered, walking naturally, and showing no symptoms of the injury. [w.k.]

Postoperative Hemorrhage After Abdominal Hysterectomy.—Voituriez³ divides postoperative hemorrhages into subperitoneal and intraperitoneal. The first may be limited and encysted, in which case the blood collects in the cellular tissue of the large ligament and forms a hematoma which may be slowly absorbed; or the blood may flow freely from the vagina. The intraperitoneal hemorrhages are the more frequent and alarming, and usually originate in the uteroovarian or the uterine artery, generally the latter as that artery presents more difficulties because of its depth and its tendency to retract. Intraperitoneal hemorrhage requires prompt intervention; time must not be wasted in medical treatment, but the abdomen must be opened at once and the bleeding vessel ligated. This should be immediately followed by injections of saline solution, either intravenous or hypodermic. After severe hemorrhage the danger is not so much from the diminution of blood-globules as from the lowering of the blood tension, owing to the loss of a notable part of the liquid blood; hence the remarkable effects of large injections of saline solution. The older or intravenous method requires the most surgical skill, but produces more rapid results, and therefore should be used in urgent cases as the last act of the operation. But subsequently hypodermoclysis should be preferred because of its simplicity, its freedom from danger, and the favorable results attending it. The saline can thus be introduced in sufficiently large quantities with little or no pain, and no anesthetic is required. [w.k.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Preventive and Hygienic and Dietetic Management of Uremia.—Uremia, or renal insufficiency, demands the most careful regulation of diet. The toxins that provoke it are produced in small part by the metabolism of living cells, but chiefly by fermentation in the stagnant contents of the intestines, or by common ingredients of food, such as potassium salts, which probably play a part in uremic intoxication. These are derived directly from the food and can be excluded from the body by a regulation of diet and by emptying the intestines. *Catharsis* must be provoked, so as to remove from the bowels all fermenting and toxic matter. If a patient suffers from uremic mania, from acute uremia, or from symptoms of mild uremia that are becoming severe, all food should be forbidden for 36 or 48 hours, but water should be given as freely as possible. If unconsciousness prevents its being swallowed easily, it should be given by the rectum or subcutaneously, so that diuresis will be aided as much as possible. *Cathartics* should also be given so as to empty the bowels as rapidly and as completely as possible. No treatment is more effective than this. When the uremic symptoms have disappeared, food may be given, but the amount and character of it should be prescribed with care. To begin with, *water gruel* made of arrow-root or rice is sometimes recommended. It is rarely necessary to do this. It is better to give no food until the symptoms of uremia are gone, and then to begin by giving milk. At first a half glass every two hours may be given. The amount should gradually be increased to a full glass. Milk is an ideal food in these cases, for it contains a minimum of toxic matters, is not likely to ferment in the intestines, and is a valuable diuretic. Care must be taken to make the bowels move freely. When the volume of urine voided approaches the normal average, starches and sugars may also be given. For example, rice breads, potatoes, and many fruits may be used to supplement, not to displace the milk. If improvement continues, vegetables may also be permitted to form a part of the diet. Albuminous food should not be used so long as the daily excretion of nitrogenous waste is much below the average for one on a milk or a modified milk diet. In an acute nephritis it should not be used so long as there is albumin in the urine; in chronic cases not while the urine contains much sediment, numerous casts, epithelial and blood-cells, or granular matter. When proteids are added to the diet, it is best to begin with fish and soft-cooked eggs; later, to add squab, breast of fowl, and, when recovery is complete, the red meats and game. *Proteid foods* should be given at first in small portions, and their effect upon the amount of urin, urea, and albumin voided should be watched carefully. In the same way the effect of larger amounts and of different kinds of foods should be studied. So long as large quantities of milk are taken daily it is not necessary to urge the drinking of water, but when the diet is varied and the amount of milk taken is lessened, it is best to prescribe the drinking of approximately two quarts of fluid, preferably milk and water. A little tea or coffee, and milk soups, may be permitted in many instances. It is equally necessary to keep the intestines well emptied, the skin clean and active, and the lungs filled with pure air. This disease should be treated in large, well-ventilated rooms. The patient must be protected from drafts and from cold by suitable clothing. Hot baths and friction of the skin are important aids to treatment. In all cases of uremia as complete rest as possible should be enjoined.—[N. S. Davis, Jr., "System of Physiologic Therapeutics," Vol. 6.]

A New Valerian Preparation (Valerianic Acid Dimethylamid).—As a result of their experiments with various preparations and derivatives of valerian, Kionka and Liebrecht¹ claim to have discovered a stable and reliable therapeutic preparation in valerianic acid dimethylamid, a colorless fluid with a peculiar odor and a pungent, acrid taste. Its physiologic action is characterized by extreme restlessness on the part of the subject, followed by twitching and convulsions when given

¹ The Medical Press, February 26, 1902.

² American Journal of Obstetrics, January, 1902.

³ Journal des Sciences Medicales de Lille, January 25, 1902.

¹ Deutsche medicinische Wochenschrift, December 5, 1901.

in toxic doses. On the vasomotor system its effect is shown by constriction of the peripheral bloodvessels and an increase in the blood-pressure, followed later by intermittent relaxation of the vascular walls, a decrease in the blood-pressure and cardiac paralysis. Reflex action in the warm-blooded animals is not increased, but rather diminished when the drug is given in small doses. The drug, under the name of "valyl," is put up in gelatin capsules containing 0.125 gram mixed with an equal portion of mutton suet, the dosage being 2 to 3 capsules t. i. d. Kionka and Liebrecht have obtained good results by its use in cases of hysteria, neurasthenia, traumatic neuroses, neuralgias of various forms, menstrual disturbances, and disturbances of the climacterium and pregnancy. [H.H.C.]

Izal in the Treatment of Tuberculosis.—Tunncliffe¹ points out that fresh air and forced feeding constitute the best treatment in pulmonary tuberculosis, but that in certain cases treatment with intestinal antiseptics is productive of excellent results, and that there can be no objection to the use of drugs in combination with general hygienic treatment. He reports several cases illustrating the beneficial action of izal. He believes that the best results are to be obtained in cases of active pulmonary tuberculosis and in cases with old cavities with abundant fetid expectoration. Izal seems also to exert a beneficial action in cases in which diarrhea is present, whether this is due merely to decomposition of the intestinal contents or to actual tuberculous lesion of the intestine. In cases in which the bronchitic element is well marked it is less useful. [A.O.J.K.]

Chloreton in Epilepsy.—McCarthy (*International Medical Magazine*, August, 1901) suggests chloreton as a substitute for the bromids in epilepsy. Good results are obtained with decreasing doses after the primary effect is obtained. One dose of 15 or 20 grains is given at night until a drowsy effect is produced on the following day; as soon as the number of fits diminish the dose is reduced one-half and the patient kept on this indefinitely. [R.M.G.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Echinacea is recommended by T. C. Irwin, of Jacksonville, Fla., in the treatment of old ulcers, benign and malignant, and varicose ulcers of the leg. Echinacea (fluid extract?) and water, equal parts, are applied on absorbent cotton. One case, said to be cancer of the cheek, is reported to have been cured by four applications, with no return in three months. [R.M.G.]

The following formula for a **laxative pill** is suggested by Sawyer (*Practical Druggist*, Vol. x, No. 5, 1901):

Aloes socotrin 1 to 3 grains
Sulfate of iron $\frac{1}{2}$ grain
Extract of hyoscyamus 1 grain

Belladonna and nux vomica, according to Sawyer, have little value. [R.M.G.]

Calcium creosolate (*Pharmaceutical Era*, Vol. xxvi, No. 19, 1901) is the calcium salt of the trisulphacetic ether of creosote, and contains about 25% of creosote. It is a grayish-white powder having an acidulous taste and a powerful odor. It is soluble in 10 parts of water, and readily soluble in alcohol, hydrochloric acid, and certain organic acids. It is said to have been employed with good effect in diabetes, in doses varying from 0.2 to 0.6 grams (3 to 6 grains) 3 or 4 times a day, preferably in powder. [R.M.G.]

FORMULAS ORIGINAL AND SELECTED.

Anilin stains may be removed with the following mixture:

Sodium nitrate 7 parts
Dilute sulfuric acid 15 parts
Water 500 parts

The mixture should be allowed to stand a day or two before being used. (*Practical Druggist*, Vol. x, No. 5, 1901.) [If this preparation is really successful in removing anilin stains from the fingers, it should find a place in every clinical laboratory.] [R.M.G.]

Tonic laxative pill without aloin:

Extract of ignatia amara 6 grains
Extract of belladonna 1 grain
Resin of podophyllum 1 grain
Resin of iris 1 grain
Piperin 1 grain

Mix. For 12 pills.

Dose: One pill after meals thrice daily. Gradually diminish quantities or frequency.

It is suggested that **neuralgia** be treated by rubbing the following mixture gently over the painful spot:

Menthol 15 grains
Guaiacol 15 minims
Absolute alcohol 5 minims

This may be repeated two or three times in the 24 hours (*Practical Druggist*, Vol. x, No. 5, 1901). [R.M.G.]

For chronically recurrent diarrhea dependent on intestinal fermentation:

Sodium ichthyolate 5 grains

Encapsulate.

Dose: One capsule 3 or 4 times daily.

Toothache.—The following formulas may be welcome to the country doctor who is called upon to stop a violent toothache and cannot send his patient to a dentist: The cavity of the tooth should be cleansed, if possible, and dried with a pledget of absorbent cotton wrapped around a toothpick or sharpened match stick, after which a small wad of cotton, saturated with one of the following, is introduced into the cavity:

Cocain hydrochlorate 3 parts
Menthol 30 parts
Carbolic acid (crystals) 30 parts
Oil of cloves 1 part
Tincture of camphor 240 parts

or

Orthoform phenol (crystallized) 1 part
Camphor 1 part
Chloral hydrate 4 parts

(*Practical Druggist*, Vol. x, No. 5, 1901.) [R.M.G.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended March 15, 1902:

SMALLPOX—UNITED STATES.

			Cases	Deaths
California:	Sacramento.....	Feb. 22-Mar. 1.....	1	
	San Francisco.....	Feb. 28-Mar. 2.....	4	
	Denver.....	Feb. 24-Mar. 8.....	3	
Colorado:	Washington.....	Mar. 1-8.....	2	
	District of Columbia:			
Illinois:	Belleville.....	Mar. 1-8.....	19	
	Chicago.....	Mar. 1-8.....	17	
	Crawfordsville.....	Mar. 1-8.....	8	
Indiana:	Evansville.....	Mar. 1-8.....	31	
	Indianapolis.....	Feb. 22-Mar. 8.....	1	
	Terre Haute.....	Mar. 1-8.....	42	
Iowa:	Ottumwa.....	Feb. 1-Mar. 1.....	9	
	Covington.....	Mar. 2-9.....	4	
	Lexington.....	Mar. 1-8.....	4	
Kentucky:	Portland.....	Mar. 1-8.....	17	1
	Boston.....	Mar. 1-8.....	4	1
Maine:	Cambridge.....	Mar. 1-8.....	1	
	Chicopee.....	Mar. 1-8.....	3	1
Massachusetts:	Lawrence.....	Mar. 1-8.....	1	
	Malden.....	Mar. 1-8.....	1	
	New Bedford.....	Mar. 1-8.....	1	
Michigan:	Quincy.....	Mar. 1-8.....	3	1
	Detroit.....	Mar. 1-8.....	2	
	Ludington.....	Mar. 1-8.....	16	
Minnesota:	Minneapolis.....	Feb. 22-Mar. 1.....	4	
	Winona.....	Mar. 1-8.....	2	1
	Butte.....	Feb. 28-Mar. 1.....	52	1
Montana:	Omaha.....	Mar. 1-8.....	1	
	Camden.....	Mar. 1-8.....	1	
Nebraska:	Harrison.....	Mar. 2-9.....	2	
	Hoboken.....	Mar. 2-9.....	46	1
New Jersey:	Jersey City.....	Mar. 2-9.....	3	
	Kearney.....	Mar. 2-9.....	22	3
	Newark.....	Mar. 1-8.....	1	
New York:	Union.....	Mar. 2-9.....	3	
	West Hoboken.....	Mar. 2-9.....	1	
	Blington.....	Mar. 1-8.....	60	10
Ohio:	New York.....	Mar. 1-8.....	1	
	Chillicothe.....	Feb. 22-Mar. 1.....	15	
	Cincinnati.....	Feb. 28-Mar. 7.....	47	11
Pennsylvania:	Philadelphia.....	Mar. 1-8.....	3	
	Rhode Island:			
	Providence.....	Mar. 1-8.....	2	
South Carolina:	Charleston.....	Mar. 1-8.....	16	
	Sloux Falls.....	Feb. 22-Mar. 8.....		

¹ Lancet, January 18, 1902.

Tennessee:	Memphis.....	Mar. 1-8.....	4
Texas:	Houston.....	Mar. 1-8.....	12
Utah:	Salt Lake City.....	Feb. 22-Mar. 8.....	6
Washington:	Tacoma.....	Feb. 23-Mar. 2.....	5
Wisconsin:	Green Bay.....	Mar. 2-9.....	11

SMALLPOX—FOREIGN.

Belgium:	Antwerp.....	Feb. 8-15.....	4	3
	Ghent.....	Feb. 1-22.....	6	
Brazil:	Rio de Janeiro.....	Jan. 18-Feb. 9.....	33	
Canada:	Halifax.....	Feb. 22-Mar. 8.....	3	
	Quebec.....	Feb. 8-Mar. 6.....	121	2
	Winnipeg.....	Feb. 16-Mar. 1.....	7	
Colombia:	Cartagena.....	Feb. 17-23.....	1	1
Cuba:	Guantanamo.....	Feb. 27.....	1	
France:	Marseilles.....	Jan. 1-31.....	1	
	Paris.....	Feb. 15-22.....	3	
Gibraltar:	.....	Feb. 9-16.....	1	
Great Britain—				
England:	Birmingham.....	Feb. 15-22.....	1	
	Liverpool.....	Feb. 15-22.....	14	
	London.....	Feb. 8-15.....	64	
	Manchester.....	Feb. 15-22.....	1	
	Southampton.....	Feb. 15-22.....	1	
Scotland:	Glasgow.....	Feb. 15-28.....	8	
India:	Bombay.....	Feb. 4-11.....	11	
	Madras.....	Feb. 1-7.....	2	
Italy:	Baselice.....	Feb. 17.....	176	
	Naples.....	Feb. 8-15.....	11	
	.....	Feb. 15-22.....	9	
	Palermo.....	Feb. 1-22.....	35	6
	.....	Feb. 8-15.....	1	
Malta:	Mexico.....	Feb. 23-Mar. 2.....	2	1

YELLOW FEVER.

Brazil:	Rio de Janeiro.....	Jan. 19-Feb. 9.....	24
Mexico:	Vera Cruz.....	Feb. 22-Mar. 1.....	1

CHOLERA.

China:	Canton.....	Mar. 6.....	Increasing.
		Two deaths among Europeans.	
India:	Bombay.....	Feb. 4-11.....	4
	Calcutta.....	Feb. 1-8.....	50
	Madras.....	Feb. 1-7.....	4
Straits Settlements:	Singapore.....	Jan. 11-18.....	5

PLAGUE—INSULAR.

Hawaii:	Honolulu.....	Feb. 26-Mar. 2.....	
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PLAGUE—FOREIGN.

Brazil:	Rio de Janeiro.....	Jan. 18.....	11
China:	Shui Tung.....	Jan. 23.....	100
India:	Bombay.....	Feb. 4-11.....	531
	Calcutta.....	Feb. 1-8.....	124

Changes in the Medical Corps of the U. S. Army for the week ended March 15, 1902:

APPEL, Major Aaron H., surgeon, will proceed to Iligan, Mindanao, for duty as post surgeon, relieving First Lieutenant Robert B. Grubbs, A. S. The latter will proceed to Butuan, Mindanao, for duty as post surgeon, relieving Contract Surgeon Samuel C. Lindsay.

HENRY, Major J. N., surgeon, now at Fort Slocum, will proceed to Newport News, Va., in time to meet the second battalion of the eleventh infantry upon its arrival there from Porto Rico en route to San Francisco, Cal., and accompany it to that place. Upon arrival at San Francisco Major Henry will report for transportation to the Philippine Islands for duty.

CURRY, Captain Joseph J., assistant surgeon, now at Fort Bayard, is by reason of physical disability honorably discharged, to take effect March 14, 1902.

The following named officers of the medical department are relieved from duty in the division of the Philippines, to take effect June 1, when they will proceed to San Francisco, Cal., and report by telegraph to the adjutant general of the Army for orders: Major Henry S. Turrill, surgeon; Major Edwin F. Gardner, surgeon; Captain George A. Skinner, assistant surgeon; Captain Carl R. Darnall, assistant surgeon; First Lieutenant Thomas L. Rhoads, assistant surgeon; First Lieutenant Howard W. Beal, assistant surgeon; First Lieutenant Edward P. Rockhill, assistant surgeon; First Lieutenant Frank C. Baker, assistant surgeon; First Lieutenant William E. Vose, assistant surgeon.

JENKES, ERNEST, hospital steward, Fort Monroe, is transferred to Fort Clark for duty.

McLAUGHLIN, Captain WHARTON B., assistant surgeon, having tendered his resignation, is honorably discharged, to take effect March 10, 1902.

So much of orders of February 19, as assign First Lieutenant Jerome S. Chaffee, assistant surgeon, to duty at the U. S. general hospital, Fort Bayard, is amended so as to direct Lieutenant Chaffee to report at the Army and Navy General Hospital, Hot Springs, Ark., for duty, to relieve Contract Surgeon William E. Musgrave, who will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

MUSGRAVE, WILLIAM E., contract surgeon, is granted leave for one month, to take effect upon his relief from duty at the Army and Navy General Hospital, Hot Springs, Ark.

WAHLQUIST, CHARLES J., hospital steward, will stand relieved from duty at Fort Douglas upon the arrival at that post of Hospital Steward William C. Livingston, and will then be sent to Fort Wingate for duty.

THORP, CHARLES W., contract surgeon, granted leave for three days, March 3, is extended 27 days, with permission to apply for an extension of one month.

STONE, Captain JOHN H., assistant surgeon, will upon arrival in the United States, proceed to Washington Barracks for duty.

ROMIG, Captain EDWARD A., now at Big Rapids, Mich., will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

WILSON, EDGERTON T., contract surgeon, now at Owosso, Mich., will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

The following changes in the stations and duties of contract surgeons are ordered: Contract Surgeon August von Clossman is relieved from duty as attending surgeon and examiner of recruits in St. Louis, Mo., and will report at Jefferson Barracks for duty. Contract Surgeon Alva R. Hull is relieved from duty at Jefferson Barracks and will proceed to Fort Logan for duty.

ROBERTS, First Lieutenant WILLIAM M., assistant surgeon, is granted leave for 30 days, with permission to apply for an extension of 30 days.

GIBSON, E. T., contract surgeon, is assigned to duty as transport surgeon of the Army transport Meade, to relieve First Lieutenant Henry H. Rutherford, assistant surgeon.

PROBERT, MERTON A., contract surgeon, will proceed to his home, Delaware, O., for annulment of contract.

LIPPITT, Captain WILLIAM F., assistant surgeon, granted leave for seven days, is extended seven days.

CRAMPTON, Major LOUIS W., surgeon, granted leave January 22, is extended six days.

Changes in the Medical Corps of the U. S. Navy for the week ended March 15, 1902:

SPRATLING, Surgeon W. L., detached from the Naval Recruiting Station, Buffalo, N. Y., and ordered to the Naval Hospital, Portsmouth, N. H.

NORTON, Surgeon O. D., ordered to the Richmond as relief of Surgeon E. H. Marsteller.

MARSTELLER, Surgeon E. H., detached from the Richmond and ordered to the Lancaster.

BOGERT, Surgeon E. S., Jr., detached from the Lancaster and ordered to Buffalo, N. Y., for duty at the Naval and Marine Recruiting Rendezvous.

PRYOR, Passed Assistant Surgeon J. C., detached from the Naval Hospital, Newport, R. I., and to hold himself in readiness for duty on the Massachusetts.

WARD, Passed Assistant Surgeon B. R., detached from the Constellation, and ordered to the Navy Yard, Boston, Mass.

FAUNTLEROY, Assistant Surgeon A. M., detached from the Naval Hospital, Portsmouth, N. H., and ordered to the Illinois.

MCDONNOLD, Assistant Surgeon P. E., detached from the Naval Academy, and ordered to the Olympia.

OMAN, Assistant Surgeon C. M., detached from the Naval Hospital, New York, and ordered to the Constellation.

GRIFFIN, Assistant Surgeon W. E., ordered to the Naval Hospital, Newport, R. I.

DUNN, Assistant Surgeon H. A., detached from the Frolic, and ordered to duty with the Marine Brigade.

BRISTER, Assistant Surgeon J. M., detached from duty with the Marine Brigade and ordered to the Frolic.

WEBB, Assistant Surgeon U. R., detached from the Kentucky and ordered to the Iris.

ARMSTRONG, Passed Assistant Surgeon E. V., detached from the Olympia, and ordered to Washington, D. C., and home to wait orders.

Changes in the Medical Corps of the U. S. Marine Hospital Service for the week ended March 13, 1902:

STONER, J. B., passed assistant surgeon, to proceed to Cape Charles Quarantine and assume temporary charge of the station during the absence on leave of Assistant Surgeon C. W. Wille—March 13, 1902.

HOBDY, W. C., assistant surgeon, to proceed to Savannah Quarantine and assume temporary charge of the station during the absence on leave of Acting Assistant Surgeon W. J. Linley—March 7, 1902.

BILLINGS, W. C., assistant surgeon, to proceed to Ludington, Mich., for special temporary duty—March 8, 1902. Relieved from duty at Chicago, Ill., and directed to proceed to New York, N. Y., and report to Surgeon G. W. Stoner for duty—March 7, 1902.

MOORE, DUNLOP, assistant surgeon, relieved from duty at Honolulu, T. H., and directed to proceed to Yokohama, Japan, for duty in the office of the U. S. Consul General—March 6, 1902.

WILLE, C. W., assistant surgeon, granted leave of absence for 10 days from March 21—March 8, 1902.

BOGGESS, J. S., assistant surgeon, to proceed to Delaware Breakwater Del., and assume temporary charge of the station during the absence of Assistant Surgeon C. H. Lavinder—March 7, 1902.

CAMINERO, H. S., acting assistant surgeon, granted leave of absence for 30 days from March 5—March 11, 1902.

HOUGH, J. S., acting assistant surgeon, relieved from duty at Yokohama, Japan, and directed to proceed to Hongkong, China, and report to Assistant Surgeon J. W. Kerr for duty in the office of the U. S. Consul General—March 6, 1902.

LINLEY, W. J., acting assistant surgeon, granted leave of absence for nine days from March 15—March 12, 1902.

BECK, J. E., junior pharmacist, upon being relieved by Junior Pharmacist G. A. Morris, to proceed to Mobile, Ala., and report to the medical officer in command for duty and assignment to quarters—March 7, 1902.

MORRIS, G. A., junior pharmacist, relieved from duty at Havana, Cuba, and directed to proceed to Fort Stanton, N. M., and report to the medical officer in command for duty and assignment to quarters, relieving Junior Pharmacist J. E. Beck—March 7, 1902.

American Medicine ⁴⁹³

FOUNDED, OWNED, AND CONTROLLED BY THE MEDICAL PROFESSION OF AMERICA

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The Cost of an Ignored Suggestion.—In 1881 a physician, Dr. Finlay, suggested that mosquitos are the transmitters of the germs of yellow fever. The profession ignored the suggestion. This fact has a many-sided significance, the chief of which is its cost in human lives and suffering. The financial expense cannot be estimated, and in only one small part of the world can we estimate the life expense. In Havana yellow fever continued to claim its victims as it had done for two centuries. In 1900 there were 1,244 cases, with 310 deaths. Then came a most dramatic and startling rediscovery and demonstration of Dr. Finlay's discovery, and there was a sudden end of yellow fever. The last case was on September 28, 1901. But during the twenty years that have elapsed over 8,000 lives have been lost. Major Gorgas in his report may well say to the immortal honor of the army medical corps that "the discovery made is only excelled by that of Jenner, and as time goes on it will stand in the same class as that great boon to mankind."

The health of the army, moral as well as physical, is the subject of a general order just issued by the War Department by direction of the President. This noble order breathes throughout a new spirit, let us call it the American spirit, which has never before been felt in the world of politics, and which every true American will welcome as initiating the new epoch of purity and honor to which our country is leading the way. "The only way," says President Roosevelt.

"The only really efficient way in which to control the diseases due to immorality is to diminish the vice which is the cause of these diseases. Excessive indulgence in strong drink is absolutely certain to ruin any man, physically and morally; while diseases due to licentiousness produce effects which are quite as destructive, and even more loathsome.

The officers are urged to show the men by precept and example the duty of morality and self-control, using the utmost tact, discretion, and good sense. Venereal disease is almost sure to follow licentious living. It is never a trivial affair, and it is worse than folly to believe that sexual indulgence is necessary to health.

"Experience shows that in a majority of cases venereal diseases are confined to a comparatively narrow circle of men, who are admitted to the army hospitals again and again. These men always seriously impair their own efficiency as soldiers, and sometimes utterly destroy it, and they throw upon their self-respecting comrades the burden of performing all of the duties which they have unfitted themselves to perform. Every

effort should be made to promote throughout the army a cleanly and moral tone in word no less than in deed."

An order has been sent to Manila, says *The Evening Post*, forbidding the further exaction of fees for the medical examination of prostitutes, or the issue to the women of certificates of their freedom from disease, since these things have given rise to misunderstandings and the assumption that our Government was countenancing the social evil by issuing something in the nature of a license. Hereafter, women known to be professional prostitutes, will be compelled to undergo examination from time to time, and, if found to be diseased, will be sent to a hospital for treatment. The soldiers will be inspected regularly for the same purpose. But an occasional hospital order, thus issued, will be the only official recognition of the existence of a condition of things which no discipline can crush out, and only the strictest vigilance can control, but which the authorities could not conscientiously ignore.

Tuberculosis of the Skin, following Accidental Inoculation with the Bovine Tubercle Bacillus.

Ravenel, who has already published several observations upon cases of localized tuberculosis in man acquired by infection with material from bovine tuberculosis, now reports another case (*Pennsylvania Medical Bulletin*, February, 1902). His patient was a veterinarian who wounded himself slightly on the wrist while performing autopsies on two cows that were the subjects of experimental tuberculosis. Four weeks later the scar became red, and a nodule formed, which was excised. Two guineapigs were inoculated with portions of the growth, and developed generalized tuberculosis. Tubercle bacilli were present in the nodule on section. This case and the others which have been reported prove beyond doubt that the bovine tubercle bacillus is pathogenic for man and can produce tuberculosis when directly introduced through the skin; but they have no direct bearing upon the larger question raised by Koch, viz., whether the bovine tubercle bacillus is harmful when swallowed with tuberculous meat or milk. The experimental side of this important problem has been splendidly attacked by Pearson and Ravenel, by Smith and others, but careful clinical observation, particularly among bottle-fed infants, is necessary to aid in its solution.

Credit Vaccination, Not Sanitation.—The anti-vaccinationists claim that our modern freedom from smallpox is due to general sanitation. The experience in Germany is most quoted because in that country smallpox has been nearly eradicated. But general sanitation has

been no more thorough there than in some other countries. France, Belgium, Austria, all share with Germany in advancing sanitary science. No profound difference separates Germany from the rest, except the Vaccination Law of 1874, passed a quarter of a century ago, very curiously. Further, the decline of smallpox was sudden in Prussia after 1874, but sanitation advances gradually. Moreover, why does sanitation plus vaccination insure immunity, while sanitation and nonvaccination does not? Was Gloucester more insanitary than other English towns? Measles and whoopingcough are still diseases of children, as they have always been, but the age incidence of smallpox has now (by means of vaccination) been shifted to later periods of life. King Frederick William of Prussia, in October, 1803, stated that 8,000 patients had been inoculated with smallpox lymph after vaccination without contracting the disease. At that time smallpox was on the average killing 40,000 people of Prussia each year. From 1844 to 1869 without compulsory vaccination the rate was 248 per 1,000,000. In 1874 the vaccination law of Prussia was put in force, whereby vaccination of all children under 2 and revaccination at 12 was made compulsory. At present there are in Prussia no epidemics, and the rates (per million of population) have been as follows:*

Before 1874 (1866-74).—620, 432, 188, 194, 175, 2,432, 2,624, 357, 95.

After 1874 { 1875-85.—36, 31, 3, 7, 13, 26, 36, 36, 20, 14, 14.

{ 1886-98.—5, 5, 3, 5, 1, 1, 3, 4, 3, 0.8, 0.2, 0.2, 0.4.

The law of 1874 made no difference in the vaccination of the Prussian army, which enjoyed good vaccination ever since 1834: every recruit being vaccinated on joining—twice if necessary. But the law of 1874, which only directly affected infants and school children, made a great and striking difference in the smallpox mortality of the army. Previously there were a few deaths, one or two almost every year, but after 1874 there was not a single death for ten years, and only two deaths (1884 and 1898) in the whole period 1875-98. The first death is that of a reservist twice unsuccessfully vaccinated in the army. This shows that the protection which an individual acquires by vaccination is increased by his being surrounded by a well-vaccinated community.

It is also claimed by the antivaccinationists that isolation is responsible for the improvement. Well, if so, it is not, then, due to sanitation. Let it be credited to one or to the other. If due to isolation the argument relied upon is that from centers of infection radiate the poison both to the vaccinated and the unvaccinated. But, in 1899, 28 persons died of smallpox in Germany, and these 28 were in 21 separate districts, and there was not one death in any large town.

The greatest single employer of medical service, and one, we urge, which is not sufficiently or rightly valued by us, is the life insurance company. The largest companies have on their lists of active examiners as many as one-third of the practitioners of the country and smaller companies may have 10,000.

There is hardly a medical man that is not or that has not been employed by the insurance companies. The benefit extends to the humblest and youngest through the beneficial and assessment organizations, and there are few men so busy that they do not welcome positions with the largest companies. Several million dollars a year, at least three, is certainly not too high an estimate of the income to the American profession from this source. This fact, it may be incidentally noticed, should give pause to those who advocate rival companies limited to policies on the lives of physicians. Moreover, the best companies pay good fees, not seldom higher than does the private patient, and they pay 100% of our bills, promptly, and in cash. The positions thus held by medical men are often of social, professional and financial advantage to the examiner. We are not unmindful of the fact that the profession as a rule gives its *quid pro quo*. Without our services, the results of scientific research and zeal, the financial affairs of the insurance business would not be so prosperous, and at all times the companies are dependent upon our special knowledge for this success. The queries to which all this leads up, however, are these: In the first place, are we as a profession rightly and sufficiently cognizant of our obligation and advantage in this matter? Not, we do not hesitate to reply, so long as we do not specially and better prepare our medical students to meet the peculiar demands to be made upon them. There should be in every medical college some special lecture courses designed to give the special instruction required of the life insurance examiner. Some of the questions in examinations by the college, and by the state boards should be framed with this in view. Secondly, are those members of our profession who are examiners giving back to us the results of their examinations? They have splendid opportunities for research, tabulation of statistics, and the formulation of valuable conclusions derived from the rich clinical material placed at their disposal. Some good work of this kind has been done, but as a whole the scientific contributions of the medical examiners of life insurance companies are deplorably wanting in unity and thoroughness. The companies may rightly ask of us a proper recognition and preparation for their special work, and we may as justly demand of them more scientific, statistic, and literary work as evidences of their social obligations.

Some Hospital Statistics.—The following table is made up from official reports. The numbers in the first column refer to those hospitals of a large American city which treated over 10,000 patients in 1900:—

Hospital No.	In-patients	Out-patients	Total Patients	Total Running Expenses	Cost per Patient
One.....	1,851	8,197	10,051	\$107,079.37	\$10.65
Two.....	1,894	11,810	13,704	105,635.16	7.71
Three.....	3,850	12,559	16,409	83,410.03	5.08
Four.....	901	11,433	12,334	53,787.05	4.36
Five.....	3,026	34,100	37,126	125,939.43	3.39
Six.....	4,079	30,360	34,939	116,790.30	3.34
Seven.....	4,654	15,674	20,328	64,056.22	3.15
Eight.....	973	14,608	15,581	34,717.45	2.23
Nine.....	1,206	24,011	25,217	53,372.86	2.12
Ten.....	745	23,666	24,411	45,813.40	1.87
Eleven.....	2,052	18,614	20,666	37,781.17	1.83
Twelve.....	1,898	34,281	36,179	63,373.79	1.75

* Facts About Smallpox, etc., a pamphlet issued by the Council of the British Medical Association.

Perhaps one of the most common-sense ways of calculating the value of a hospital to the community in which it is situated, is by finding the number of citizens it has been enabled to restore to health and usefulness. The figures in the table make one wonder why the cost per capita in one great hospital is five or six times as much as in another. The relatively greater cost of in-patients than out-patients is a factor, but the discrepancy is by no means thus wholly accounted for. The dispensary abuse has been much criticised, but has the other side of the question had a deserved emphasis? Is not the hospital which treats its patients in the dispensaries as far as possible, and which keeps down the average stay in the wards to the lowest number of days consistent with the safety of the patient, doing a practical work which the hospital is likely to forget that retains its patients longer than may be really required? Do we think that every time a wage-earner is admitted to the wards of the hospital his income-producing ability ceases at once and the hospital may thus become a pauperizing agency if it were possible just as safely to produce the same result by treating the applicant as a walking case and allowing him to resume at least partial labor? Do we always think of the wife and children who are deprived of support when the head of the family is told that he must enter a ward? Does the desire for clinical material sometimes influence more than the comfort of those dependent upon the sufferer? This is a great problem, and abuse must not be considered as being all on one side. Improperly conducted the dispensary may become an influence for evil instead of good, but when rightly managed may it not, in reality, "help the poor to help themselves?"

State and Territorial Laws as to the Practice of Medicine.—Thousands of young physicians leaving college within the next few months will be glad of the classified epitome of the laws as to the practice of medicine of different states and territories, which has just been issued by the Illinois State Board of Health. The summary sets forth in detail the legal requirements in force March 1, 1902. Upon request we will supply information concerning special states, etc. The following is a rearrangement of the tabular outline prefixed to the Illinois State Board's summary:

1. Admit to Practice on Presentation of a Recognized Diploma:

Alaska (a), Arkansas, Colorado, Indiana (1), Indian Territory (b), Kansas (c), Kentucky, Michigan, Nebraska, Nevada, New Hampshire (1), New Mexico, Ohio (1), Oklahoma, Philippines (1), South Carolina (1), South Dakota, Tennessee (1), Virginia (c), Wisconsin (c) (1) (t), Wyoming.

2. Require an Examination with Diploma:

Alabama (d), Arizona, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indian Territory (b), Indiana, Iowa, Louisiana, Maine, Maryland, Montana, Nevada (f), New Hampshire, New Jersey, New Mexico (1), New York, North Carolina, Ohio, Pennsylvania, Philippines, Puerto Rico, South Carolina, Utah, Vermont, Virginia (m), Washington, Wisconsin (m).

3. Require an Examination without Diploma:

Alabama (c), Hawaii, Indian Territory (b), Kansas (1) (k), Massachusetts, Minnesota (k), Mississippi, Missouri, New Hampshire (n) (w), North Dakota (k), Oregon, Pennsylvania (w), Philippines (1), Rhode Island, Tennessee, Texas, West Virginia.

4. Examine Nongraduates in Medicine:

Alabama (e), Arkansas, Colorado, Hawaii, Indian Territory (b), Kansas (k), Massachusetts, Michigan, Minnesota (k), Mississippi, Missouri, Nevada (n), New Hampshire (w), New Mexico, North Dakota (k), Oklahoma (n), Oregon, Philippines (1), Pennsylvania (w), Rhode Island (o), Tennessee, Texas, Vermont (g), Virginia (1), West Virginia, Wyoming (k).

5. Accept Licenses of Other States or Countries in Lieu of a Diploma:

California, Kansas (p), Maryland, Nevada, New Hampshire (w), North Carolina, Ohio (f) (w), Pennsylvania (f) (w), Virginia (p), Wisconsin (p) (t).

6. Empowered to Recognize Certificates of Other Boards.

California, Delaware, District of Columbia, Illinois (h), Indiana, Kansas, Maine, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Puerto Rico, Texas, Virginia, Washington, Wisconsin.

7. License Graduates of Colleges Within State Without Examination:

Illinois (v), Indiana, New Hampshire, Ohio, South Carolina, Tennessee, Wisconsin.

8. Permit the Practice of Physicians from other States in Consultation:

California, Connecticut, Delaware, District of Columbia, Georgia, Idaho, Indiana (r), Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Philippines, Puerto Rico, Rhode Island, South Carolina, Tennessee, Texas, Utah, Virginia, Vermont (s), Wisconsin, Wyoming.

REFERENCES:

- (a) No law.
- (b) Each nation has its own laws.
- (c) Discretionary with board.
- (d) If examined by a County Board.
- (e) If examined by the State Board.
- (f) Foreign graduates.
- (g) Nonresidents only.
- (h) By resolutions of board.
- (i) If not a graduate of recognized college.
- (k) Applicant must show evidence of college attendance.
- (l) Certain persons only.
- (m) If not eligible to a license without examination.
- (n) Must have had five years' practice.
- (o) If a reputable physician.
- (p) In lieu of examination.
- (r) Licensed physicians residing on border of a neighboring state permitted to attend bona fide calls in state.
- (s) Physicians in Dominion of Canada.
- (t) According to ruling of attorney-general.
- (v) Board is empowered to license certain Illinois graduates without examination, but requires them and all other applicants to pass an examination in the usual branches of medicine.
- (w) If licensed to practise in some foreign country.

Therapeutic and Nutritive Value of Alcohol.—The views of Professor Atwater and others maintaining the nutritive value of alcohol find support in recent experiments of Rosemann, from which he concludes that it protects bodily protein from consumption. In view of this change of attitude on the part of Professor Rosemann, who has heretofore often been quoted as authority for the view that alcohol possesses no power of conserving protein—attention may be called to the interesting discussion which followed the reading of Dr. Henry F. Hewes's paper before the Clinical Section of the Suffolk District Medical Society on the "Value of Alcohol as a Therapeutic Agent." (*Boston Med. and Surg. Jour.*, March 13, 1901).

Admitting the value of alcohol as a medicinal agent there was a consensus of opinion regarding the need for greater discrimination in the use both as to its purity and as to its appropriate employment. As a stomachic, antipyretic or analeptic, it appears to be no longer in favor; for the right side of the heart it is regarded as a poison and admissible only in collapse. In nervous diseases, and as a narcotic its value is questionable.

On the other hand its use finds advocates as a stimu-

lus to sudden and supreme muscular effort, in diabetes, in stopping hunger, for its sedative action, and in coma.

The fact that the expense for alcohol in the Massachusetts General Hospital fell from \$1.48 per patient a year in 1884 to 29 cents each patient a year in 1900, called forth the following remark from Boston's eminent clinician, Professor Shattuck: "I give less alcohol because I give less drugs than I used to, and alcohol in sickness I regard as a drug. I also reserve its use in hospital to acute disease, feeling more recently than formerly perhaps, the serious responsibility we, as physicians, are under with regard to its abuse. I formerly prescribed ale and beer, sometimes stronger forms of alcoholic drinks to hospital patients with debility from one or another cause. I do not do so now."

A Contention as to Stegomyia.—The *Havana Sun* and *El Nuevo Pais* of Havana, Cuba, evidently express public opinion in their recent references to the protest of Dr. Fernandez Ybarra against the unqualified acceptance of *Stegomyia* as the only carrier of yellow fever infection. A contributor to the latter journal finds the organization of mosquito brigades to be highly amusing and speaks slightly of the "International Sanitary Congress." Whether Dr. Ybarra is right or wrong in his contention that further search will reveal other effective agents in yellow fever propagation, the agency of *Stegomyia* has been established by a devotion to the cause of public health and science and by a system of investigation evidently beyond the comprehension of the humorous contributor to *El Nuevo Pais*; and the *Stegomyia* brigade together with "la brigade Anopheles" must needs be as immune to the taunts and flings of their critics as to the stings of the insect pests they seek to exterminate. The asserted fact that cities in which no work has been done to destroy mosquito larvae are as free from yellow fever as Havana in no way relieves the authorities of the latter city of their responsibility. Let the good work go on! Let sanitary officials proceed against the known source of danger and let Ybarra and others be given every chance to demonstrate the accuracy of the suspicions they suggest.

A parody of a parody is given in *The Practitioner* of March, translated from the French journal the *Temps*, after M. Doyen, the French surgeon, had separated the Hindoo twins, Radica and Doodica. M. Doyen had the cinematograph at work while he operated in the circus and wrote a long report of the case for the newspapers. The notoriety seeker is well taken off. The operation by the newspaper surgeon is this time supposed to be upon M. Doyen, "whose exceptional cerebral activity had doubled his personality:"

"By ill luck the scissiparity was incomplete, the two persons remained attached to one another by a membrane extending from the umbilicus to the sternum. To distinguish them it was necessary to call one Radoyen, and the other Doyenka. This at first caused no inconvenience, but with increase of age troublesome disagreements, grave incompatibilities of character and temper became manifest between the two doubles.

* * * It was determined to separate them, and my scientific aid was invoked. The operation did not last twenty minutes. I had invited my friends of Barnum and Bailey's circus, who are now indispensable to me. They were of the greatest use to me, particularly the man with the elastic skin. By stitching the skin of his abdomen to that of the abdomen of the living skeleton, I constructed artificial Siamese twins on whom I made most interesting preliminary experiments. There were also present the armless man, who wrote at my dictation with his foot, and the pincushion man, who played a modest but indispensable part, as will presently be seen. The two monsters, Radoyen and Doyenka, were placed upon a table invented by me, covered with a sheet sterilized by means of a preparation which is my property. I took up my position on the right so that the cinematograph should lose nothing either of my movements or my features. The superficial part of the portion of the membrane was formed by a cartilaginous plate of a certain thickness which I divided with a bistoury made according to my directions. As is usual in my clinic, anesthesia was produced by means of methyl chlorid. As I ceased to require my needles, my scissors, and my forceps, I stuck them into the cheeks of the pincushion man, that is what he served for. Underneath the cartilaginous plate I found, as was to be expected, a bridge of liver, seven centimeters in breadth by four in thickness, traversed by a large number of arteries, arterioles, veins, and venules. This was the time or never to use my original method of hemostasis. I therefore performed extemporaneous crushing of the hepatic pedicle by means of my large double lever forceps from Creusot, which weighs a million tons, but which can be set in motion by one finger, and which exerts a pressure of 600,000 kilos. * * *

"Happily for posterity the operation was completed before the cylinders of the cinematograph were exhausted. Radoyen was first carried to a neighboring table, a compress invented by one of my usual assistants was placed in the wound, and the skin provisionally brought together with toothed forceps of which I recently published a drawing. Then came the turn of Doyenka. I sutured his abdominal wall, taking care to leave in a small drain of gauze sterilized by my ordinary attendant whom I cannot recommend to my *confrère*. The operation had succeeded. As for Radoyen and Doyenka, I hope they will get over it. An immense concourse of people, which I estimate at 7,000,000, was waiting at the door of the hospital, and I had to escape from their acclamations."

Clinical Instruction in Smallpox.—London is attempting the solution of a question that, thanks to the concerted action of the medical schools and the health authorities, has been satisfactorily solved in Philadelphia, viz.: How best to make students familiar with the physiognomy of contagious eruptive fevers. The recommendation of the Hospitals Committee to the Local Government Board comprised the following clauses, some of which, particularly that offering instruction to practitioners as well as to students, deserve adoption elsewhere: (1) No student shall be admitted to study at the hospital until he has completed the third year of his medical education, has held the offices of clinical clerk and dresser, and has obtained from his medical school sanction to his attendance at the hospital; (2) the ordinary course of study at the hospital shall consist of 12 demonstrations, and no student shall receive a certificate who has not attended eight of them; (3) the fee shall be four guineas; (4) the means of conveyance to and from the smallpox hospitals shall be by the Board's steamboats to and from its London wharf; (5) every student will be required to wear, as long as he is within the hospital, a suit of brown Holland overalls, consisting of coat, trousers and cap, which will be provided by the Board; (6) any legally qualified medical man may attend

the hospital for the purposes of instruction as if he were a student; (7) in order that qualified medical men who have not sufficient leisure to attend a prolonged course of instruction may have opportunities of seeing cases of smallpox, demonstrations will be given from time to time, the fees charged being one guinea per demonstration or two guineas for three demonstrations; and (8) the rules as to disinfection and vaccination shall apply equally to medical men and students. The importance of a correct diagnosis in smallpox, and also in other eruptive fevers, is so great that every facility limited only by the reasonable restrictions necessary, should be given to the student and to the general practitioner to familiarize himself with the symptoms of these diseases.

Children in County Poorhouses.—In how many states and in how many counties are there such conditions as are shown in the following?—

"At one institution that I visited where the paupers and patients were at dinner, one of the insane patients arose from her chair, went over to the plate of one of the paupers and grasped every article of food that was placed upon it in her hands and passed around the table and sat down at her own plate, and then got up and went around the table, gathering from the plates of the paupers the food allotted to them, taking it up with her hands, sat down and then began eating in the primitive method, using fingers instead of fork. The paupers while poor but in their right mind, could not help but revolt at such a condition. I was told that this was a daily occurrence."

That by public control and order paupers and the chronic insane should be "housed together, sleep and eat together, for twenty-four hours each day" shows a sad condition of affairs both in and out of the county institutions. But worse than this is the fact that "so many children are confined in county houses not only associated with paupers, but with insane people, growing up with them and confined in the same dormitories with them." During the most imitative and plastic period of life children are thus put into these schools of pauperism and insanity. It is an expensive method, it is cruel, and the evil is increased by the cure.

The Life-insurance Business.—It is almost impossible to secure the data for estimating the total amount of the life-insurance business. Even if possible, the figures are so huge that their significance is hardly comprehended. There is none, moreover, with which the medical profession is so intimately associated, and, to a large extent, responsible. According to one insurance journal, the figures of seventy-seven companies for the year ending December 31, 1901, are as follows: The assets of these companies amount to \$1,912,201,227, and their surplus to \$277,089,525. They received in premiums last year, \$860,181,575, and receipts from other sources increased that amount to \$451,297,512. The companies disbursed on policyholders' account the sum of \$187,431,697, and after providing for all expenses, there was laid by for the policyholders' future protection the sum of \$154,844,478. In volume of new business written, the year 1901 was the greatest in the history of the business, for, after deducting not-taken policies, the total new ordinary issues are found to aggregate \$1,878,777,-

515. The increase in amount of insurance in force also surpassed all previous records, as a gain of \$703,831,469 is shown, bringing the total now outstanding up to \$7,797,402,168 of ordinary business.

The Mosquito Problem in New Orleans.—An especially noteworthy contribution to the literature concerning mosquitos as infective agents in yellow fever and malaria is the Report on Mosquito Investigation by Professor George E. Beyer of the Department of Biology of Tulane University and his associates, Pothier, Couret, and Lemann. It covers very fully the mosquito fauna of New Orleans and vicinity together with the conditions which govern the various activities presented by this insect during its life cycle and measures for the mitigation of the evils of which it stands convicted. Peculiar interest attaches to the experiments with *Bacillus ieteroides* from which the commission deduces the conclusion that the infection conveyed to animals by it as described by Sanarelli produces a disease in animals having the characteristic lesions of yellow fever; further that the disease is conveyed by *Stegomyia* and that these same *Stegomyia* cannot convey the disease from a dead body. The studies of the Commission as regards malaria confirm the descriptions of previous investigators of the life cycle of the plasmodium in the body of the intermediate host.

The Encouragement of Temperance.—A method too frequently neglected, whereby temperance may be encouraged, is the regulation of the habits of employees in reference to liquor-drinking. If the drink-habit is bad it must have bad effects, and these must serve to make the workman less capable and trustworthy. A suggestion of the method may be gathered from the fact that the French governor-director of railroads has written to the different societies opposing the use of alcohol that all the government roads have agreed to the following: First, to discharge all employees who persist in using spirits and wine while on duty; second, all persons who continue to drink shall be dropped from the pension rolls of the company, and will not participate in the endowment funds in case of an accident. All restaurants on the roads are forbidden to sell spirits to the workmen. In our own country we find that Rule 207, of the Union Pacific, prohibiting employees from patronizing saloons, has, it is said, ruined twenty-five saloonkeepers, who will close their doors on the first of the month, when their licenses expire. The rule has been in force for four months and special agents have reported many violations. Offenders have been dropped in every instance without regard to previous standing. Only the better class of saloons have survived the effects of the order. Two of these are going to move. Three gambling houses have closed.

The Osteopaths Claim a Friend at Court.—In an editorial in *Osteopathic Success* (published at Wilkes-barre, Pa.) calling upon the brethren to aid in the fight for one of their number practising medicine without a license, there is a naïve confession that it is self-interest

that motives the practitioners of osteopathy, and that there is sympathy for them in the State Medical Board:

"Are we to sit at home, with the blinds down, half-ashamed to be seen when another man is fighting our battles, and protecting us in our struggle to win food and clothing for our wife and babies? Well, we in Wilkesbarre don't intend to, and *Success* herewith subscribes twenty-five dollars (one patient) as a donation in the event of this Staff case being carried any further. Now then, you who want to do the right thing, keep an eye on *Success*, and we will let you know if the "medics" intend to seek a higher tribunal. We have a friend at court, and any step taken by the State Medical Board is not long unknown to us. But don't forget that you ate breakfast today with an easy mind all because one man has taken a stand and won his case."

A Vivisection Experiment on a Large Scale.—

"Our friends the enemy" should organize a plan to bring the Japanese Government up standing for its awful human wholesale vivisection experiments upon its army. We read in the daily papers that in Formosa "a battalion of soldiers, completely protected from mosquitos for 161 days during the malarial season, escaped the disease entirely, whereas there were 259 cases of malaria in an unprotected battalion in the same place and during the same length of time."

Notice.—It has been brought to our attention that attempts have been made to use the confidence of the profession in this journal and its management to induce investment in commercial undertakings having no relation to medical journalism. We warn physicians that this use of our name or company is entirely unauthorized, and that if such investments are made it must be irrespective of any reference to AMERICAN MEDICINE, its editor, or its publishing company.

GEORGE M. GOULD, *President Board of Directors.*

G. C. C. HOWARD,
Treasurer.

WILMER KRUSEN,
Secretary.

EDITORIAL ECHOES

Osteopathic Erudition and Science.—I have been your leader for nearly thirty years but I have had no books to guide me excepting those on descriptive and demonstrative anatomy and those few in such crude form that they only suggest the wondrous provision that the God of nature has placed in man with which to ward off or banish the cause of disease if man were only studious and would only learn enough to detect the variations and readjust the deviations back to the normal.—[Dr. A. T. Still, in *Journal of Osteopathy*, February, 1902.]

Indecent Advertisements in the Daily Papers.

—There is another way of keeping a paper alive when it is not on sound business lines, and that is by running a lot of disreputable and shameful advertising—advertising that ought to put to shame any self-respecting publisher. I refer to a class of so-called medical advertisements that are carried by most of the newspapers of the country—even the respectable papers—but which advertisements are indecent and vile, and which the Post Office Department should compel publishers, regardless of their avarice, to drop.—[*The Washington Times*.]

AMERICAN NEWS AND NOTES.

GENERAL.

Marine Hospitals.—Favorable reports have been authorized on the two House bills approving the construction of marine hospitals at Buffalo, N. Y., and Pittsburg, Pa.

Smallpox in the United States, as officially reported from December 28, 1901, to March 21, 1902, reaches a total of 24,194 cases, with 708 deaths. The total for the same period in 1901 was 11,496 cases, with 149 deaths.

Cholera in Manila is reported with 16 cases and 15 deaths among the natives in 2 days. It is believed that the disease was communicated from Hong Kong and quarantine has been established against that place. Every effort is being made by the Board of Health to prevent its spread.

Medical Care for Philippine Constabulary.—An order has been issued by General Chaffee, of the Philippine division, directing that officers and men of the Philippine constabulary may receive medical attention at military hospitals at the rate of \$1 a day for officers, and forty cents a day for enlisted men. The bills for such service will be forwarded to the civil government for payment out of the appropriation for the support and maintenance of the constabulary.

Contract Dental Surgeons.—The Secretary of War has decided that contract dental surgeons and their enlisted assistants have no official relation to the surgeon of a post. When it is found necessary to recommend for relief from duty an officer or enlisted man suffering from dental disease, the contract dental surgeon will report the case to the surgeon of the post, who will provide for it on his list of sick and wounded. In all other instances the report of dental operations shall be made only by the contract dental surgeon.

The literature relating to mosquitos is multiplying at a great rate. Dr. L. O. Howard reviews, in *Science*, two new works on the subject. One of these, by F. V. Theobald, published by the British Museum, is in three volumes. It describes in detail 340 species of Culicidae, distributed in 23 genera, 108 of the species and 10 of the genera being new to science. Of the species, 131 belong to the old genus *Culex*, and of these 51 are new to science. Of the malaria-bearing genus *Anopheles*, 39 species are described, of which 12 are new to science. For North America 37 species are described, of which 5 are new.

Leprosy.—A commission of medical officers of the Marine-Hospital Service appointed to investigate the origin and extent of leprosy in the United States report 278 cases, of which 155 are in Louisiana. The commission recommends a retreat for lepers, as the disease is conveyed from one person to another and 33% of the patients in the country are at large; it further recommends that the retreat should be in the arid Southwest or in a similar region further North, or on an island in the Gulf of Mexico or on the Pacific Coast, as the infection is most frequently conveyed by the inhalation of dust in places where lepers have been located.

Disinfection for Tuberculosis.—Surgeon-General Wyman has sent a circular letter to the commissioned officers and acting assistant surgeons of the Marine-Hospital Service, directing that hereafter if a sailor with pulmonary tuberculosis applies for treatment, notice shall be sent to the captain of the vessel with which the patient sailed prior to his application. This is in order that the captain will have the apartments occupied by the patient thoroughly disinfected under the supervision of a medical officer. It is likewise requested that the forecabin and other apartments used should be whitewashed or painted after such disinfection, and a report of each vessel whose forecabin has been disinfected be submitted to the Marine-Hospital Bureau.

Medals of Honor.—For unusual bravery in action in Cuba, in the Philippines or in China 10 officers and 23 enlisted men of the United States Army have been presented with Medals of Honor. Among those so honored is Lieutenant George W. Matthews, assistant surgeon, United States Army, formerly captain and assistant surgeon Thirty-sixth Volunteer Infantry, "for most distinguished gallantry in action near Labao, Luzon, P. I., October 29, 1899, in attending wounded under a severe fire of the enemy and seizing a carbine and beating off an attack upon wounded officers and men under his charge." In commenting on this, the *Army and Navy Register* of March 15, 1902, says: "It is an interesting fact recalled by the awarding of a medal of honor to Lieutenant George W. Matthews, of the Medical Department, that 5 of the 110 medals which are now held by army officers were conferred upon officers of the Medical Department. This is rather surprising when it is reflected that medical officers are noncombatants and are not usually found on the firing line. Their position is supposed to be where there is difficulty for an officer to distinguish himself by the sort of valor which gains a medal of honor. The list of medical officers who win that distinction is steadily growing year by year."

EASTERN STATES.

Autopsy Bill.—The Massachusetts Legislature has been petitioned to amend the present law by allowing autopsies to be performed in the state insane hospitals and asylums. As the law now reads, all bodies must be delivered immediately to medical schools for dissection. It is claimed that such a measure is very necessary as an aid to pathology. On the other hand, the amendment is opposed on behalf of the medical school, for it is stated that such legislation would interfere with dissection as practised in such schools. The final decision of Legislature is awaited with interest.

NEW YORK.

City Hospitals.—Dr. Smith Ely Jelliffe has been appointed visiting neurologist to the city hospitals.

The Eastern Medical Society of New York City held its annual dinner at the Broadway Central Hotel Saturday evening, March 22. The attendance was the largest in the society's history.

The Craig Colony prize of \$200, open to universal competition, is offered for the best original unpublished contribution to the pathology and treatment of epilepsy. The essay must be written in English and accompanied by a sealed envelope enclosing the author's name and address and bearing on its outside a motto or device which is to be inscribed also upon the essay. The award will be made at the annual meeting of the Board of Managers of the Craig Colony, October 14, 1902, on the recommendation of the committee of three members of the New York Neurological Society, by whom all papers will be examined. Manuscripts should be sent to Dr. Frederick Peterson, 4 West Fifth Street, New York City, on or before September 30, 1902. The prize essay becomes the property of the Craig Colony, and will be published in its medical reports.

PHILADELPHIA, PENNSYLVANIA, ETC.

Children's Hospital.—James P. Hutchinson has been elected visiting surgeon.

Atlantic City Hospital.—The children's ward and maternity ward added recently have been opened for admission of patients.

Mosquitos.—The bill appropriating \$10,000 for experimenting on the destruction of mosquitos in New Jersey has been defeated in the Senate 8 to 10.

Cancer Research.—A meeting of wellknown physicians of Western Pennsylvania with Dr. Roswell Park, of Buffalo, was held recently to discuss the subject of carcinoma, its pathology and cure, and to devise means for the establishment of an international commission for cancer research.

Sanitary Barber Shops.—A bill to regulate and improve the condition of barber shops throughout Philadelphia, will be introduced into Councils. It provides for the registration and licensing of all shops, and for the appointment of inspectors to visit them from time to time to investigate their sanitary condition.

A gold medal will be presented to Dr. Frank M. Cook, by the citizens of Hackettstown, N. J., in appreciation of his devotion during the smallpox epidemic. When the plague first started and a strict quarantine was enforced against the place, Dr. Cook, who was a retired physician, volunteered his services and by his untiring efforts did much to check the spread of the disease.

SOUTHERN STATES.

Veteran Practitioner.—Dr. John C. Campbell, a nephew of Ephraim McDowell, who lives in Denmark, N. C., although 89 years old, is still in active practice and keeps himself informed on new remedies and methods of treatment.

A hospital for mariners and sailors will be made from the old naval hospital on the Government farm at Annapolis, which has long been in disuse. The building which is situated on an elevation commanding a fine prospect originally cost \$200,000, and the cost of remodeling is estimated at \$75,000.

Postgraduate Courses.—The College of Physicians and Surgeons of Baltimore announce postgraduate courses to be held from April 28 to June 9, 1902, designed for physicians who wish to spend a short time in advanced clinical and laboratory study and keep in touch with the progress of the day. Courses are provided for in medicine, surgery, medical and surgical specialties and in laboratory courses in clinical medicine, pathology, bacteriology and pharmacology.

Columbian University.—Two large buildings are to be added to those now in use by the university. One will relieve the existing pressure in the medical department, and the other will almost quadruple the present facilities of the Columbian Hospital. The present medical school building is to be torn

down, and a new structure, which will have ample lecture halls and laboratories for medical and dental students, will be erected in its place. The new hospital building will be connected with the present institution. The work on these additions will be commenced about April 1, and it is confidently expected that both structures will be ready for occupancy by October 1.

Regulations of Dental Practice.—A bill now pending in Congress proposes to regulate the practice of dentistry in the District of Columbia. The present law requires that a certificate of qualification be issued to any one presenting a diploma from any dental college having a three years' course, without any specification as to legal qualification or responsibility. Accordingly, diplomas are presented from a number of bogus colleges that pretend to give the required three years' instruction, while in reality they sell diplomas to all applicants after a few weeks' attendance, and in some instances without any attendance at all. It is claimed that legislation which will protect the people against such incompetency and malpractice is sorely needed.

Quarantine Station.—An appeal to Congress from the Florida Legislature, numerous medical societies and health boards of some of the Southern States contains strong arguments against the establishment by the Navy of a coaling station at Tortugas and the removal of the quarantine station. The transfer of Tortugas from the Treasury to the Navy Department is greatly deplored, and it is suggested that Congress exert its influence toward the restoration of the quarantine features. The claim is made that Tortugas is the most advantageous site for this object. It is a safe distance from the coast, it has no residents that can be endangered by vessels carrying contagious diseases, and stricken crews can be more readily cared for. A station near the coast line is opposed on the ground that great risk is incurred, as contagious and infectious diseases could be easily introduced into Florida, and from there would spread quickly to adjoining states. A number of the neighboring states have agreed to cooperate in the effort to induce Congress to restore the station to its original site, as is witnessed by the resolutions which have been drawn up by the various health boards and numerous medical societies.

Baths and Massage.—A report in reference to Major Sylvester's recommendation that a law be enacted to regulate bath and massage houses has been submitted to the District Commissioners by Dr. W. C. Woodward, District Health Officer. He holds that the business of conducting such houses is so distinct from the practice of medicine that it would be unreasonable to require the wouldbe proprietor to comply with the law regulating the registration of physicians. The alternate proposition that an application signed by at least six physicians be required for permission to conduct such establishments would probably fail to accomplish the purpose of the proposed law unless the endorers were held responsible to some extent. The proposition is made that the establishment of such houses for improper purposes can be best restricted by requiring the proprietor to file with the commissioners a bond conditioned on the maintenance of his establishment for the sole purpose of giving baths and massage, and that it will be maintained in a manner entirely in accordance with the law and not detrimental to public morals. It is further suggested that the proprietor keep a register of the full name, age, present and former residence of each employee and attendant. A second register should show the name and address of each person receiving a bath or massage, unless such person presents a written order for treatment from a duly qualified medical practitioner. These records should be kept for a specified time, and should be open to inspection by the mayor, superintendent of police or any authorized person. A penalty should be imposed for violations.

WESTERN STATES.

University of Chicago.—The erection of a large laboratory for anatomical purposes is contemplated at a cost between \$500,000 and \$1,000,000.

Inspection of Schools.—A staff of 30 physicians under the direction of the Health Board of Detroit, Mich., has commenced the daily medical inspection of schools.

The Royal College of Physicians of London and Royal College of Surgeons have placed upon their limited list of accredited colleges, the Northwestern University Medical School, Chicago Medical College.

Smallpox in Nebraska is reported as existing to such an extent (764 cases) that the State Board of Health decided to telegraph for a special agent from the Marine Hospital Service to cooperate with them in measures to eradicate the disease.

St. Louis is not responsible, it has been decided in court, for damage in the deaths of the 13 children who died from tetanus following treatment by antitoxin obtained from the Board of Health. The judges ruled that the State of Missouri cannot be held liable for the acts of its agents and as the city of St. Louis acted for the state it cannot be held liable.

CANADA.

McGill University.—It is reported that the faculty has concluded to ask the Dominion Government for an enactment to inaugurate a five years' course in medicine.

FOREIGN NEWS AND NOTES

GENERAL.

Plague in India.—The most severe outbreak of plague on record, with a daily mortality of 2,000, is reported from Lahore (Punjab province). It is attributed to the policy of noninterference in caste customs.

Mosquitos.—The theory that mosquitos convey malaria is borne out by recent Japanese experiments in Formosa on two battalions of soldiers, one of which was completely protected from mosquitos for 161 days during the malarial season and escaped the disease. An unprotected battalion at the same place had 259 cases of malaria.

Bubonic Plague.—An epidemic of the disease is reported to be raging in Shuiting, about 250 miles south of Canton. There are about 30,000 inhabitants in the city, and the entire disregard of sanitation which exists is no doubt the reason that the plague claims at least several thousand victims each year. It is impossible to obtain reliable statistics from the native authorities, but it is estimated that considerably over 100 natives have already succumbed to the disease. Canton is reported to be entirely free of the scourge. This is very encouraging in view of the fact that four steam launches carrying passengers and freight make regular trips between the infected city and Canton.

CONTINENTAL EUROPE.

The sick club of the Berlin Street Tramway Society has appointed Fraulein Dr. V. Leyen as club doctor, the first appointment of the kind bestowed upon a woman. The club comprises 7,000 families, and employs 22 general practitioners and 15 specialists.

The revision of the Swedish pharmacopeia has been completed after seven years of labor, and the new edition is issued. It is entirely in Swedish, with the Latin names of drugs appended, and includes a department devoted to veterinarian drugs and tables of maximum doses for animals as well as for man.

Prescriptions by Druggists.—Pharmacists of Paris have been forbidden by the courts to diagnose ailments or to prescribe medicines to any of their customers. A druggist who diagnosed and prescribed for kidney trouble was fined 50 francs (\$10) and costs, in spite of the fact that both diagnosis and treatment were correct.

First Aid to the Injured.—A clever contrivance to obtain prompt aid for those injured in street accidents has been inaugurated in Paris. It consists of an emergency box, containing a small medicine chest, a folding stretcher, and telephone connection with the nearest ambulance station. Access to the box is obtained by breaking a glass panel.

The league against syphilis which Professor Fournier established lately under the name of Société de Prophylaxie Sanitaire et Morale, adopted a resolution at a recent meeting to provide for instruction concerning venereal disease in schools to boys above 16. This might be given in an annual lecture, delivered preferably by a medical man, and accompanied by a leaflet of instruction distributed to each boy.

Against Tuberculosis.—Messrs Althoff, Fraenkel, Gerhardt, v. Leyden, and Pannwitz have organized in Berlin an International Central Bureau to combat the inroad of tuberculosis, and will issue a monthly publication called *Tuberculose*, differing from other medical journals in that it will appeal directly to all who are interested in this movement, to committees of sick clubs, trades-unions, charitable organizations, parochial authorities and employers of laborers as well as to medical and scientific men.

Against Tuberculosis.—W. P. Atwell, U. S. Consul at Roubaix, France, writes to the Assistant Secretary of State concerning an organization called the Polyclinic Society, formed in France with the practical aim of creating 200 dispensaries, five of which are to be in Paris, where the best-known methods for the treatment of tuberculosis will be applied by physicians of high standing. The poor are to be treated gratuitously in these dispensaries, and the rich at a moderate price. The philanthropists who conceived the idea selected Roubaix as a field, where consumption is very prevalent, and more than a year ago opened a dispensary on one of the principal avenues of the town. In that establishment patients have been treated by the best physicians of Roubaix, different methods being practised in order to secure the best results. Much interest is awakened in France by the founding of the antituberculosis dispensaries. Mr. Gustave Rouanet, member of the chamber of deputies in the eighteenth district of Paris, recently deliv-

ered a lecture on the subject, which was attended by the prime minister, Mr. Waldeck Rousseau, Dr. Brouardel, ex-dean of the faculty of medicine, Professor Landouzy, and many other distinguished men of science. Mr. Waldeck Rousseau has given assurance that the government will cooperate in the work of founding antituberculosis dispensaries. In another communication Mr. W. P. Atwell writes that last year a congress was held at the Sorbonne by the teachers' mutual aid society to discuss the establishment of a sanatorium and dispensaries for teachers afflicted with tuberculosis. The teachers' friendly aid association was also represented at this congress. It was decided to call a national meeting of the two societies under the law regulating mutual aid associations. The statutes adopted by this meeting were approved by the minister of the interior January 15, 1902, which gives legal existence to the society. In order to procure necessary funds for the construction and furnishing of a sanatorium, the union decided upon a popular subscription in France, by authority of the minister, and under the auspices of all teachers; also a lottery with a capital of 1,000,000 francs, tickets, 50 centimes each, and prize lots, the highest of which will be 125,000. The French chamber is now considering a report favorable to the organization of this national lottery for the construction and maintenance of a sanatorium and dispensaries for tuberculous teachers.

OBITUARIES.

William Waring Johnston, of Washington, D. C., at Atlantic City, March 22, aged 59. Dr. Johnston graduated from the medical department of the University of Pennsylvania in 1845, and afterward studied at the University of Edinburgh and in Paris. Since 1871 he has been a member of the faculty of the medical department of Columbian University, and at the time of his death was professor of clinical medicine there. He was president of the Medical Society of the District and also of the Obstetrical and Gynecologic Society, and was connected with a number of other societies. He was an expert in the treatment of diseases of the heart, and was called into consultation in most of the cases of illness of well-known public men for years past. He was one of the founders of AMERICAN MEDICINE.

John Francis Langan Mullin, of Newport, England, February 17, aged 52. Previous to his medical career he lived in the Southern United States. He was an alumnus of the Queen's University, Ireland, and a favorite pupil of Dr. Foote, of Dublin, and of Sir William Stokes. His genial nature and professional skill so endeared him to the people of Newport during his practice of 10 years in that place that all business traffic was suspended along the route of his funeral procession and the way was thronged with the sorrowing people.

Gerhard Loelling, of Philadelphia, March 23, aged 69. He was born in Prussia, where his father, Philip G. Loelling, was an eminent surgeon, and was graduated from the German Universities before coming to Philadelphia, where he took his doctor's degree at Jefferson Medical College and won for himself an enviable reputation as a conscientious and painstaking physician.

John J. Stafford, a well-known physician of Washington, D. C., March 17, aged 52. Dr. Stafford was a native of Washington and for many years was professor of chemistry in Georgetown University Medical School.

John E. Richardson, of Brooklyn, for many years chief surgeon of the Long Island Railroad, the Atlantic Avenue Railroad and of the Brooklyn police, March 23, aged 51.

Henry Martyn Skillman, of New York City, where he had practised for 57 years, March 22, aged 78. He was formerly a professor in the Transylvania Medical College.

George W. Cushing, a practitioner of Brooklyn for more than 25 years, March 20. He was a member of the Kings County and New York State Medical Societies.

Marc Levingston, of San Francisco, Cal., one of the most prominent physicians in the state and a specialist in diseases of the throat and lungs, March 14, aged 45.

F. H. Thompson, a Canadian, and one of the most widely-known physicians in the United States service, at Seattle, Wash.

Henry Whitesell, of Sewickley, Pa., from a fall from a cliff while on his way to see a patient, March 23.

Reuben O. Evans, of Malden, Mass., while treating a patient in his office, March 20, aged 42.

I. A. Williams, a prominent physician of Baton Rouge, La., March 18, aged 80.

Edward S. Oliver, of Baltimore, at Saranac Lake, N. Y. March 18, aged 30.

Robert Ellegood, a prominent physician of Laurel, Del., March 22, aged 74.

Oren Day Pomeroy, of Whitestone, L. I., March 18, aged 68.

Noah S. Borneman, of Norristown, Pa., March 22, aged 45.

Mauricio W. Gillmer, of Philadelphia, March 17, aged 40.

R. T. Isbester, of Chattanooga, Tenn., March 21, aged 42.

Francis I. Diamond, of Philadelphia, March 8.

Thomas L. Jackson, of Marvell, Ark., March 17.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

A CASE OF GENERALIZED VACCINIA WITH UNUSUAL COMPLICATIONS.

BY

SIDNEY D. WILGUS, M.D.,

of Ogdensburg, N. Y.

The case described appeared in a young man of 22, who was vaccinated January 23, 1901. The local sore pursued an ordinary course, becoming pustular a week after the date of vaccination. The eighth day the patient's face became swollen and inflamed. Erysipelas being endemic in the hospital in which he was confined, he was secluded, with the idea that this disease was developing. Within a few hours papules and vesicles made their appearance on the forehead and cheeks. The swelling continued to increase, and at the end of 12 hours the eyes were entirely closed. It might be noted here that this patient had long been subject to chronic exfoliating eczema of the neck, face, scalp, and also a small area on the flexor surface of the left forearm. When the vesicles developed on the face, the latter surface was examined and found to be involved in the same way. During the course of the disease which followed, these surfaces were the only ones affected, and this limitation aided in making a diagnosis other than smallpox. (See Brouardel in *Twentieth Century Practice of Medicine*.)

The following are abstracts from ward notes made during the course of the disease:

"February 1, 1901.—Face swollen and inflamed; eyes swollen shut; face covered with papules, vesicles, pustules, and a few crusts, which were scattered. The patient has a tendency to scratch these lesions, which itch. According to his statement he has no pain.

"February 2, 1901.—Eyes kept clean with boric acid sponges. Erysipelatous swelling extends a short distance into the scalp. The patient is unrecognizable from the deformity of the face. He is restless and will not allow iced applications to remain on face. Papules near to, and on the eyelids, discharge pus, which runs down between the swollen lids.

"On February 3 and 4, there was no change in the condition, except that the eruption was maturing, and crusts began to form. No generalized vaccinia marks except upon the face, scalp, neck, and a patch 3" by 2½" on the flexor surface of the left forearm. In these localities the papules, vesicles (umbilicated), pustules and crusts are seen mixed together in the same locations. The eruption is present in all stages of development, and is thickest on the face; but a newer crop of eruptions appears near the border of the hair on the scalp, and to a lesser extent on the neck. Today the face has become swollen

involved parts for several days. This smell was exceedingly disagreeable, and gave one a headache in a very few moments. By the 8th the patient was quite comfortable, and the swelling in his face had decreased, until it was moderately above the normal size. This day, for the first time, he was able to see out of both eyes. By the 9th, through anointing with vaselin and swabbing gently with warm water, fully half of the crusts were removed. The temperature, which had continued to range between 100° and 103° F. throughout the course of the disease, became normal for the first time on the 12th.

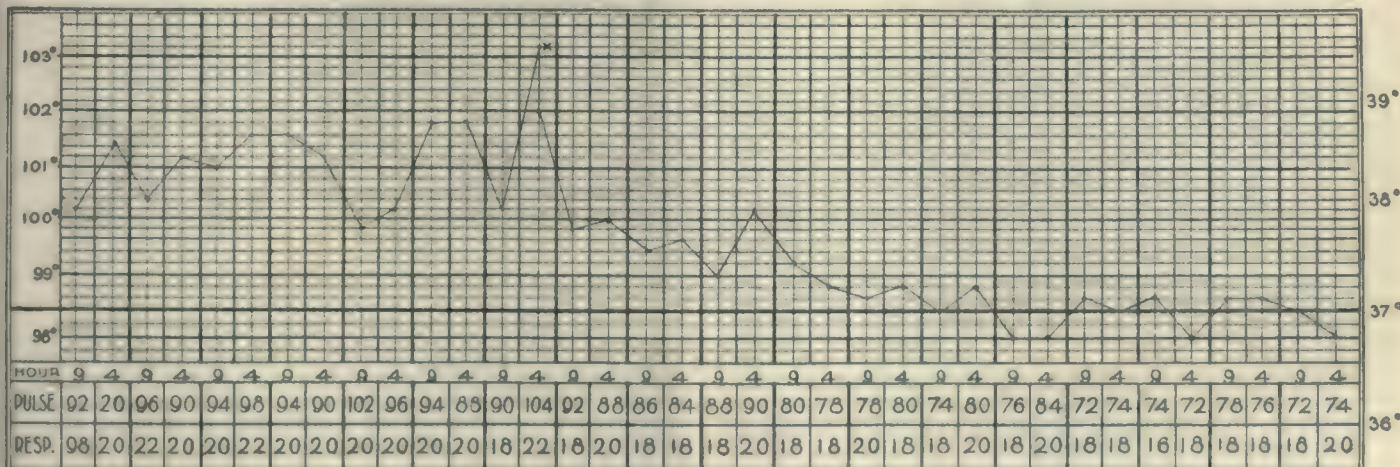


Two days later the patient sat up for a short time. By the 10th practically all of the scabs had disappeared. On this date a boil developed on the right side of the lower jaw, and on being lanced discharged a considerable quantity of pus. On the 21st, he had improved so much in strength and in general appearance that he was sent back to the ward in which he was vaccinated.

The following is an abstract of the last note made in his case:

"This is a case of generalized vaccinia, due, in part, to multiple inoculations through scratching, but mostly to influence on eczematous areas of the virus in the blood. The affected areas are badly pitted, and the patient is marked for life."

In the early stage the disease was suspected to be erysipelas which was endemic, but after a day or two papules, vesicles, etc., made such a diagnosis untenable. The fact that the



* Pustulation complete, sponge bath.

to the size of that of a man weighing 225 pounds, although the patient has never weighed more than 125 pounds.

February 5.—Eruptions still maturing; face covered with crusts, except where he has removed them; but the papules and vesicles are fewer. Swelling is increased on the lower part of the face, and has extended further into the scalp. About the eye there is possibly a little swelling."

After this day improvement began. No more papules or vesicles developed, but the pustules all developed crusts so that the patient's entire face, the anterior portion of the scalp, and the area on his arm were covered with a great mass of them. A strong, scorched-flesh odor had emanated from the

affected areas were limited to eczematous patches, which were scratched by the patient; that the disease appeared about a week after vaccination; that the headache and backache were not prominent symptoms, made untenable the diagnosis of smallpox, about which at first some anxiety existed; also the fact that he had not been in contact with variola, either directly or indirectly, was greatly in favor of generalized vaccinia. Further, no one about him contracted the disease, as would have occurred had the case been smallpox.

The first of the two photographs shows the condition of the patient's face February 3, two days before the crustation reached its maximum. The eruption is fairly well shown. The amount of swelling is easily seen by comparing this with the second photograph, taken two months later, which shows the amount of pitting resulting from the disease.

The temperature chart is self-explanatory.

With this case in mind, one would hesitate about vaccinat-



ing an eczematous person without notifying him of the possibility of the development of generalized vaccinia.

It is interesting to note that swelling appeared the eighth day after vaccination, and that pustules appeared almost at once. The general reaction was quite marked, and though the face swelled enormously little discomfort was produced. This peculiarity has been noticed in some cases of erysipelas with marked facial involvement.

A CASE OF TRAUMATIC ABSCESS OF THE STOMACH.

BY

BERTRAM L. BRYANT,
of Bangor, Me.

The patient was a trained nurse, about 23 years of age, weighing at the time of the accident about 125 pounds. She was sitting at the table after having eaten a hearty meal. A friend came up behind and pulled her chair backward. When half way down she attempted to spring from the chair, bringing great strain upon the abdominal muscles over a full stomach. She was at once seized with sharp, cutting pains in the upper abdominal region, and soon vomited the stomach contents mixed with considerable blood. I was sent for during the afternoon. The patient was in bed suffering with great pain. Her knees were drawn up, and she was breathing very shallow as a deep breath increased the pain. The nausea was great, vomiting at every attempt to keep even water on the stomach. Temperature was 100°, pulse 85. On examination a very tender spot was found about one inch in diameter a little below the tip of the ensiform cartilage. The rest of the abdomen was normal in every respect. All attempts to take anything by the mouth were abandoned. Hypodermics of morphia and atropia were given to control the pain, and hot applications ordered over the stomach. The pain was so severe that large doses of morphia were necessary. The following day an attempt was made to give bismuth and cocaine by mouth, also a small amount of milk with limewater. Both caused great pain and were at once rejected, the vomitus being tinged with blood. The nausea, pain, and headache were very severe and continuous. No further attempt to feed by mouth was made for several days. On the third day the patient was taken to the hospital and rectal feeding at once begun with peptonized egg milk with whisky every four hours. These were well retained. On the morning of the fifth day there was a slight chill, and the temperature rose to 101° and to 102° in the afternoon. The area of tenderness over the stomach was somewhat larger and extremely sensitive. Although the case began with a plain history of traumatic injury to the stomach wall as shown by nausea and the repeated vomiting of blood, the fact that it was followed in a few days by rise of temperature, chills,

and increasing pain, and the increased area of tenderness over the stomach with a white blood count of 18,000 indicated a diagnosis of abscess of the stomach. A consultant who was called in confirmed the diagnosis, but an operation was not thought advisable at the time. Enough morphin was given to entirely control the pain. The two following days the temperature remained between 100° and 101°. On the morning of the eighth day there was another chill with temperature 102°. I remained at the hospital the greater part of the day and the following night. I decided to operate the next morning if conditions did not improve. During the night the abscess evidently ruptured into the stomach, for the temperature suddenly fell to normal, and vomiting and pain ceased, though nausea continued as the bowel was being flushed every four hours with saline solution pus was observed. On the tenth day she was able to retain small quantities of champagne and a little milk with limewater. The improvement was steady for three days, when a slight accident occurred while moving about in bed, and the pain returned very severe, and all feeding by mouth was stopped. This lasted for four days followed by improvement for a week. At the end of that time, against advice, she insisted on leaving the hospital, and the moving brought about, as I feared, a second relapse. After a few days rest I sent her to her home in a neighboring state where she could have uninterrupted rest. Within a month she had fully recovered.

NEW INTRAUTERINE PACKER AND DRESSING FORCEPS.

BY

CHAUNCEY D. PALMER, M.D.,
of Cincinnati, Ohio.

I am fully persuaded that the instrument shown in the accompanying cut will be found very convenient and useful for the following purposes:

(a) Intrauterine packing with gauze after curettage;

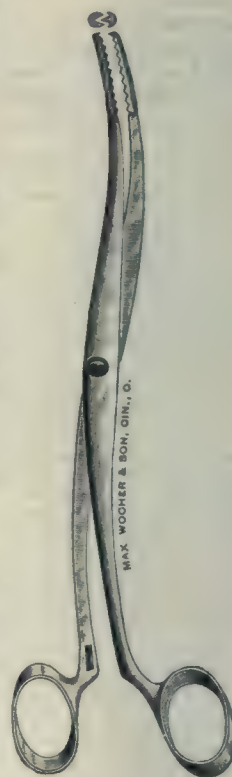
(b) Intrauterine medication.

It can also be employed as a speculum forceps through any kind of a vaginal or rectum speculum. Its size and shape permit of its use through any cystoscope.

Made of the best metal, well tempered, its sigmoid shape facilitates its use.

The rings on the handle are so filed that they adapt themselves to any size or direction of the operating fingers.

A ratchet on the handles and minute teeth on the distal end firmly hold any cotton, wool or gauze. The length and strength are adapted for all cases and in any emergency. The instrument is now made by Max Woche & Son, of Cincinnati, Ohio.



"MEDICAL ALLUSIONS IN SHAKESPEARE'S PLAYS."

To the Editor of AMERICAN MEDICINE:—Dr. Donellan's bright and clever paper on "Medical Allusions in Shakespeare's Plays," which appeared in your issue of February 15, reminds me of a book which is probably unfamiliar to many, and which is not referred to in this article. I think it is out of print. The work is entitled "Shakespeare as a Physician," and was written by Dr. J. Portman Chesney, of St. Joseph, Mo., and published in 1884.

It is quite an elaborate production of 226 pages, the author's conception having been to present Shakespeare's medical knowledge in a "complete and connected form;" or, as the title page has it, "Comprising Every Word Which in Any Way Relates to Medicine, Surgery or Obstetrics, Found in the Complete Works of That Writer, with Criticisms and Comparison of the Same with the Medical Thoughts of Today." There are chapters on psychology, neurology, etiology, dermatology, etc.

It might interest some of your readers to know of this book.
Philadelphia, Pa. H. S. ANDERS, M.D.

ORIGINAL ARTICLES

SAND FILTRATION IN RELATION TO DISEASE.*

BY

JAMES M. ANDERS, M.D., LL. D.,
of Philadelphia, Pa.

Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia; Attending Physician to the Medico-Chirurgical Hospital, Philadelphia, etc.

I have been requested to discuss briefly the question of the relation of sand filtration of water to practical medicine. I have long felt and believed that the method of purifying drinking water for municipalities by slow sand filtration is the best and most practicable. During ex-Mayor Warwick's administration, I was a member of his Advisory Committee, and among the improvements sought to be accomplished by that body was the purification of the water supply of Philadelphia. An appropriation was applied for by Mayor Warwick, but Councils repeatedly refused to grant it. The physicians on the Advisory Board, and who had seriously considered the question, were the late Drs. Shakspeare and Pepper, Dr. J. Wm. White, and myself. We were unanimously of the opinion that sand filtration was the most available as well as effective method of purification of the water supply.

It is true that Mr. Rudolph Hering, an engineer of acknowledged ability and great reputation, investigated the subject of the future water supply of Philadelphia during the years from 1883 to 1886, and that as a result of his studies he recommended the procuring of water by gravity from upland sources, "supplemented by water pumped from the Delaware River from a point above the most serious point of pollution." Since then, as a result of a more thorough knowledge of the nature and results of filtration, Mr. Hering has expressed the opinion that filtration of the water supply really deserves serious consideration. The members of the Advisory Committee mentioned above had also carefully considered the advantages and disadvantages of a supply by gravity from upland sources, where unpolluted water is found, prior to determining to their satisfaction the superior availability and possibilities of sand filtration.

The foregoing statements presuppose the fact that the drinking-water supply for Philadelphia is impure, and the most important points of pollution are as follows:

TOWN.	POPULATION. (Census of 1890.)	DISTANCE ABOVE INTAKE. (Queen Lane)
Conshohocken.....	5,470	8 miles.
Norristown.....	19,791	12 "
Phoenixville.....	8,514	23 "
Pottstown.....	13,285	36 "
Reading.....	58,661	58 "
Pottsville.....	14,117	103 "
Total.....	119,838	
Urban population on watershed, 63 per square mile. ¹		

Provision has been made for the purification of the sewage of Reading, although this is considered inadequate by some competent engineers, and the sewage from certain portions of this city, which was formerly discharged into the pools in the Schuylkill River made by dams, is now carried by an intercepting sewer to a point below the lowest pumping station, but above the city limit the river banks are lined by manufacturing establishments that discharge their sewage directly into the river.

Says Hazen,² "the use of water from the Schuylkill from the present intakes has been regarded by every competent authority for many years as most objection-

able, and the use of water from such a polluted source should be abandoned at the earliest possible moment."

About 6% of the water supply of Philadelphia is derived from the Delaware River and doubtless considerable quantities of sewage from the city sewers is carried by the tide, especially when the natural flow of the river is at the minimum, to points above the present intake. Having now briefly shown that it can do no harm, at all events, to attempt to purify the present water supply for Philadelphia, I invite your attention to the more practical phases of the subject that I have been requested to discuss. These fall naturally under two heads: (a) The affections that are produced by the habitual and temporary use of polluted water, and (b) the efficiency of sand filtration as a practical means of minimizing the prevalence of the diseases produced by an impure water supply.

(a) *The affections that are produced by habitual and temporary use of polluted water.*

Whilst I shall endeavor later to emphasize the potency of impure water, especially when bacterially contaminated, in causing certain diseases, I desire at the outset to insist that the deleterious and devitalizing effect of imbibing such water, upon the general health of the community, is practically inconceivable. By lowering the resistance to that large class of infectious diseases, its indirect influence as a causative factor must be considerable, not to speak of the suffering occasioned by the habitually depressed and weakened systemic condition thus engendered. Much inconvenience and ill health, caused by impurities in the drinking water, originates primarily from the alimentary tract and is due to gastric and intestinal disturbances. The ingestion of contaminating materials may be a cause of dyspepsia or diarrhea, and most probably also renders the system receptive to the invasion of the *Bacillus coli*, the *Bacillus of Shiga*, and other pathogenic organisms, and this quite independently of any pollution of the drinking water by the disease-producing germs themselves.

If the limits of my paper permitted, I might dwell at length upon the disturbance of the general nutritive processes and multiform systemic manifestations consequent upon the gastrointestinal disturbance occasioned by a grossly-contaminated water supply. Drinking water containing the germs of disease has been held justly responsible for numerous epidemic outbreaks of certain leading infectious diseases. It is to be stated, however, that water polluted with disease germs "may sometimes be used for a long time by those accustomed to it, without the development of the specific malady, and it may only be after the system is weakened by excesses or other predisposing conditions that the disease manifests itself; or it may happen that only strangers and nonacclimated inhabitants incur the disease. It has been suggested that this immunity is probably brought about by the very gradual introduction into the body of the disease germs and their poisons, so that old residents are not susceptible to the quantities of either of these which are sufficient to give rise to the particular diseases in newcomers."³

For many years, with few exceptions, all of the leading European cities have used filtered water. Medical literature abounds in recorded epidemics of infectious diseases transmitted by the drinking water. One of the most striking and notable instances was the cholera epidemic in Hamburg in 1892, which resulted in over 8,000 deaths. This epidemic was caused by the use of unfiltered water drawn from the river Elbe. Another epidemic of cholera due to the water supply occurred in London.⁴ Epidemics of typhoid fever, clearly traced to the drinking water, occurred at Lausen, Switzerland; at Plymouth, Pa.,⁵ and in other localities. Similar instances could be multiplied if time permitted.

In Philadelphia it is with a view more particularly to diminish the prevalence of typhoid fever that efforts have been and are being made to purify the drinking

*Remarks presented to the North Branch of the Philadelphia County Medical Society, February 20, 1902.

water by sand filtration, since the disease is constantly present and often assumes epidemic proportions. Philadelphia has not any too soon awakened to the necessity for a better water supply, as can readily be shown by the weekly reports of the various health officers in the recent past. During the winter of 1897-98, as my auditors will recall, an extensive epidemic outbreak occurred in Philadelphia. The number of cases reported to the health officer between November 27, 1897, and March 1, 1898, was 1,927, or about three times the number of cases reported weekly under usual conditions. About 65% of the cases occurred within a "sharply-circumscribed area in the northern section of the city that embraces principally the 15th, 20th, 28th, 29th, 32d, 27th and 38th wards" (Abbott).

It is interesting to note that whilst laboratory studies shed no important light upon the origin of this epidemic it was found that about ten days prior to its onset (November 16) there was suddenly deposited in the Schuylkill river a large volume of raw sewage as a result of the overflow of the large intercepting sewer that carries the sewage of a great portion of northern Philadelphia. Doubtless this polluted water was pumped into the Queen Lane reservoir, and it is believed to have been responsible for the epidemic. At all events clear and convincing circumstantial evidence links cause and effect.

At the present time an epidemic of typhoid fever of considerable proportions is raging in Philadelphia, and whilst only six wards have escaped the disease perhaps most of the cases have occurred in West Philadelphia. During the month of January there were reported 510 cases with 49 deaths, whilst during the first two weeks of February the total number of cases reported rose to 411 with 41 deaths. Do we want evidence of more convincing character than this in support of the opinion that an important safeguard, as filtration is held to be, against the most common among the infectious diseases should be no longer delayed? When we consider that the factors concerned in the causation of the disease have long been known, as well as the definite effect of pure drinking water as a means of prevention, it must be admitted that Philadelphia and other American cities have been inexcusably backward, or guilty of glaring dereliction even in the matter of procuring an abundance of good, pure drinking water.

The generally accepted fact that the character of the water supply is a certain criterion of the deathrate from typhoid, should in this connection be recollected. And whilst an abundant and good water supply is of first importance to large municipalities, it has been shown that an improved drainage system must be combined in order to reduce the endemic prevalence of typhoid fever to the lowest point. In Philadelphia the drainage system is better at present writing than the character of the water supply, and it is, therefore, highly probable that the morbidity from typhoid fever will be greatly diminished after the introduction of the present contemplated method of sand filtration shall have been accomplished.

(b) *The efficiency of sand filtration as a practical means of minimizing the prevalence of diseases produced by polluted drinking water.*

To show what may be expected from an improvement in the character of the water supply as a result of filtration, I desire to adduce in the briefest possible manner some incontestable statistic proof. "For the 12 years prior to the application of filtration to the water supply of Hamburg, Germany, the average annual deathrate from typhoid fever was 39.7 per 100,000 of population; for the six years since filtration was established the average deathrate from the disease has been 9 per 100,000, and for the year 1898 it was 5 per 100,000."

The mortality rates from typhoid fever in five European cities using the slow sand filtration is as follows: Berlin, 5 per 100,000; Breslau 9 per 100,000; Hamburg, 9 per 100,000; Rotterdam, 2 per 100,000; The Hague, 5

per 100,000; average, 6 per 100,000. Sanitary authorities are in agreement that in cities having a pure water-supply the average deathrate from typhoid fever does not at any period exceed 25 per 100,000. On the other hand, it has been a matter of common observation that cities using unfiltered river water, show the deplorable typhoid deathrate of 100 per 100,000.

With regard to epidemic diseases as related to the water supply Hazen observes: "The death of 3,400 persons from cholera followed the temporary supply of unfiltered water by the East London Water Company in 1866, while the rest of London remained nearly free from the disease."⁶ The cholera epidemic of Hamburg and Altona, in the autumn and winter of 1892 and 1893, affords a striking and instructive example of the value of such filtration as is being introduced into Philadelphia at the present time. Both Hamburg and Altona take their water supply from the River Elbe. For the same period of time or during the epidemic Hamburg harbored 16,957 cases, with 8,606 deaths, while in Altona only 516 cases and 316 deaths occurred. To present the contrast in another and yet more forcible manner, in Hamburg the cases numbered about 2,648 to every 10,000 of the population, and in Altona not over 346 to every 10,000.

In speaking of this epidemic, Abbott⁷ pertinently remarks: "It must be remembered many citizens of Altona drank the water of Hamburg during the time of their occupation in that city, for Hamburg affords employment for many residents of Altona."

As a business proposition no city can afford to carry the financial burden which a grossly-polluted water supply entails. It would be an easy task to indicate that the purification of the water supply by filtration in Philadelphia will prove to be true municipal economy. Epidemics are costly. Estimated at \$5,000 per capita, Chicago's financial loss from typhoid fever alone in 1891 was over \$10,000,000. Again, according to the mortality statistics of Philadelphia for the last five years, a conservative estimate would place the saving in death loss by filtration at not less than \$1,000,000 annually.

It can be readily shown that whilst the primary cost of slow sand filtration is greater, and whilst it requires more space, it has undoubted superiority over mechanic filtration. Besides, the latter or mechanic filtration is much more expensive to operate and demands the utmost care in "the artificial chemical processes which constitute the system." Moreover, sand filtration is a natural process.

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OBSERVATIONS ON BACILLUS COLI COMMUNIS FROM CERTAIN SPECIES OF DOMESTICATED ANIMALS.¹

BY

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There are few species of bacteria, other than the highly pathogenic forms, which have received more attention, and concerning which there seems to be more uncertainty, than *Bacillus coli communis*. It is generally recognized that the normal habitat of this species is in the intestinal tract of man and certain, if not all, of the domesticated and, probably, wild animals. It is under-

¹ Read at the meeting of American Bacteriologists, Chicago, January 1, 1902.

stood further that soil, or water polluted with the excreta of man or these animals may and usually does contain this bacillus in greater or less numbers for a certain length of time after said pollution. It does not seem to be assured, however, that it will multiply and continue to exist as in a new habitat in these extraneous environments excepting possibly in rare instances under peculiarly favorable conditions respecting food, moisture, and temperature. Numerous investigations have revealed the existence of marked variations in this species and already there has come into recognition several groups of varieties with many intermediate and transitional forms. So conspicuous have these varieties become that an inquiry is already being made into their possible significance from a sanitary point of view. Bacteriologists, however, are intensely interested in the conditions which give rise to so many varieties.

A search for the source of the varieties and groups of varieties which have been described shows that, with few exceptions, they have been isolated from polluted soil, water, or lesions of various kinds in man or in animals. The existing knowledge concerning the types and varieties of this species, as it exists in its normal habitat in the digestive tract of different animals, is so exceedingly meager that further investigations to determine, if possible, the extent of its variations in different individuals and even in the same individual, and in different species, seems to be promising of good results. The perplexing questions that are constantly arising respecting certain forms of the colon bacillus often found in water supplies and morbid tissues suggested the desirability of determining the relation between these bacilli and those existing normally in the digestive tract of different animals. To this end we undertook the present investigation of the colon group in its natural haunts. The amount of labor involved in following out the different lines suggested in such an inquiry, together with the difficulties involved in obtaining the intestines in the same condition, was so enormous that no attempt is made to correlate our findings either with the stage of digestion, or the character of the food taken previously. We are unable to offer any information concerning the relative numbers of this organism in the different parts of the same intestine, information which our work has suggested would be very desirable and worthy of an independent investigation.

In order to bring our preliminary findings¹ to the attention of those interested in this work, it seems best to report simply the results obtained, omitting all discussion of the literature.

The general plan of work and methods which we followed are, stated briefly, as follow:

1. To make a series of gelatin plate cultures from each of the large (cecum or colon) and small (ileum) intestines of freshly-killed animals. For this a platinum loop full of mucus from the mucosa was taken for the first plate in each case. A tube of bouillon was also inoculated from each.
2. To make subcultures in bouillon from six well-isolated, characteristic, spreading colonies believed to be those of *B. coli communis*, which appeared on the plates.
3. To replate these bouillon cultures to make sure of no contamination.
4. To make from the colonies which developed on the second series of plates, subcultures (1) in agar for stock cultures, (2) directly from the same colonies in different media used in this study.
5. To determine the pathogenesis by inoculating such experimental animals as the guineapig and rabbit. (This was found to be impossible for every culture owing to the scarcity of animals.)

¹ In November, 1900, our laboratory was burned and we lost the cultures of the colon bacillus from 42 animals. These were partially studied, but not sufficiently to include in this list. It can be stated, however, that so far as observed there were no marked exceptions to the results here recorded.

After this general scheme examinations were made and the results here reported from 44 animals divided among six species. The cultures made from the different colonies of this bacillus from the intestine of the same animal were practically identical in all of their manifestations. For this reason, but one culture from each individual is included in the appended table.

1. *Horses*.—The horses from which the examinations were made were those killed for dissection in the department of anatomy of the New York State Veterinary College. They were old, but in a state of good health, with the exception of lameness, which in a few cases was very bad. In all, examinations were made from nine horses. In some animals the number of colonies of *B. coli communis* which developed on the plates made from the mucosa of the large and small intestines were practically the same. In these cases they comprised nearly all of the colonies. In others the number of colonies of *B. coli communis* from the cecum and ileum varied, and colonies of other bacteria predominated in numbers. The colon bacilli obtained from the different animals were morphologically alike, all motile, some moderately and others actively so. The cultures in bouillon and on agar, gelatin and potato, did not exhibit characters unusual for this species.¹ Their effect upon the sugars, on milk, and the production of indol is indicated in the appended table:

ACTION OF *BACILLUS COLI COMMUNIS* FROM THE INTESTINES OF HORSES ON THE SUGARS AND MILK.

Horse. No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk.
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	+	1 3	3.5 2.7	Acid.	1 6	3.6 2.1	Acid.	0	—	Alk.	8 days.
2	+	6 13	3.5 2.5	"	5 13	3.3 1.7	"	7 13	1 1	Acid.	2 days.
3	+	6 13	1 2	"	bub- ble.	—	"	0	—	Alk.	Acid no coag.
4	+	1 2	4.5 2.5	"	6 13	2 1	"	0	—	"	7 days.
5	—	1 3	1.4 1	"	1 2	3.3 2	"	0	—	"	2 days.
6	+	5.5 13	3 2	"	1 2	4.1 2.6	"	4 13	1 1	Acid.	5 days.
7	+	1.1 2.5	3 2	"	1 2	2 1.1	"	7.5 13	4.7 2.8	"	2 days.
8	+	6 13	8.7 2.3	"	5.4 12.5	3.4 2	"	7.5 13	4.6 2.9	"	4 days.
9	+	1 2	—	.....	5 13	3 1	"	0	—	Alk.	No change noticed.

In Nos. 6, 7, 8 the time required for the completion of the gas production in saccharose was 23, 17, 15 days respectively.

2. *Cattle*.—Eleven examinations were made from the bovine intestines. No. 1 died suddenly, supposedly from poison. The colon was decidedly hemorrhagic. Nos. 2 and 3 were killed because of tuberculosis. Nos. 4, 5 and 6 were killed for beef at the slaughter-house. The remaining five were slaughtered veals, four to six weeks old. We also examined the intestines of a calf of full term but born dead. All of the media inoculated from this animal remained sterile (not included in table). The number of colonies obtained from the different animals varied greatly; in the majority of cases there were more

¹ The general characters which are referred to as differentiating the colon bacillus are those given by Dr. Theobald Smith (The American Journal of the Medical Sciences, September, 1895.)

colonies of *B. coli communis* on the plates made from the large intestines. The bacilli in the cultures from the different animals showed a moderate degree of motility. The growths in the bouillon, on agar, gelatin and potato were in no way different from those generally considered to be characteristic of *B. coli communis*. The effect on the sugars and on milk are given in the appended table.

ACTION OF *BACILLUS COLI COMMUNIS* FROM THE INTESTINES OF CATTLE ON THE SUGARS AND MILK.

Cow. No.	Ind. l.	Dextrose.			Lactose.			Saccharose.			Milk.
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	+	1 2	3.5 3	Acid.	7 13	2 1	Acid.	7 13	4 3	Acid.	3 days.
2	+	7.5 13	2 1	"	5 13	3 1	"	5.3 13	3.3 2	"	7 days.
3	+	1 2	2 1	"	5.5 13	4 1.5	"	0	—	Alk.	3 days.
4	+	5.5 13	3.5 2	"	5.5 13	3.5 2	"	5.5 13	3.2 2.3	Acid.	7 days.
5	++	5 12	3 2	"	5 12.5	3 2	"	0	—	Alk.	3 days.
6	+	5 12.5	3 2	"	1 2	3 2	"	0	—	"	2 days.
7	++	1 2	3.9 2.5	"	6 13	3.6 2.4	"	0	—	"	8 days.
8	+	1 2	3.3 2.5	"	6 13	3.8 2.2	"	0	—	"	7 days.
9	+	1 2	3.8 2.4	"	5.3 13	3 2.3	"	8 13	4.8 3.2	Acid.	5 days.
10	+	1 2	3.7 2.5	"	1 2	4 2.5	"	0	—	Alk.	8 days.
11	+	6 12.5	3.5 2.5	"	7 13	2 1	"	1 3	2.7 1.8	Acid.	8 days.

ACTION OF *BACILLUS COLI COMMUNIS* FROM THE INTESTINES OF SHEEP ON THE SUGARS AND MILK.

Sheep. No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk.
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	+	7.5 13	4 3.5	Acid	1 2	4 2.5	Acid.	0	—	Alk.	2 days.
2	+	5.7 13	3.2 2.5	"	5.5 13	3.5 2	"	0	—	"	4 days.
3	+	1 3	2.7 2	"	1 2	4.1 2.4	"	1 2	3.9 2.8	Acid.	4 days.
4	+	4.8 12.5	2.8 2	"	5.3 12.5	3.4 1.9	"	6.5 12.5	3.5 3	"	4 days.
5	+	5.8 12.5	3.3 2.5	"	1 2	4 2.3	"	5.5 12.5	3.6 1.9	"	2 days.
6	+	1 2	4 2.6	"	7.5 12.5	4.7 2.8	"	5 12	3.1 1.9	"	2 days.
7	—	1 2	3.7 2.3	"	6 13	3.9 2.2	"	0	—	Alk.	(Acid slight ppt.)
8	—	6.7 12	4.1 2.6	"	5.8 12.5	4.1 1.7	"	0	—	"	(Acid slight ppt.)

3. *Sheep*.—Intestines from eight sheep were obtained. No. 1 died of some unknown disease. Autopsy was held a few hours after death. The intestines were apparently normal, except a few nodules caused by *Cesophagostoma Columbianum*, Curtice. All of the others were from nearly or quite full-grown lambs, that were killed for food. Most of the gelatin plates developed many colonies of liquefying bacteria and fungi which interfered with even an approximate estimate of the number of colonies of *B. coli communis*. The colon bacillus was isolated in a number of cases by plating bouillon cultures which were made directly from the mucosa at the time that the original plates were made. In every case the colon bacilli, were motile, but the degree of activity differed slightly, except in No. 8, which was very active, exhibiting a darting motion. The growths in bouillon, on agar, gelatin, and potato, were characteristic of *B. coli communis*. The effect on the different sugars and on milk, together with the indol reaction, are appended.

4. *Pigs*.—In this series we used the intestines from full-grown pigs that were killed for food. The gelatin plates were remarkable for the great number of colonies of *B. coli communis* present, and the small number of colonies of other bacteria. In the hanging drop the colon bacilli isolated from each case were sluggish in their movement. There was nothing unusual noted respecting their growth in the bouillon, agar, gelatin, and potato cultures. The effect of growth in bouillon containing sugars and in milk, together with the indol reaction are given in tabulated form.

ACTION OF *BACILLUS COLI COMMUNIS* FROM THE INTESTINES OF PIGS ON THE SUGARS AND MILK.

Pig. No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk.
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	++	6.3 12	3.8 2.5	Acid.	4.8 12.5	3.3 1.5	Acid.	1 3	2 1	Acid.	Coagu- lated.
2	—	1 5	1.8 .7	"	5.5 13	3.7 1.8	"	0	—	Alk.	No change.
3	++	5 12	3.2 1.8	"	5.2 12	3.4 1.8	"	1 5	1.6 .9	Acid.	Coagu- lated.
4	++	4.5 12.5	2.7 1.8	"	1 2	4.2 2.3	"	6.7 12.5	4 2.7	"	Coagu- lated.
5	+	1 2	2 1	"	1 2	4.2 2.5	"	0	—	Alk.	No change.
6	++	1.5 2.5	2.2 2	"	3 8	2 1	"	1 3	4.5 2.5	Acid.	Coagu- lated in 4 days.
7	+	1 2	2.7 1.5	"	5.5 12	2.5 1.5	"	2 5	2 1	"	Coagu- lated in 3 days.

*Notes concerning the time required to produce the changes in the milk in the first five cases were inadvertently omitted.

5. *Dogs*.—Six dogs were examined. No. 1 had dis-temper, and the intestines were congested; the other five were healthy dogs that were killed for the purpose of obtaining blood-serum for culture media. In one case (dog killed for serum) no colonies of *B. coli communis* developed. In the other cases more *B. coli* were found in the large intestine than in the small. There were many colonies of liquefying organisms. The colon bacilli showed the characteristic morphology, and were all motile with no marked difference in degree. Cultures in bouillon, on agar, gelatin, and potato, showed no unusual characteristics, and all produced approximately the same amount of indol. The effect of the different cultures on sugar and milk follow:

ACTION OF *BACILLUS COLI COMMUNIS* FROM THE INTESTINES OF DOGS ON THE SUGARS AND MILK.

Dog. No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk. Coagulated in
		Quant- ity of Gas.	H CO ₂	Reac- tion.	Quant- ity of Gas.	H CO ₂	Reac- tion.	Quant- ity of Gas.	H CO ₂	Reac- tion.	
1	+	9 13	5 4	Acid.	8.5 13	6 2.5	Acid.	2.7 13	1.9 0.8	Acid.	3 days.
2	+	7 13	2 1	"	5 13	3.3 1.7	"	0	—	Alk.	3 days.
3	+	7 13	4.3 2.7	"	6.4 13	3.9 2.5	"	0	—	"	4 days.
4	+	5 12	3.4 2.3	"	1 2	2 1	"	1 12	1.1 .4	Acid.	3 days.
5		Colonies of <i>Bacillus coli communis</i> were not found.									
6	+	1 2	2 1	Acid.	1 2	2 1	Acid.	1 10	5 2	Acid.	3 days.

6. *Chickens*.—The chickens, three in number, were about three-quarters grown, and were killed for food. *B. coli communis* was present in large numbers. They were only moderately active. The growths in bouillon, on agar, gelatin, and potato, showed no unusual characteristics. There was no appreciable difference in the amount of indol produced. The results of partial examinations of the colon bacilli from seven other chickens gave, so far as made, similar results, except certain of them which permeated saccharose with the formation of gas. The action of the bacilli from the three fowls, on sugars and milk are appended.

ACTION OF *BACILLUS COLI COMMUNIS* FROM THE INTESTINES OF CHICKENS ON THE SUGARS AND MILK.

Chicken. No.	Dextrose.			Lactose.			Saccharose.			Milk. Coagulated in
	Quant- ity of Gas.	H CO ₂	Reac- tion.	Quant- ity of Gas.	H CO ₂	Reac- tion.	Quant- ity of Gas.	H CO ₂	Reac- tion.	
1	3 13	2.5 0.5	Acid.	3.3 13	2 1.3	Acid.	0	—	Acid.	2 days.
2	7 13	2 1	"	7 13	4.7 2.3	"	0	—	Alk.	3 days.
3	4.5 13	3.5 1	"	5 13	3.8 1.2	"	0	—	Acid.	3 days.

A study of the action of the colon bacilli on the sugars and milk shows that those existing in the intestines of these different species of animals fall very naturally into two groups, viz., those that ferment the three sugars with the formation of gas and those that ferment dextrose and lactose only. These correspond with the two varieties described by Smith. It is important to note that the quantity of gas produced and the relative quantities of H and CO₂ varied somewhat in the different cultures. It is difficult, however, to find variations sufficient either in extent or constancy to warrant the formation of new varieties or groups.

Examinations have been made of the intestines of a number of frogs with negative results so far as the colon bacillus is concerned. A number of rabbits have also been examined, with the result that *B. coli communis* appears in the intestine of about one rabbit in four. All of the cultures studied from the rabbits fermented the three sugars with the formation of gas. They all produced indol and coagulated milk.

The variation in the pathogenesis of the cultures from the different species of animals was very marked in so

far as they were tested. Guineapigs inoculated in the abdominal cavity with 0.5 cc. of a fresh bouillon culture died in from 24 to 36 hours when inoculated with the cultures from dogs, but with very few exceptions they did not die after the inoculation with cultures from the other animals. The further fact was observed that when guineapigs were inoculated with cultures of one, two, three, four and five days' growth respectively, those inoculated with the four and five day cultures remained well while the others died. Additional results will be necessary before conclusions can be drawn from these preliminary observations.

THE TREATMENT OF SUPPURATION IN THE UTERINE APPENDAGES.¹

BY

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The treatment of pelvic suppuration in women is a subject which has been so much discussed during the past 20 years that one might well hesitate to bring it before you. My reason for doing so is that although the subject is old as a basis for discussion, it is one of the most important in gynecology. It is my purpose to report my entire experience in dealing with the various varieties of suppuration in the uterine appendages, to give the results which have been secured by the several operations which have been practised, and to present the conclusions which I have drawn from this experience as a basis for discussion.

Cases of suppuration in the female pelvis can be advantageously divided into two classes: Circumscribed abscesses, as represented by pyosalpinx, abscess of the ovary, and puerperal phlegmon; and intraperitoneal collections of pus complicating suppurating disease of the uterine appendages. This report deals with 200 cases, 146 of which were treated by abdominal section, and 54 by incision and drainage, in almost all cases the avenue of approach being through the vagina.

Historically the operative procedures employed have passed through three periods of development. Prior to 1895 almost all patients were operated upon by abdominal section and the removal of the appendage or appendages involved. During this period drainage either with the glass tube or with gauze was freely resorted to. Later, when both appendages were involved, hysterectomy has been substituted in the great majority of cases for oophorosalingectomy; and the employment of drainage has been more and more restricted, until it is now used only in the worst cases.

During the era of hysterectomy there has been a growing tendency, which has become a fixed rule, to avoid abdominal section in all cases of large pelvic abscesses in which the disease of the uterine appendages is complicated by intraperitoneal abscesses. Such patients are treated by incision and drainage. The good results, remote as well as immediate, secured by this method, have led to the extension of the indication for vaginal incision to circumscribed pus collections when these can be easily reached, especially when of long standing, or if the patient comes under observation during an acute attack.

Vaginal hysterectomy has not been employed in cases of pelvic inflammation. The arguments of those claiming that this method offers advantages over the simple incision in the complicated cases, or over abdominal section in the typical cases of pelvic suppuration, have never seemed convincing.

The number of cases embraced in this report would

¹ Read before the Medical Society of the State of New York, at Albany, January 28, 1902, before the Lehigh Valley Medical Society, at Wilkesbarre, January 30, 1902, and before the Philadelphia County Medical Society, March 11, 1902.

be greater and the mortality would be higher if the cases of suppurating ovarian tumors and suppurating fibroids, with or without pyosalpinx as a complication, were included.

In looking back over 14 years' work in this field it is gratifying to realize that our present methods give far better results both immediate and remote than those in use in the first half of this period. Prior to 1895 the mortality in 55 cases was 16.3%; since the beginning of 1895 the mortality in 91 cases has been 6.5% in patients treated by abdominal section. If to these are added 54

1%. The substitution of sterile catgut ligatures for silk has eliminated the occurrence of pedicle ligature abscesses from the list of sequels, together with the adhesions and sinuses which formerly gave great annoyance in a not inconsiderable percentage of cases.

From the standpoint of the patient, one of the greatest gains has been in the marked lessening of the percentage suffering from postoperative pain from adhesions, inflammatory exudate and pedicle abscesses. This group of complications in former years was sufficiently common

VAGINAL INCISION AND DRAINAGE FOR PELVIC SUPPURATION—OUTSIDE CASES.

Name and Date of Operation.	Family Physician.	Diagnosis.	Operation.	Result.	Subsequent History.
Mrs. McN., June 18, 1895.	W. D. Robinson.	Pelvic abscess following dilation and injection of hydrogen peroxid.	Vaginal incision and drainage.	Recovered.	Is entirely well. December 6, 1901.
Miss K., January 23, 1896.	Franklin Brady.	Gonorrheal pelvic abscess from long-standing pus tubes; peritonitis; acute sepsis.	Vaginal incision and drainage.	Recovered.	Has continued well and has been able to do hard work. December 1, 1901.
Mrs. R., February 23, 1896.	J. T. Walker.	Puerperal abscess.	Incision left groin and vaginal incision.	Recovered.	Has remained well. December 10, 1901.
Mrs. B., February 26, 1896.	W. D. Robinson.	Puerperal pelvic abscess, intraperitoneal, about brim of pelvis.	Vaginal incision and drainage.	Recovered.	Pelvic organs normal, has had one child since. December 6, 1901.
Miss H., December 31, 1896.	B. F. Hawley.	Gonorrheal pelvic abscess; almost moribund from peritonitis and sepsis.	Vaginal incision and drainage.	Recovered.	Felt well, but had adherent appendages when last seen; is married; sterile.
Miss F., October 5, 1898.	J. C. Cooper.	Gonorrheal pelvic abscess.	Vaginal incision and drainage.	Recovered.	Has continued well; is married; no children. December 5, 1901.
Mrs. S., February 6, 1899.	Mary H. Cheney.	Suppurating hematocele; ectopic pregnancy.	Vaginal incision and drainage.	Recovered.	Right hydrosalpinx developed; abdominal section, unilateral salpingo-oophorectomy May 3, 1899. Is well.
Mrs. R., March 5, 1899.	W. E. Hall and J. H. Pugh.	Puerperal pelvic abscess.	Vaginal incision and drainage.	Died of heart clot shortly after operation.	
Miss H., October 27, 1899.	I. Leopold.	Puerperal pelvic abscess opening into rectum.	Vaginal incision and drainage.	Recovered; secondary hemorrhage.	Sinus; second operation in hospital, March 3, 1900. Sinus remains.
Mrs. L., November 25, 1899.	J. H. Pugh.	Recent puerperal pyosalpinx, pelvic abscess and fibroids.	Vaginal incision and drainage.	Recovered, but not cured.	Sinus persisted; second incision January 18, 1900, and later abdominal section to remove right appendage.
Mrs. A., December 14, 1899.	G. H. West.	Pelvic gonorrheal abscess; sick for 20 years.	Vaginal incision and drainage.	Recovered.	Continued to do well, excepting painful menstruation. December 15, 1901.
Mrs. S., December 15, 1899.	J. C. Cooper.	Pelvic abscess.	Vaginal incision and drainage.	Recovered.	Involved right appendage removed by celiotomy, February 5, 1900. Left appendage removed for ectopic pregnancy, May 17, 1901.
Mrs. S., January 21, 1900.	Helen Kirshbaum.	Puerperal pelvic abscess.	Vaginal incision and drainage.	Recovered.	Made good recovery; since delivered of a child.
Miss S., January 24, 1900.	I. Leopold.	Recent gonorrheal pyosalpinx and abscess.	Vaginal incision and drainage.	Recovered.	Is married and well; has not been pregnant. December 4, 1901.
Mrs. P., May 19, 1900.	Ellwood Patrick.	Puerperal pyosalpinx and abscess, postabortion.	Vaginal incision and drainage.	Recovered.	Second abscess pocket opened June 14; has improved until now has entirely recovered her strength. Has had one attack of peritonitis; requires a radical operation. December 13, 1901.
Mrs. M., June 15, 1900.	Ellwood Patrick.	Puerperal pyosalpinx and abscess, postabortion.	Vaginal incision and drainage.	Recovered.	Has since enjoyed good health. December 13, 1901.
Mrs. H., October 4, 1900.	H. Jarrett.	Gonorrheal pelvic abscess.	Vaginal incision and drainage.	Recovered.	Made very good recovery and is entirely comfortable. December 10, 1901.
Mrs. R., January 31, 1901.	Joseph Bringham.	Large pelvic abscess, gonorrheal; acute sepsis, patient very ill.	Vaginal incision and drainage.	Recovered.	Second pocket opened by vaginal incision four weeks later, fecal fistula developed; December 5, 1901, is quite well and strong, without pelvic discomfort; tiny fistula, through which gas but no fecal matter escapes, is still present.
Mrs. A., May 1, 1901.	Edward Kerr.	Puerperal phlebitis and cellulitis of right broad ligament; operation 34 days after labor.	Vaginal incision; perforation of the exudate, no pus found.	Recovered.	Has since remained well. December 10, 1901.
Mrs. G., May 19, 1901.	Helen Kirshbaum and W. Wayne Babcock.	Puerperal ovarian abscess.	Vaginal incision and drainage. Mass consisting of suppurating ovary was freely movable, broad ligament but little infiltrated.	Recovered.	Made good recovery; appendage involved is normal on examination; patient pregnant.
Mrs. J., June 3, 1901.	W. T. Sharpless.	Pelvic abscess secondary to appendicitis.	Vaginal incision and drainage.	Recovered.	Made good recovery; pelvic organs normal in position and free from tenderness. November 2, 1901.

patients treated by incision and drainage, the mortality has been reduced to 4.8%.

This very substantial reduction in mortality by no means represents the entire gain which has been secured by changes in technic. With the improvements in technic the necessity for abdominal drainage has been almost entirely eliminated. The avoidance of drainage and the employment of an improved technic in closing the abdominal wound have reduced the occurrence of postoperative hernia from upwards of 10% to a fraction of

to substantially lessen the benefits otherwise secured from operation in pelvic inflammatory cases. At the present time such complications are rare, and cases requiring the reopening of the abdomen to relieve pain due to adhesions and pedicle abscesses have practically disappeared from practice.

In order to bring the subject before you in proper shape for discussion it will be best to consider seriatim, operation in the various types of cases by the different methods under consideration.

Operation for Pyosalpinx or Abscess of the Ovary Complicated by Intraperitoneal Abscess.—Twenty-six patients belonging to this group have been operated upon, with seven deaths, or about 27%. In four of these patients hysterectomy has been done, with two deaths; and in 21 patients one or both uterine appendages have been removed, with five deaths. A mortality of 27% is too great to be accepted in any operation, if by any means it is possible to secure better results. For this reason simple drainage has been sub-

radical operation in this particular group. As the pus is not contained in an abscess sac it is impossible to remove the wall of the abscess, so that a pus-secreting membrane must be left within the peritoneal cavity, which necessitates the employment of drainage, and usually a large gauze drain. If drainage by the abdominal route is practised, the result in a large percentage of cases is post-operative hernia. Owing to the conditions present and the use of drainage, postoperative adhesions are inevitable, and in a considerable percentage of cases give rise

VAGINAL INCISION AND DRAINAGE FOR PELVIC SUPPURATION—HOSPITAL CASES.

Name and Date of Operation.	Family Physician.	Diagnosis.	Operation.	Result.	Subsequent History.
Mrs. S., January 11, 1896.	C. R. Marshall.	Suppurating ectopic pregnancy; sinus into vagina, through which femur of fetus protruded.	Vaginal incision and drainage.	Recovered.	Has remained well. December 15, 1901.
Mrs. M. H., May 9, 1896.		Double pyosalpinx; acute nephritis.	Vaginal incision and drainage.	"	
Mrs. I. S., December 7, 1896.	D. F. Greenewald.	Suppurating ectopic pregnancy.	Vaginal incision and drainage.	"	Permanent recovery. December 15, 1901.
Mrs. B. R., March 11, 1897.	David Riesman.	Puerperal cellulitis.	Vaginal incision into exudate; no pus.	"	Was well when last heard from. December 10, 1901.
Mrs. F. D., March 24, 1897.	Wm. E. Parke.	Pelvic exudate following oophorosalingectomy.	Vaginal incision into exudate; no pus.	"	
Mrs. F. L., April 3, 1897.	Wm. E. Parke.	Mass in right broad ligament, from old pedicle abscess.	Vaginal incision and drainage.	"	
Mrs. B., May 8, 1897.	Wm. N. Ferguson and Thos. E. Jones.	Pelvic abscess behind left broad ligament; puerperal.	Vaginal incision and drainage.	"	Hysterorrhaphy a year later. Ut. appendages normal. Well June 1901.
Mrs. F. J., October 27, 1897.	J. C. Brobst.	Suppurating ovarian cyst.	Ischio-rectal sinus incised and packed; vaginal incision and drainage.	"	Failure—sinus persisted. Secondary abdominal hysterectomy. Recovered.
Mrs. M. K., November 22, 1899.	C. R. Marshall.	Suppurating ovarian cyst.	Vaginal incision; no pus reached.	"	Secondary abdominal section; hysterectomy; recovered.
Miss S. D., February 24, 1898.	Wm. N. Ferguson.	Pelvic abscess (abortion); pint of pus.	Vaginal incision and drainage.	"	Made good recovery. January 6, 1902.
Mrs. J. G. P., March 23, 1898.	J. H. Ruhl.	Postoperative inflammatory cyst.	Vaginal incision and drainage.	"	Good recovery.
Mrs. A. N., May 14, 1898.	Hannah M. Thompson.	Pelvic abscess (abortion).	Vaginal incision and drainage.	"	Has remained well. January 15, 1902.
Mrs. U. P., December 17, 1898.		Pelvic abscess, acute peritonitis.	Vaginal incision and drainage.	"	
Mrs. S., January 25, 1899.	Helen Kirshbaum.	Pelvic abscess, extensive peritonitis; dermoid cyst.	Vaginal incision and drainage.	"	Subsequent celiotomy; oophorosalingohysterectomy. Recovered.
Miss F. B., September 4, 1899.		Pelvic abscess; postabortion.	Vaginal incision and drainage.	"	Good recovery. Well 1 year later.
Mrs. S. H., September 23, 1899.		Pelvic abscess.	Vaginal incision and drainage.	"	
Mrs. E. L., January 18, 1900.	W. E. Hall and J. W. Pugh.	Pelvic abscess; postabortion.	Vaginal incision enlarged and drainage.	"	Failure—secondary unilateral oophorosalingectomy. Well June, 1901.
Miss C. H., March 3, 1900.	Isaac Leopold.	Pelvic abscess; postabortion.	Vaginal incision and drainage.	"	Sinus persists.
Miss A., March 21, 1900.		Pus tubes; gonorrheal. Pelvic abscess; acute peritonitis.	Vaginal incision and drainage.	"	Made good recovery after second incision.
Mrs. U. B., April 7, 1900.	L. Boyer.	Postoperative exudate.	Vaginal incision and drainage.	"	Good recovery. December 15, 1901.
Mrs. M. G., October 6, 1900.		Pelvic abscess.	Vaginal incision and drainage.	"	
Mrs. M. M., December 15, 1900.	T. E. Jones.	Pelvic abscess (puerperal); acute peritonitis—sepsis; large amount of pus.	Vaginal incision and drainage; second incision opposite side.	"	Health good. Increased weight. January 15, 1902.
Mrs. N., December 17, 1900.	J. J. Moylan.	Right ectopic pregnancy; nephritis.	Vaginal incision and drainage; pack.	"	Abdominal section to remove tubal mole, June 8, 1901; oophorosalingectomy. Made good recovery.
Mrs. I. H., December 20, 1900.	Isaac Leopold.	Pelvic abscess.	Vaginal incision and drainage.	"	Reopened abscess. Good recovery.
Mrs. D., January 9, 1901.	G. Y. MacCracken.	Pelvic hematocoe associated with cancer and phlebitis.	Vaginal incision and drainage (gauze).	"	Good recovery.
Mrs. M. W., January 30, 1901.	J. A. Krug.	Large pelvic abscess; septicaemia.	Vaginal incision and drainage.	"	August 15, needs radical operation.
Miss P. K., January 31, 1901.		Tuboovarian abscess; acute peritonitis.	Vaginal incision and drainage.	"	Left oophorosalingectomy and hysterorrhaphy, February 27, 1901.
Mrs. E. C., September 27, 1901.	J. H. Lowright.	Large pelvic abscess; gonorrheal.	Vaginal incision and drainage (gauze).	"	Good recovery. February 15, 1902.

stituted for radical operation in this class of cases, with the result of reducing the primary mortality to less than 2%. The ultimate results secured by this method will be discussed under its proper head.

Experience in operating upon this class of patients by the two methods has convinced me that the radical abdominal operation should be abandoned and simple drainage substituted. The objections to the radical abdominal operation, either the removal of the appendages or hysterectomy, are: First, the high primary mortality; and second, the numerous sequels which are apt to follow

to pain, and may require subsequent operation. Owing to the infiltration of the bowel, fecal fistula is a common complication of radical operation in this group of cases. If a radical operation is attempted for pyosalpinx complicated by intraperitoneal pus, especially during the course of an acute peritonitis, all of the pelvic organs are so infiltrated with inflammatory lymph that almost inevitably both appendages are removed. Especially in cases of abscess of puerperal origin, one or both appendages can be saved if a drainage operation instead of a radical operation is performed. Of the 14

patients in whom a subsequent abdominal section was performed, out of the 54 patients in whom incision and drainage were practised, in only three was it necessary to remove both uterine appendages. For all these reasons the radical operation is to be condemned and simple drainage substituted.

To this change in practice more than to anything else is due the fact that the mortality from abdominal section in the entire group of pus cases has been reduced from 16.3% to 6.5% in the last seven years, as compared with the preceding seven; and that the mortality in the total number of cases in the last seven years has been reduced to 4.8%.

When through an error in diagnosis the abdomen is opened in a patient belonging to this group, if conditions permit, it is best to abandon the abdominal operation and resort to vaginal drainage. To make this feasible it is necessary to have a well-trained assistant, who can keep himself clean and close up the abdomen after the drainage operation has been completed. If this is not feasible, it may be better simply to make drainage from above and leave the diseased tube or ovary for a subsequent radical operation rather than to attempt its removal when the patient is reduced by sepsis and fever, and when the entire pelvis is infiltrated with inflammatory exudate. The careful evacuation of the abscesses and a well-placed drain, protecting the general peritoneal cavity, will save a far larger percentage of such patients than a radical operation.

Operation for Pyosalpinx or Abscess of the Ovary, the Pus being Confined to the Tube or Ovary.—In this group of cases 120 patients have been operated upon, with eight deaths, or 6.6%. Of these, 46 have been operated upon by hysterectomy, with one death, a mortality of 2.1%; and 74 by the removal of one or both uterine appendages, with seven deaths, a mortality of 9.4%. The reasons for the markedly better results secured by hysterectomy, as contrasted with those from the simple removal of the affected appendages, are easily understood by one who has practised both methods. To analyze these two groups of cases more closely: During the time that the 46 hysterectomies were done, 34 patients have been operated upon with the removal of one or both appendages. In the patients in whom the uterus as well as the appendages were removed the mortality has been 2.1%, and in those in whom one or both appendages were removed, leaving the uterus, the mortality has been 5.8%. As the patients were operated upon during the same period of time it cannot be alleged that a growing operative experience is the explanation of the improved results in the hysterectomy cases. Moreover, as a matter of fact, the group of cases in which hysterectomy was done was of a more serious nature than that in which the appendages alone were removed, because whereas in the first group both appendages were involved in all cases, in the group of 34 cases in only half of them was it necessary to remove both appendages.

The conditions under which it is preferable to remove the appendages rather than to do a hysterectomy have usually to do with the anesthetization of the patient. Full anesthesia and quiet respiration are very desirable for the performance of hysterectomy, whereas the appendages can be removed with the patient only partly under anesthesia. When, as sometimes happens, it is difficult or dangerous to fully anesthetize a patient, this fact may decide the choice against hysterectomy.

The manifest advantages of hysterectomy over oophorosalingectomy are: (1) Hemorrhage is better controlled, as the main trunks of the ovarian and uterine arteries are ligated. This very greatly lessens the tendency to oozing hemorrhage from torn adhesions. (2) The pelvis is left in a very much more healthy condition, because the peritoneum from the anterior face of the broad ligaments and the bladder peritoneum, which is almost invariably nor-

mal, can be drawn over and sutured upon the raw areas upon the posterior surfaces of the broad ligaments and floor of the pelvis. Such raw surfaces are inevitable, because of the separation of the diseased appendages. A much better inspection of the pelvis is afforded at this stage of a hysterectomy than is possible at the conclusion of an oophorosalingectomy; and isolated oozing points may be ligated, in this way avoiding postoperative collections of blood in the pelvis. By leaving the pelvis in better condition the occurrence of postoperative inflammation, masses of exudate and blood accumulations are much less common after hysterectomy than after oophorosalingectomy.

In the group of cases of pyosalpinx and abscess of the ovary prior to 1895 drainage was employed in the great majority of cases, even though the pus sac was not ruptured in its removal. This was done on the ground that the case was suspicious from the standpoint of infection, and that the drainage was of service in removing blood from the torn adhesions. At the present time drainage is practically never employed in such cases, even though the pus sac is ruptured in its removal. Drainage is indicated only when the integrity of the bowel, bladder or ureter is open to suspicion, and in very rare cases in which the condition of the patient makes the arrest of oozing hemorrhage from minute bleeding vessels hazardous because of the time consumed. The last indication is very rare in good hands. The ground on which drainage is omitted when pus sacs are ruptured is that if the peritoneum is left in a fairly normal condition it is better able to resist infection without than with drainage.

Incision and Drainage for Pyosalpinx and Abscess of the Ovary when Complicated by Acute Peritonitis, or by Intraperitoneal Abscess. Incision and Drainage for Puerperal Phlegmon.—The relatively high mortality of abdominal section for complicated cases of suppuration in the uterine appendages has led to the employment of simple incision and drainage. This might be considered a reversion to the type of operation in vogue before the introduction of abdominal section for the cure of inflammatory disease of the uterine appendages. But this is only partly true. The old operation of aspiration and puncture for pelvic abscess was practised without an adequate knowledge of the pathology of pelvic suppuration, and the technic employed was so imperfect as to yield very poor results. Incision and drainage at the present time is practised with a full knowledge of the pathology of pelvic suppuration, and enlightened by this knowledge the surgeon is enabled to vary his technic so as to meet the indications for the thorough evacuation and drainage of the pus cavities in the different classes of cases presenting themselves.

Incision and drainage has been practised in 54 patients. In the great majority of the patients the incision has been made through the vault of the vagina, in a smaller number through the groin, and in some by a combination of the two incisions. The results obtained, as nearly as can be ascertained, are: Thirty-two have been cured, in 15 there has been a partial failure, in 6 the ultimate result is unknown—that is, the patients have disappeared from observation—and in 1 case the patient died of heart clot immediately after operation. This patient was almost moribund when operated upon. By cured is meant that the patient has been restored to good health and no further operation has been required. By failure is meant that a subsequent operation for the removal of one or more of the appendages has been required. Most of these so-called failures have been in a very real sense brilliant successes, as the lives of the patients have been saved when in jeopardy and a cure has been made possible by subsequent abdominal section. The 14 patients in whom a radical operation was performed at a subsequent date all made good recoveries from the secondary abdominal section, and in only three of them was it necessary to remove both append-

ages.* These facts are strong arguments in favor of simple incision in complicated pus cases, as the radical operation performed as a primary procedure would have had a very different mortality—not to speak of the 32 patients cured by the incision alone—and most of the patients would have lost both appendages.

The following is an analysis of the 54 cases in which the patients were treated by incision and drainage:

DIAGNOSIS.	CASES.	CURED.	FAILED.	UNKNOWN.	DIED.
Postoperative exudate and inflammatory cyst.....	4	2	0	2	0
Ectopic pregnancy.....	1	0	1	0	0
Suppurating ectopic pregnancy.....	3	2	1	0	0
Suppurating ovarian cyst.....	2	0	2	0	0
Unclassified, including 11 pelvic abscesses of undetermined origin.....	13	5	4	4	0
Puerperal abscess and cellulitis.....	22	15	6	0	1
Gonorrheal pelvic abscess.....	9	8	1	0	0

Of the cases of hematocele from ectopic pregnancy, in three suppuration was undoubted, and in one doubtful. In the doubtful case vaginal incision was practised because of acute nephritis. Of the four cases it was subsequently necessary to perform a radical abdominal operation in two, or 50%. In one case a hydrosalpinx had developed, and in the other a tubal mole. This result is of interest as bearing upon the general question

15 patients were cured; in 6 the operation was a failure, and one patient died. Two of the failures were counted twice, as each patient was operated upon once at home and once in the hospital. Puerperal phlegmon and puerperal ovarian abscess offer the best field for incision and drainage. A perfect cure can be effected in all such cases, with the preservation of all the organs of generation. This is also true of most cases of puerperal intraperitoneal abscesses, and many cases of acute puerperal suppurating salpingitis. Increasing experience strengthens the conviction that incision and drainage is the operation of election for puerperal abscesses, and that abdominal section should be employed only in very exceptional cases.

Of the nine cases of gonorrheal abscess eight patients were cured, and one was a failure. This would indicate that the results of simple incision were better in gonorrheal cases than in any other class. This apparent showing I believe to be fallacious. It has been, and is my belief, that recent gonorrheal pus tubes should not be operated upon by incision and drainage, for two reasons: First, that if operated upon the good results would only be temporary in character; and second, that radical operation gives excellent results in these cases, as it is well recognized that gonorrheal pus seldom gives rise to postoperative peritonitis. Therefore, of the nine cases of

INCISION AND DRAINAGE THROUGH THE ABDOMINAL WALLS FOR PELVIC SUPPURATION.

Name and Date of Operation.	Family Physician.	Diagnosis.	Operation.	Result.	Subsequent History.
Mrs. H., April 21, 1891.	I. Leopold.	Puerperal phlegmon right broad ligament; extensive peritonitis.	Incision through right groin; drainage.	Recovered.	October 27, 1892, was operated on for ventral hernia; abdominal and pelvic contents normal except slight adhesions; right ovary and tube normal. Delivered at term 18 months later.
Mrs. X., May 1, 1894.	Thos. D. Dunn.	Puerperal phlegmon left broad ligament pointing through inguinal canal.	Incision through left groin.	Recovered.	Four years later she was well and had given birth to twins.
Mrs. B., November 11, 1895.	Wm. A. Cross.	Puerperal pyosalpinx and intraperitoneal abscess, seen 18 days after labor; patient very ill and septic.	Direct incision and drainage.	Recovered, with sinus.	Abdominal section and removal of right pyosalpinx March 2, 1896; patient miscarried June 5, 1897; has been well since.
Mrs. L., December 12, 1895.	R. R. Stoner.	Puerperal pyosalpinx 21 days after labor; edema of lungs; acute nephritis.	Direct incision and drainage; general peritoneal cavity opened and packed with gauze.	Recovered.	March 1, 1897, abdominal section; small right ovarian tumor and occluded right fallopian tube, and an adherent vermiform appendix removed; good permanent recovery.
Miss R., March 4, 1895.	W. E. Hall.	Tuberculous pelvic abscess opening into rectum.	Incision through left groin for drainage.	Recovered, with fistula.	Subsequent abdominal section; left oophorosalphingectomy, October 30, 1897, and closure of fistula.

of the treatment of hematocele from ectopic pregnancy. The radical abdominal operation yields such uniformly good results in cases of hematocele as to make vaginal incision of doubtful value except in cases in which suppuration has occurred.

In the two cases of suppurating ovarian cyst treated by vaginal incision and drainage, failure resulted. From the nature of the case this result was to be expected. Simple incision is indicated in such cases only when the condition of the patient forbids a resort to the radical operation.

The unclassified cases consisted largely of abscesses in which it was difficult to determine whether they were of gonorrheal or of puerperal origin.

Of the 22 cases of puerperal abscess and cellulitis,

*Fourteen patients required a subsequent abdominal section as follows:

Hysterorrhaphy.....	1
Unilateral oophorosalphingectomy with hysterorrhaphy....	1
Unilateral oophorosalphingectomy.....	8
Hysterectomy.....	3
Ventral herniotomy.....	1

The inclusion of eight of the 54 patients operated upon by incision and drainage for pus may be questioned, as pus was not evacuated by the incision. These cases are as follow:

Postoperative exudate, no pus.....	4
Ectopic pregnancy, no pus—acute nephritis.....	1
Hematocele, no pus—associated with cancer and phlebitis, 1	
Puerperal cellulitis, no pus.....	2

gonorrheal pelvic abscess, eight were cases of long standing; and so far as a limited number can, these cases show that good results can be obtained by incision and drainage in long-standing cases of gonorrheal pyosalpinx and intraperitoneal abscess, but they have no bearing upon the question of incision and drainage in recent gonorrheal cases.

The following are the conclusions which I have drawn from the experience of operations in 200 cases of pelvic suppuration in women, and from a study of the results obtained. These are presented for discussion:

The methods of dealing with suppuration of the uterine appendages have been greatly improved within the past 14 years. The mortality has been reduced from more than 16% in the first half of this period to less than 5% in the second half.

This reduction in the mortality has been obtained by:

1. Abandoning abdominal section in the treatment of pyosalpinx and abscess of the ovary when complicated by intraperitoneal abscess, and by substituting direct incision and drainage in this group of cases, and also for recent cases of pelvic suppuration of puerperal origin.
2. By substituting hysterectomy for oophorosalphingectomy for the removal of bilateral suppuration in the uterine appendages.

These changes in methods of operation have permit-

ted the development of a much more perfect technic, which yields greatly improved results, remote as well as immediate. Ventral hernias, pedicle abscesses and troublesome intraperitoneal adhesions have become very rare instead of very frequent sequels of abdominal operations.

Free incision and drainage in cases of suppuration of the uterine appendages complicated by intraperitoneal abscess has proven to be a most valuable life-saving measure, yielding a mortality of less than 2%, as contrasted with 27%, from abdominal section. The remote results have been scarcely less gratifying, 32 of the 54 having been permanently cured.

Incision and drainage has proved to be a most conservative operation, not only in the saving of life, but in the conservation of the sexual organs. Of the 14 patients in whom subsequently a radical abdominal operation was performed, in only three was it necessary to remove more than one uterine appendage. The substitution of incision for the radical operation has saved many young women from the annoyance of a premature menopause, and has enabled a number of them to bear children. Six pregnancies are known to have occurred, resulting in five children—one pair of twins, one miscarriage, and one pregnancy now developing.

Direct incision and drainage finds its best indication in: (1) Puerperal phlegmon; (2) puerperal ovarian abscess, intraperitoneal abscess and pyosalpinx; (3) in complicated cases of pelvic suppuration of whatever origin, in which the pus is not contained within the ovary and tube.

The value of direct incision is most manifest in the worst class of cases, in which the patient is acutely ill from suppuration and peritonitis, and in which abdominal section gives its worst results.

Finally, I wish to acknowledge my indebtedness to Drs. W. S. Crosby, Ellice McDonald and Stephen E. Tracy, who have compiled the elaborate tables necessary for the preparation of this paper; and also to the family physicians who have kindly answered inquiries as to the present status of many of the patients.

Appended is a table of the cases of incision and drainage.

SUMMARY OF TABLE OF ABDOMINAL SECTIONS FOR SUPPURATION IN UTERINE APPENDAGES TO MAY 18, 1901.

A. DIVISION I.	
Hysterectomy for circumscribed pus limited to uterine appendages:	
Cases.....	46
Deaths.....	1
Mortality.....	2.1%
DIVISION II.	
Hysterectomy for intraperitoneal pus in addition to pus in uterine appendages:	
Cases.....	4
Deaths.....	2
Mortality.....	50%
B. DIVISION I.	
Appendages removed for circumscribed pus contained in a tube or ovary:	
Cases.....	74
Deaths.....	7
Mortality.....	9.4%
Appendages removed for circumscribed pus contained in a tube or ovary since January 1, 1895:	
Cases.....	17 unilateral; 17 bilateral
Deaths.....	2
Mortality.....	5.8%
DIVISION II.	
Appendages removed for intraperitoneal abscess in addition to pus in ovary and tube:	
Cases.....	22
Deaths.....	5
Mortality.....	22.7%
Total cases of abdominal section.....	146
Total deaths.....	15
Total mortality.....	10.2%
Mortality from abdominal section for pus cases previous to 1895:	
Cases 55, 9 deaths, 16.3% mortality.	
Mortality from abdominal section in pus cases subsequent to 1895:	
Cases 91, 6 deaths, 6.5% mortality.	
Cases of incision and drainage for pelvic suppuration.....	
Deaths.....	1
Mortality.....	1.8%
Grand total of cases since January 1, 1895.....	
Deaths.....	145
Mortality.....	4.8%

REPORT ON A PARASITIC DISEASE IN HORSES, MULES AND CARIBAO IN THE PHILIPPINE ISLANDS.¹

BY

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Assistant Surgeon U. S. Vols.; Member of the Board to Investigate Diseases in the Philippine Islands.

Investigation of a parasitic disease occurring in the caribao has shown that the parasite found in these animals is identical with that reported by Smith as occurring in horses and mules, and which appears to be the "surra" parasite (*Trypanosoma Evansi*). A biting fly (not as yet identified) appears to be the disseminating agent of this disease in horses, mules and in the caribao.

When I arrived at Manila, October 26, 1901, I found that Assistant Surgeon Allan Smith, U. S. Army, with Surgeon J. J. Kinyoun, of the Marine-Hospital service, had discovered a parasite in the blood of horses and mules with a fatal epidemic disease. They found that while the temperature of the infected animal was high the parasite occurred in the blood in enormous numbers. Soon after this Capt. Smith identified the disease as "surra," which is well known in India and Burmah, and is closely related to the nagana or tsetse fly disease prevalent in Africa.

Since my arrival I have been assisting Dr. Smith. At first we tried various treatments, in the hope of saving some of the sick animals, but the results were discouraging. No treatment seemed to be of value. Methylene-blue and quinin subcutaneously and intravenously were of no avail. Recently Dr. Smith went to Southern Luzon with Major Potts, of the Inspector General's Department, to investigate the origin and spread of this widespread epidemic of surra in government horses and mules, and in the meanwhile I have been working in Manila on the mode of transmission of this disease, and have collected considerable evidence. The natives ascribe the origin of this disease to infected pastures and grass.

It was only recently that I obtained healthy animals for experimentation, and the experimental stable is not yet finished, but I hope to start this work very soon. Although I have as yet little experimental evidence to offer, still there is strong circumstantial evidence in favor of the transmission of the surra parasite by means of a fly biting. I have found on infected animals a biting fly, closely resembling the tsetse fly, and filled with blood. On dissection these flies have been found to contain large numbers of active *Trypanosomata*, which disappear in two days from the fly's body.

An experimental station has been established in the walled city, and I have obtained two caribao in addition to the horses and ponies. I had no idea that these caribao had the disease, as they were reported well, save that one had an injury of one of its legs, received while being unloaded from a transport. These animals were stabled at the pony corral, and had been there for some time; the injured one not having been outside the corral for six months. I asked for the injured animal with the view to finding if it were possible to give the disease "surra" to it. We had a white mule ill with surra in quarantine at the pony corral, and it was my intention to transfer some blood from the mule to the caribao by subcutaneous injection. Before doing this I examined the caribao's blood, in order to become familiar with the normal caribao blood. On examination of the blood of the injured caribao I was surprised to find it swarming with surra parasites. I took the animal's temperature, and found it 105°. I then examined the blood of the other caribao, and found the same condition—parasites very numerous in the blood, and temperature 105.8° F. On further investigation I learned that a week before both these caribao had been turned loose in a small pas-

¹ From a report made to the Surgeon-General of the Army, December 17, 1901.

ture occupied by the infected white mule before mentioned. On both caribao and on the mule I caught flies identical with those in which I found the surra parasite at the Malacan corral. The flies containing blood had large numbers of the *Trypanosoma*, while those not containing blood were negative for parasites of surra.

This discovery throws some light on the origin and spread of surra. Dr. Slee, veterinarian to the Civil Board of Health, upon his return from a tour of Southern Luzon, where he was recently investigating the diseases of cattle, stated that prior to the epidemic of surra among native ponies in the Camarines and Albay provinces, that there had been severe loss among caribao and other cattle, attributed to rinderpest. He also said that the epidemic disease among caribao and other cattle was devastating the same districts in which the "horse disease" was very prevalent. It was never suspected before that the cattle disease and the horse disease had any relation.

It is very probable that the cattle epidemic is surra, not rinderpest, and that the disease among horses and mules which has destroyed such a large number of animals, had its origin from infected caribao or other cattle.

Rinderpest has existed for several years in the southern provinces of Luzon and in some of the other Philippine Islands. I have telegraphed to Dr. Smith, at Nueva Caceres, and requested him to examine all sick caribao and to look for the fly which I found containing surra parasites. I trust soon to be able to make further reports on this disease.

MOVABLE KIDNEY; WITH POSSIBLE EXPLANATION OF FAILURE IN SOME CASES TO RELIEVE SYMPTOMS BY NEPHRORRHAPHY.¹

BY

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of New York City.

Much has been written in recent years concerning movable kidney and yet it would be difficult to find a topic upon which the medical mind is so much at variance as upon this subject. The greatest differences of opinion exist in regard to its etiology, its importance and its treatment. It is not my purpose to discuss these questions but to give a brief review of the subject and report a few cases that would seem to explain why some of the operations for its relief have not been followed by success.

The kidneys, although classed as fixed organs, really move up and down with respiration. The average range of motion is given by Watson, of Boston, as the result of his experiments, to be from half an inch to one and one-half inches, while Robinson, of Chicago, from his great experience, places it at three inches.

In most women the right kidney can be felt and in a small proportion the left. A palpable kidney is not necessarily a movable one. A "movable kidney" is the term used by Reed in his excellent treatise, to indicate one that has a range of motion in excess of the normal, and in these remarks that definition of the term will be understood whether the motion be but slightly in excess of the normal or the excursion extended to the pelvis; because the difference between a movable kidney and a floating kidney is but one of degree.

The frequency of movable kidney has been variously estimated. Küster, of Berlin, as quoted by Harris, examined successively 1,733 patients that applied to him for treatment of various complaints, and in this number found 44 movable kidneys; 828 of these patients were men and among them were 4 movable kidneys or .0049%, of 905 women 40 cases were found or .044%. Among gynecologic patients the proportion is estimated by

various authors to be from 10% to 20%. In other words, according to those who have studied the subject practically, 4% or 5% of all women who apply for medical treatment have movable kidneys.

In looking over the literature of this subject there appear to be just two facts upon which all writers agree, namely: That the proportion of women with this condition is far in excess of the men, and that the right kidney is much more frequently affected than the left.

In regard to the etiology of movable kidney much energy and ink have been expended in the construction of theories accountable for it, but as yet no entirely satisfactory one has appeared. One of the predisposing causes is undoubtedly to be found in the female body form, as pointed out by Küster. He explains that the upper portion of the abdominal cavity is relatively of much smaller capacity in women than in men. The cavity is not only contracted laterally but from before backward as well; the effect of this is to displace the organs occupying this zone of the abdomen. The stomach lies in a more longitudinal direction and the pylorus is depressed. The liver is compressed from before backward thus depressing its anterior and posterior borders. The depression of the posterior border crowds the right kidney lower and tends to displace or tilt the superior pole in an anterior direction. The increased breadth of the female pelvis gives to the psoas muscle a more oblique direction than in the male.

The causes of displacement of the kidney may be divided into two classes—those that weaken the kidney attachments and those that lessen the intraabdominal pressure.

Watson, of Boston, has demonstrated that by far the most important tissues concerned in maintaining the kidney in its normal position are the attachments between the posterior and upper aspect of the tunica propria of the kidney and the fascia covering the lumbar muscles and the peritoneum covering the diaphragm. Great variations in the development of this fascia explain the predisposition of individuals to the displacement such as those which weaken the kidney attachments from above, as enlarged liver; or tight lacing; or traction made upon the ureters, colon or duodenum or traumatism; or absorption of perineal fat. The intraabdominal pressure may be lessened by the relaxation of abdominal walls, and by injuries of the pelvic floor.

Robinson calls attention to the fact that the right renal artery is longer than the left, and for this reason the support given to the organ by this vessel is lessened on the right side.

The excursion of a movable kidney may vary from a few inches to the middle line of the abdomen or to the true pelvis. Two cases have come to my notice in which the kidney slipped behind the uterus and obstructed labor. The kidneys move through the arc of a circle in which the vessels form the radius.

The upper part of the ureter usually moves with the kidney and there is a great tendency for the ureter to become kinked at the junction of the movable with the fixed portion. This produces an intermittent hydronephrosis. The bloodvessels may also be sharply flexed and interfere with the blood-supply of the kidney.

Symptoms.—The severity of the symptoms of movable kidney are in no way proportionate to the degree of mobility. The organ may be freely felt and moved about by the patient, and yet give no particular symptoms. The great majority of patients present the following complex symptoms: Pain, disturbances of urinary organs, indigestion or flatulence, and disturbances of the nervous system. In most of these patients the impairment of the general health is marked; they are ill-nourished and anemic, are highly emotional, and often neurasthenic.

The pain accompanying this condition varies greatly both in severity and in location. It may be felt in the lumbar region just below the last rib or anteriorly to the

¹ Read before the Society of the Alumni of City Hospital, November 13, 1901.

umbilicus. Most frequently it is felt in the kidney and the bladder. The pain may be acute, but most frequently is of a dull aching or dragging character.

The most marked urinary symptoms, are frequent and often painful urination, usually following an attack of dull pain in the side, which is usually relieved by lying down.

The patients complain of pain and discomfort after eating, eructations, nausea, and sometimes vomiting. Colitis of a catarrhal type is not an uncommon accompaniment of this condition, and jaundice has also been noted. Many of these patients are neurasthenic and have vague nervous disturbances, others have headaches and dizziness, or mental depression. Some have characteristic movable kidney attacks. These consist of intense colicky pain in the region of the kidney, extending down to the bladder, and frequent urination accompanied by nausea and vomiting.

Movable kidneys may become attached to various abdominal organs and give rise to symptoms demanding abdominal operations, as in the two cases recently reported by Watson.

An almost universal complaint with the patients that I have seen has been an exaggerated pulsation of the aorta felt in the epigastrium.

By some, movable kidney is considered but a part of a general enteroptosis described by Glenard. In many cases the kidneys descend simultaneously with the abdominal organs, but cases undoubtedly exist in which the kidney is the only organ displaced, and all symptoms disappear when it is returned to its normal site.

Treatment of movable kidney, in addition to remedies directed to the improvement of the general health and for the alleviation of the gastric and nervous symptoms, etc., is both palliative and operative.

The palliative treatment consists in the application of a mechanic device intended to support and maintain the dislocated organs. Belts, pads, and trusses are used for this purpose, and in patients with lax abdominal walls and ptosis of abdominal organs these supports give relief, but in my cases they have been of little benefit when the kidney alone was displaced.

Gallant, of New York, recently published an able article showing how the modern style of corset called the "straight front" may be used with much benefit in these cases. The simple plan suggested by him is well worth trying, since all other forms of support have proven so unsatisfactory.

The operative treatment of this condition is at present receiving much attention and has resulted in some lively and interesting discussions. The mooted questions are: whether movable kidney is not a part of a general enteroptosis and therefore a general disease needing no surgical interference and belonging to the domain of general medicine; what cases demand an operation; what is the best operative procedure? It is not the purpose of this paper to discuss these questions. Most authorities agree that there are some movable kidneys that require an operation. The indications are well expressed by Harris. He advises operation when distinct symptoms are present which are unrelieved by mechanic or symptomatic treatment, and when secondary changes in the kidney are present, due to mobility (nephrydrosis, etc.).

In cases associated with general enteroptosis an operation upon the kidney should be followed by a mechanic support of the abdominal wall. Upon neurasthenics, this, as well as other operations, is usually unsatisfactory and the symptoms are likely to persist unless it can be demonstrated that the neurasthenic condition is dependent upon the floating kidney.

An operation is the only means by which a movable kidney can be restored permanently to its normal location, and yet after operation what proportion of patients are relieved of their symptoms? To determine the proportion of failures is extremely difficult, because the

surgeon often completes his history of the patient soon after the operation, when the rest in bed and a restricted and regulated diet have improved her general condition. Later, in response to inquiries, the patients often deceive the surgeon, either because they dislike to tell him that the operation was a failure or fear that another might be suggested, and so they wander off to consult another whom their friends have recommended.

If this is not so how is it that we read so many reports of patients cured and yet see so many failures? Is it not reasonable to suppose that if we see bad results following other surgeons' work that they should meet some in ours? Within a comparatively short time a number of those unfortunates with "hard luck stories" have come under my observation. I will relate but a few of them:

CASE I.—The first is a small, thin, delicate woman, aged 29, who has been married three years and has no children. Fourteen years ago she began to have attacks of nausea, vomiting and nervous headaches, and also to suffer from indigestion. Ten years ago she had an attack of dysentery, and at that time the attending physician discovered that her right kidney was prolapsed. Soon after this attacks of acute pain commenced, of a colicky character, located in the region of the right kidney and extending to the bladder. This was attended with frequent, painful and ineffectual attempts to urinate. Nausea and vomiting accompanied the attacks. These paroxysms first occurred at intervals of a year or two, and lasted but a short time, later they became almost of monthly occurrence and lasted for several hours. During the intervals she suffered from indigestion and flatulence, she complained of violent pulsation in the epigastric region, and was extremely nervous. January 10 she was operated upon by a prominent surgeon of this city, and the kidney was sutured in place. The wound healed primarily. The patient was delirious after the operation, and had persistent vomiting for three or four days. Persistent pain began in the region of the kidney soon after the operation, and a slight rise of temperature was noticed. This left her for a time. A tumor which was thought to be part of an enlarged liver was discovered under and below the twelfth rib of the right side. The patient was allowed to leave bed and continued about the same for nearly two months after the operation. She now began to have a slight rise in temperature and increasing pain.

The surgeon who performed the operation having left the city, Dr. Carr, of this Society, was called in. He appreciated her condition, and consulted me in regard to surgical interference. An excessively sensitive tumor was felt on the right side of the abdomen. Her temperature was then over 102° and the pulse 120. Her urine had continued about normal in quantity and quality. A speedy operation was advised and she was moved to my service in the hospital. An incision was made in the line of the cicatrix, and the kidney exposed. The external convex border opposite the hilum presented in the wound. This was incised, liberating about four ounces of foul-smelling urine. The interior of the kidney and its pelvis was explored with the finger, and no stone was found. The patient's condition was so extremely weak that it was deemed advisable to put her to bed with least possible delay. The wound in the kidney was packed with gauze and drainage established. She recovered from the operation and has been as comfortable as the presence of a renal fistula will permit. When the drainage is interfered with she has a dull, aching pain and becomes extremely nervous, and then the enlarged kidney can be distinctly felt. I expect to perform nephrectomy for her relief.

CASE II.—The second patient, aged 32, has had four children. Four years ago she had her appendix and one ovary removed. Two years later her youngest child was born, and following this confinement she began to feel dull pain in the region of the right kidney. Gastric intestinal disturbances gave her great discomfort and nervous symptoms were marked. Aortic pulsations annoyed her greatly. One year ago she had nephrorrhaphy and Alexander operation performed. She said her kidney was decidedly prolapsed and movable before operation. Since the operation she has complained of absolutely the same symptoms as before.

Recently I examined this patient under ether, and found the right kidney enlarged but finally fixed in what seemed to be its normal site. No other cause for her symptoms could be found.

CASE III.—Mrs. W., a young woman, aged 24; has no children, but had one miscarriage. Had feelings of traction on both sides, sometimes on right side alone, sometimes dull, sometimes sharp; dizziness and headaches; gastric disturbances; sometimes burning during urination. Right kidney was found to be movable. Almost the whole organ could be felt below the rib. Pressure upon the kidney caused nausea. No other condition could be found to account for the symptoms. An abdominal support was advised.

This patient disappeared, but returned six months later and informed me that she had had her kidney fixed up but had received absolutely no benefit from the operation. The kidney that had wandered could now be felt in its proper abode but was slightly enlarged.

CASE IV.—The fourth and last case that I shall mention was of an unmarried woman of about 30 years. She consulted me for the first time six months after her operation. She said her symptoms had been chiefly severe pain in the stomach after meals, which lasted for an hour to an hour and a half. She complained of dizziness, headache, dyspepsia, nausea and vomiting, and a persistent dragging pain in the right side. She said that her kidney was found below the last rib. She felt some relief immediately after the operation, but symptoms returned as soon as she attempted to work. Upon examination the kidney seemed to be in the normal place, but was extremely sensitive to pressure and seemed enlarged.

Upon inquiry I found that all these operations had been performed with practically the same method by the different surgeons. The operation performed in these cases was with some slight modification and variations of technic, the one most frequently resorted to. The kidney is exposed by a lumbar incision and the perineal fat removed. The capsule of the kidney is divided along its convex border and peeled back on each side. The cortical portion is then transected and fastened with absorbable sutures to the lumbar fascia. The denuded portion of the kidney being fixed in the bottom of the wound.

In looking over the recorded cases of various operations I noticed that some reported a certain percentage as cured and the others as relapsed—meaning that the kidney became displaced again after operation. Now if the operations recorded here mean anything they indicate that a kidney may remain fixed and yet the result of the operation be anything but a cure.

The symptoms of movable kidney are the result of the varying degrees of intermittent hydronephrosis that is so easily produced by kinks or obstructions to the ureter, by the interference with the blood supply and dragging upon the colon, and, as Edebohl has pointed out, "to pressure and traction upon, stretching and irritation of, various parts of the solar plexus of the sympathetic and of its branches."

The reports of these cases, and others that might be found in the literature, would seem to indicate that the torsion or dragging upon the ureter, vessels and nerves of the kidney may be produced in the fixation as well as when the kidney is permitted to wander freely in the abdominal cavity. I believe that in many cases of fixation the kidney is attached in a position of external rotation on its vertical axis and if this is true it is not difficult to see how the functions of the ureter and vessels are interfered with. According to Gray "the anterior surface of the kidney is convex, looks forward and outward and is covered by peritoneum." The upper part of this surface on the right side is in contact with the under surface of the right lobe of the liver on which it produces a slight concave impression, below this the descending portion of the duodenum and the hepatic flexure of the colon are connected to this surface, the former by areolar tissue and the latter by its mesocolon. The posterior surface is embedded in areolar tissue which separates it from the diaphragm and from the anterior lamella of the lumbar fascia covering the quadratus lumborum and psoas magnus muscles.

The external border is convex and is directed outward and backward. In the operations that I have described the external convex border was fastened to the bottom of the excision looking posteriorly, this would naturally rotate the internal concave border and the hilum more outward than normal and facilitate the formation of a kink in the ureter and obstruction to the circulation besides offering a better opportunity for downward pressure by the liver.

Therefore in cases of movable kidney when an operation is indicated and the symptoms persist after operation I believe that in most instances the kidney has been fixed in a malposition and when the operation has been performed in the manner described it has been rotated outward on its vertical axis.

This point, so far as I know, has never before been emphasized and I would impress upon the surgeon that,

when performing nephrorrhaphy, fixation of the kidney alone is not all that is required but, care should be exercised that the circulation of the ureter and vessels is not interfered with, and that the possibilities of these occurrences are not so remote as have been supposed.

A CRITICISM OF A RECENT DISCUSSION UPON THE VALUE OF CERTAIN CASES OF BLOOD EXAMINATION.

BY

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of Philadelphia.

It is with no little regret that the writer has seen reopened the discussion with regard to the value of the blood examination in clinical medicine and surgery; and this regret deepens with the thought that not only has the study of the question again been carried on in an unfortunate manner, but in a line that has always proved certain of unfortunate results. When I found occasion to answer¹ a paper by Dr. Deaver¹ in which he condemned the entire science of hematology as a "waste of time," and based his conclusion entirely upon the results of the blood count, I did so with the hope that it would call attention to the fact that criticism of special lines of study should be made by those who have prepared themselves not only by clinical observation, but by actual work in that special line. I believed and stated then, and to my mind Dr. Deaver's subsequent communication² proves that his first article did not correctly voice even his own views. He drew conclusions that rested upon the presupposition of a thorough examination of the blood, when only a partial one had been made. He accused the blood count of a fallibility in diagnosis, when the diagnosis should not have been entrusted to it, but retained in his own hands. He quoted cases in which the blood count was deceptive, and in which a further examination would in all likelihood have shown him his acknowledged error in diagnosis. And he concluded his article by stamping the blood examination (which he had not made) as a "waste of time." I answered this article, not as one of the current medical journals³ said "as a hematologist," but as a student of internal medicine, who has devoted an unusual amount of time to laboratory work and to laboratory methods of diagnosis, always, however, in close connection with the diagnosis of actual cases, and with reference to them. Since that time a succession of articles has appeared upon the subject. The journal which criticised the position held by me found it necessary to publish one month later an article⁴ by one of its own editorial board taking the identical ground maintained by me. Dr. Deaver himself in the number before referred to⁴ so far modified his attitude as to change the term "waste of time" to the statement that "the preceding pages show that they (blood examinations) have very often been of greatest value to us," this remark following a six column article citing the various clinical methods of blood diagnosis in medicine and surgery. In all modesty I think I may venture to say that letters of congratulation were received by me from such men as Osler, of Johns Hopkins, and Wyeth, of New York, expressing unqualified approval of my criticism, based upon their own clinical experience and study.

It seems unfortunate, therefore, that another of the opponents of laboratory methods of diagnosis should take the field and rest his case upon the same old basis of misconception, the assumption that the blood examination should be depended upon to form the diagnosis if used at all. When the medical man and surgeon become thoroughly aware of the fact that the blood examination is no more to be relied upon for a complete diagnosis (except in rare instances such as malaria etc.) than

the uterine douche for the cure of an endometritis, but is simply a means of assistance to that end, on that very day will the criticism become more judicial, and the blood examination of more value to its present opponents. In order that there may be no more said than is necessary to show the unfortunate character of the ground taken by Dr. Baldy in his recent communication⁶ published under the same title as that first chosen by Dr. Deaver, I will waste no time before proceeding to the cases considered in his article. Before citing these cases *seriatim*, however, I wish to call attention to several points suggested in my former reply to Dr. Deaver, as follows:

"No one will question that certain individuals present individual powers of resistance that surprise no one more than the operator himself." * * * "Carry out a thorough examination of the blood and much will be learned. Even should it prove true that it is of less value in some cases than others, an intelligent consideration of the attending circumstances will give it an importance that will outrank others of the valuable means of assistance at our command."

"We would remind those who would belittle the assistance of the clinical laboratory that its most ardent advocates have never claimed for it universal and invariable applicability."

In reference to chronic suppuration:

"I would suggest that there are other tests that can be applied to the blood beside that of leukocyte count." * * *

"There *may* (italics new) not be present in the blood what is ordinarily indicated by the term leukocytosis, but in the great majority of cases of acute and chronic suppuration * * * so long as the tissues of the patient resist the inflammatory process, the relative number of polymorphonuclear leukocytes will be increased; and this fact may be depended upon as religiously as if the leukocytosis were of the largest size."

"If pus then forms there is almost invariably a steady and sure increase in the leukocytosis."

"We should not overemphasize any one of the three (physical examination, clinical history, and the clinical laboratory examinations). But to discard any one as 'useless' or 'misguiding' is as irrational as to dispense with one of our bodily members, because we can live fairly comfortably with the others alone."

I have quoted the above not only in order to present my own valuation of the blood examination and its relative position with respect to clinical medicine and surgery, but to offer that held by all active and trained clinical students of blood diagnosis. Many whose wealth of experience is in no way second to that of any opponent of the advanced theories of blood diagnosis have already spoken in no uncertain tone; and others, whose experience clinically has not been as wide, have studied the subject far more thoroughly and have observed carefully and well. The criticisms, up to this time, have all come from men who have endeavored to convict the laboratory of an attempt to assume the responsibility for the diagnosis, and usually from men who have had no experience in the laboratory. Dr. Deaver has heretofore considered only the bloodcount. Dr. Baldy states that chronic suppuration gives no leukocytosis. Neither can find warrant for such dependence upon one method, or upon one incorrect and sweeping theory, in any writings by recognized students of the blood. Both forget, the only alternative being that they refuse to consider, that the result of the blood examination is a means of assistance to, and does not constitute the diagnosis itself.

I will consider briefly a few of the cases mentioned by Dr. Baldy, preceded by the simple statement of a fact which he seems to overlook, that it is necessary for the refutation of an established fact or theory that more than a single exception or two be noted to that fact.

CASE I, as considered by Dr. Baldy, is admittedly in line with the usual blood picture found when pus is present in the body. He, however, misstates the fact when he says that it "illustrates the laboratory position in the matter of being able to diagnose pus." The laboratory does not claim to *diagnose* pus in any such way, and the blood examination may even prevent the diagnosis in certain cases if the surgeon who fails to combine with his study of the blood picture the reading of the thermometer, the physical examination, the subjective symptoms, and the examination of every other obtainable

secretion and excretion of the body at that time. The internist or surgeon who omits these precautions is negligent. I will not carry the discussion of this point further.

CASES II, III, IV.—A case was clinically diagnosed by Dr. Baldy as one of "pus tubes." The blood examination then showed, leukocytes 12,850, polymorphonuclear cells 86%, lymphocytes 6% (no reference made to condition of red corpuscles, to degenerative or regenerative changes, or to the hemoglobin). Chronic adherent salpingitis was found present and no pus. With regard to this case little comment is necessary. I have already repeatedly stated, and base my statement on my own experience and that of many others, that chronic inflammations and chronic suppurations not only can give a leukocytosis but nearly always give a relative leukocytosis of the polymorphonuclear forms, even if the numerical leukocytosis is absent. This is a case in which repeated examinations of the blood would have been more useful than one. Appendicitis, lymphangitis, enteritis, overexercise can give the picture, but in such conditions the attendant circumstances remind one that the blood examination is only a help to the diagnosis. Dr. Baldy's clinical diagnosis was in error, and his method as well. By his own statement he directed the blood examination to be made too late and allowed the result of this examination to confirm him in a mistake already made. No injustice was done the patient, as the operative measure had been decreed irrespective of the blood examination. The injustice was done the blood examination in that it was involved in a diagnosis incorrectly made before all the facts were in. The very use of the word "exception" by Dr. Baldy demonstrates his realization of the position held in this matter by the large body of internal clinicians and surgeons. I doubt, moreover, if he can substantiate his statement by reference to any author recognized as an authority on the subject, who will venture to say that to obtain a leukocytic count "the suppuration must be acute," or that any suppurative process need be present.

CASE V.—Dr. Baldy refers to a case mentioned by Dr. Deaver and criticised by Dr. Kallteyer. While I do not wish to be drawn into another's discussion, I would suggest that Dr. Kallteyer's statement is by no means as offensive as this statement would lead us to believe. The case was one in which the leukocytes numbered 20,000 on the day of admission, and gradually decreased in number until the sixth day, when the count was 7,500 per cmm. An abscess was then found containing 500 cc. of pus. Dr. Baldy has not only misread the actual wording in his claim that Dr. Kallteyer characterizes this as anything other than an acute condition, but he overlooks the literal statement that it *was* acute ("when this stage in a pathologic process, such as acute appendicitis, is reached"). There is nothing said subsequently to lead us to think that Dr. Kallteyer had changed his mind, as the article ends with the sentence in question. Had Dr. Deaver at this time ordered a differential count, I feel safe in asserting that he would have found a relative leukocytosis, perhaps and probably idiosyncrasy, perhaps and probably obtained pus organisms from a culture of the blood—all of which means would have furnished assistance in forming the diagnosis. He had six days at his command in which to carry out these precautions. Every clinician has seen cases in which the leukocytic count falls during quiescent or improving symptoms; and every internist knows that extraordinary diagnostic care must be employed at such a time. Among the means that often fail at such times is the blood count. A further examination may help to exclude the error of the simple count, as I had the honor of suggesting some months ago, and have again today. Dr. Deaver stated nothing new when he told us that in such cases the blood count is not dependable. He failed, however, to state, as does also Dr. Baldy, that these facts are as well known as the occasional dangerous subsidence of active symptoms, nor did he mention that they form the exception to the rule.

It may not prove out of place at this point to insert a short note of a number of cases examined by me during the last month, nearly all of which have a distinct bearing in this connection, three of which demonstrated the value and assistance rendered by a careful examination of the blood in medicosurgical conditions.

CASE I was that of a child, aged 8, examined for Dr. Morris J. Lewis. Forty hours previous to the blood examination she was well. Since then has grown fretful, with pain in the abdomen. History of indefinite occasional abdominal pain. Child had passed a few large round worms the day before, and vomited one. Distinct pain and tenderness on pressure centered around the appendiceal region. Rigidity of the abdomen at time of blood examination on 1.29, '02. H. 74%, R. b. c. 5,824,000. Leuk., 17,200. Polymorphonuclear cells, 96%. No other pathologic changes in the blood. The operation showed a gangrenous appendix, and a large quantity of foul pus in the abdominal cavity.

CASE II.—A typhoid case of six weeks' standing. Temperature had several times reached normal, and for several days had been bounding up and down in a septic fashion. There was no chill, no symptom over the body for some time since to account for the temperature. Blood examination for Dr. Morris J. Lewis (1.9, '02) gave H. 95%, R. 4,960,000, L. 7,800; no differential count made. No malarial organisms. No pig-

mented leukocytes. On 1.24, '02, the blood showed H. 70-75%, R. 3,832,000, L. 4,800. Polymorphonuclear cells 90%. No other pathologic change in the blood picture. Condition continued with no improvement, and on 1.30, '02 the examination showed H. 78%, R. 4,962,000, L. 9,200. Polymorphonuclear cell 92%. On this day a slight bulging was made out in the apex of the vaginal wall. No abdominal tenderness or mass felt then or at any time previous. Operation showed a large ovarian abscess, from the pus of which a pure culture of typhoid bacilli was obtained. The blood examination, made the day after operation (2.6, '02), gave H. 60%, R. 4,320,000, and L. 7,900. Polymorphonuclear cells 72%. This examination was made by Dr. Longcope at the Pennsylvania Hospital, and of course after the pus had been evacuated. The case will be reported in full by Dr. Lewis at a later date.

CASE III.—A Swedish girl, with a walnut-sized abscess of the axillary glands. Otherwise well. Blood examination before incision of glands (2.10, '02) gave H. 94%, R. 5,220,000, L. 7,600. Polymorphonuclear cells 94%. No other pathologic changes. Blood examination on day following, H. 92%, R. 5,232,000, L. 8,200. Polymorphonuclear cells 78%. No other pathologic changes.

CASE IV.—Examined for Dr. Packard during convalescence from lobar pneumonia of several weeks' standing. Temperature irregular. Pneumonia still unresolved at base of lung. Symptoms indicate a pleural effusion, possibly of pus. Blood examination (2.11, '02) gave H. 93%, R. 5,264,400, L. 8,400. Polymorphonuclear cells 96%. No other pathologic changes. Pleural puncture was made, but no fluid obtained. From this point on the patient improved steadily and finally.

The above cases have been taken from a number included in the experience of a month's time, one being in a patient of my own, and the others being examined for other physicians. All show particularly well the blood reaction to inflammatory processes, the abscess of the Swedish girl being a chronic, recurring condition of years' standing. No numerical leukocytosis was present. The case with the typhoid abscess is even more interesting than the others, because of its detailing the blood condition before as well as after the operation, and the presence of a relative leukocytosis in spite of the typhoid infection, and in the absence of a numerical leukocytosis. It does not seem necessary to state that in Cases I and II the blood examination was of use both to patient and physician, although in neither case was there serious doubt as to the condition present. Case III was studied simply for the sake of proving the point as to the polymorphonuclear percentage in chronic conditions. Case IV did not give final evidence of the expected effusion, though it may still have been there, though small, and there was present sufficient cause in the inflamed pleura and unresolved lung to account for the increase in the polymorphonuclear cells. This case is a striking illustration of the principle that the clinical symptoms and the history of the case must be considered in conjunction with the blood findings, and without such simultaneous consideration error is inevitable. The blood picture is powerless to discriminate alone between pus and massive exudate in the lung, as both give the same picture and are but different forms of identical conditions. Considered alone, the relative leukocytosis does not even suggest the presence of pus over a simple effusion, and the needle must determine the condition of affairs, if the symptoms are not equal to the task. All of these cases are well or recovering at the present time. I shall not stop longer than to refer to three cases mentioned near the close of Dr. Baldy's article, two of which again confirm my statement with regard to the usual occurrence of leukocytosis, both actual and relative, in chronic inflammations. A third (threatened abortion) gives nearly the same picture but is hardly to be classed with the chronic conditions. Dr. Baldy states that the blood-count in these cases indicated pus. Let me again say with serious emphasis that the blood picture in not one of these cases indicated pus unless the clinical picture bore out the suggestion. And if I may be permitted to suggest such a thing, it seems uncommonly strange that this lesson cannot be learned. If symptoms of a fibroid tumor are present, that condition must be considered alongside or in advance of the possibility of any other inflammatory process. And if an abortion or tubal rupture (Case IX) is imminent, it is

fair to presume that the medical man has known of the pregnancy and will consider this in advance of any other condition. If he has not known of it the blood examination cannot be expected to and will not supply his lack of knowledge. Such unfairness in the consideration of a scientific problem does not impress the younger school of medical men with the astuteness of those who are going before and leaves a regretful taste in the mouths of those who would gain wisdom rather than discouragement from the hands of their medical fore-runners. I would finally express the opinion that Dr. Baldy touches the keynote of his error when he complains, in considering the fall in the leukocytic count in typhoidal perforation, that "to catch the drop one has to have all the typhoid patients examined frequently." Even so.

His entire article has been based upon a series of cases in which only one examination has been reported and presumably only one has been made. This too in a hospital where he has at his command a force of laboratory assistants under the direction of an authority in pathology. In short he has attempted to place the whole structure upon a few of the stones that make up its foundation. Dr. Baldy has attacked this problem from the position of a man who has already recorded himself in opposition to the microscopic examination of other pathologic issues than the blood, on the ground that the surgeon is again led astray. In his criticism of the microscopic examination of supposedly malignant growths he openly blames the pathologist for his inability to render a final and complete diagnosis of the specimen from his room in the laboratory. I have heard Weichselbaum in Vienna refuse even to examine a specimen until the clinical history as well as the autopsy findings were placed in his hands.

Let me close as I began by referring Dr. Baldy and all students of the blood to the vast army of medical men and surgeons who are every day using and profiting by (the welfare of the patient being in view) examinations of the blood and of the various tissues of the body. As a student of medicine primarily, and therefore of the laboratory, let me say that Dr. Baldy, and I trust myself, will live to acknowledge the value of not only all that is now claimed for the blood examination, but to realize the benefit of a fund of knowledge of which the present store is only the veriest beginning.

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Ambulances drawn by horses to respond to accident calls, as in our cities, are reported as about to be introduced in London.

Subjects for Dissection.—The Senate passed a bill recently to obviate the desecration of graves in the District of Columbia and to promote anatomic science. It provides for furnishing medical colleges with bodies of certain persons and further provides a board of control of the dead human bodies to be disposed of by the act. To this board no body is to be delivered if the deceased person during his last illness without suggestion or solicitation, asked to be buried or cremated or if any friend or relative claims the body or arranges to dispose of it without expense to the District, or if the deceased was a traveler and died suddenly. The bill has the approval of the commissioners.

Mortality in Michigan for February, 1902, amounted to 2,665 deaths, a decrease of 160 from the number returned for the preceding month. As February is a shorter month than January, the death-rate, on the contrary, showed an increase from 13.5 to 14.0 per 1,000 population. There were 422 deaths of infants under one year; 150 deaths of children aged one to four years, and 897 deaths of elderly persons over 65 years. Important causes of death were as follows: Tuberculosis of lungs, 152; other forms of tuberculosis, 21; typhoid fever, 38; diphtheria and croup, 38; scarlet fever, 20; measles, 16; whooping cough, 18; pneumonia, 369; meningitis, 45; influenza, 78; cancer, 114; accidents and violence, 100. There were four deaths from smallpox.

SPECIAL ARTICLE

FACTS ABOUT SMALLPOX AND VACCINATION.*

1. The mortality from smallpox is much less now than in prevaccination times.

Bernouilli, the famous mathematician, calculated that no fewer than 15,000,000 of human beings in the last century died of it every 25 years. Süßmilch, an eminent statistician of the time of Frederick I, estimated that nearly everyone had smallpox, and that it carried off a twelfth part of mankind. In London in 1660-79, of every 80,000 deaths, 4,170 were from smallpox. In Iceland in 1707-9, it killed 18,000 persons in a population of 50,000. In Glasgow, a large and very unsanitary town, in 1783-1800, of 31,088 deaths or burials from all causes, 5,959 were due to smallpox. Chester, which on the other hand was described by an eminent authority of the time as a town of "almost incredible" healthiness, had fewer than 15,000 inhabitants, and contained in the year 1775 only 1,060 persons, or one in 14, who had not had smallpox. In Kilmarnock, with 4,000 or 5,000 inhabitants in 1728-64, of every 1,000 children born alive 161 died of smallpox. In the village of Ware, in Hertfordshire, after an epidemic in 1722, only 302 persons in a population of 2,515 had never had the smallpox. Such examples could easily be added to. Great diminution of smallpox mortality occurred after the introduction of vaccination where smallpox inoculation never prevailed; and also in places where smallpox inoculation had prevailed.

2. The greatest diminution in the smallpox mortality is found in the early years of life, in which there is most vaccination.

In Geneva in the period of 1580-1760, during which there were 25,349 smallpox deaths, 961 of every 1,000 were under 10 years of age. In Kilmarnock in 1728-64, of every 1,000 smallpox deaths, 988 were under 10 years of age. In a total of 36,755 deaths from smallpox at all ages occurring in Kilmarnock, Edinburgh, Manchester, Warrington, Chester, Geneva, and the Hague in various prevaccination periods from 1580 onward, 17,252 were under two years of age. In the present day, on the other hand, vaccination being performed in infancy and having its greatest protective influence in the earlier years of life, smallpox has to a great extent departed from children and transferred itself to later and less protected ages. In London in 1884, of 1,000 smallpox deaths, only 343 were under 10 years old. But this calculation includes both vaccinated and unvaccinated persons. In the vaccinated community the corresponding figures were not 343, but 86; and in the unvaccinated, not 343, but 612. Among the unvaccinated the 612 is better than the Geneva 961, and the Kilmarnock 988 of prevaccination times. Vaccination, by lessening the opportunities for infection, and increasing the intervals between epidemics, has helped even the unvaccinated. Yet among the unvaccinated in London, Leicester, Dewsbury, and Gloucester, smallpox is still to a great extent a disease of childhood.

In prevaccination times, smallpox, measles, and whooping-cough were diseases of childhood. Measles and whooping-cough are still diseases of childhood, but smallpox, and especially fatal smallpox, has been to a very remarkable extent driven from vaccinated childhood by means of vaccination. In the same way, what still remains of it can be driven from later periods of life by means of revaccination.

The manner in which smallpox differentiates between the vaccinated and unvaccinated is seen in the incidence of the disease on towns where it has recently prevailed. In Gloucester, for example, there had been extreme neglect of infantile vaccination, and the disease attacked a school and spread there, the scholars being children. In Leicester the infection was accidentally introduced into the scarlet fever hospital and the children being unvaccinated the disease began to spread there. The hospital was then emptied of scarlet fever and no more

cases were admitted, and in the town of Leicester scarlet fever cases increased to thousands. In Warrington, on the other hand, infantile vaccination had been well carried out, but there was a want of adult revaccination and the disease fastened on the workmen in a large ironworks. Then the workmen's committee in charge of the sick fund resolved "that any member who remains unrevaccinated after Monday, November 21, 1902, shall not be entitled to any sick benefit should he be afflicted with smallpox;" and in consequence over 1,400 men were revaccinated by the work's doctor, and many others privately. The result was that after the middle of December there were only 12 cases among the employees, and the health officer of Warrington reported that these were among men who had refused revaccination or joined the works subsequently.

The following table teaches a lesson that cannot easily be misread.

Percentage of total smallpox deaths borne by children under 10 years of age in recent outbreaks.

	Vaccination Default in antecedent years.	Percentage of total smallpox deaths borne by children under 10 years of age.
Warrington . . .	Very slight.	22.5
Sheffield . . .	Very slight.	25.6
London	In 1883-91, 10%	36.8
Dewsbury . . .	In 1882-92, 32.3%	51.8
Gloucester . . .	In 1885-94, 10.6 to 85.1%	64.5
Leicester . . .	In 1883-92, 43.8 to 80.1%	71.4*

3. In countries where there is much vaccination and revaccination relatively to the population, there is little smallpox.

In Prussia both vaccination and revaccination are compulsory, and smallpox mortality is almost abolished. Beginning with the year 1816, it is found that in that country previous to the law of 1874 the smallpox deathrate was 309 per annum per million of population. Since then, ending with 1892, it has been 15, and in the last ten years of the period only 7. Moreover, the compulsory vaccination age is the second year of life, and investigation showed that in 1886-90 more than two-fifths of the few deaths that occurred from smallpox were under 2 years of age. In Austria, where vaccination is not compulsory, the rate instead of being 7 per million, as in Prussia, was 453 in the same period. In Belgium also vaccination is not compulsory, and in 1875-84 it had a rate of 441 per million as compared with Prussia's 22 in the same period. In Italy since 1888 vaccination of infants has been compulsory, as has revaccination of children attending public schools. Already a great improvement is indicated. In 1881-90 the smallpox deathrate was 355 per million per annum, and in 1891-94 it was only 65. At the time of the European epidemic of 1870-75 Scotland, England, Sweden and Bavaria had a compulsory vaccination law, and their smallpox rates per million in the worst years were 1,470, 1,830, 1,660 and 1,660 respectively. Prussia, Holland and Austria had no general compulsory vaccination, and their rates in the worst years were 5,060, 5,490 and 6,180. Coming to 1877-86, with vaccination not compulsory in Austria, with only infantile vaccination compulsory in England, and with vaccination and revaccination compulsory in Prussia, the average deathrate per million from smallpox in the capitals of these three countries was in Vienna 670, in London 250, and in Berlin 10. In London the rate would have been less but for the disease spreading from the smallpox hospitals that it then contained.

4. In classes among which there is much vaccination and revaccination there is little smallpox.

In epidemics, as in London, Sheffield, and Warrington, revaccinated postmen and policemen remained safe in the midst of exposure to infection. Sir Charles Dilke stated in 1883 that the average strength of the permanent postal service in London was 10,504 in 1870-80, and yet during all that period, including the great epidemic, there was not a single death from smallpox, and only 10 slight cases. In 1891-4, the employees of the General Post Office were over 55,000, yet there were only 17 cases of smallpox and 1 death, though postmen, owing to the nature of their duties, are specially exposed to infection.

* Or 66.6. The difference depends on the exclusion or inclusion of three deaths which occurred owing to the attack of several children in a scarlet fever ward through proximity to the smallpox hospital.

* Issued by the Council of the British Medical Association, January 19, 1898. The references to the authorities, reports, etc., are omitted, but may be found in the original pamphlet, copies of which can be obtained at the offices of the British Medical Association, 429, Strand, London, and from the Jenner Society, Gloucester, at 64s 6d. per 1,000 copies, or 6s. 6d. per 100. Single copies, 1½d.

In the army and navy, where a large majority of the men are successfully revaccinated, there is very little smallpox—very much less than before revaccination became so prevalent.

No persons are so terribly exposed to infectious diseases as are the nurses in fever and smallpox hospitals. As regards fever nurses, Dr. Collie, Medical Superintendent of Homerton Hospital, declared that "the only way in which nurses become seasoned against fever is by taking the disease." At Homerton, Stockton, and Liverpool Road Fever Hospitals, in the ten years ending 1881, 133 of the staff were attacked by various fevers, and 25 died. The Gateshead Medical Officer wrote: "Every nurse who has been more than a fortnight in the typhus wards has suffered from typhus." In Newcastle in 1882 only 5 out of 14 nurses escaped typhus, and among the 9 attacks there were 2 deaths. In the Hospitals of the Metropolitan Asylums Board in 1887-95, no fewer than 704 of the attendants contracted scarlet fever, diphtheria, or enteric fever.

How is it as regards smallpox? At Homerton Hospital in 1871-77, 366 persons were employed. All but one were revaccinated and she was the only one who took smallpox. In the Highgate Hospital the Royal Commission found that since May, 1883, of 137 nurses and attendants 30 had had smallpox before entering the service. Of the other 107 all except the gardener were revaccinated, and the gardener was the only one who took smallpox. In the Sheffield Hospitals, in the year ending March 31, 1888, there were treated 1,798 smallpox patients. The total number of attendants, etc., was 161. Of these 18 had had smallpox previously and escaped attack; 63 had been vaccinated in infancy, of whom 6 were attacked and 1 died; the other 80 were successfully revaccinated, and not one contracted smallpox. In Leicester, however, where vaccination is neglected, some of the nurses refused revaccination. In the outbreak there the total hospital staff consisted of 40 persons. Of these 14 had either had smallpox or had been revaccinated before the outbreak, and 20 were vaccinated owing to the outbreak. Among these 34 (14 and 20) 1 mild case occurred in a nurse whose revaccination was 10 years old. Six of the 40 nurses appear to have been imbued with antivaccination opinions, and refused revaccination. Only 1 of the 6 now needs any protection against smallpox. Five of them took it and 1 died.

5. In places where smallpox prevails it attacks a much greater proportion of the unvaccinated than of the vaccinated, especially where the vaccinations are comparatively recent.

In the Homerton Smallpox Hospital in over 10,000 cases treated by Dr. Gayton nearly 21% were unvaccinated, and among children under 10 the unvaccinated were no less than 47.6%. The unvaccinated at this time (1873-84) in the population from which the cases were drawn did not amount nearly to 21%, much less to 47%. On the other hand, there is one hospital (Highgate) which does not admit children under 7, and which draws its patients from a more universally vaccinated section of the population, and this hospital differed from others in London in that the percentage of unvaccinated patients was found to be much less, the difference being due to the difference in the ages of admitted cases, and the difference in the prevalence of vaccination in the population from which cases came.

6. In houses invaded by smallpox in the course of an outbreak not nearly so many of the vaccinated inmates are attacked as of the unvaccinated in proportion to their numbers.

Taking children under 10 years old, in infected houses in Dewsbury, 10.2% of the vaccinated were attacked, and 50.8% of the unvaccinated; in Leicester, 2.5% of the vaccinated, and 35% of the unvaccinated; in Gloucester, 8.8% of the vaccinated, and 46.3% of the unvaccinated. These places are selected here because they are centers of antivaccination, as to which it cannot be truthfully alleged that the unvaccinated are weakly children whose vaccination has been postponed by medical certificate, or that the vaccinated and unvaccinated children belong to different classes, especially when they are compared in the households actually invaded by the disease. It is urged by antivaccinationists that vaccination does not protect against smallpox, but on the contrary tends to weaken the system

against all disease. Yet the vaccinated were attacked in much less proportion than the unvaccinated.

7. The fatality rate among persons attacked by smallpox is much greater, age for age, among the unvaccinated than among vaccinated.

Taking the 10,403 cases treated in Homerton Hospital in 1873-84, the deaths among the vaccinated 8,234, were 869 or 10.5% and among the unvaccinated 2,169, were 938, or 43.4%. We shall see shortly that the deaths among the well vaccinated were only 3%. Taking the epidemics in three towns, Dewsbury, Leicester, and Gloucester, where vaccination has been neglected, we find that under ten years of age, among 72 vaccinated children, two died or 2.7%, but among 961 unvaccinated children attacked 350 died, or 37.3%. Taking persons over ten years old, among 1,959 vaccinated persons attacked, there were 136 deaths, or 6.9%, and among 331 unvaccinated persons there were 75 deaths, or 22.6%. Again it is to be noted that as vaccination was practically optional in these towns, the unvaccinated children, according to antivaccination theories, should have been more able to resist death by smallpox than those who had been subjected to an operation which is alleged to weaken the system and render it more liable to disease and death.

8. It cannot be truthfully alleged that independently of vaccination smallpox is a milder disease now than in former centuries.

If it were the case, as is sometimes argued by antivaccinationists, that the smallpox fatality rate in last century was about 18%* of persons attacked, then the much higher rate now occurring among the unvaccinated would show the disease to be much more severe now than then. But in the last century, as in the present century, the fatality varied greatly in different outbreaks, as does the fatality of scarlet fever, diphtheria, measles, etc., in the present century. And in epidemics in the present century, whether they be mild or severe, whether the fatalities be few or many, and whether there be much or little vaccination in the community, it is found that both the attack rate and the fatality rate are much greater in the unvaccinated than in the vaccinated in proportion to their numbers.

9. The degree of protection conferred by vaccination corresponds to the thoroughness with which the operation has been performed, three or four marks being much better than one or two, and a large mark much better than a small one.

In Dr. Gayton's 10,403 cases at the Homerton hospital, 2,085 had good marks, and the fatality rate was 3%; 4,854 had indifferent marks, and the fatality rate was 9%; 1,295 were alleged to be vaccinated, but had no marks, and the fatality rate was 27%; and 2,169 were unvaccinated, and the fatality rate was 43%. Taking "good" marks only, and attending to their numbers, Dr. Gayton found that with one mark, the fatality rate was 4.1%; with two marks, 3.3%; with three marks, 2.3%; with four or more marks, 1.5%. The cases on which these percentages are founded were 529, 649, 518, and 389 respectively. Taking nearly 7,000 cases observed in recent years, the Royal Commission found that the smallpox fatality rate in persons with one mark was 6.2%; with two marks, 5.8%; with three marks, 3.7%; and with four marks 2.2%.

It is comparatively seldom that cases come to hospital with the smallpox eruption so far advanced and profuse as to obscure the vaccination marks, but in hospital statistics in this country a column is provided for "doubtful" cases, and if the figures for any large hospital be examined it will be seen that the inclusion of such cases either as "vaccinated" or "unvaccinated" does not alter the lesson taught by the statistics.

10. Sanitation cannot account for the facts above set forth.

Whooping cough and measles deaths still belong to childhood as in the last century, while smallpox deaths have been removed from childhood to later periods of life. How could sanitation account for this differentiation? If it be suggested that because

*This rate is based mainly on a prevalence of the disease in certain towns in the West Riding of Yorkshire in certain years between 1720 and 1730, but no average either for a century or for a country can be calculated on such limited data. (*Vaccination Indicated*, pp. 67-69.)

sanitation confers a special benefit on children it may have altered the age incidence of smallpox, the answer is got by looking at facts. In Germany, as we have seen, vaccination is not compulsory till the second year, and over 40% of all the smallpox deaths occur under two years of age. In Scotland the vaccination age is six months, and children under six months make just about the same contribution (138 deaths per 1,000 deaths) to the total smallpox deaths as they did (139 deaths per 1,000) before the vaccination law was passed. But in the next half year of life—the half year of vaccination—the contribution has fallen from 153 to 47. Surely this is vaccination and not sanitation. In a community attacked by smallpox, how could sanitation at home protect postmen going from door to door day after day in infected districts? In Leicester, how could sanitation account for the revaccinated nurses escaping smallpox, and the nurses who had refused vaccination taking smallpox? How could sanitation cause smallpox to pass over vaccinated children and seize on unvaccinated children, in houses invaded by smallpox in Dewsbury and Leicester and Gloucester? How can sanitation have caused the fatality of smallpox cases to be much less among the vaccinated than among the unvaccinated in these towns, especially if vaccination weakens the system and makes it less resistant to disease as is alleged by antivaccinationists? How could sanitation cause children with three or four vaccination marks to have a less fatality from smallpox than children with one or two vaccination marks? In Glasgow, while sanitation was going from bad to worse in the early part of the century, vaccination was introduced and smallpox underwent an enormous diminution, though hospitals and isolation and disinfection were entirely out of the question. In Gloucester, vaccination had been neglected, and in 1891 the secretary to the antivaccination league declared to the Royal Commission that Gloucester was a very clean town, and had always been well abreast of sanitary improvements, and that its deathrate was very low. The Board of Guardians also wrote to the Commission on the same lines. But smallpox came, and the town suffered from a terrible epidemic, and ever since then the antivaccinationists have been declaring there was a great want of sanitation in Gloucester. What was wanting was vaccination.

For convenience the Registrar-General many years ago grouped together places whose deathrate was low, and classified them as "healthy districts." They were nearly all found to be sparsely populated rural districts, where, though houses may be damp and overcrowded and other insanitary conditions prevail, there is little opportunity for infection. In such places, in spite of bad sanitation, there is a lower deathrate than in towns because, independently of sanitary effort, the atmosphere is purer. Also, there is less smallpox, and it comes at a later average age, because there is less facility for spread of infection on account of the smallness of the population and the distance of house from house and village from village. In such circumstances, though there is little sanitary effort, there is little smallpox, and unvaccinated persons have a better chance of escaping smallpox attack than they have in large towns where sanitary arrangements are more elaborate.

11. Though isolation of smallpox cases in hospitals is a useful auxiliary to vaccination, it is no substitute for it.

In an unvaccinated nation it would be utterly impracticable to provide sufficient smallpox hospitals. For whoopingcough and measles hospital accommodation has not been seriously attempted, though these diseases cause an enormous mortality. Where, owing to vaccination, liability to smallpox is limited, hospitals are very useful and help to give time for general revaccination. But in an unprotected community their almost certain breakdown is obvious. Who would have attended to all the sick in Leicester if all nurses had had the same experience as the nurses who refused revaccination? In an unprotected community, instead of smallpox being limited, it would spread in rapidly widening circles. Where a person protects himself by vaccination and revaccination he can defy smallpox. He carries his protection with him wherever he goes, and a father can obtain protection both for himself and his family. Even if isolation in hospitals were made more stringently compulsory than vaccination has ever been in this country there

could be no complete security. The protection of the individual might fail at any moment. It would depend not on himself, but on other people. His cordon of protection would be a chain the measure of whose strength would be its feeblest link, and over not one link would he have efficient control. Failure of parents to observe the symptoms of illness; failure to call in a doctor; failure of the doctor to recognize smallpox; failure in promptitude of removal; inadequacy of hospital accommodation; insufficiency of disinfection of persons and things—these would be among the risks to which even a law of compulsory isolation would leave him exposed. Obviously the risk of collapse of voluntary isolation would be much greater.

12. Vaccination is very safe.

Nothing done by human beings is entirely without risk, but the risks of vaccination have been grossly exaggerated. Some of the earliest antivaccinationists held that the countenance of a vaccinated child might be transformed so as to assume "the visage of a cow." Later on, in the 'fifties, vaccination was accused of making people bald-headed, shortsighted, lazy, and of causing degeneracy in music, painting, oratory, poetry, etc. Still later, the habit has been to get statistical returns of increasing and decreasing diseases from the Registrar-General, and to attribute the increasing diseases to vaccination, and to use the decreasing diseases to illustrate the view that smallpox also might decrease without vaccination. But a disease may be increasing at one time and decreasing at another. Thus at one time cholera and enteric fever and scarlet fever were blamed on vaccination, but when these diseases began to decrease, their decrease was, and still is, held to show the needlessness of vaccination.

One foul disease in particular has been blamed on vaccination. It happens that since Leicester gave up vaccination that disease has increased there much more rapidly among infants than in the rest of England. So, also, erysipelas, while it decreased in England by 16%, increased in Leicester by 41%. Similarly, diarrhea, dysentery, and bronchitis, all of which have been blamed to vaccination, increased much more in Leicester than in England. The periods under comparison are 1863-67 and 1883-87. It is not to be supposed that the increase in these diseases is due to want of vaccination, but if instead of increasing they had diminished in Leicester, it is undeniable that their diminution would have been attributed by antivaccinationists to diminution in vaccination, just as increase of many sorts of disease has been attributed by them to vaccination where vaccination is not neglected as in Leicester. The Royal Commission made most careful search for injuries resulting from vaccination, and, after the fullest consideration, arrived at the deliberate conclusion that such injuries are "insignificant" and "diminishing," and can be still further diminished. So insignificant are they that vaccination is nowhere more nearly universal than in the families of medical men, who love their children as other men do, and who know much better than other men can do, the exceeding safety of vaccination.

13. Calf lymph is now available for the vaccination of every child in the country.

Reverting to the foul disease which has formed the principal allegation by antivaccinationists, it is to be noted that the use of calf lymph makes its occurrence through vaccination an absolute impossibility, as calves are not subject to that disease.

Board of Managers of Craig Colony.—Governor Odell has nominated for managers of the Craig Colony for Epileptics Pearce Bailey, of New York City; Mary E. Joy, of Syracuse; James H. Loomis, of Wyoming County; Abbot Law Dow, of Brooklyn; George L. Williams, of Erie County, and Jeanette R. Hawkins, of Franklin County.

Brooklyn's water supply, according to the report of C. P. O'Connor, chemist of the local department, shows organic pollution owing to overflow into thickly populated districts of tributary streams of the watershed supplying the Ridgewood reservoir. Dr. J. H. Raymond, Sanitary Superintendent of the Borough of Brooklyn, recommends to the Board of Health that a sanitary patrol be established similar to the one which existed when Brooklyn was a distinct city.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 22, 1902. [Vol. XXXVIII, No. 12.]

1. The Prostate. JOHN B. MURPHY. (Continued.)
2. Prolonged Intubation. EDWIN ROSENTHAL.
3. An Operation for Spina Bifida. With Report of a Successful Case. LEONARD FREEMAN.
4. Case of Thomas B. Boden, the Consumptive Irish Immigrant. Its Medical, Sociologic, International and Humanitarian Aspect. S. A. KNOPE.
5. The Use of Tropacocain in Spinal Anesthesia. WILLIAM P. ILLING.
6. Our Hospitals. H. D. NILES.
7. A New Method of Dealing with Bowel Perforations Communicating with Pelvic Abscesses. THOMAS W. HUNTINGTON.
8. A Case Illustrating Plastic Surgery of the Eyelids. CASSIUS D. WESCOTT.
9. The X-Ray in Determining the Limits of the Frontal Sinus. JOHN HAROLD PHILIP.

2.—Prolonged Intubation.—The factors necessitating prolonged intubation are the type of the disease, the sequels and the wearing of the tube itself. Chronic laryngeal diphtheria may be due to the persistence of streptococci after the disappearance of *Bacillus diphtheriae*, or it may be secondary following nasal or faucial diphtheria. The most frequent sequel necessitating prolonged intubation is paralysis of the vocal cords. Irritation from the tube may result in inflammation and edema. The edema may be due to other causes, however, as too strong local remedies. Local measures should be used only when indicated and then only the weakest solutions. Early and sufficient use of antitoxin will cure before symptoms of stenosis occur. In neglected cases administration of more serum after operation will reduce the time of a simple intubation to five from seven days, the minimum before antitoxin was introduced. Longer use than this may be considered prolonged intubation and frequent extubation with reinsertion of progressively smaller tubes should be practised until finally none is required. The tubes should be clean; if of metal they should be regilded, or if of rubber a new one should be provided for each case. [H.M.]

3.—Operation for Spina Bifida.—Aspiration and compression are very unreliable and should be limited to small, slow-growing tumors covered with normal skin. Injection of irritating fluids is risky, especially if the aperture is large. Hydrocephalous is said to supervene sometimes. Setons or continuous drainage should never be used. The open method of operating is preferable to any other and in selecting this age and resisting power should be considered, for the very young will not tolerate prolonged anesthesia or extensive manipulations. Owing to this and the delicacy of the structures it is often impossible to procure bone or periosteal flaps for plastic operations. Freeman in a recent case used fine silver wire in closing the aperture in the vertebral column. After placing the nerve structures and remnants of the sac in the canal a continuous over-and-over suture was inserted through periosteum and ligaments and occasionally bone itself, the stitches being close enough to form a firm covering for the cord. It is generally unnecessary to suture the spinal membranes. The remnants of the sac fold into a mass, which plugs the opening, and adhesions soon occur. Infection from catgut is thus avoided. [H.M.]

5.—Tropacocain in Spinal Anesthesia.—Tropacocain is now universally prepared by the decomposition of atropin and hyoscyamin. It should be sterilized by heating in a water bath or autoclave to 176° F. for 15 minutes, then cooling for three hours, the procedure being repeated four or five times with the solution in a glass-stoppered bottle. Anesthesia lasts only half as long after boiling. It is only half as toxic as cocain, and recovery is much more rapid. Cocain anesthesia appears in from 4 to 10 minutes, that from tropacocain seldom under 10 minutes. There is usually no complaint of thirst, heat, vomiting, or perspiration; there is no marked increase or decrease in the pulse or respiration; no dyspnea, no anxiety. Relaxation of the sphincters occurred in two cases. Anesthesia from $\frac{1}{4}$ -grain will last 15 minutes or longer. Illing has never used more than one grain, the anesthesia lasting from one to three hours. Hyoscin is injected hypodermically 10 minutes previously. [H.M.]

6.—See AMERICAN MEDICINE, Vol. III, No. 2, p. 54.

7.—Bowel Perforations Communicating with Pelvic

Abscesses.—Immediate closure of a bowel perforation with such an environment by any of the suture methods has generally proved disappointing, as the intestinal coats are so altered that reopening occurs after a few hours. It is a matter of general experience that a fecal fistula, when the bowel opening is closely approximated to the parietal peritoneum in the floor of an abdominal wound, tends to spontaneous closure without subsequent embarrassment. Huntington, in a case of tuboovarian abscess with adherent sigmoid flexure, temporarily closed the perforation with a pursestring suture, dissected out the abscess sac, drained the pelvic cavity per vaginam, closed the median incision, then made an anterior cholecystomy incision over the sigmoid, and sutured the bowel to the parietal peritoneum. One month later the colon was resected and the abdominal wound closed, and the patient left the hospital in perfect condition. [H.M.]

9.—The X-ray and the Frontal Sinus.—Owing to occasional absence of the sinus, and the lack of landmarks defining its limits, and the danger of injuring the dura in operation, Philip advises previous use of the x-ray, and presents a radiograph which clearly defines its limits. [H.M.]

Boston Medical and Surgical Journal.

March 20, 1902. [Vol. CXLVI, No. 12.]

1. Osteoarthritis of the Spine; Spondylitis Deformans. JOEL E. GOLDTHWAIT.
2. Privileged Medical Communications; A Rejoinder. DAVID W. CHEEVER.
3. Cases of Extrauterine Pregnancy Illustrating Difficulties in the Diagnosis of the Condition. EDWARD REYNOLDS.
4. Case of Combined Extrauterine and Intrauterine Pregnancy. H. P. PERKINS.

1.—Osteoarthritis of the Spine.—In this disease there is proliferation of the edges of the articular cartilages with ultimate ossification of this and of portions of the fibrous and ligamentous tissue. The process begins on one side anteriorly and extends along the anterior lateral ligament. The intervertebral disc may be absorbed, sounding the back. If the vertebrae are ankylosed beforehand no deformity is produced. If the process is more active on one side lateral deformity results. The symptoms may be slight. Usually pain and limitation of motion are prominent. The pain may be at the seat of disease or referred to leg, arm, side, etc. It is usually worse after rest. The pressure causing it is probably due to hyperemia and not to thickened bone, as it is relieved by treatment. Limitation of motion is due partly to osseous deposit and partly to muscular spasm, and deformity is permanent or otherwise in proportion to the predominance of one or the other factor. There may be a limp from irritation of the psoas. The etiology is uncertain. Treatment should be wholly nourishing and stimulating, including extra diet, bathing, massage, electricity, dry heat and tonics. A plaster-of-paris or leather jacket should be applied with the patient standing erect as possible. This must fit perfectly, so as to prevent change of curve in the recumbent posture, and must be worn in acute cases three or four months, reapplying every one or two weeks. A light brace or corset may be sufficient in mild cases. [H.M.]

2.—Privileged Medical Communications.—Cheever corrects an error of fact in regard to English law made in a previous paper, and defends himself from the charge that the legislation invoked is in behalf of the physician. It is the patient and the public whom he seeks to protect. In Massachusetts courts the doctor is in a cruel and false position. The following is proposed for consideration: It shall be considered unprofessional and improper for a physician to divulge anything confided to him by a patient unless with the patient's consent, to defend himself when accused, to expose crime. In all other cases professional confidences shall be classed as "privileged communications."

4.—Difficulties in the Diagnosis of Extrauterine Pregnancy.—Reynolds reports six cases, illustrating the difficulty often encountered in making a positive diagnosis of ectopic gestation. In Case 1 the patient thought herself pregnant by comparison with previous experiences; she was attacked by the characteristic pains of extrauterine gestation, with slight uterine hemorrhage and increasing tenderness on the left side. An abdominal section showed a slightly retroflexed uterus

with the tube lying under it sharply flexed and much engorged with blood. On raising the uterus the tube rose with it, its engorged condition disappeared and there was no sign whatever of ectopic pregnancy. The uterus was ventrosuspended and she soon recovered. In Case 2 the patient presented none of the usual signs of pregnancy but suffered from sharp pains. This led to an examination which revealed an ill-defined mass in the Douglas' fossa supposed to be a newgrowth pressing upon the rectum. Yet on opening the abdomen the only abnormality was an extrauterine gestation the size of a hen's egg, just on the point of rupture. Case 4 was that of a chronic invalid with no noteworthy menstrual irregularity, no pain other than she had been accustomed to for 13 years, yet on operating after an apparent miscarriage Reynolds found an ectopic pregnancy of about the tenth week. In Case 5 the only symptoms were two months' amenorrhea and diffuse abdominal pain. A small macerated fetus was found in Douglas' fossa. In the sixth case there had been no amenorrhea and no symptoms referable to ectopic gestation except intermittent abdominal pain, which is common to many other conditions; but the pathologic report upon the mass removed, stated that it was the remains of an extrauterine pregnancy. [W.K.]

5.—A Case of Combined Extrauterine and Intrauterine Pregnancy.—Perkins reports a case in which the existence of uterine pregnancy and other morbid conditions tended to confuse the diagnosis. He was sure of the presence of a hematocele but uncertain as to its origin. Operation was at first refused, but as the symptoms became more alarming, the abdomen was opened, the enlarged and ruptured right tube bisected near the uterus, and ligated most carefully, with no apparent disturbance of the uterus, in the hope of saving the uterine fetus. But the fifth day after the operation hemorrhage and pain made it necessary to curet the uterus. Recovery was uneventful, the patient leaving the hospital on the fifteenth day. [W.K.]

Medical Record.

March 22, 1902. [Vol. 61, No. 12.]

1. Are Vessels Infected with Yellow Fever? Some Personal Observations. HENRY R. CARTER.
2. Pathology of Appendicitis. J. COPLIN STINSON.
3. The Disadvantages of Gauze Packing in Appendicitis Work. ROBERT T. MORRIS.
4. A Plea for Specific Plans of Treatment Other Than by Single Drugs. LOUIS FAUGÈRES BISHOP.
5. What is Chronic Rheumatism? EDWIN M. MERRINS.
6. A Simple Test for Equilibrium of Eye Muscles in Binocular Vision. FRED'K C. RILEY.
7. Static Wrinkles. HENRY G. PIFFARD.

1.—Are Vessels Infected with Yellow Fever.—Dr. Henry R. Carter, formerly of the quarantine service of the Gulf, Chaudelaur and Ship Islands, cites a number of cases to prove that vessels harbor infected mosquitos and that through their agency cases of yellow fever are contracted aboard the vessel itself. This data is presented as opposed to the recently-expressed opinion of Dr. Doty, the Quarantine Officer of New York, to the effect "that while cases of yellow fever contracted ashore develop aboard vessels, yet none are contracted aboard the vessel itself; that is, the vessel does not become infected with yellow fever." The probability of a vessel lying in a yellow-fever port becoming "infected" in the sense of harboring *Stegomyia* is so great that it is evident Drs. Carter and Doty are at variance only as to the signification of the term "infection." [C.S.D.]

2.—Appendicitis.—J. C. Stinson, after an extended discussion on appendicitis, comes to the following conclusions: As appendicitis is strictly a surgical disease, the earlier it is operated upon the better for the patient; cases operated upon early should have no mortality; during all appendicitis operations the appendix should be removed, provided irreparable damage is not done in attempting to find or remove it; where there is a local or general infection the abscess cavity or cavities should be freely opened, all adhesions separated, all pus, shreds, etc., cleaned out, all inflamed or pathologic omentum excised, and all pathologic intestines and infected portions of abdomen freely irrigated with hot water or hot saline solution till the fluid comes away clear; the intestines, etc., then dried with sponges and returned to their normal positions, fecal concretions are more apt to be present as exciting causes of appendi-

ctitis than foreign bodies; foreign bodies are sometimes present in the appendix, and are exciting causes of appendicitis; when the appendix contains foreign material it is more likely to be a pointed or heavy body; fecal concretions closely resemble some foreign bodies of light weight—grape seeds, cherry stones, etc.,—and that when one is in doubt whether the material is a concretion or foreign body, it should be carefully examined microscopically and chemically to determine the exact characters; operations, such as appendicitis or somewhat similar operations, *i. e.*, those involving laparotomy, can be as readily, quickly, safely, and cheaply performed at the patient's home as elsewhere. [A.B.C.]

3.—The Disadvantage of Gauze Packing in Appendicitis Work.—Morris asserts that gauze drainage in operations for appendicitis should be discarded wherever possible. Iodoform gauze is especially harmful because it frequently produces insidious iodoform poisoning, resembling very closely a general septicemia. Gauze drainage of any kind is apt to produce ileus and obstruction of the bowel; it causes excessive exudation; it leaves a weak place in the abdominal wall, and hence invites hernia; it depresses the patient's resistance and prolongs if it does not cause surgical shock. A small capillary drain can be used to drain off excessive fluid from the abdominal cavity. The surgeon should work toward the discontinuance of gauze drainage as rapidly as experience proves that it can be done safely. [A.B.C.]

4.—Specific Plans of Treatment.—Louis Faugères Bishop presents a timely plea for greater attention to the development and practice of specific plans of treatment, in place of the rule-of-thumb administration of so-called specific drugs as practised by what he terms "the iodid-of-potash school of therapeutics, that is, those who administer drugs on general principles. [C.S.D.]

5.—What is Chronic Rheumatism?—Edwin M. Merrins supports the conclusions of the British Medical Association in its report upon the geographic distribution of rheumatic diseases, to the effect that the degree of moisture of any locality has little or no influence upon their occurrence. He argues that it will be found that at some time or another the patient has had some disease of microbic origin, and concludes that the occurrence of rheumatic symptoms months or years after the acute infectious disease, may be explained as an upsetting of the balance between the phagocytes and residual microbes; thus the germs which had invaded a joint during the course of an infectious disease would, upon the patient's recovery, be forced into quiescence, and would remain so as long as this balance of power between the tissues and the germs was maintained. As soon, however, as the resistant power of the tissues become weakened by cold and wet—which are thus seen to be secondary, not primary, etiologic factors—the balance is destroyed, and the symptoms of pain, stiffness and weakness follow. If Wasserman's theory be established that the toxins and not the germs are the cause of the local arthritic trouble, the conclusion is practically the same. [C.S.D.]

7.—Static Wrinkles.—Piffard suggests glass insulators under the legs of the static machine to prevent loss of charge. In using Morton's wave current with an eight plate machine he found he could increase the output over 25% by adding two revolving plates, this increasing the generating surface and diminishing resistance, as the plates had to be brought nearer together. By substituting a seven inch metallic disc for the small trial ball on the end of the negative pole-rod a spark-gap of ten inches could be used with no more inconvenience to the patient than formerly with the five inch gap. This has doubled the efficiency of the machine as regards the wave current. [H.M.]

New York Medical Journal.

March 15, 1902. [Vol. LXXV, No. 11.]

1. The Medical History of Dr. Samuel Johnson. FRANCIS R. PACKARD.
2. The President's Inaugural Address, Delivered at the Ninety-sixth Annual Meeting of the Medical Society of the State of New York, held at Albany, January 28, 29 and 30, 1902. HENRY L. ELSNER.
3. Uric Acid: Its Sources and Effects. JAMES TYSON.
4. Chancroid of the Eyelid. MATTHIAS LANCKTON FOSTER.
5. Trifacial Neuralgia and Its Treatment. HENRY TRÉVE BARBER.

6. A Case of Ankylostomiasis (Uncinariasis) Occurring in a Sailor. JOSEPH B. GREENE.

2.—See AMERICAN MEDICINE, Vol. III, No. 5, p. 181.

3.—**Uric Acid.**—Tyson, in discussing the sources and effects of uric acid, says that it is one of the end-products of animal metabolism just as much as urea, and that it is not an intermediate product as once supposed. It is remotely derived from the food ingested, and in this respect it is analogous to urea. The only way in which uric acid can exist in the blood is in the shape of a quadriurate, which is a very soluble, unstable combination in which the monomolecular sodium has taken the place of one fourth of the displaceable hydrogen of two molecules of uric acid. The later views as to the role played by uric acid limit its harmfulness to the formation of concretions, and ascribe the alloxuric bases the harmful phenomena of the so-called uric acid lesions, including gout. [C.A.O.]

4.—**Chancroid of the Eyelid.**—Foster reports a case in a man of 36, who one month before had contracted a sore on his penis, followed by suppurating buboes in the groin. The entire lid was red, swollen, and dropping over the eyeball. The ulcer was elliptical, its floor excavated and covered with a purulent detritus, its edges abrupt and elevated, but not indurated. The venereal sore of the eyelids most frequently met with is the initial lesion of syphilis. The author refers to several cases, but he has been unable to find in medical literature a case reported in which chancroid of the eyelid was even a probable diagnosis. [C.A.O.]

5.—**Trifacial Neuralgia.**—A very severe case of tic douloureux in a girl of 18 is reported by Barber. The condition had lasted for 3½ years and during this time she had never been free from pain except at night. He ordered one granule containing ⅓ of a milligram of aconitin every four hours. In three days the patient was very much better. He then stopped the aconitin and gave her:

Dried sulfate of iron 7½ gr.;
Extract of chamomile 7½ gr.;
M. pro. pil. No. II;

of which she took two a [day, one after each meal. In two or three weeks she was entirely free from pain. [C.A.O.]

6.—**Uncinariasis.**—A case occurring in a sailor is reported by Greene, of the U. S. Marine Hospital, Staten Island, N. Y. He complained of pain in the epigastric region, especially on the left side. The bowels were loose. He presented the appearance of one suffering from severe anemia. Blood examination showed red corpuscles 3,440,000; white, 45,000, and hemoglobin, 44. An examination of the feces revealed a large quantity of elliptical ova, typical in appearance of the eggs of *Uncinaria duodenale*. The patient was put on a restricted liquid diet, and given a saline purge followed by two doses of thymol, 1.5 grams each. An examination of the feces failed to reveal any signs of the parasite. Male fern was tried with no better results. The patient began to improve and it was thought that the worm escaped detection. [C.A.O.]

Medical News.

March 22, 1902. [Vol. 80, No. 12.]

1. Malnutrition as Shown in Congenital Syphilis. CHARLES GILMORE KERLEY.
2. The Necessity for Sanitary Safeguards on the Central American Canals. GEORGE A. SOPER.
3. A Report on the Use of Antituberculous Serum T. R. EARL SPRAGUE BULLOCK.
4. Simple Traumatic Synovitis of the Knee. WILLIAM S. THOMAS.
5. The Therapeutics of Cutaneous Diseases. ALBERT E. CARRIER.

1.—**Malnutrition and Congenital Syphilis.**—Kerley states that malnutrition in a child at any time up to the third or fourth year counts for nothing as indicating hereditary syphilis unless attended by other and more confirmatory signs of this disease. In children, however, from about 4 years of age up to puberty persistent malnutrition in the absence of apparently adequate cause and in spite of ordinary supporting treatment may mean congenital syphilis without any other symptom of this disease. No promise can be given to a man or woman who has had syphilis that his or her children will be free from the disease. Given a family with father and mother of average health and strength, with negative family history, child or

children "delicate," undersized and underweight, with lack of endurance, low vitality, indifferent food capacity, poor appetite, the physician adds mercury bichlorid or potassium iodid to the treatment, regardless of the social standing of the parents. [A.B.C.]

2.—**Sanitary Safeguards on the Central American Canals.**—Soper replies to Stubbert's criticisms of his previous paper and claims that the small amount of sickness on the Nicaragua route is due to its being practically uninhabited, to the small amount of work done on it, and to the precautions exercised. The sanitary advantages of the Panama route are less length of swamp to be excavated, less total length, and less rainfall. Fewer laborers would be required, and their greater concentration would permit more efficient sanitary organization. [H.M.]

3.—**Antituberculous Serum, T. R.**—Bullock reports the results of administration in 23 cases divided into 4 classes, (1) permanent rise of temperature produced, (2) little or no change, (3) failure during treatment, (4) improvement. The conclusion was reached that the serum was either harmful or entirely negative. Those who have spoken favorably of it have interpreted what occurs as a result of proper hygienic surroundings as the effect of the serum. [H.M.]

4.—**Simple Traumatic Synovitis of the Knee.**—William S. Thomas bases his paper on 54 cases of simple traumatic synovitis, which were under his care in connection with St. Luke's Hospital. In diagnosis he lays stress on the history of some trauma, which may, however, have been seemingly slight; on the patient's ability to fully extend the leg, which he usually does for the sake of comfort, swelling, moderate disability, especially on climbing stairs, which disability gradually disappears with moderate use of the joint only to reappear after a rest of a few hours or less. The most valuable part of this excellent paper relates to treatment, which is largely mechanic. Rest, complete or partial, counts for more than all other remedies combined, though *absolute* rest is not required, unless the symptoms are severe. When the patient can earn his living with the joint immobilized, he should be allowed to walk about while wearing the splint. Rest in bed is not needed. With the leg in full extension, a plaster cast encasing the leg and thigh from ankle to perineum is all that is required in the way of apparatus. The plaster splint may be worn from three to four weeks, then removed, the joint examined, and the cast reapplied if necessary. So long as there is excess of fluid in the joint or any point of tenderness, the cast *must* be worn to insure good results. In the early stages there must be rest, later when the active symptoms are subsiding, massage without motion of the joint hastens absorption, strapping and counterirritation are often helped. All cases recover if properly treated, but some are much slower than others. [A.B.C.]

5.—**Therapeutics of Cutaneous Diseases.**—Skin affections are overtreated. Many would recover more quickly with hygiene, proper diet and habits without medicine or with internal medication alone. Attention is called to idiosyncrasy toward certain drugs, the eruption being considered a complication or aggravation of the skin disease for which the drug has been administered. Skin diseases should be cured as quickly as possible, as long-continued local irritations may result in disturbance of some internal organ. For instituting a normal therapy the process occurring in the individual lesion should be understood. In the ordinary every-day case of the skin in young children it should be remembered that the epidermis is easily removed, rubbing deprives the skin of its natural protection. Patients should be seen often, as a therapy today may be improper tomorrow. More harm than good follows the use of arsenic in skin diseases. It should never be given in acute inflammation. The alkalies are indicated in active congestion. Antimony gives good results in dermatose in the robust; mercury is very useful where there is induration, the salicylates in congestions and gouty or rheumatic disorders, ichthyol in vasomotor disturbances. Calcium sulfid seems to interfere with pus formation, and the iodids are valuable in the elimination of waste products. The principles of local therapy include the removal of all sources of irritation to the skin, absolute clean-

illness, relief of distressing subjective symptoms, selection of a proper vehicle for the drug and proper application of the remedy. [H.M.]

Philadelphia Medical Journal.

March 22, 1902. [Vol. IX, No. 12.]

1. The Use of Methylene Blue as a Sedative. D. E. HUGHES and ELIZABETH LOVEFACE
2. The Implantation of the Tubercle Bacillus. LAWRENCE F. FLICK.
3. The Various Methods of Vaccination and Their Results; with a Suggestion as to Best Methods. F. M. WOOD.
4. Finger Amputations. H. C. DEEVER.
5. The Young Physician. EMIL AMBERG.

1.—Methylene-Blue as a Sedative.—Hughes and Loveface detail 22 cases of insanity in which methylene-blue was used as a sedative. These were nearly all cases of wild excitement, and in only six did it fail to produce a calmative effect which did not resemble the sedative action of other drugs, but seemed rather a natural quietude, the patients being relieved of excitation, but without dulness or hebetude. The effect was noted three to four hours after a dose was given, and lasted from 15 to 20 hours. The drug in some cases was administered hypodermically in an aqueous solution, 1 grain doses, once, twice or thrice daily as required; in others it was given in capsules. It is necessary to boil the solution in order to prevent the formation of the abscesses. [F.C.H.]

2.—See AMERICAN MEDICINE, Vol. II, No. 14, p. 521.

3.—The Various Methods of Vaccination and Their Results.—Wood prefers to scarify with a sterilized needle, and applies a sterilized gauze dressing after the vaccine has dried, and strongly advocates the glycerinated lymph in hermetically sealed tubes, though good results will be obtained from glycerinated lymph on ivory points. [F.C.H.]

4.—Finger Amputations.—Deever advises conservatism in all operations on the fingers, every possible bit of tissue being permitted to remain. Latest recognized technic in regard to finger amputations is detailed. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Scarlatina, Measles, Rubella, and the "Fourth Disease."—Somewhat more than eighteen months ago, Clement Dukes (*Lancet*, July 24, 1900) directed attention to what he believed to be a disease distinct from scarlatina, measles, and rubella—a disease that he named provisionally the "fourth disease." The paper occasioned considerable discussion, so that at the present time there exists quite a little literature on the subject, the most important contributions being by Weaver (*Dublin Medical Journal*, June, 1901, and *British Medical Journal*, February 8, 1902), Caiger (*British Medical Journal*, November 16, 1901), Williams (*British Medical Journal*, December 21, 1901), Washbourn (*Ibid*), Millard (*Ibid*), and Ker (*Practitioner*, February, 1902). The subject was discussed also at the meeting of the British Medical Association last year. Dukes stated that the incubation of the "fourth disease" approximates to that of rubella (nine to twenty-one days); that as a rule there are no premonitory symptoms, though slight sore throat and malaise occasionally, and vomiting rarely, occur before the rash appears; that the rash covers the entire body in a few hours and is brighter than that of scarlatina; that the throat becomes swollen, the conjunctiva pink, and the glands enlarged, though not to the same extent as in rubella; that desquamation may be very slight or as profuse as in scarlatina; that the kidneys are rarely affected; that the tongue is clean or slightly furred, but does not peel like that of scarlatina; that the pulse is not unduly accelerated; that the temperature averaged 101°, but in one case was 104°; that the disease affords no protection against scarlatina or rubella; that infection does not last longer than twenty-one days; that there are practically no sequels, and that recovery is the rule. As was to have been expected, Dukes' opinions did not find immediate corroboration or acceptance. Though sup-

ported by Ashby, Poynton, and Broadbent, he was combated by Caiger, Washbourn, Millard and Williams. Recently, Ker, in a critical review of the entire subject, weighs carefully the evidence for and against the existence of the disease. He first points out the main distinctions of scarlatina, measles and rubella, and then describes the different skin conditions not associated with any epidemic features that are liable to be confused with these diseases—of which he mentions various drug rashes, septic rashes and antitoxin rashes. He states that it takes a bold man to deny the existence of a fourth disease, and that the difficulties of diagnosis of German measles are very great. He believes, however, that Dukes lays far too much stress on the "established law of Cullen," that one attack of an infectious disease always confers immunity, and that he goes too far when he claims scarlatinal relapses and second attacks as additional evidences of his disease. The relapses and second attacks do occur in most infectious diseases is an established fact—a fact commented on in this discussion by Caiger, Washbourn, Millard and Ker. Ker says further that Dukes' position would have been stronger if in the first epidemic that he described he had noted what diseases the patients had had previously, especially whether they had had rubella (as Dukes diagnosed the cases when he first saw them). None of the patients in Dukes' third epidemic had had scarlatina, though many of them had had rubella, and the opponents of Dukes remark that the disease in this epidemic is quite compatible with mild scarlatina, whereas the second epidemic is explained by the concurrence of rubella and scarlatina. As evidence that Dukes' cases may have been either rubella or mild scarlatina it has been further pointed out that the incubation period given corresponds with that of rubella; that many scarlatina patients have enlargement of the posterior cervical, axillary and even inguinal glands; that albuminuria is frequently absent in the early stages of scarlatina, and that in different epidemics large numbers of cases may be seen without the detection of a single case of albuminuria in the late stages; that many cases of scarlatina show but little fever and sometimes but little acceleration of the pulse; that in scarlatina the tongue frequently is so little furred that the characteristic peeling cannot and does not occur, and that the fact of desquamation not having spread infection in Dukes' cases means little or nothing since desquamation is not regarded so seriously as a source of infection as it formerly was. At present the existence of a "fourth disease" cannot be considered as settled; indeed, such is the confusion of ideas concerning it that Millard, stating that it is very undesirable that every atypical or ambiguous affection of a scarlatiniform nature should be classed under the common designation "fourth disease," facetiously remarks that Weaver should, perhaps, have described his cases as examples of "fifth disease." The importance of the question must be apparent to all. If the cases are examples of mild scarlatina they require unrelenting care to limit spread of infection; if examples of either morbilliform or scarlatiniform rubella (both of which are still recognized by Dukes) they should be diagnosticated and treated as such, and the term "fourth disease" should be dispensed with. For the time being the position taken by Poynton is eminently practical; admitting the existence of the disease and stating that he thought he had seen cases, he said that "if he had the same experience again he would call them by the useful name of scarlatina, and avoid the worry and anxiety of the fourth disease."

Changes in Blood Due to Autointoxication with Benzol-bodies.—Mohr,¹ who reports several cases of autointoxication in workmen employed in the manufacture of benzol derivatives, finds that the symptoms, although varying to some extent according to the special product made, have a general similar-

¹Deutsche medizinische Wochenschrift, January 30, 1902.

ity. They are first headache and dizziness, ending in severe cases in unconsciousness, then coldness of the extremities, rapid pulse, quickened shallow respiration, twitching of the muscles, disappearance of the reflexes and extreme pallor changing to an icteric tinge. This latter is due to the formation of methemoglobin in the blood, resulting in degenerative changes in the red cells and the liberation of blood pigment in the circulation. The therapy consists of oxygen inhalations. [H.H.C.]

Feeding in Gastric Ulcer.—Brunton¹ advises giving the patient rest in bed and feeding by the rectum for a few days, and then continuing feeding by the rectum, careful feeding also by the mouth. The first food given should be milk in small quantities—a tablespoonful of milk with a teaspoonful of lime water every two hours. Gradually the quantity of lime water should be diminished while the quantity of milk is increased. Then custard, and later pounded fish and pounded chicken should be given. Chocolate also is well borne. Other articles may be added gradually. [A.O.J.K.]

The Pathologic Process in Chronic Interstitial Nephritis.—Tomlinson² is of the opinion that no one becomes a victim of chronic degenerative disease of the kidneys who has not a hereditarily or congenitally defective renal structure. The importance of such a factor is proved by the frequency of granular kidney as a family disease. [D.R.]

The Alkalescence and the Alkaline Tonicity of the Blood in Diseased Conditions.—Brandenburg³ calls attention to two factors in the alkalinity of the blood, the one in which the alkali is in combination as a carbonate and the other as an albuminate. The albumins of the blood are capable of combining in a marked degree with an alkali. Consequently the percentage of alkali, which is very diffusible, depends largely upon the quantity of albumin in the blood. The proportion between the two forms of alkali varies greatly, and it may be said that the higher the alkalinity the lower the percentage of diffusible alkali and vice versa. As a result the alkaline tonicity of the blood remains practically unchanged, since although the alkalescence may vary, the absolute quantity of diffusible alkali in 100 cc. of blood remains almost constant. Furthermore, although a certain relationship exists between the freezing point of the blood and its alkaline tonicity, it is the quantity of diffusible alkali, no matter what the alkaline valence of the blood may be, which influences the freezing point. [H.H.C.]

Carcinoma and Malaria.—This is an answer to Loeffler's proposition that cancer should be treated by the inoculation of malaria. This proposition is based upon the idea that cancer is infrequent in the tropics and that this infrequency is connected with the prevalence of malaria. Prochnik⁴ shows that carcinoma is not infrequent in the tropics and that malaria does not protect against it. The article is interesting also because it gives some account of the conditions in Dutch India. Diseases of the respiratory tract, such as pneumonias and pleurisy, are rare. The exanthemas, with the exception of variola, are mild in character. Diphtheria is rare and sporadic, and is not virulent. Typhoid fever, the existence of which in Dutch India was at first doubted, is found. The author takes issue with Professor Koch's opinion that malaria is on the decrease; on the contrary, he holds that it is on the increase. He is also not a partisan of the theory that the mosquito is the only transmitter of malaria. The most common carcinoma in the tropics appears to be that of the liver. Inasmuch as malaria predisposes to cirrhosis, it is probable that in that way it may favor carcinoma. [D.R.]

A Possible Predisposing Cause of Cancer.—Mason⁵ adduces a number of statistics and observations that indicate that whatever the ultimate cause may be, cancer will be found to be due to some germ whose habitat is a sewage-contaminated subsoil, and that its entrance into the organism is through one of the apertures of the body lined with mucous membrane. [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The treatment of inoperable malignant growths is a subject which has not received sufficient attention of late. Before the introduction of anesthesia and modern antiseptic surgery, suitable palliative treatment was a matter of general interest, indeed almost the only resource of the surgeon when extensive operations for the radical removal of malignant growths were seldom performed.

Until the cause of carcinoma and sarcoma are definitely determined, we cannot expect any entirely satisfactory method of treatment other than that by operation, but physicians and surgeons should not lose interest in such cases as soon as they feel that they are incurable, for usually much can be done for the comfort of the patient by palliative measures. One of the most important papers on this subject which has appeared recently was that by Czerny, of Heidelberg, read at the German Surgical Congress for 1900. He emphasized the importance of palliative treatment, and even reported a number of cases which had been considered inoperable that were successfully treated and cured by nonoperative means. In the management of inoperable cases three things are of great importance—the prevention of bleeding, which of course rapidly reduces the strength of the patient; the relief of pain, and the treatment of foul discharge, which are among the most distressing features of malignant growths. For the prevention of hemorrhage the ligation of a main artery may be considered. This was formerly frequently practised in the treatment of malignant growths, but has of late years gone out of general use. Good results have followed this measure, specially in the treatment of carcinoma of the tongue. Dawbarn, in his recent Gross prize essay, has shown the value of ligation and excision of the carotid arteries in the treatment of malignant growths located in the tissues supplied by these arteries. Czerny believes that curetting and the use of the actual cautery will also in many cases give much relief, and in certain cases effect a cure. He advises the use of chemical caustics without curetting, and finds zinc chlorid solution of from 20% to 50% the best preparation. Gauze strips are moistened in such a solution and packed into the cavity. Caustic plasters may be used on the flat surfaces. Czerny cites several cases in which after curetment and excision, with the use of zinc chlorid solution, cases that had been considered inoperable by good authorities were definitely cured. He has also used compresses saturated with 10% to 30% formalin solution, arsenic pastes and injection of Fowler's solution, but these measures cause inflammation and pain and frequently poisoning results. There have been a few definitely good results from the use of electric treatment and Adamkiewicisz' cancrin. The use of Coley's serum is too well known in this country to need more than mention in this connection. Few fair-minded persons who have followed the literature of the use of Coley's preparation will deny that a number of cases of undoubted sarcoma have apparently been cured by its use. Unfortunately, it is of little avail in the treatment of carcinoma.

The latest addition to our means of treatment of malignant growths is the use of the x-rays. Carl Beek was among the first to adopt this method of treatment (*New York Medical Journal*, November 16, 1901) and in a recent paper he has added some valuable suggestion as to the best ways of using the x-rays in such cases (*Medical Record*, January 18, 1902). At first it is best to expose for a short time at long intervals, until the individuality of the patient is well studied. For the first time expose five minutes only. A week should elapse then before a second exposure is made. If after the third exposure, made two weeks later than the first, no in-

¹ British Medical Journal, March 1, 1902.

² Northwestern Lancet, December 15, 1901.

³ Deutsche medizinische Wochenschrift, January 30, 1902.

⁴ Wiener klinische Wochenschrift, January 30, 1902.

⁵ British Medical Journal, January 18, 1901.

flammatory signs have shown, the patient does not seem to have an unfavorable idiosyncrasy, longer exposures and shorter intervals can be attempted. The exposures may then last 10, 20, or even 45 minutes, and may be repeated every other day, in obstinate cases even daily. The risk of burning the patient under such powerful treatment is not small. In regard to precautions, he advises that the healthy skin surfaces should be protected by tinfoil or lead plates during the process of irradiation for therapeutic purposes; and during the intervals, xeroform salve should be employed prophylactically.

William J. Morton (*Medical Record*, March 8, 1902) reports a series of cases which he has treated by this method. Among the cases were a sarcoma of the elbow, several carcinomas of the breast, one of them involving part of the sternum, an epithelioma of the face, etc. In practically all of these cases he found that there was immediate and complete relief of pain. This in itself is no small contribution to the treatment of carcinoma and the use of the x-rays for relief of pain alone would seem preferable to the usual narcotic medicines. A numbing effect is not infrequently observed when the x-rays are used for diagnostic purposes. Morton believes that it is possible that the reduction of innervation may have some influence on the activity of the growth. He believes that the x-rays not only affect the nerves, however, but there is a general retardation of protoplasmic activity. This effect is noticed if small jelly fish and other lower organisms are subjected to the influence of x-rays. In addition to the relief of pain in a number of cases there was decided reduction of the size of the new growth and establishment of repair. Offensive discharge if present disappeared; enlarged lymphatic glands softened and disappeared and even glands quite distant from the growth and not submitted to the action of the x-rays sometimes disappeared. The patients were also improved in general health. A certain number of cases have apparently been definitely cured. In using this treatment the greatest caution is necessary to produce the beneficial effect without burning or injuring the tissues to such an extent as to produce gangrene. The quality of radiation from differences in the degree of vacuum in the tube no doubt cause great differences in the therapeutic effect of the x-rays. The low vacuum tube actuated strongly when near tissue can exert a destructive influence in burning and production of gangrene which a high vacuum tube under similar conditions will not. Hence Morton prefers to employ a high vacuum tube equivalent to a seven inch air gap which is not actuated too strongly.

The results which Morton and a number of others have reported are sufficiently encouraging so that the x-ray treatment should certainly be given a more extended trial in cases of inoperable malignant growths. There is already sufficient evidence that superficial epitheliomas of considerable extent may be cured in this way, although probably for the present excision is the safest method for all cases. Too much could not be expected from this method, and patients should certainly not be encouraged to allow the favorable time for operation to pass in temporizing with measures of this kind which are not likely to be successful in the majority of cases. On the other hand, there has been a decided tendency among many members of the profession to neglect inoperable cases of malignant growth. The fact that physicians and surgeons lose interest in such cases as soon as they feel that they are incurable is one reason why that patients suffering with such growths become dissatisfied and fall into the hands of quacks who, in most cases not only do them no good, but extort large sums of money from them and add to their sufferings. It is certainly not quackery to adopt any measures which will relieve suffering, and while no conscientious practitioner of medicine or surgery would feel justified in holding out much hope of cure to a patient from the

employment of the measures herein suggested, their use as palliative measures, with a definite understanding as to the purpose and possibilities of the treatment is not only justifiable, but desirable.

Lumbar Hernias.—Borchardt¹ divides these hernias into four groups according to the etiologic factors causing them: those of traumatic origin, those following abscesses, those arising spontaneously without any known cause, and the congenital lumbar hernia. Out of 43 cases of lumbar hernias he has collected 19 following injuries. The number following psoas or pelvic abscesses which break in this region is comparatively small and no doubt the pointing of the abscess in this region is in some part caused by the natural weakness of the abdominal wall. The form which is commonly spoken of as spontaneous also tends to occur in the region known as Petit's triangle. Symptoms of strangulation are of comparatively frequent occurrence. Ten cases of this kind have been reported. In five of these the strangulation was of a transient character. One case from v. Bergmann's clinic is reported. A child 15 months old was brought into the hospital with a rounded tumor in the left lumbar region occupying nearly all the space between the last rib and the crest of the ilium. The child's mother stated that she had noticed this tumor soon after birth and that it had gradually increased in size. The greatest prominence was noted in the midaxillary line, the tumor flattening out anteriorly and posteriorly. Loops of intestine, the spleen and left kidney could be felt. The hernia could be reduced to the abdominal cavity with a gurgling sound. Coughing caused bulging and the tumor became quite tense. The possibility of radical cure was considered, making an extensive muscle plastic with the sacrospinal muscles to close the defect, but it was given up because of the weakness of the child and from the fact that the sacrospinal muscles were too poorly developed to permit of division. A suitable bandage was applied which retained the rupture in place. The child died from bronchopneumonia only a few weeks after it first came under observation. At the necropsy it was found that the case was not one of true hernia but a pseudohernia caused by a high degree of atrophy of the muscles of the abdominal walls. There was no true hernial sac or ring but rather a circumscribed bulging of the entire abdominal wall. In the differential diagnosis between this form of pseudohernia and true hernia stress is laid upon the presence of a definite hernial ring and the size of the tumor.

Injury of the Thoracic Duct in the Operation for Breast Carcinoma.—Schoff² reports a case of this kind in which he removed the breast of a woman of 49 for adenocarcinoma with involvement of the axillary and supraclavicular glands. The patient noticed the growth in the outer lower quadrant of the left breast five months previously. It was not painful and grew slowly at first, later more rapidly. At the time of operation the tumor was the size of a goose egg, nodular and hard; the overlying skin was firmly adherent. In the left axilla was a group of glands, the size of a hen's egg, that were hard and very slightly movable. A freely movable gland the size of a nut was found in the supraclavicular fossa. The entire breast was removed, together with the pectoralis major and part of the pectoralis minor. The incision was carried up into the axilla, and it was dissected free of fat and glands. The glands were then removed from the supraclavicular region. They were found so adherent to the internal jugular vein that it was necessary to tie this and excise a part of it. The wounds healed well, but the wound in the neck was filled with milky fluid when the stitches were removed at the first dressing. This was evidently chyle from a wound in the thoracic duct. The escape of the chyle continued in spite of firm packing with iodoform gauze. On the fifteenth day after the operation the patient was taken with dyspnea and a feeling of fullness in the chest and abdomen. There was dullness on the left side posteriorly, extending to the lower level of the scapula. Death followed the next day. At the necropsy the pleural cavity was found filled with chyle, which, from compression of the lung, had been responsible for the death. Schoff discusses the sub-

¹ Berliner klinische Wochenschrift, December 9, 1901.

² Wiener klinische Wochenschrift, November 28, 1901.

ject of wounds of the thoracic duct at some length, giving references to all cases which have thus far appeared in the literature which have come to his notice. He has found records of 19 accidents of this kind. As the chyle does not coagulate at body temperature, closing the duct with a thrombus, the wounds of the duct are followed by loss of chyle which may last for weeks. Ligation of the thoracic duct is of questionable success, for the ligatures usually cut through the delicate wall of the vessel. Fortunately, the valve at the junction of the subclavian vein prevents leakage of blood. He mentions Keen's case, in which the wound of the duct was successfully sutured. Of the 19 cases, he states that only one resulted fatally. His case is the only one of chylothorax which has come to his notice. Very often there is a serious weakness from the continuous loss of chyle, and the accident should be considered sufficiently serious so that great pains should be taken to avoid wounds of the thoracic duct in dissections in the supraclavicular region. [M.B.T.]

The Local Treatment of Ulcers Resulting from Intubation.—Bókey¹ reports five cases in which he suspected the presence of decubital ulcers during intubation and in which he made very successful use of O'Dwyer's gelatin-alum coated bronze intubation tubes. He regards this method of treatment as an extremely simple, mild and efficacious one, and believes that by its use a secondary tracheotomy may often be avoided. [H.H.C.]

Bullet Wound of the Motor Region of the Brain; Successful Extraction.—Drew² records the case of a soldier who sustained a bullet wound over the anterior part of the right parietal region, at about two inches from the middle line. This occurred five days before his admission into the hospital at Pretoria. On admission there were the ordinary signs of cerebral compression, and in addition partial paralysis of the left side of the face, and complete paralysis of the left arm below the elbow. Operation was done to relieve pressure and in the hope of finding the bullet. The wound proved to be of the "gutter" variety. The ball was found and removed, it being imbedded in the skull after having ploughed its way for a considerable distance, depressing the inner table. Recovery was complete. [A.B.C.]

Removal of a Brain Tumor on the Left Frontal Lobe.—Elder and Miles³ report the case of a man of 47 who had been in good health up to five months previously, when he was taken with pain in the back of his head and in the small of his back, and with shooting pains in the legs. Soon after, the pain was referred to the left frontal region. The left side of his forehead and face became swollen. He had occasional attacks of vomiting without relation to food or other apparent cause. He became depressed, sleepy, dull, apathetic and forgetful. Incontinence of urine developed later on. The marked feature of his mental condition was the lack of power of association memories and the lack of judgment. There was loss of strength to grasp with the right hand. The plantar and patellar reflexes were present and not exaggerated; there was ankle-clonus; coordination was not impaired. The blood was found to be normal on examination. Over the left frontal eminence was a small round swelling apparently arising from the bone. In the center of this was a soft area which was tender on pressure. The patient denied syphilis. It was stated that he had an abscess opened over the frontal region three years previously. There was no history of injury. He was treated with potassium iodid and mercury for several days without improvement. His pulse became slow, there was no anesthesia, percussion over the frontal region causing wincing. Examination of the eye-grounds showed some dilation of the veins in the fundus. A horseshoe-shaped incision was made with its base over the left eyebrow. A small area of caries was exposed on the surface of the frontal eminence and cheesy debris between the carious bone and the scalp was removed. The dura was not adherent, was slightly thickened and bulged, giving evidence of considerable intracranial tension. On incising the dura the brain substance appeared to be normal, but did not pulsate. On introducing the finger a firm nodular mass was felt occupying

the tip of the frontal lobe. It was felt to have a thin covering of the brain cortex over it. It was easily enucleated, and immediately after removal the brain pulsed freely again. A small strand of iodoform gauze was carried down into the wound and the incision was then closed. The growth was uniformly firm, of a dull grey color, not vascular, and it measured 2 inches by 1½ by 1½ inches. On microscopic examination the diagnosis of syphiloma was made. The following day the patient was much brighter, but he was in an emotional condition suggesting that of a man who had taken a little too much alcohol. The paresis of his face gradually passed off and his headaches disappeared entirely. His further recovery was uneventful, and he has continued well since the operation. [M.B.T.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Transplantation of Ovaries.—The general attitude of all true surgery is the conservation of function and the preservation of healthy tissue. The gynecologist has frequently been unjustly condemned as the most destructive and inconsiderate of specialists. He is often called upon to deal with conditions in the pelvis in which the sacrifice of organs is essential to the relief of suffering, and is confronted by the difficult problem of either failing to relieve his patient or performing a sacrificial operation. Veritably he is between Scylla and Charybdis and must grasp the horns of the dilemma; exercise good, conservative, surgical judgment; and pay slight attention to the indolent, carping critic who has never been required to solve such an intricate problem. No doubt the critic has served a useful purpose by stimulating research and inciting the gynecic surgeon to practise true conservative surgery. The conservative work done by Polk, Dudley and many others, who insisted upon the retention of ovaries and tubes in cases in which they had previously been removed, has borne excellent fruit, and the limitations of conservatism have been pretty clearly defined. In a certain proportion of cases nothing but the complete extirpation of the uterine appendages will be safe, and in this class of cases the possibility of ovarian transplantation demands consideration. A careful review of the literature of ovarian transplantation has recently been presented by Nicholson¹, and the author indicates how, when conservative ovarian surgery is impossible, ovarian influence may still be maintained by a transplantation of those organs. The fact that pregnancy may occur, as shown by the experiments of McCone, presents some interesting problems. McCone has successfully transplanted the ovary from one species to another by grafting from the bitch to the rabbit, and from his experience concludes that both homoplastic and heteroplastic transplantation are possible, and that in the latter the organs transplanted may be obtained either from an animal of the same or of a different species. If the animals are of the same species, pregnancy may be expected in a proportion of cases, while if the species are diverse the post castration atrophies changes will be prevented. Nicholson believes that there is, without doubt, an influence inherent in the ovaries beyond the mere process of ovulation, which is very important for the development of the genitalia and also for their conservation. Whether this is strictly an internal secretion or not remains to be proved; but certainly there seem to be many facts in favor of this theory. Although the internal secretion of the ovary has been denied by some authorities who have been content to ascribe to the ovary only the function of ovulation; nevertheless the striking results which have been obtained by Knauer, Halban, Morris and others may lead us to modify our views upon the influence which these organs exert.

Iodoform and Carbolic Acid Intoxication.—Some patients have a peculiar susceptibility to iodoform and carbolic acid

¹ Deutsche medizinische Wochenschrift, November 21, 1901.

² British Medical Journal, January 18, 1902.

³ Lancet, February 8, 1902.

¹ University Medical Bulletin, January, 1902.

poisoning. The symptoms of the former are accelerated pulse, from 130 to 150 per minute, elevated temperature, nausea and vomiting, dizziness and confusion of ideas. The sole test appears to be iodine in the urine. J. S. Stone¹ reports 2 cases resulting from the use of iodoform gauze after operations, 1 of which resulted fatally. In this instance after the operation the pelvis, which was almost entirely denuded of peritoneum, was packed with iodoform gauze sufficient to hold the viscera above the denuded area. The patient gradually grew worse, became delirious, and in fact maniacal, and died in 2 weeks. As sepsis, typhoid fever and all other diseases were excluded by the symptoms her death was ascribed to iodoform poisoning. The 2 cases of carbolic acid poisoning resulted from the use of intrauterine douches of carbolic acid solution, its rapid absorption producing dizziness, chills, apparent swaying and rocking of the bed and rapid irregular pulse. These symptoms subsided after the discontinuance of the douches. [W.K.]

Oophorectomy for Cancer of the Breast.—Percy Paton² reports two cases of malignant disease of the breast in which oophorectomy was performed. In the first case the left breast had been removed, and then upon recurrence of the growth at the scar and the involvement of the right breast, both ovaries were removed. The growth on the left side was checked for a brief period, but the right continued to increase and the patient died in a few months. In the second case the oophorectomy was performed soon after the removal of the breast for cancer. The woman recovered well and left the hospital improved in general health. The growth, however, speedily recurred in the scar and she failed rapidly, dying in less than six months after the removal of the ovaries. It may be noted here that the nature of the growth in both cases was characteristic scirrhous. [W.K.]

Carcinoma Uteri Complicating Pregnancy, Labor and the Puerperium.—C. G. Cumston¹ condemns the old idea that a pregnant woman afflicted with carcinoma of the cervix is practically lost to all the resources of medical science, and that everything must be sacrificed to save the offspring. A review of statistics of such cases treated without surgical intervention shows a maternal mortality of from 40 to 50% and an infantile deathrate according to some authors of 63%. And of the children born alive a large proportion died in a brief period. He is convinced that pregnancy and labor decidedly increase the progress of the carcinoma; that in many instances the extension of the neoplasm becomes very rapid, seriously affecting the general condition of the patient, sometimes resulting in death before labor begins. In view of these facts, there has been in recent years a more general resort to surgical treatment of carcinoma during pregnancy with comparatively favorable results, and Cumston closes a comprehensive and careful study of such cases with these conclusions: If the carcinoma can be radically removed the life of the mother alone is to be considered. Up to the beginning of the sixth month of pregnancy vaginal hysterectomy is the operation of choice; but after this period is passed abdominal hysterectomy, or Dührssen's vaginal cesarean section followed by hysterectomy, is indicated. When the neoplasm is inoperable the life of the child must be considered; but if the progress of the growth is such that the mother becomes rapidly cachectic, thus compromising the fetal vitality, pregnancy should be interrupted. Palliative treatment only should be instituted, because partial operations on the neoplasm usually produce miscarriage and the mother is not materially benefited by them. Cesarean section at term may be done; but when the uterus is left there is danger of septicemia, and consequently Porro's operation is the one of choice, if the peritoneal tissues are not infiltrated to such an extent as to render this procedure dangerous. [W.K.]

Puerperal Insanity.—Robert Jones³ reports the results of a thorough study of the cases of puerperal insanity admitted to the London County Asylum. Out of 3,500 female patients admitted, in 259, or 7.4%, the insanity was ascribed to pregnancy, confinement, the puerperal state, or to lactation. Jones divides this disease into three classes: Insanity of pregnancy, of the puerperium, and of lactation, of which the second often

presents marked delirium with religious or erotic features. The first two classes occur most frequently between the ages of 25 and 29, while the insanity of lactation occurs usually between 30 and 34, a fact which supports the view that this form is closely allied to exhaustion. Of the 259 cases, 56, or 21.6%, were from pregnancy; 120, or 46.33%, occurred during the puerperium; and 83, or 32.43%, were associated with lactation. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Artificial Carbonated and "Nauheim" Baths.—

These are used chiefly to relieve the embarrassed circulation by stimulating the activity of the vast peripheral vascular system, both cutaneous and muscular, in cases of valvular and muscular disease of the heart. For the carbonated bath continuous evolution of carbon dioxide gas is necessary; for the Nauheim bath this must take place in a warm brine solution. Many attempts have been made to utilize liquid carbon dioxide. It is difficult to secure solution of carbon dioxide in hot water, or to heat the cold carbon dioxide solution (*e. g.*, soda water) without expelling the gas; hence it has been proposed to overheat the water or brine solution, and then to admit highly charged, cold, carbon dioxide water in such quantity as will yield a mixture of the strength and temperature desired. However, no simple and easily-managed apparatus that can be availed of at the patient's home has yet been placed upon the market, and for domestic use, therefore, the extemporaneous generation of gas is necessary. In the older and cruder method still largely used in Europe, sodium bicarbonate is acted upon by sulfuric or hydrochloric acid. American physicians prefer to substitute acid sodium sulfate (sodium bisulfate) which is equally efficacious and as a solid is more easily handled. The ingredients for carbonated baths have been placed upon the market in convenient packages. Eight parts of sodium bicarbonate will neutralize twelve parts of sodium bisulfate, but it is desirable to keep the alkali in excess—among other reasons, for the protection of the tub. The commercial packages each contain about 32 ounces of sodium bicarbonate and an equal quantity of bisulfate, made into cakes of 4 ounces each. These quantities, in a bath of 40 gallons, will yield about 250 cc. of carbon dioxide to the liter. The quantity of gas evolved may be increased by adding bisulfate. Carbonic acid gas cannot, however, be held in a solution of constant composition when exposed in a tub, and this applies to the natural carbonated waters as well as to the artificial bath. Although the Nauheim springs contain from 550 cc. to 1,300 cc. of gas to the liter, yet so much is allowed to escape before the bath is given that it is quite probable that the artificial bath prepared as stated is fully equal in strength to the natural bath, as it likewise seems to be in therapeutic efficiency.

Preparation and Administration of the Bath.—

The brine solution at Nauheim contains from 2% to 3½% of salts, of which about 82% is sodium chlorid, and about 8% calcium chlorid. To prepare the brine solution for the artificial baths, these or other salts may be used in any strength desired. Many American physicians content themselves with sodium chlorid; others use sea-salt, believing that the iodine and bromine have therapeutic value; still others prefer the Nauheim crystallized salts. The tub should contain from 40 to 50 gallons of water of the temperature desired, usually from 97° to 90° F. (say 36° to 32° C.); this, as well as the saline constitution and percentage, the carbonic acid charge, and the duration of the bath, being adapted to the needs of the individual case. The brine solution is first made, and then the sodium bicarbonate in convenient packages is deposited at four places in the tub, roughly corre-

¹ American Journal of Obstetrics, January, 1902.

² British Medical Journal, March 1, 1902.

³ British Med. Jour., March 8, 1902.

sponding to the shoulders and ankles of the patient when he shall be immersed. The acid cakes are deposited in the neighborhood of the alkali and, unless the tub is of wood or porcelain, upon squares of tinfoil. Evolution of gas begins at once, and is allowed to progress for two or three minutes, so that the water shall be well charged before the patient enters. When it is desired to limit the action of the gas to a portion of the body, the alkali is placed near the part to be acted upon, and acid cakes are added successively. In this way a local application may be quite prolonged. The general duration of the bath in cases of cardiac and renal affections is from five to eight minutes; but this is to be governed in each instance by the effect, which in serious cases should be watched by the physician, or in others by a highly skilled attendant. To some patients it is well to give the bath at night, and to follow it with brief, gentle massage, as the combination tends to promote refreshing sleep. A course of graduated baths, usually 12 in number, may extend over a period of from four to six weeks; after which the treatment may be intermitted for 12 weeks or more. Such a course may begin with weak saline baths; the third or fourth bath may be mildly carbonated; while the twelfth will reach a high degree of saline percentage and of gaseous charge. The quantities set forth in the table that follows do not constitute a rigid and invariable routine, but are to be taken as illustrative.

For 40 gallons of water :

	BRINE		GAS	
	Sodium chlorid	Calcium chlorid	Sodium bicarbonate	Sodium bisulfate
Bath 1.....	60 ounces	0 ounces	—	—
" 2.....	72 "	8 "	—	—
" 3.....	84 "	9 "	—	—
" 4.....	96 "	10 "	8 ounces	8 ounces
" 5.....	108 "	11 "	16 "	16 "
" 6.....	120 "	12 "	24 "	24 "
" 7.....	132 "	12 "	32 "	32 "
" 8.....	144 "	12 "	40 "	40 "
" 9.....	156 "	12 "	48 "	48 "
" 10.....	168 "	12 "	48 "	56 "
" 11.....	180 "	12 "	48 "	60 "
" 12.....	192 "	12 "	48 "	60 "

On the days intervening between baths, the gentle resistance exercises, known by the name of the brothers Schott, may usefully be employed.

Treatment of Epilepsy of Alcoholic Origin by Strontium Bromid.—Touraille (*Bulletin Général de Thérapeutique*, March 23, 1901) states that chronic alcoholism is able to cause all the symptoms of epilepsy in descendants of people of this class. This epilepsy in children of alcoholic parents assumes all the characters of true epilepsy. It may be characterized by simple convulsions—vertigo, petit mal or grand mal. It will yield to the bromid treatment, to which must be added an absolute milk diet or a milk-vegetable diet. Chemically pure strontium bromid should be employed to the exclusion of other bromids, because it is well tolerated by the organism, and does not produce symptoms of bromism. The dose should be rapidly increased until the diminution and suspension of the epileptic attacks is accomplished; afterward progressively diminish this maximum effective dose to an average of 30 to 60 grains daily, which must be maintained for a greater or less length of time in order to assure the result and prevent a return of the attacks, which is always imminent in patients predisposed. [L.F.A.]

Electricity in Acne Rosacea.—A. H. Ohmann-Dumesnil (*Electrotherapy, Cohen's System*) believes that in this affection most positive good results follow the proper use of electricity. In the first, or hyperemic, stage the treatment for acne may be sufficient, accompanied, of course, by the necessary general and local measures. Of much greater efficacy is labile anodal galvanization, the electrode being moved in the direction of the flow of venous blood—that is, toward the heart. In the second, or inflammatory, stage, the method of galvanization employed in the first stage should be supplemented by electrolytic destruction of the visible arterioles, which constitute constant feeders of blood to the congested skin. To accomplish the

rapid coagulation of the blood in these vessels each should be punctured with a No. 12 cambric needle attached to the negative pole. With a current intensity of from 4 to 6 milliampères, coagulation takes place rapidly in a small or medium-sized arteriole. When the vessel is larger, an increased ampère is necessary—so high as 8 milliampères in some cases. The good effects of such treatment are quickly apparent. In the third, or hypertrophic stage of acne rosacea, if not too far advanced, good results are to be obtained by plunging a No. 12 cambric needle into the tissues, connecting it with the negative pole, and employing a current of from 10 to 12 milliampères. Care should always be taken that the current is not of such an intensity as to produce scarring. The entire purpose of the operation is to produce absorption and retraction of the fibrous tissues, as well as obliteration of the vessels.

Care of the Nasopharynx in Scarlatina.—According to Seibert (*Archives of Pediatrics*, August, 1901; *Monthly Encyclopedia of Practical Medicine*, Vol. iv, No. 12, N. S., p. 474) ichthyol finds one of its many uses in the cleansing and disinfecting of the nasopharynx in scarlatina. A half-pint of warm ichthyol solution, 1% to 5%, is allowed to flow through the nares from a fountain syringe every six hours. In cases in which the infiltration of the nasopharynx has so far advanced as to obstruct the passage between nose and throat, and irrigation is insufficient, local applications of a 50% alcoholic solution of resorcin are added to the treatment and are said to be perfectly harmless. [R.M.G.]

FORMULAS ORIGINAL AND SELECTED.

For febrile influenza (except of gastric or neurotic variety) at outset:

Sodium benzoate . . . . .	.6 drams
Sodium salicylate . . . . .	.3 drams
Tincture of nux vomica . . . . .	.2 fluidrams
Essence of pepsin . . . . .	.2 fluidounces
Peppermint water, enough to make . .	.4 fluidounces

Mix.

Dose: For an adult, 1 dessertspoonful in a wine-glass of water every second hour till tinnitus occurs, or until 6 doses have been taken; then every fourth or sixth hour as indicated.

PATHOLOGY.

R. M. PEARCE

The Pathology of Diabetes.—Records of study of the disease diabetes are found as far back as 1788. In that year Cowley published a carefully studied case of severe diabetes with pancreatic calculus and atrophy of the gland. Other reports were made from time to time, but Bouchardat (1851) would seem to have been the first writer to have connected definitely disease of the pancreas with diabetes. Lancereaux (1877) drew especial attention to this relation. His work was followed by that of Lapierre (1879) and Baume (1882); but since that time the literature on this subject has grown rapidly. Experimental contributions to the functions of the pancreas in relation to diabetes, had yielded remarkable results until von Mering and Minkowski's publication of the effects of complete extirpation of the gland in the dog (1889). Claude Bernard showed that tying off the duct of Wirsung produced no effect. Extirpation of the pancreas in the dog causes, without exception, diabetes of severe grade. Incomplete removal of the pancreas, however, is not necessarily followed by diabetes—one fifth of the gland left either *in situ* or transplanted beneath the skin may avert it. Should the amount left behind sink to one-eighth or one-twelfth, or should a larger remnant suffer later in its nutrition and undergo atrophic change, a mild form of diabetes arises which, however, tends to become more severe and to terminate fatally. Complete extirpation of the gland in cats, rabbits, swine, toads, and frogs, is followed likewise by fatal results. There are no records of complete removal of the pancreas in human beings. Numerous observations, however, have shown that the pancreas of human

beings reveals marked pathologic changes in cases of diabetes. The most marked of these being atrophy, fibrous induration, and degeneration of Langerhans' islands.

Of the causes of the pathologic changes in the pancreas which produce diabetes, the chief one considered until recently has been concretions in the ducts. Of the 72 cases in the bibliography, 14 were due to pancreatic calculi (Hansemann). Naunyn's case was of this nature. The pancreatic changes consist of secondary atrophy. Next in frequency come the primary atrophies, fibrous indurations, instances of interstitial lipomatosis, and hyaline degenerations of the islands of Langerhans. In diabetic atrophy there is interstitial pancreatitis; on account of adhesions the gland is with difficulty separated from its surroundings and presents a brownish discoloration (although it is not pigmented), is of a smoother texture, and microscopically shows hypertrophy of the stroma and atrophy of the secreting cells. Such examples of interstitial pancreatitis need not, however, be associated with diabetes. Hansemann has seen diabetes in an early case of interstitial pancreatitis, and is of the belief that a particular form of pancreatitis, which he calls granular atrophy, is always associated with diabetes. Hanot has described cases of bronzed diabetes (*diabète bronzé*) in which besides pancreatic disease, hypertrophic cirrhosis of the liver has been present. Twenty-four cases of this disease, all in males, have been collected by Anschütz.

Although the evidence is not complete and unmistakable, yet it must be regarded as proving that the pancreas in man, as in animals, is intimately concerned in regulating the carbohydrate metabolism of the organism, and that a failure of the functioning of the organ in man is followed by symptoms of diabetes. That this failure is independent of the digestive function is proved by the results of ligature and occlusion of the ducts, and that it depends upon an internal secretion supplied by the pancreas to the blood is highly probable. Whether this hypothetic secretion is the product of the cells of the islands of Langerhans is unproved, yet the observations of Opie during the past year would indicate that these structures bear an important relation to diabetes.

Opie divides the chronic inflammations of the gland into two forms. The interlobular pancreatitis, characterized by proliferation of fibrous tissue between the lobules which are invaded from the periphery, and the interacinar pancreatitis, where the new-formed fibrous tissue is more diffusely distributed within the lobules. With the first type the islands of Langerhans are implicated only when the sclerotic process has reached a very advanced grade. To this variety belongs the chronic inflammation which follows occlusion of the pancreatic duct. With the interacinar type of inflammation, on the other hand, the islands are affected as are the other elements of the gland, and coarse stands of fibrous stroma following the capillary vessels separate the columns of atrophic cells.

Of 11 cases of chronic pancreatitis of the interlobular type, in only one was diabetes present. In two of three instances of interacinar pancreatitis, diabetes mellitus was present. Opie believes that though the number of cases is small they indicate that where diabetes accompanies a lesion of the pancreas the islands of Langerhans are implicated in the disease. To support this view, Opie has more recently reported two cases in which practically the only change to be found in the pancreas was the presence of a homogeneous material which stains pink with eosin and shows most of the characters of a hyalin material. Opie's work has been supported by others, and very recently Wright and Joslin have reported two cases showing hyaline metamorphosis of the islands of Langerhans. These cases were discovered in studying the pancreases taken from nine cases of diabetes.

The pancreas, however, is not the only organ, the disturbance of whose functions is capable of producing

diabetes. It is probable that other organs also preside over the carbohydrate metabolism, although perhaps in a less degree, and that the pancreas may vicariously for them, although they themselves have not the power to be substituted for the pancreas (Naunyn). Reale and Minkowski have shown that the removal of all of the salivary glands in the dog is followed by a transient glycosuria reaching 3% of sugar. That diabetes can also result from disease of the liver, the pancreas remaining normal, seems probable. The recent work on adrenals by Blum and also by Croftan is also interesting in this connection. Croftan shows that in a number of cases of suprarenal disease, the symptoms of diabetes develop. This, he believes, shows the glands exercise some influence on the percentage of sugar in the blood, and with this point in view he has made a series of experiments showing the fermentative action of adrenal extract on glycogen. The results indicate that the adrenals can supply a diastatic ferment which converts glycogen into dextrose. His work on animals is also interesting in that after injection of adrenal extract in varying quantities a distinct, but transient, glycosuria is produced.

Herter and Richards have also done some recent work on suprarenal glycosuria. Their experiments were carried out on eleven dogs. Their method was to inject intraperitoneally a solution of adrenalin (1:1,000) in doses varying from 6 to 10 cc. In each case the injection was followed by the appearance of glucose in the urine, which in one case reached as high as 9.17%. In another case it was as low as 0.25%. In most cases glucose appeared in the urine within four hours after the injection, but in one case in less than five minutes. With two exceptions the dogs used had been on a diet of lean meat previous to the injections.

A feature of importance brought out in one of the experiments is the fact that an abundant excretion of glucose followed the injection of an adrenal solution which had been boiled for five minutes. It would be expected that any diastatic ferment contained in the extract would be destroyed by this treatment. The method described by Takamine for the preparation of adrenalin renders it most unlikely that any diastatic ferment would resist the injurious action of the heat employed in the course of the process for getting rid of albuminoid substances. Moreover, adrenalin can be added to a solution of glycogen and kept in the incubator for 24 hours without any conversion of glycogen into sugar. Herter and Richards believe these considerations show no reason for attributing the glycosuria from adrenalin to the presence of a diastatic ferment.

The existence of a renal form of diabetes is still unproved. That the kidneys are not merely passively engaged in the elimination of the urinary constituents is shown by experimental phloridzin diabetes, in which the capacity of the renal epithelium to prevent the excretion of the normal sugar of the blood is diminished and the anomaly of glycosuria without hyperglycemia is observed. The appearance of glycosuria in chronic Bright's disease after renal hemorrhages, etc., has been regarded as speaking for a diabetes of renal origin. The evidence is, however, inconclusive.

The organs which would appear to be established as presiding directly over the carbohydrate metabolism are the pancreas and liver. But what the mechanism of the control exercised by them is has not been solved. That nervous influence is essential is proven; but that the nervous control is specific and other than ordinary trophic influence is highly improbable. In other words, the carbohydrate control resides in somatic cells contained in the pancreas and liver, chiefly in the former organ, and perhaps in still other organs; the integrity of these cells insures physiologic metabolism; pathologic conditions disturb the control, whence arise, according to the circumstance of duration, severity, etc., transient glycosuria or persistent diabetes.

Tuberculosis and Syphilis in their Relation to the Elastica of the Testicle.—From a study of 40 cases of syphilis and tuberculosis of the testicle, of which 17 were tuberculosis, A. Federmann¹ believes that tuberculosis is an intratubular process and leads to rapid destruction of the elastica of the tubules. The syphilitic process is interstitial and produces only a displacement of the seminiferous canal. Therefore, in this process, as in interstitial tuberculous orchitis, the elastic wall is preserved intact. Besides physical causes there are certain chemie toxins which, in the rapid destruction of tuberculosis and the inertness of syphilis, play a great part. He believes caseation does not injure elastic tissue, but that this is destroyed by tuberculous granulation tissue. The sooner the latter appears in the lesion the more quickly are the elastic fibers destroyed, whereas the quicker necrosis enters, the more intact remains the elastica. We find, therefore, in necrotic areas, the elastic fibers always in the same condition they were before the onset of necrosis. Therefore, the appearance of elastic fibers in such a lesion furnishes us a clue as to the time necrosis began. [W.F.H.]

The Diagnosis of Glanders by the Strauss Method.—Langdon Frothingham² points out that Strauss was the first to demonstrate the fact that if virulent glanders bacilli were introduced into the abdominal cavity of the male guineapig, peculiar suppurative lesions of the serotal peritoneum generally resulted in a few days; hence the method of diagnosis with suspected discharges from animals or man is aptly termed the Strauss method. The subject of Frothingham's article is a summary of the results which he has obtained after constant use of this method for a number of years, together with suggestions in technic which have proved useful to him. He gives a good clear description of the variety of lesions which may occur in glanders, with a summary of results obtained by many inoculations. Under the division of "positive tests" 123 horses and 2 men were examined. In most of these cases the material used for inoculation was taken from the nose. Positive results were obtained at the first test in 105 cases; at the second test, in 16 cases; at the third test, in 2 cases; and at the fourth test, in 2 cases. In only 1 case did serotal lesions develop as late as the fifth day, the greater number of pigs showing lesions on the second and third day after inoculation. On the other hand, 189 horses were tested and gave negative results. In these the swab was taken mostly from the nose. One hundred and thirty-nine horses were tested once; 44 horses were tested twice; 7 horses were tested 3 times; 1 horse was tested six times. The last division of the review is classified as "negative tests, though the horse had glanders." In 35 cases the horse was afterward killed as glandered. Of these cases, 29 were tested once; 3 cases tested twice; 2 cases tested 3 times; 1 case tested 6 times. Frothingham believes this number of failures is not remarkable when we consider the chances of diminished virulence of the bacillus, insufficient discharge, and the fact that in the early lesions few, if any, bacilli may be in the discharge. Again, in healing glanders lesions the bacilli in them are probably less numerous and perhaps less virulent. Another point of considerable importance is the fact that the guineapig is not highly susceptible to glanders, and for this reason certain field mice would be more suitable. [W.F.H.]

On the Origin of Angioma Cavernosum.—In a careful piece of work, consisting in the report of a case and the histologic study of the tumor, Pilger³ endeavors to explain the mode of origin of this class of tumors. He reviews at some length the theories advanced by other writers on the subject, and concludes by giving his own findings, which in brief are as follows: That due to trauma there is a rupture of one or more bloodvessels of a part. The blood, as a result, lies free in mass or as single corpuscles between widely separated connective tissue fibers. The connective tissue cells, because of increased pressure on them become finally converted into endothelial cells which are found frequently lining the cavernous spaces. [W.F.H.]

Plague.—According to Düreck⁴ who, in a lecture before the

Medical Society of Munich, October 16, 1901, gives the results of his observations, including 16 autopsies in Bombay last February, when the epidemic was most virulent, the mortality being 92%, there is no question but that contagion may enter through the skin, even when there is no abrasion. The tonsils may also at times be the points of entrance. The primary lesion (plague carbuncle) is rarely found. The principal seat of the disease is the lymphatic system. The appearance of the buboes varies. Suppuration is regarded as a favorable symptom, large cavities being formed, and these heal slowly by granulation. The number of plague bacilli in the buboes varies greatly; yet there is no other infectious disease in which the pathogenic microorganisms are found in such profusion. Thus the swelling of the spleen is often caused solely by congregation of plague bacilli. After the lymphatic system the lungs are most frequently affected, but primary plague pneumonia is rare. What we observe is usually a diffuse bronchitis, while lobar pneumonic hepatization is extremely rare. The alveolae are filled with plague bacilli; hence the great danger to those in the room, when by coughing a spray of bacilli are scattered. The spleen is always enlarged, hard and cracked. The follicles are easily discernable, often protruding and of grayish-red color, and embolic pus plugs are often found. In the liver are found multiple abscesses from the size of hemp-seed to hazelnuts. The kidneys show frequently a hemorrhage nephritis, and there are subserous and submucous hemorrhages of the intestine. [J.C.S.]

A Case of Cirrhosis of the Liver with Multiple Adenomas.—H. Fraser¹ reviews the literature of the more important cases bearing on this subject and gives the results of his study of a case. The gross and minute pathologic findings are carefully given. His conclusions show that there is a primary hyperplasia of connective tissue in the liver which at first is loose in character, but later contracts and thereby causes in some places a destruction of the parenchyma and in others allows a compensatory hypertrophy. The latter occurs especially where the connective tissue is not so dense or in such places where there is little resistance to growth, viz., the surface of the liver. These hypertrophic masses are undoubtedly adenomas and originate in part from the epithelium of the bile ducts and in part from the liver cells. [W.F.H.]

Degeneration of the Islands of Langerhans of the Pancreas in Diabetes Mellitus.—J. W. Wright and Elliott P. Joslin² have studied carefully the pancreases in nine cases of diabetes mellitus, and hyalin changes in the islands of Langerhans, like those described by Opie, were found in two of these nine cases. In one of these two cases, only a few normal intracinar islands were found. All of the others showing extensive change. The condition in these islands of Langerhans consists essentially in the presence of a hyalin eosin-staining substance in the form of irregularly shaped masses, varying in size, the larger being several times as large as an epithelial cell of the island. This substance seems to take the place of epithelial cells, and it varies considerably in amount. Aside from the changes in the islands of Langerhans, the sections from the pancreas in this case show no lesions except a small area of polymorphonuclear leukocytic infiltration. The pancreas in the other case is extensively invaded by fat tissue, which separates the gland substance into small nodules. The interstitial tissue is somewhat increased in amount. Most of the islands of Langerhans show some of the hyalin change above described in their central portion. Among the remaining seven cases of diabetes, definite lesions were observed in the pancreas in only one. In this case there is an exudate of fibrin and leukocytes chiefly in the connective tissue septums of the gland. The islands of Langerhans are not affected. Wright and Joslin have two good photographic illustrations clearly demonstrating the lesions, and have given a short clinical history of the nine cases. [W.F.H.]

Contributions to the Pathology of Tuberculosis of the Larynx.—Arthur Meyer,³ with the view of throwing more light upon the mode of entrance of tubercle bacilli in tuberculosis of larynx associated with pulmonary tuberculosis, pub-

¹ Virchow's Archiv, Bd. 105, Hf. 3, p. 409.

² The Journal of Medical Research, Vol. 1, No. 2, p. 291.

³ Virchow's Archiv, Bd. 105, Hf. 3, p. 427.

⁴ Berliner medicinische Wochenschrift, January 6, 1902.

¹ Virchow's Archiv, Bd. 105, Hf. 3, p. 427.

² Journal of Medical Research, Vol. 1, No. 2, p. 360.

³ Virchow's Archiv, Bd. 105, Hf. 3, p. 408.

lishes the results of his observations. He first examined a number of larynges removed from cases of pulmonary tuberculosis which did not show, macroscopically, evidence of tuberculous infection of the larynx. Histologically, a certain percentage showed no tuberculous lesion, but others revealed quite marked ones. In the earliest stages of the latter group were found a number of discrete tubercles lying in the depth under intact epithelium. Later stages apparently showed confluent tubercles with central caseation, and finally in the latest stage, destruction of the overlying epithelium and ulcer formation existed.

From the above findings it would seem that tuberculosis of the larynx in such cases may begin under intact epithelium, and suggests the possibility that tubercle bacilli can invade an epithelial coat or penetrate through small spaces between the epithelial cells. Meyer's further work consisted in the injection of tuberculous sputum into the trachea of rabbits and dogs after having caused slight abrasion of the epithelium covering its surface. His experiments were limited to the two animals, but in both, the production of marked laryngeal and tracheal tuberculous lesions were successful. [W.F.H.]

Teratoma of the Pleural Cavity.—The tumor mass was found by G. v. Török¹ to lie under the tenth rib and was removed by entering the chest from the back. The patient was a girl 4½ years old. At the operation a sac was discovered which could be removed in part only since it was found to have become firmly attached to the aorta and vena cava. In the portion of sac removed, hair, teeth, small and large intestine were found. The child died soon after the operation from pneumonia. At autopsy, beside a bronchopneumonia of both lungs and the portion of sac adhering firmly to the spinal column, which was markedly deflected to the right, nothing abnormal was found. Further study of the teratoma showed also bone and cartilage. In conclusion, Török gives a review of the different theories advanced as to the origin of teratomas. [W.F.H.]

The Pathologic-histologic Action of the Tubercle Bacillus.—In this long serial article Baumgarten² discusses in detail the theories of various authors regarding the causal factors involved in the development of the tubercle, its morphologic changes, histology, degenerative processes and methods of healing. [H.H.C.]

Two Cases of Lymphosarcoma of the Bronchial Lymph Glands with Secondary Lymphosarcomatosis of the Esophagus.—F. Schlagenhauser³ found two cases in a woman of 71 and a man of 60. The former had, for a long time, had symptoms of esophageal stenosis, which had disappeared of late. Death was caused by hemorrhage from the aorta. The autopsy showed that a lymphosarcoma, arising in markedly anthracosed lymph nodes, had encroached upon the pericardium and the esophagus; the latter was not stenosed, but had been widened by extensive ulceration. The adventitia of the aorta showed extensive infiltration with tumor masses. The rupture of the aorta was evidently caused by necrosis due to invasion of bacteria from the esophageal ulcer. The second case showed similar findings with the addition of metastases in the ileocecal valve, in the middle of the ileum, sigmoid flexure, bladder, and rectum. The lesion of the esophagus, which was also ulcerated but not stenosed, had given no clinical signs and was only discovered at autopsy. The affection of the esophagus was very extensive in both cases, and consisted in a diffuse infiltration of all the coats with tumor cells. The author favors decidedly the influence of carbon granules upon the tissue of lymph glands as of etiologic moment. [W.F.H.]

Four Cases of Acute Hemorrhagic Meningomyelitis in Cocker Spaniels with Some Remarks on the Etiology of Myelitis.—Philip K. Brown and W. Ophüls⁴ report the clinical and pathologic findings in four cases of acute hemorrhagic meningomyelitis in spaniels. The onset of the trouble was sudden in all but one case, and the actual paralysis was acute there, also. All the cases had fever. No etiologic factors were common

to any two cases. In all the trouble, began in the lumbar cord and extended upward, and in two the cervical cord was extensively involved, particularly in regard to the hemorrhage. In all cases the softening was far more extensive than indicated by the hemorrhage. At necropsy cultures and smears were made in all but one case, and no bacteria were found, nor were they found in sections. The lesions found anatomically were the same in all four dogs, differing only in duration and extent; and consisted largely of hemorrhages into the cinerea, alba, pia and the loose connective tissue outside the dura. In addition to the hemorrhage, there were extensive necroses and degenerations in the spinal cord which did not show any relation in size and distribution to the hemorrhagic process. In a few spots it was possible to see some cellular infiltration. No bacteria were found in any case, and no evidence of interference with the blood supply. Trauma could be excluded. The authors, therefore, suggest the possibility that the lesions are the result of a general toxemia. In addition to the careful report of these cases, Brown and Ophüls have given a comprehensive review of the literature. [W.F.H.]

The Pathogenesis of Pancreas Cysts.—Lazarus,¹ in consequence of considerable experimental and other study, states that, according to their pathogenesis, pancreas cysts may be divided into two principal groups. To the first group belong those cystic formations derived from gland ducts and acini. These may result in one of three ways: (1) Through proliferation—the cystoma glandulare proliferum, the most common form according to the statistics of operative cases; (2) through retention—retention cysts, which result from the principal duct of the pancreas or its ramifications, such as the acini, in consequence of mechanic obstruction to discharge of the pancreatic juice. The most frequent cause is chronic interstitial pancreatitis. This genetic relationship indicates the etiologic identity of the two processes; (3) through degeneration—lobular softening cysts—which may follow acute pancreatitis that occurs in consequence of acute infective diseases. To the second group belong pseudocysts (cystoids) which have no epithelial lining. These also may result in one of three ways: (1) Through softening in consequence of regressive metamorphoses in tumors or of foci of fat necrosis; (2) through aurodigestion—those traumatic cysts in which in consequence of indurative processes in the neighborhood of the hematoma, resorption was interfered with and retention of secretion occurred; (3) through the extravasation of blood and pancreatic juice in the bursa omentalis in consequence of rupture of the pancreas with reactive inflammatory encapsulation—hematoma pancreatis et bursae omentalis. [A.O.J.K.]

A Case of Branching Osteomas of the Lungs.—In a man of 78, who had died of carcinoma of the pancreas, M. Jerusalem² found at autopsy in the lower lobe of both lungs a many branching osteomas. The tumors had no connection with the bronchi and great vessels, but lay free in the interalveolar tissue. They were found to consist, in great part, of tube-like spicules. In two places cartilage was found, and pigment frequently lay in the cartilage. The alveoli round about contained air and showed no sign of inflammation. Considering the apparent frequency with which giant cells of the bone-marrow reach the lung capillaries and set up inflammatory changes there, Jerusalem has thought that these tumors may have been caused by bone-marrow cells lodging in the lung, and instead of degenerating had developed bone-producing activities. [W.F.H.]

A Preliminary Report on the Blood in Two Cases of Filariasis.—W. J. Calvert³ gives a brief report of his findings in the blood of two cases of filariasis. These cases were discovered in the examination of blood from 426 Filipino prisoners of war, the object of such examination being to determine the prevalence of filariasis in the Philippine Islands. The two cases differ in duration of the disease, one being possibly no longer than three months; the other probably of one year's duration. In the former it was found that the leukocytosis and the percentage of eosinophiles were higher than in the latter. Calvert believes this fact, in addition to the negative findings in the

¹ Zeitschr. f. Heilk., Bd. 21, Heft 9.

² Berliner klinische Wochenschrift, November 18, 1901.

³ Virchow's Archiv. Bd. 164, 1901. S. 147.

⁴ The Journal of Medical Research, Vol. I., No. 2, p. 344.

¹ Zeitschrift für Heilkunde, xxii, Heft vi and x. 165-269, 1901.

² Jahrbuch der Wiener k. k. Krankenanstalten. Bd. 7, 1900, Hft. 2.

³ Johns Hopkins Hospital Bulletin, Vol. xlii, No. 130.

blood in old cases, leads one to conceive that in the early stages of filariasis, leukocytosis with an increase of the eosinophiles may be looked for, and that, as the disease progresses, the leukocytosis and increase in eosinophiles gradually decrease to normal. [W.F.H.]

Pathologic Changes in the Digestive Tract in Pernicious Anemia.—It is generally conceded that atrophic inflammatory processes are found both in the stomach and in the intestinal tract in pernicious anemia, both in the true idiopathic variety and in that due to Botriocephalus. Some difference of opinion exists, however, in regard to the pathogenic significance of the underlying intestinal affection. Some regard it as the direct cause of the atrophy, while others look upon it as secondary to the anemia. That the anemia is not directly associated with the intestinal affection is shown by the absence of marked emaciation. Faber and Bloch¹ endeavor to explain, by careful analysis of four cases of pernicious anemia, both the nature of the morbid process in the digestive tract and its pathogenic significance. During life the gastric secretion in all cases was found to be reduced in quantity or abolished altogether. In two cases in which a careful microscopic examination of the stomach could be made, diffuse inflammation of the mucosa with destruction and atrophy of the glands, or in other words, a progressive interstitial, atrophic gastritis was found, to explain the great alterations in the gastric secretion. In both cases the inflammatory process ended in the duodenum. On the other hand, the intestine did not present any extensive atrophic processes, so that it is not proven that intestinal atrophy exists in pernicious anemia. In regard to the gastric changes it may be stated positively that they are not the cause of the pernicious anemia; on the other hand, the theory that the gastric trouble is secondary to the anemia is somewhat weakened by the fact that one of the patients was suffering from an undoubted gastric achylia when the pernicious anemia had only begun to develop, the percentage of hemoglobin at that time being 60%. It would appear, therefore, that the gastric affection and the blood changes are due to a common cause, be it infectious or of a toxic nature. The failure to find any anatomic changes in the intestinal tract does not, in the opinion of Faber and Bloch, exclude the possibility of abnormal processes being at work in the intestine. According to their view the gastric affections in pernicious anemia bears the same relation to the blood changes as does disease of the spinal cord which is not necessarily the result of anemia but often makes its appearance long before any changes in the blood can be demonstrated. From the fact that in the one case which presented spinal lesions minute disseminated foci of myelitis were found with diseased vessels at the center, the authors are led to entertain the possibility that the disease was produced by a living virus in the blood stream and that it is not to be regarded as a system degeneration or a combined sclerosis, as was formerly supposed. [R.M.G.]

A Case of Severe Gout with Amyloid Degeneration.—Stumm² found in this case extensive amyloid degeneration of the kidneys; the adrenals and pancreas were affected to a less degree. The amyloid was limited chiefly to the arterial wall in the liver, heart, uterus, ovaries and striped muscle. In the lung only a small part of the interstitial tissue outside the capillaries was affected. [W.F.H.]

The Etiology of Chronic Rheumatism.—Triboulet³ bases his views upon numerous cases culled from the literature as well as five joint aspirations performed by himself. Of the latter, four gave negative bacteriologic results, while the fifth revealed Staphylococcus albus. The author emphasizes the preponderance of negative results as well as the noteworthy fact those cases giving positive bacteriologic findings have shown a great variety of organisms. The autopsy of a case of chronic rheumatism, dying of an acute trouble, showed an absolutely intact joint surface. The synovia were markedly edematous, while during life a free effusion with evident fluctuation had been present. Sections through the area of inflammatory edema revealed in the meshes of connective staphylococci. Triboulet also sought by a variety of ways to bring

about chronic arthritis in rabbits and dogs. By injecting intravenously attenuated cultures of staphylococci, he succeeded in producing in rabbits once an acute arthritis and in another case a subacute arthritis with beginning ankylosis. Practically all cases were negative, even when the animals were exposed at the time of injection to cold, and although injury to the joints had been produced. With dogs the results were quite negative. Originally, dogs having an acute hemorrhagic urethritis were utilized because the author hoped that this urethritis so common in dogs, like gonorrhea in man, would lead to a joint affection. Triboulet finally concluded that all rheumatism depends upon a kind of septicemia. According to the susceptibility of the individual it may be acute or chronic rheumatism or a real pyemia with localization in the joints. The cause of this "septicémie rhumatismale" can be staphylococci, streptococci, gonococci, or other bacteria, and the factors of predisposition of the individual with attenuation of the organism play an important role. [W.F.H.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended March 21, 1902:

SMALLPOX—UNITED STATES.			Cases	Deaths
Alabama:	Birmingham.....	Feb. 1-28.....	12	
California:	Los Angeles.....	Mar. 1-8.....	1	
	Sacramento.....	Mar. 1-8.....	1	
	San Francisco.....	Mar. 2-9.....	6	
Colorado:	Denver.....	Mar. 1-8.....	5	
Florida:	Jacksonville.....	Mar. 8-15.....	9	
Illinois:	Belleville.....	Mar. 8-15.....	2	
	Chicago.....	Mar. 12-19.....	7	
Indiana:	Elkhart.....	Mar. 8-15.....	1	
	Evansville.....	Mar. 8-15.....	4	
	Indianapolis.....	Mar. 8-15.....	13	
	Michigan City.....	Mar. 10-17.....	1	
	Terre Haute.....	Mar. 8-15.....	2	
Iowa:	Clinton.....	Mar. 1-8.....	3	
Kansas:	Wichita.....	Mar. 8-15.....	2	
Kentucky:	Covington.....	Mar. 8-16.....	11	
	Lexington.....	Mar. 8-15.....	1	
Louisiana:	New Orleans.....	Mar. 8-15.....	3 cases im- ported.	
Maine:	Portland.....	Mar. 8-15.....	2	2
Maryland:	Baltimore.....	Mar. 8-15.....	1	
Massachusetts:	Boston.....	Mar. 8-15.....	21	4
	Cambridge.....	Mar. 8-15.....	5	
	Chicopee.....	Mar. 8-15.....	1	
	Haverhill.....	Mar. 8-15.....	1	
	Holyoke.....	Feb. 22-Mar. 15.....	25	
	Malden.....	Mar. 8-15.....	2	
	Newburyport.....	Mar. 1-15.....	2	1
	Somerville.....	Mar. 8-15.....	1	
Michigan:	Detroit.....	Mar. 8-15.....	6	
	Ludington.....	Mar. 8-15.....	13	
Minnesota:	Minneapolis.....	Mar. 1-15.....	29	
Montana:	Butte.....	Mar. 2-9.....	1	
Nebraska:	Omaha.....	Mar. 8-15.....	45	
	South Omaha.....	Mar. 8-15.....	80	1
New Jersey:	Camden.....	Mar. 8-15.....	3	
	Newark.....	Mar. 8-15.....	32	6
New York:	Binghamton.....	Mar. 8-15.....	1	
	New York.....	Mar. 8-15.....	65	11
	Yonkers.....	Mar. 7-14.....	1	
Ohio:	Chillicothe.....	Mar. 8-15.....	2	
	Cincinnati.....	Mar. 7-14.....	25	
	Cleveland.....	Mar. 7-14.....	3	
Pennsylvania:	Allegheny City.....	Mar. 8-15.....	6	
	Lebanon.....	Mar. 8-15.....	2	
	Norristown.....	Mar. 8-15.....	1	
	Philadelphia.....	Mar. 8-15.....	53	6
	Pittsburg.....	Mar. 1-15.....	9	
Rhode Island:	Providence.....	Mar. 8-15.....	1	
	Warwick.....	Mar. 7-14.....	2	
Tennessee:	Memphis.....	Mar. 8-15.....	14	
Texas:	San Antonio.....	Feb. 1-28.....	9	
Utah:	Salt Lake City.....	Mar. 8-15.....	1	
Washington:	Tacoma.....	Mar. 2-9.....	9	1
Wisconsin:	Green Bay.....	Mar. 9-16.....	5	
	Milwaukee.....	Mar. 8-25.....	2	

SMALLPOX—INSULAR.

Porto Rico: Ponce..... Mar. 8..... several cases reported

SMALLPOX—FOREIGN.

Austria:	Prague.....	Feb. 15-Mar. 1.....	11	
Belgium:	Antwerp.....	Feb. 15-Mar. 1.....	34	8
Brazil:	Pernambuco.....	Jan. 15-31.....	85	
Canada:	Halifax.....	Mar. 8-15.....	1	
	Quebec.....	Mar. 8-15.....	20	1
Colombia:	Panama.....	Feb. 24-Mar. 10.....	15	
France:	Paris.....	Feb. 22-Mar. 1.....	2	
	Rheims.....	Dec. 1-8.....	1	
	Roubaix.....	Feb. 1-23.....	1	

¹ Therapeutische Monatshefte, Vol. xv, May, 1901.

² D. Arch. f. klin. Med., Bd. 64, S. 518.

³ Revue de med., T. xviii, S. 189, u. 329.

Great Britain— England:	Liverpool.....	Feb. 22-Mar. 1.....	6	
	Liverpool.....	Mar. 1-8.....	27	
	London.....	Feb. 15-Mar. 1.....	881	189
Scotland:	Sheffield.....	Feb. 22-Mar. 1.....	1	
	Dundee.....	Feb. 22-Mar. 1.....	7	
	Edinburgh.....	Feb. 15-22.....	1	
India:	Glasgow.....	Feb. 28-Mar. 7.....	22	10
	Bombay.....	Feb. 11-18.....	8	
	Calcutta.....	Feb. 8-15.....	5	
Italy:	Rome.....	Feb. 9-16.....	2	1
	Rome.....	Jan. 11-18.....	3	1
	Mexico.....	Mar. 2-9.....	3	1
Mexico:	Moscow.....	Feb. 8-22.....	18	12
Russia:	Odesa.....	Feb. 15-Mar. 1.....	1	
	St. Petersburg.....	Feb. 8-15.....	7	1
Uruguay:	Montevideo.....	Feb. 5.....	32	

YELLOW FEVER.

Dutch Guiana:	Paramaribo.....	Jan. 1-31.....	5	3
Mexico:	Vera Cruz.....	Mar. 1-8.....	8	4

CHOLERA.

India:	Bombay.....	Feb. 11-18.....	6	
	Calcutta.....	Feb. 8-15.....	61	

PLAGUE.

India:	Bombay.....	Feb. 11-18.....	663	
	Calcutta.....	Feb. 8-15.....	120	
	Karachi.....	Feb. 9-16.....	60	47
Japan:	Nagasaki.....	Mar. 13.....	Present.	

Changes in the Medical Corps of the U. S. Army for the week ended March 22, 1902:

The following organizations, officers, contract surgeons and detachments of enlisted men, having arrived on the transport Sheridan, will, upon being released from quarantine, report as indicated: The 1st squadron, 11th cav., under Major James B. Hickey, 11th cav., will proceed to Tacloban, Leyte, to relieve the battalion of the Marine Corps in Samar, the commanding officer reporting to the commanding general, 6th separate brigade. The regimental headquarters and 1st battalion, 27th inf., to the commanding officer, Post of Manila, pending the arrival of the transport Crook; Major John C. Gresham and 2d Lieutenant Edward A. Keyes, 4th cav., Major Thomas F. Davis, 15th inf., 1st Lieutenant George B. Rodney, 5th cav., 1st Lieutenant Reuben Smith, 28th inf., 2d Lieutenant Charles Keller, 3d inf., 2d Lieutenant Joseph V. Kuznik, 9th cav., and 2d Lieutenants Harry D. Mitchell and William M. True, 16th inf., to the commanding general, department of North Philippines, for assignment to duty with their respective regiments; Captain Russell C. Langdon, 9th inf., to the commanding officer, Post of Manila, for duty to conduct recruits to the headquarters of his regiment, and Chaplain Samuel J. Smith, 19th inf., to the commanding general, department of South Philippines, for assignment to duty with his regiment; Captain B. Frank Cheatham, quartermaster, and the two post quartermaster sergeants, to the chief quartermaster of the division; Captains Thomas R. Marshall and James S. Kennedy, assistant surgeons, Contract Surgeon Charles F. Williams, and the detachment of enlisted men of the hospital corps, to the chief surgeon of the division; the post commissary sergeant, to the chief commissary of the division; the enlisted men of the Philippine scouts, to the adjutant general of the division.

The following assignments and changes in stations and duties of officers are announced: The following-named, now in Manila, P. I., will report as indicated: Major Charles E. Woodruff, surgeon, to the commanding general, department of North Philippines, for assignment to duty; Captain Franklin M. Kemp, assistant surgeon, to report by letter to the commanding general, 3d separate brigade, for assignment to duty; Captain Harry A. Eberle, assistant surgeon, to report by letter to the commanding general, 7th separate brigade, for assignment to duty; Captain Daniel P. McCord, assistant surgeon, now on temporary duty at convalescent hospital, Corregidor Island, will report on the transport Crook, for duty as transport surgeon.

APPLE, Captain W. EDSON, assistant surgeon, is granted leave for two months, with permission to visit the United States.

MINOR, Major JAMES C., surgeon, is relieved from duty in the department of North Philippines and will report by letter to the chief surgeon of the division of the Philippines, for instructions, with a view to his assignment as commanding officer of the division hospital at Los Banos, province of Laguna, Luzon.

ANDERSON, Major THOMAS B., surgeon, is relieved from duty in the department of North Philippines, and will report to the commanding officer, Twenty-seventh Infantry, for duty as surgeon of that regiment.

NIEDEMAN, Major WILLIAM F. DE, surgeon, granted leave on surgeon's certificate December 17, is extended one month on account of sickness.

FOGG, Captain JOHN S., assistant surgeon, on account of physical disability, is honorably discharged, to take effect March 25. Captain Fogg will proceed to his home.

STEWART, Captain WILLIAM J. S., assistant surgeon, recently appointed, will report to the commanding general, department of the East, for assignment to duty with recruits or troops that may be sent to San Francisco, Cal., and upon arrival at that place will report for temporary duty and assignment to duty on a government transport when a vacancy occurs.

FLETCHER, GARDNER, contract surgeon, now at Bloomington, Ind., will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

Orders of March 4, are so amended as to direct Contract Surgeon Erwin I. Shores, upon the arrival of First Lieutenant Clarence J. Manly, assistant surgeon, at Fort Caswell, to proceed to his home, Elmira, N. Y., for annulment of contract.

CURRY, JOSEPH J., contract surgeon, now at the U. S. general hospital, Fort Bayard, will report to the commanding officer of that hospital for duty.

FORD, First Lieutenant CLYDE S., assistant surgeon, is granted leave for two months.

ROBERTS, First Lieutenant WILLIAM M., assistant surgeon, is relieved from further duty in the division of the Philippines, and upon the expiration of the leave granted him, February 27, will proceed to Fort Sill.

BISPHAM, First Lieutenant WILLIAM N., assistant surgeon, is relieved from further duty at Cabana Barracks, Cuba, and will proceed to Fort Totten for duty.

HICKS, GEORGE L., contract surgeon, is relieved from temporary duty at Fort Totten, to take effect upon the arrival at that post of First Lieutenant William N. Bispham, assistant surgeon, and will then report for assignment to duty with recruits en route to San Francisco, Cal., where he will report for transportation to the Philippine Islands, and upon arrival at Manila, will report for assignment to duty.

ASHBURN, JAMES K., contract surgeon, is granted leave for one month from about April 1.

Orders of March 14 are so amended as to direct that the honorable discharge of Captain John S. Fogg, assistant surgeon, shall take effect May 25, 1902.

FOGG, Captain JOHN S., is granted leave, on account of sickness, to include May 25.

PROBERT, MERTON A., contract surgeon, now at Columbus, O., is relieved from further duty in the division of the Philippines, and will proceed to Fort Crook for duty.

QUINTON, Captain WILLIAM W., assistant surgeon, is granted leave for one month, to take effect upon his relief from duty at Fort Ethan Allen.

MCD. VAN POOLE, First Lieutenant GIDEON, assistant surgeon, now at the general hospital, Presidio, will proceed to Hot Springs, Ark., and report at the Army and Navy general hospital at that place for treatment.

CROXTON, Captain RICHARD C., extension of leave granted January 29, is further extended one month.

Changes in the Medical Corps of the U. S. Navy for the week ended March 22, 1902:

FEBEREE, N. M., medical director, commissioned a medical director from January 26, 1902—March 19.

DICKSON, S. H., medical inspector, commissioned a medical inspector from January 26, 1902—March 19.

GEOW, E. J., passed assistant surgeon, commissioned a passed assistant surgeon from January 10, 1902—March 19.

PARKER, E. G., passed assistant surgeon, commissioned a passed assistant surgeon from January 10, 1902—March 19.

OMAN, C. M., assistant surgeon, detached from the Constellation and ordered to report to the commandant of the Marine Corps, Washington, D. C., to accompany a detachment of marines to the Asiatic Station.

Changes in the Medical Corps of the U. S. Marine Hospital Service for the week ended March 20, 1902:

BAILLACHE, PRESTON H., surgeon, leave of absence for 5 days from March 13, 1902, under paragraph 179 of the regulations.

MAGRUDER, G. M., surgeon, granted extension of leave of absence on account of sickness, for 1 month from February 22—March 17, 1902.

WERTENBAKER, C. P., passed assistant surgeon, to proceed to Lincoln, Neb., for special temporary duty—March 19, 1902.

RUSSELL, H. C., assistant surgeon, granted leave of absence for 5 days from February 13, 1902, under paragraph 181 of the regulations.

PARKER, H. B., assistant surgeon, to proceed to Mobile, Ala., for special temporary duty—March 17, 1902.

WHITE, M. J., assistant surgeon, relieved from duty at the Marine hospital, San Francisco, Cal., and assigned to special duty at San Francisco from March 19—March 20, 1902.

HOBBS, W. C., assistant surgeon, detailed as inspector of unserviceable property at Savannah Quarantine—March 14, 1902.

RICHARDSON, T. F., assistant surgeon, to proceed to Philadelphia, Pa., for special temporary duty—March 19, 1902.

CURRIE, D. H., assistant surgeon, relieved from duty at Hygienic Laboratory, to take effect March 29, 1901. Relieved from special temporary duty at San Francisco, Cal., and assigned to duty at San Francisco—March 20, 1902.

HOLT, J. M., assistant surgeon, granted leave of absence for 7 days from March 14—March 14, 1902.

HARRIS, B. Y., acting assistant surgeon, leave of absence granted for 15 days by Department letter of February 19, 1902, revoked—March 14, 1902.

McCORMAC, J. T., acting assistant surgeon, granted leave of absence for 15 days from March 28—March 15, 1902.

WALKER, R. T., acting assistant surgeon, granted leave of absence for 5 days from April 8—March 17, 1902.

WETMORE, W. O., acting assistant surgeon, granted leave of absence for 14 days from April 3—March 17, 1902.

MAGUIRE, E. S., senior pharmacist, leave of absence for 30 days granted Pharmacist Maguire by Department letter of February 4, 1902, revoked—March 14, 1902.

GIBSON, R. H., senior pharmacist, granted leave of absence for 25 days from March 29—March 17, 1902.

APPOINTMENTS.

SAVAGE, WALTER L., of New York, appointed acting assistant surgeon for duty at Buffalo, N. Y., March 18, 1902.

STUART, ALBERT F., of Maine, appointed acting assistant surgeon for duty at Portland, Maine, March 18, 1902.

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\$4.00 YEARLY.

The Limitation of Our Advertising Pages.—In the line of the professional ideals actuating the founders of *American Medicine*, it has been decided to inaugurate the second year of existence of the journal by limiting the number of advertising pages to 44. As our subscription-list increases, making our income from this source greater, it is intended that the number of pages of advertising shall be still further decreased, and more pages devoted to scientific matter. We believe that this plan recognizes in the most practical way our obligations to professional journalism, to the general profession, and to our individual subscribers. It is also as thoroughly to the advantage of the better class of advertisers, who will thus gain the added prominence of exhibition conferred by the fewer pages, and the benefit of selection implied in the limitation.

A Mayor as a Medical Censor.—The San Francisco papers of March 26 make the astounding announcement that four medical members of the Board of Health have been summarily removed because in faithful pursuance of their duties to the community at large they have, first, persisted in reporting the existence of bubonic plague in San Francisco, second, that they "have put the city to great and unnecessary expense in quarantining Chinatown, third, for their "blameworthy conduct" in making hurried disposition of the bodies in suspected plague cases. Mayor Schmitz constitutes himself an authority on the detection of infectious disease and evidently purposes to suppress all reports at variance with the results of his personal investigation. He is apparently oblivious of the fact that information as to the existence of so dread a disease as bubonic plague in any given locality is of such vital importance to the nation as to offset any temporary financial loss to an infected municipality. That the plague has existed in California has been proved and made public by eminent and reliable medical experts other than those who have been removed, and means will undoubtedly be found through the state or national health-authorities for keeping the public informed of the truth regarding the disease. In fact, in the Public Health Reports issued by the U. S. Marine-Hospital Service, cases of bubonic plague in San Francisco are being constantly reported. The questions that naturally arise as to the newly inducted physicians are: In their acceptance of office, do they deliberately

acquiesce in the reflections upon the fidelity and integrity of their deposed fellow practitioners? Is it understood that they accept nonprofessional censorship? Is the inference correct that they are bound to furnish health reports pleasing to the Mayor of their city?

The recognition of antitoxins by the pharmacopœia finds its difficulty in the lack of a standardization of the tests as to strength, etc. The convention of 1900 on Revision of the Pharmacopœia agreed that such a standardization is at present impossible. The committee having the revision in charge, although they must be convinced of the great value of the diphtheria antitoxin, and also desiring that an objective test should be found which all will recognize as uniform and scientific, are doubtless met by the fact that the tests upon animals have not that accuracy and uniformity that is demanded for pharmacopœial recognition. The last edition of the German Pharmacopœia does admit the diphtheria antitoxin, but it must be remembered that its manufacture in Germany is controlled by the government, and that such control is impossible in our country. It has been urged that sufficient exactitude could be obtained by a system of labels and vouchers which would throw the responsibility upon the individual manufacturer. This might satisfy the demands for protection by the retail druggist, but would by no means do away with the difficulty of the pharmacopœial revision committee, a difficulty the solution of which we hope they may find.

Early Medicine in the United States.—Those who are in sympathy with the growing interest in medical history which is so evident in recent medical literature and teaching, particularly noticeable in that emanating from the medical school of Johns Hopkins University will find pleasure and profit in reading Dr. Packard's account of medicine in the United States previous to the year 1800, referred to elsewhere in our columns. The lack of medical care to which the early settlers were subjected; the acquisition by the pioneers of such knowledge as the aborigines possessed concerning the medicinal value of native plants; the quaint receipts that constituted a major part of the domestic medical lore of the time, showing the influence of the doctrine of signatures and of the herbalists; the accounts of early epidem-

ics and the first efforts at quarantine, all throw a valuable side light on the state of medicine in the colonies, and afford the background essential to a proper appreciation of the task which confronted those broad-minded and far-seeing men who laid the solid foundation upon which has arisen the splendid structure of American education and practice of the present day. Some 200 early American physicians figure in the pages of this work and their relations to the beginnings of our leading medical institutions, schools, societies, and hospitals, afford the nucleus about which has been gathered a fund of information in which every American physician must feel a vital interest.

The Fight Against Osteopathy in Virginia.—

The Senate Committee in Virginia has just voted, 7 to 1, against a bill requiring osteopaths and others who assume the responsibility of treating disease to undergo an examination before the Board of Medical Examiners. Another bill is to be presented to create an Examining Board of Osteopaths. We wish we had space to report the proceedings, lasting three and a half hours, in the crowded senate chamber. The newspaper reporter had great difficulty with his "aleopaths," "alleopaths," "alopaths," etc., but whenever a particularly stupid bit of nonsense was shot at the audience by the osteopathic lobbyists it was always said "and the ladies applauded." It is plain that "the ladies" are violently against regularity in medicine. Why is this so generally the rule? The profession made a brave struggle against the quack-loving crowd of ladies and legislators, and have by no means given up the fight. We wish them all success. They will, of course, have success finally, for even "legislators" and "the ladies" by no amount of enactments and applause can reverse the laws and facts of biology and of social evolution. The sad thing is that the debauching experiments in quackery should be tried. They are awfully expensive in money and in lives, and there will eventually have to be an undoing of all of them and a return to orderly scientific progress. The *Richmond Times* keeps its sanity and in an editorial wisely says:

We have no doubt there are in the state many men capable of making good legal arguments and far above many lawyers in brains and knowledge and character, but they are not allowed to practise law until they have been through a prescribed course of study according to certain fixed rules. The law assumes, and human experience confirms, that certain general rules and laws must be adhered to for the greatest good of the general mass. There is not a higher or a more generous or self-sacrificing class of men than the doctors. They are required to take a long and expensive course of education to fit them for their work. The state forbids them to practise until they have done so. The talk of a doctors' trust is shallow and unfounded because the schools are open and any man who chooses to take the courses and stand the examinations can do so. If the bars are let down there will be no safeguard against all kinds of quacks and swindlers coming in to prey on popular credulity.

The County vs. the State Asylum System for the Insane, and a Reason.—The chief executive officers of the Iowa State institutions for the insane, feeble-minded, etc., have a "quarterly meeting" with the Board of Control. The latest number of the *Bulletin*

contains an account of the October, 1901, meeting, at which was read an excellent paper by Dr. William F. Wegge, of Milwaukee, Wis., on modern provision for the insane. An incidental suggestion was made as to the popularity of the Wisconsin County Asylum System, because it brings patients nearer home. Thereupon the chairman and Superintendent Hill made statements which have vivid references to the relative advantages of the county and state systems, and also to some of the special difficulties of superintendents; there is also given an unexpected and a most unpleasant view of one side of human nature:

"Many of the friends of the insane, as soon as they have unloaded them on the state, so to speak, have no further use for them. They will not even correspond with them. They will not answer letters. Our experience, where we have undertaken to write friends of patients, in cases where patients were suspicious and accused the superintendents of delaying their mail, and where we assured them that we would take the matter up ourselves, is that in two-thirds of the cases we never received a reply from these people, showing an utter abandonment by their friends after they had gone to the hospitals.

"Relatives are deeply interested in persons who become deranged before they leave home, and at the time they leave home and probably for some months after they leave home; but in the course of time they lose interest. It is illustrated in the matter of securing clothing for patients from relatives. They are quite willing to assist in this matter at the outset—say, during the first year, but if the patient remains in the hospital for several years, precious few relatives will continue to supply clothing—perhaps send a garment or two at Christmas time, if they respond to the invitation at all.

"After they have been there a while they would wish to bury them, and if they didn't die, they would wish to have the public forget that they have a relative in such a place, and no reference is made to them. Sometimes superintendents are requested not to send postal cards or letters, unless the patient is likely to die, and the relatives, of course, visit the patient less frequently, and that is one reason why patients believe that the letters are not sent; and yet, as superintendent, I have enough sentiment about me, that I consider it my duty to shield relatives and foster the idea in the minds of the patients, that they have good homes, and that they have relatives who are dear and that the relatives are still interested in the patients. Relatives will visit patients and tell me that they do not wish to take the patient home, and yet they will not tell the patient that. They will wink at me and want me to tell the patient that they cannot go home, and their minds are relieved when the superintendent says that he thinks it best and necessary for the patient to remain in the hospital longer."

Is there a glimpse here of one of the reasons why insanity is often so incurable? Will the postmortem examination of the insane brain show the existence of this cause?

Vegetarianism and the One Cent Restaurant.

—We think that the advocates of vegetarianism or a "bloodless diet" are extremists and that if by any miracle the civilized nations were converted to this practice it would be to the advantage neither of mankind nor of animals. But we are just as thoroughly convinced that that extreme would not be worse than the present one of eating too much meat. There are facts and enough of them to show that health and strength are possible upon a diet without meat, but there is the other incontrovertible fact that generally speaking the makers and bearers of civilization have been and are meat-eaters. In nothing is the truth of the old adage,

medio tutissimus ibis, more certain than in this of diet. A mixed diet, a moderate amount of both kinds of food, is far better than either extreme. Of the two, as we have said, there can be little doubt that the overeating of meat is the worse both for health and morals. As to the financial aspect, the meat eaters can have absolutely nothing to say. And now that poverty is pressing so horribly upon millions it would be strange if these did not at last awaken to the folly of wasting their lives in slavery to a fashion that demands a diet several times as expensive as is necessary to support life comfortably and healthily. The American, even the poorest, spends twice or thrice as much as he need or should upon his food. A capital illustration of this fact has been given of late in New York City, where a "One cent restaurant" has been established, and has so far proved successful. A large bowl of pea soup, hominy or oats, etc., is served for one cent, and other things, coffee, bread and butter, beans, puddings, etc., at from three to five cents. A meat dinner for ten cents was offered, but proved unpopular. Any of the one cent portions contain food elements said to be sufficient to supply the nourishment required in a full meal. Two or three of these one cent portions per day, if varied according to appetite, "should maintain the weight, strength and health of an ordinary individual for an indefinite time, if such extreme economy is necessary."

The "Double Bed."—In the official report of a State Board of Charities it is stated that during 1900 there were treated in one large hospital 9,308 new in-patients; the total bed capacity in this institution was 320, but only 292 of these were for patients, and the average occupied during the year was 194. Expressed in "bed-days" these figures are as follows:

Total bed capacity	320, or 116,800 bed-days.
Total beds for patients	292, or 106,580 "
Average daily number beds occupied	194, or 70,810 "

The average stay of each in-patient in the hospital is not given in the report, but if we make a liberal allowance and place it at 18 days, we find that

Number of in-patients	9,308 × 18 = 167,544 bed-days.
Total bed-days possible, as shown above	116,800

Excess of bed-days, above maximum capacity 50,744

If we now divide this excess of bed-days by 18 we find that at least 5,636 persons must have slept two in a bed! If instead of the total bed capacity we take the actual average of bed-days as reported it will be seen that a large number of patients must have slept three in a bed! There can be but one conclusion: the old-fashioned double bed, or "four-poster," must have been quietly put in the place of the customary single cot. This innovation, however, is so radical that its announcement should not have been made by such involved and roundabout methods. We should say that although the plan might economize floor-space, equipment, etc., the experiment would be so dangerous that the medical and nursing press should be furnished with all the details of the plan and its outworking, whereby we might judge as to its merits more accurately. We have said that only the one conclusion stated is possible, but two others

are at least thinkable: 1. The period of stay in the hospital is incorrectly placed at 18 days. The highest average we have been able to find in other hospitals is 21 days and the lowest 12. In the instance cited we have reason to believe that 18 is very nearly if not absolutely correct. 2. It is possible that figures are falsified in order to influence state appropriations; but such a suspicion is, of course, not permissible. We therefore return to the question as to the size of the "beds."

Institutional Bookkeeping.—The truth is slowly dawning upon intelligent people that the duty of the state, municipality, or individual is not fully discharged when, with a lavish hand, funds are turned over to a body of managers or trustees for the maintenance of a hospital, home, or other public or charitable institution. We are beginning to realize that it is unwise not only to hand out coin indiscriminately to the applicant for alms on the street, without following up the case to see that the relief is properly applied, but that it is equally unwise to go no further than to furnish an institution with the funds for which it asks. The law of the land wisely provides that all executors, administrators, and trustees of estates of decedents and others shall, from time to time, render a full and fair account of their stewardship to a court of record, there to be carefully reviewed and approved or corrected according to the circumstances of each case. The question very naturally arises, why are trustees of public and charitable institutions not required, except in comparatively rare instances, promptly to render, at stated intervals, a full account of the funds committed to their care? It cannot be that these funds are not sufficient in amount to warrant such accounting. A moment's thought will show that the aggregate is enormous. The single state of Pennsylvania appropriates each year for the support of its hospitals, homes, and asylums \$1,500,000; and to educational institutions, exclusive of its great common school system, almost as much more, and this is not all, because the contributions of private citizens will swell this large stream to many times the sum named.

Clearly then the matter is important, and the community is justified in asking for information regarding the use of these funds. The trustees owe it to themselves, to those whom they represent, as well as to those under their care, publicly to account for every dollar passing through their hands. With an awakened public sentiment on the subject, a board of trustees failing in this simple but essential duty will soon find itself an object of distrust or suspicion.

A Physicians' Life-Insurance Company.—We have received occasional letters suggesting the formation of a life-insurance company limited to placing policies on the lives of medical men. The thought springs from the facts that so many families of physicians, at the death of the head of the family, are left without adequate support; that physicians are good risks; that the guild spirit would support such an organization; that the examiner's fees would be saved, etc. We do not think the advantages and possibilities of good by any means counterbalance the dangers. Although physicians are

not the worst risks, they are not by any means what the insurance men call first class, and if only the best risks were chosen, this limitation would at once defeat the chief object of the company. It is not generally known that such a special and limited professional company has been long in existence; indeed, the *Presbyterian Ministers' Fund Life Insurance*, is the oldest life insurance company in America, having been formed May 15, 1759. It is a feeble organization. Perhaps the greatest danger the proposed organization would run would be the perfectly natural, and to a great extent justifiable, rivalry and opposition of all the established life insurance companies. With some right they would demand of the thousands of physicians whom they employ a loyalty and exclusiveness which would at once prove a tremendous handicap to the young organization. During the past ten years, it must also not be forgotten, many new companies have "gone to the wall" which were started by men of experience and ability and with abundant capital. We hope to see our great national medical organization sometime devise a method of protecting the widows and orphans of its members from want, but at present we do not consider an insurance company limited to physicians would be successful.

The Midwife Bill.—It is noticed that the bill before the British House of Commons, to regulate the practice of midwives, has passed the second reading in spite of considerable professional opposition. The bill provides that in order to be registered, a midwife must undergo a course of training and pass an examination. England is the only country in which the practice of midwives is not regulated, and such regulation has been opposed by the majority of the medical profession, because the bill creates a new order of practitioners who can in the course of their short training acquire only a very rudimentary knowledge of midwifery, and in whom recognition by the state will cause the public to repose unfounded confidence. We have previously called attention to the gross injustice to the medical profession and, far more important, the jeopardizing of the life of the parturient woman, in permitting her to be cared for at this critical period by an ignorant, unskilled, and unclean individual. The American profession should unanimously condemn the custom of allowing midwives to practise at the expense of the lives and health of mother and child. Stringent laws are enacted in the various states regulating the registration of medical men and prescribing definite courses of study preparatory to practise, yet our larger cities are the scenes of puerperal infection and infantile mortality which form a gloomy and slimy trail of the woman with unclean personal habits.

The New Polytheism.—Among the modern exhibitions of religious and medical crazes especially rampant in our country there is one phase that should not escape the attention of the morbid psychologist. One who imagines that polytheism and god-making, at least goddess-making, died with Greece and Rome should examine carefully any one of a hundred examples of heathenish sects that have sprung up in our country.

It is strange that the comic opera writers have not used the theme as a subject for their bouffe librettos. There is real humor in these situations that would save from impending doom many a traveling troupe. For instance, How many of our readers have ever heard of "the Tingley Brotherhood?" Dr. Jerome Anderson (is he Ph.D., D.D., LL.D., Metaphys.D., or simply a poor Doctor of Physic?) declares that 190 prosperous lodges were at one time organized of "The Theosophical Brotherhood," but that when Mrs. Tingley succeeded in "getting all the personal property in her name, to all intents and purposes becoming not the head of the order but the orner itself," then the "lodges" decreased to a dozen, and now Dr. Anderson says he must resign. "She has spent \$300,000" at Point Loma, Cal., and "I have seen men and women of wealth, education and high social position humble themselves before her," etc. "Soon they will have to crawl into her presence on all fours, in this freakish oriental court." "Hundreds of thousands of dollars" are being collected, etc.

The Effects of Alcohol.—At the meeting of the New York State Science Teachers' Association, in 1898, there was appointed a committee of five to "ascertain and report what is known regarding the physiologic effects of alcohol and narcotics on the human body, and to recommend suitable methods of teaching the same in the schools of the state." The final report of the committee will not appear for some time, but as to the effects of alcohol the committee state as follows:

a. All writers agree that an excess of alcohol impairs certain functions of the cerebrum—attention, memory and self-control—and that many cases of insanity are due to such excess.

b. What constitutes excess will differ with individuals, occupations and other conditions. Upon the present occasion your committee does not undertake to prescribe the limit of safety for an average adult.

c. The committee does not consider that the general stimulant action of alcohol has been demonstrated, nor is it aware that any authority claims that in health or under ordinary circumstances alcohol is an economic food, whether for the production of heat or the protection of fat or proteid.

d. As a matter of fact, the average man in health and under ordinary circumstances disregards these and other probable or possible roles of alcohol, and takes it for its flavor or because he finds it conducive to his personal comfort or to good-fellowship.

e. Your committee believes that spirits should never be used as beverages unless largely diluted, and that alcohol in any form should be taken only at meals and after the day's work is done.

f. Youths, say under 21, should abstain altogether from alcohol, excepting under specific medical advice.

The Teaching of Domestic Science.—The fact that civilization has waited until now to make domestic economy scientific illustrates the old and general truth that at first we are only interested in that which is of least value to us, and the most important is left to the last. We study such things as astronomy thousands of years before we study cookery. That health and all other good things are largely dependent upon the arts of cooking and housekeeping is an old truism, but it is only today that we are beginning to put it in practice. Hundreds of colleges exist and millions of dollars are expended for teaching women a score or more of subjects of little or no vital connection with real life, and

the one thing all young women must later concern themselves with is left to haphazard. We wonder how many institutions there are in this country that have seriously grappled with domestic science instruction. We only know of The Pratt Institute, Brooklyn, The Boston School of Domestic Science, The Drexel Institute, Philadelphia, and the Milwaukee Downer College. In the last institution two lines of work are carried on:

(1) College and seminary students may elect instruction in practical and scientific cooking, sewing, and housekeeping. For this credit is given toward units required for a diploma or certificate.

(2) A one-year course for the training of teachers of domestic science is offered. This includes:

(a) Systematic courses in cookery, individual, general, and invalid demonstrations, the planning and serving of meals, waitress and laundry work, and home nursing.

(b) Household economics and dietetics.

(c) Courses in general and organic chemistry, the chemistry of foods, physiology and hygiene, and bacteriology.

(d) The building, furnishing, and decorating of the home.

(e) Instruction in the theory and practice of teaching, including pedagogy, observation of public-school cooking-classes, and practice teaching in waitress work and in cooking.

"Ocular Food."—The ingenuity of the nostrum vendor is not yet exhausted! A subscriber sends us a circular letter that he has received, selections from which we give below, omitting cap-headings, underscorings and the more unimportant paragraphs:

DEAR SIR:—If you are suffering from defective vision, we offer you the greatest discovery of the age, with the positive assurance that you can now acquire the priceless jewels of perfect eyes. Eyes which have by injudicious use, injury, or the ravages of time or disease, become powerless to perform their normal functions, may now be restored simply, harmlessly, inexpensively and by yourself at home. The eye is more poorly nourished than any other organ of the body; therefore, what more natural than to feed it, thus restoring and strengthening its delicate structures. Dr. Hammond, late Surgeon-General of the United States Army, greatest authority on diseases of the nervous system, revolutionized the world with the theory of directly feeding an enfeebled organ, and, in a perfected form, it is adopted today by the most eminent authorities the world over. Ocular food feeds the eye directly, and is most readily absorbed by the starving tissues. Science feeds the skin directly, the hair with food for the hair; then what more natural than to feed the eye? Neuralgia, your physician will tell you, is "the cry of a nerve for food;" feed it with nerve food (tonics) and the neuralgia goes.

Our food relieves overtaxed eyes, makes weak eyes strong and renders glasses wholly unnecessary. It is the sovereign remedy, the great restorer, an absolute certainty in the cure of weak vision from any cause. In all forms of fatigue, and inflammation in and about the eyes, it is a specific, and stands alone in the world today. Although a rare and expensive drug, it is put upon the market within the reach of all, and will be sent postpaid with full directions, and enough to cure any ordinary case, for \$2.00. For very difficult and protracted cases, we will send three bottles for \$5.00.

After first purchase, agents desiring to handle this remedy can make very advantageous terms and do a highly remunerative business.

The American Medical-book Production.—Very few people are aware of the revolution in medical-book-making which has recently and silently taken place in this country. It is probably not an over estimate that our American publishers are annually exporting to other countries from 20,000 to 25,000 volumes of books. It

was not many years ago that almost all authoritative textbooks in medicine were imported by us. But we doubt if all other nations combined now export so many as we. With the spread of the English-speaking peoples and the brilliant progress of medical science there has come a demand for medical books which the enterprising American has been the principal to see and to meet. The minor influence of patriotic pride will not be held unpraiseworthy, for the physicians of other countries cannot be charged with prejudice for our literary productions. Especially in the entirely open field of books of reference in general medicine, such as dictionaries, cyclopedias, and textbooks, we have hardly any competitors. The fact is of incalculable benefit reflexly and otherwise in stimulating our professional progress both as a guild and a purely scientific way. The esteem in which the American profession is now held all over the world is profoundly different from what it was but a little while ago, and no influence has so effectively wrought this change as the scholarship shown in our medical books on the bookshelves of every bright physician in the world. This respect would be doubled if we could crush out the abuses of American medical journalism, and if he were also a subscriber of an ideal American medical journal.

Spectacles and Failing Vision.—M. Le Roux, a French lecturer, speaking of his American audiences says:

"I had but one regret as I looked down into their faces. I saw too many spectacles. They have worked their eyes so hard that their sight is failing. They should not let their love for knowledge impair their vision."

The newspapers without medical advisers have begun to echo this inane remark, and in the next month it will probably be reprinted a thousand times. American oculists will think of the famous correction of the dictionary definition of a crab. It had been given as "a small, red fish which travels backward," and was pronounced by the scientist correct, with the exception that "the crab is not a fish, not red, and does not travel backward." So in the case of M. Le Roux's Americans, they have not worked their eyes harder than other nations, their love for knowledge has not impaired their vision, and their sight is not failing. *Tout au contraire*, our eyes are far less diseased than those of Europeans who have yet to learn that proper spectacles prevent more serious ocular and also much systemic disease. Our people have good leather shoes instead of going barefoot or wearing sabots, but the fact is not a proof that our feet are weaker or more diseased than those of the French peasant. They also have secured scientific care of their teeth, but that does not prove that carious teeth are superior to "filled" ones, or that no teeth are preferable to artificial ones. M. Le Roux's ophthalmology shows that French ophthalmologists should cross the ocean and take a post-graduate course in American ophthalmology.

Early Use of Mercury in Syphilis.—Attention has recently been called by Dr. G. Sandison Brock, of Rome, Italy, in *Janus* to an interesting old chronicle of the city of Perugia, bearing date 1494, in which the

chronicler Materazzo described the alarming epidemic of *mal francioso* or "*cirimbacole*" (syphilis) which raged in Northern Italy at that time and which a wandering Spaniard treated very successfully with inunctions of an ointment of mercury. This epidemic may have been the same which led twenty-five years later to the publication of the poem "Syphilus" by Frascatorius, of Verona. Paracelsus, to whom the introduction of mercury into medicine is commonly attributed, was only a year old at the time of this epidemic; but, as he is reputed to have studied the medical lore of gypsies, barbers and alchemists in the course of his early studies and wanderings, it is not improbable that he may have learned the value of mercury from them or by personal experience of the efficacy of the remedy in their hands.

EDITORIAL ECHOES

Diabetes as a Manifold Disease.—This new feature of the pathology of diabetes, far from being a source of confusion or discouragement in an already involved subject, is a confirmation of the accepted views of clinical observers as to the manifold nature of the disease. In diabetes, as in so many other affections, pathology is gradually coming to supply, though dilatorily, the scientific basis for the truth of the conclusions of clinical experience. The present situation should be a source of renewed encouragement to labor in the recently almost neglected field of actual bedside observation of disease as the surest source of practical medical knowledge.—[*Journal American Medical Association.*]

The development of teachers has never been assiduously prosecuted in medical education. The best investigators are often indifferent teachers; this is proverbial. It has long stood in the way of effective instruction wherever universities exist, and will no doubt continue to do so, to a greater or less extent. Nevertheless, we look forward to the time when men will be selected to teach because they have capacity in that direction, and not because they have attained distinction in some quite alien field. Teachers should be cultivated, just as we attempt to develop investigators; men who show aptitude should be given opportunities and not be suppressed. Medical education would certainly thereby be a gainer, and we should hear fewer complaints from the intelligent student body.—[*Boston Med. and Surg. Journal.*]

The Recommendation of Alcohol.—We believe that the consensus of the best medical opinion of today is that alcohol, while a valuable medicine in some conditions—and here many would include a limited dietetic value—is not properly a food. It is not what the Germans call a *Nahrungsmittel*, but is a luxury and a perfectly non-essential one to the healthy normal individual. The need of moderation in the use of alcohol and the difficulty in drawing the line between moderation and excess, together with the habit-building tendency, have all to be considered. The worst thing about the present tendency to say a good word for alcohol is the certainty that whatever may be said will be utilized unscrupulously by advocates of the liquor interest. Give them an inch and they will take a mile, and some of our confrères have had good reason to regret this fact. We believe it will be found far safer for medical men to stand on the facts opposing the general use of alcohol than to even qualifiedly advocate its usage, except exclusively as a medicine and under medical prescription. Its cause is not one that requires any fostering by our profession.—[*Jour. Am. Med. Assoc.*]

BOOK REVIEWS

The History of Medicine in the United States. A Collection of Facts and Documents relating to the History of Medical Science in this Country, from the Earliest English Colonization to the Year 1800; with a Supplemental Chapter on the Discovery of Anæsthesia, by FRANCIS RANDOLPH PACKARD, M.D., of Philadelphia. Octavo. Cloth, gilt top, Deckle edges. 526 pages. 25 full-page illustrations. \$4.00 net. J. B. Lippincott Company, publishers, Philadelphia.

The able author of this work has brought together a mass of information hitherto scattered and to most physicians unavailable; and has so arranged it as to present an interesting and orderly review of the progress of medical science in this country from the time of its settlement. In the eleven chapters of the book is discussed the medical events connected with the early history of the English colonies in America. Epidemic sickness and mortality in North America previous to 1800; the development of medical education in the United States; the medical profession in the Revolution: early hospitals and medical societies, and prerevolutionary medical writings and legislation. The portraits of Lloyd, Redman, Kuhn, Hutchinson, Rush, Ashton, Wiesenthal, Cadwalader, Shippen, Baird, Warren, Thatcher, Tilton, Munson, Long and Morton, among other illustrations, adorn and lend interest to the pages of a book which must long remain a standard work of reference.

Transactions of the Southern Surgical and Gynecological Association. Volume xiii. Thirteenth session, held at Atlanta, Ga., November 13, 14 and 15, 1900. Published by the Association, 1901.

This volume contains 37 papers of interest to the surgeon and gynecologist. Among these are two by Howard A. Kelly, 1. "Removal of Pelvic Inflammatory Masses by the Abdomen After Bisection of the Uterus." 2. On a "Rapid and Simple Operation for Gallstones, Found by Exploring the Abdomen in the Course of a Lower Abdominal Operation." George J. Engelmann discusses "Normal Menstruation," dealing with menstruation during puberty and adolescence in the girl at school and at work, presenting statistics regarding the duration, frequency and symptoms of the menstrual flow. J. Wesley Bovee, of Washington, D. C., discusses an "Operation Devised for the Treatment of Marked Prolapse of the Rectum in Women," in which the rectum was sutured to the culdesac and posterior wall of the abdominal wall after the uterus itself had been fixed to the abdominal wall. Rudolph Matas, of New Orleans, discusses the "Treatment of Abdominal Aortic Aneurysm by a Preliminary Exploratory Celiotomy and Peritoneal Exclusion of the Sac, Followed at a Later Sitting by Wiring and Electrolysis, with a Report of Two Hitherto Unpublished Cases." John B. Murphy reviews the various operations for conditions which demand removal of the rectum, and describes an operation for the resection of the rectum per vaginam. Many other contributors present papers of undoubted value, but which space will not permit us even to mention.

A Manual of Ophthalmoscopy. For Students and General Practitioners. By J. E. JENNINGS, M.D. With 95 illustrations and 1 Colored Plate. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1902. Large 12mo. Price, \$1.25 net.

This manual is a praiseworthy attempt to place in small compass, and at a moderate price a sufficient exposition of practical ophthalmoscopy for students and general practitioners, to whom the large atlases are not available on account of their costliness. The text is systematically arranged and profusely illustrated with many original black and white drawings, which are quite satisfactory and are infinitely superior to badly executed colored plates. The necessity for a section on Retinoscopy in this work is not clearly indicated, and the prescribed deduction from or addition to the reversal findings at 1 meter distance of 0.75 D is more confusing than neutralization of the shadow movement at 1 meter, and the addition or subtraction of 1.00 D. Careless proofreading has allowed Mauthner to stand for Mauthner on page 123; Mosier for Osler on page 126, and Sacks for Sachs on page 131.

AMERICAN NEWS AND NOTES.

GENERAL.

Yellow Fever.—In Rio Janeiro 80 deaths from yellow fever during the past two weeks are announced by the Argentine Consul there.

Disease in the Army.—Because of the rapid increase of specific disease and the increasing consumption of alcoholic liquors in the Philippines, the War Department officials, by direction of the President, have issued a general order to which the special attention of the army serving in the tropics and away from home is called. This order commands officers to watch carefully over the habits and morals of the troops, and declares that it is of utmost necessity that each officer, by his temperate and cleanly living, should inspire his men to preserve their health, both by abstaining from drink and the liability of contracting venereal disease.

Registration of Vital Statistics.—To combat the slackness of method, or rather the absence of any uniform method employed in registering deaths in the United States, which has so long been in the way of obtaining of accurate vital statistics, the census office in conjunction with the American Public Health Association have taken the matter in hand, and a circular has been issued calling attention to the need for a united effort on the part of Congress, the census office, the medical departments of the government, the state legislatures, the state and municipal boards of health, the registration bureaus and all medical, statistic, sanitary, and economic organizations of the country to secure accurate registration of deaths and the collection of vital statistics.

Smallpox.—It is the opinion of a member of the New York State Board of Health that the late epidemic of smallpox in the United States was due to the return of soldiers from the Philippines. He believes that the old epidemics had nearly died out, and that had strict quarantine been enforced upon the returning soldiers, the epidemic could have been avoided. In some sections of the country the quarantine is so lax that persons known to have come in contact with quarantined patients have been allowed to mingle with the general public, thus spreading the disease, and clothing, instead of being destroyed has been sold as rags. The remedy for the restriction of contagious diseases is efficient quarantine. Where it is not practical to use pesthouses, as in the case of sections where epidemics are rare, house quarantine, with watchers to guard the premises is the best means to prevent the spread of such disease.

Marine-Hospital Service.—By an agreement between the Marine-Hospital Service and the state boards of health, the following has been substituted for the seventh section of the Perkin's bill:

That when in the opinion of the surgeon-general of the United States health service the interests of the public health would be promoted by a conference with the state, territorial, or District of Columbia boards of health or health authorities or on the application of five state boards of health or quarantine officers the surgeon-general of the United States health service is authorized to invite representatives of such state boards of health and quarantine officers to send delegates, not more than one from each state or territory to said conference, and when thus convened said delegates shall be entitled to reimbursement for their necessary expenses of travel and maintenance not exceeding five days at the place of conference in accordance with such regulations as may be made by the Secretary of the Treasury.

A change in the amendment which has been agreed to makes it obligatory, instead of optional, as suggested, upon the surgeon-general to call a conference when application for it is made by the boards of health of five states. Another amendment relieves the United States of all expenses for such conferences. The question as to how general this conference should be, has not yet been decided.

The international sanitary congress in session in the city of Havana, February 15 to February 20, 1902, approved the resolutions adopted by the second Pan-American congress held in the city of Mexico and passed further resolutions:

2. The international sanitary congress resolves that the mosquito, *Stegomyia fasciata*, is the only means, so far demonstrated, as the transmitter of yellow fever.

In accord with the above resolutions, prophylactic measures should be directed to the destruction of said mosquito as far as possible, and the best means should be adopted to prevent the access of these mosquitos to persons ill of yellow fever.

3. (a) The international sanitary congress advocates the formation of antileprosy leagues, under the patronage of the government therein represented, with the object that the people be educated in every possible way of the progress that the disease is making and the methods of preventing its increase.

(b) The entrance of lepers from foreign parts should be avoided, returning them to the country whence they come. The costs of such return should be borne by the transporting companies.

(c) Confirmed cases should be isolated and suspicious cases held under observation as far as possible.

(d) Everything should be done to convince the public mind of the contagiousness of leprosy, and to recommend the most efficient means of preventing infection.

4. To recommend that all countries where malaria exists initiate a campaign of publicity relative to the discoveries recently made as to

the transmission of the disease. That in clear and simple style, and with drawings showing the genera of mosquito capable of conveying the disease, pamphlets be profusely spread among seamen arriving at malarial ports. And to diffuse the same information among school children, looking to the possible extermination of the disease.

5. To recommend that the American Republics establish leagues against tuberculosis similar to those existing in some of these republics and in the island of Cuba, with the object that, with a united effort, the propagation of the disease would be diminished.

6. Recommends the general convenience of classifying contagious diseases, from the point of view of maritime sanitation, keeping in mind the period of incubation of each.

7. To recommend to the different governments the inspection of cattle at the port of departure, as also the vessel in which they are to be transported, and the importance of vaccination when circumstances require it. This vaccination may consist of the use of "maleina" as a diagnostic means in case of horses or mules, or the serum of de Schweinitz, of Washington, against equine diseases. The congress believes it convenient that the different governments include these precepts in their respective code of laws as a preventive against the introduction of epizootics.

Resolutions Concerning International Sanitary Policy.

—The sanitary resolutions adopted by the second international conference of American States at the City of Mexico, which were published in the Public Health Reports of February 14, 1902, were afterward slightly amended, and in that form approved by the International Sanitary Congress at Havana, February 15 to February 20, 1902. The corrected text provides:

1. That all measures relating to the subjects of international quarantine, the prevention of the introduction of contagious diseases into a country, and the establishment and control of maritime and of international land detention, or health stations, shall be wholly within the control of the national governments.

2. That there shall be established in the ports of each country two kinds of detention (a) that for inspection or observation—and (b) that for disinfection.

3. That prohibitive quarantine on manufactures and merchandise shall be abolished, and that merchandise proceeding from noninfected ports or places, and which passes through infected territory without being detained therein beyond the necessary time of transit, shall not be subject to detention or other sanitary measures beyond that of the inspection which may be considered necessary at its destination; and that such inspection and delay shall not exceed the time absolutely necessary therefor. Further, that this same regulation shall apply equally to international communication by railway, provided that live stock, hides, rags, and immigrants' effects shall be excepted from the above provisions.

4. That the governments represented in this conference shall cooperate toward securing and maintaining efficient modern sanitation in all their respective ports and territories, looking toward the final abolition of quarantine. That the existence of any pestilential outbreak shall be promptly notified by the health authorities to the diplomatic or consular representatives of the republics represented in the conference, and that the health officer in each port, prior to the sailing of a vessel, shall note on the vessel's bill of health the transmissible diseases which may exist in the port at that time.

5. That a general convention of representatives of the health organizations of the different American republics shall be called to meet at Washington, D. C., within one year from the adoption of these resolutions. That each republic shall be represented by one or more delegates endowed with authority to act with those of the other republics in the conclusion of sanitary rules and agreements which will best serve all. That the voting in the convention shall be by republics, each republic having one vote. That the convention shall provide time and place for the holding of subsequent conventions, and that it shall designate a permanent executive board of not less than five members to hold office until the next meeting, which will be known as the "International Sanitary Bureau," with permanent headquarters at Washington, D. C.

6. That effective service may be rendered by the bureau, the republics shall promptly and regularly transmit to it all data relative to the sanitary condition of their respective ports and territories.

7. That the salaries and expenses of the delegates and of the members of the International Sanitary Bureau shall be paid by their respective governments, but that the office expenses of special investigations and those for translation, publication, and distribution of reports shall be defrayed from a special fund created by annual appropriations from the republics represented.

EASTERN STATES.

Tuberculosis and Glanders.—The Massachusetts Board of Cattle Commissioners, created to protect the live stock interests of the state from the ravages of all contagious animal diseases, and incidentally to protect the public health from the dangers of diseases common to animals and man, has just issued a report of work done in 1900 and 1901, in which an improved condition of the live stock over any previous year is shown; one-half of 1% of the meat cattle were found tuberculous on a basis of physical inspection. A diagnosis by means of the tuberculin test would reveal a much larger percentage, at least 10%. In 1901, from the total equine population of 75,000, glanders affected 745 horses, about 1%, and they were killed.

Test of Acuteness in Children.—In order to test the comparative acuteness in children of different grades, Professor Richardson, superintendent of the public schools in Maine, distributed copies of uncorrected newspaper proofs among the classes with instructions to the pupils to mark the errors. In a class of 87 pupils, with an average age of 14, in the ninth grade, an average number of 25 errors was marked. The highest number was 52, noted by a girl of 12; the lowest number of errors was 10. Among the freshmen and sophomore classes in English of the high school to whom the same proofs

were distributed, an average of 12 errors was noted; the highest number found by one pupil was 43, and the lowest number was 3. A proof-reader found 41 actual errors. The disparity of findings by pupils and proof-reader was due to the use of capital letters by the author to personify ideas.

NEW YORK.

Compulsory Vaccination.—A bill has been introduced by Assemblyman Patton repealing the sections of the public health law which empowers school trustees to compel pupils attending their schools to submit to vaccination or exclusion from the school on refusal; also the section authorizing the appointment by the trustees of a physician to have the vaccination in charge, the bill provides for the appointment of a commissioner to investigate the nature and value of vaccination, antitoxin, and alleged prophylactics.

Verdict Against a Hospital.—At a fourth trial of the action of Miss Helen D. Ward to recover damages for personal injuries from St. Vincent's Hospital, a verdict of \$18,000 was rendered recently before Justice Beach in the Supreme Court. Miss Ward had gone to the hospital for an operation, and while recovering from the effects of the anesthetic, a nurse applied a hot-water bag which scalded her. The suit was for \$30,000 damages. At the first trial the complaint was dismissed. The jury disagreed at the second. The jury at the third trial gave her a verdict of \$10,000. The judgment was set aside on appeal and the present trial ordered.

Course of Training for Nurses.—A plan to extend the course in the New York Training School from two to three years has been approved and will become operative October 1, 1902. This training school has headquarters on Blackwell's Island, and provides for the nursing of the patients in the City, Gouverneur, Harlem, and Fordham Hospitals. The new course will include a probationary period of three months instead of the one month which was required heretofore. Classes are to be formed quarterly and a preparatory course of instruction will be given during the probationary period with a view of preparing the nurse for her work in the wards.

Medical Jurisprudence.—The question as to whether a physician may include in his testimony statements made by a patient under his care, was argued recently in the New York City courts. Judge Bartlett gave the ruling "that a trial court cannot properly exclude testimony from a physician or surgeon as to information which he acquired in attending a patient in his professional capacity, unless the information was necessary to enable him to act in that capacity." This decision was the outcome of a case against a railroad company to recover damages for personal injuries received in an accident. A verdict in favor of the plaintiff was reversed because the surgeon on the ambulance which carried the wounded man, was not allowed to testify on the trial as to certain statements that were made to him by the plaintiff.

New Bronx Hospital.—A bill providing for the authorization by New York City of corporate stock to the amount of \$500,000 for the establishment of a hospital to take the place of the present Fordham Hospital, will be introduced into the Legislature. This is practically the same measure that passed the Legislature last year and was afterward vetoed by Mayor Van Wyck, who held that however urgent was the need of a hospital, legislation for it was entirely unnecessary. Fordham is at the present time the only general hospital above the Harlem River, and it is practically only a reception hospital, since if more than five patients a day are received, they must be sent directly to North Brother Island or Bellevue. Such hospital facilities are entirely inadequate, and the urgent need of better accommodations for the sick are clearly demonstrated. An amendment to the bill provides for the erection of a pavilion for the treatment of contagious and infectious diseases, thus doing away with the necessity for an extra appropriation for this purpose.

PHILADELPHIA, PENNSYLVANIA, ETC.

Memorial.—A white marble tablet in memory of John D. Lankenau, who was a munificent benefactor of the German Hospital, has been placed in the Mary J. Drexel Home and Mother House of Deaconesses of which he was the founder.

A summer school of medicine will be opened by the University of Pennsylvania in June, at the close of the present college year. The work will be entirely postgraduate, and largely along the line of research. Courses of instruction in 25 specialties, under the charge of the leading professors in the undergraduate school, will be arranged. Dr. S. Weir Mitchell has offered an annual prize of \$50 for the best original investigation on the "Autumnal Coloration of Plant Parts," the competition being open only to students in biology.

Philadelphia Vaccine Physicians.—The regular staff have submitted their bills which are being paid as promptly as possible from the emergency appropriation of \$250,000 for defraying the expenses of the smallpox epidemic. Many of the bills amounted to more than \$1,000. The largest bill paid

thus far was \$2,368.80 for 5,922 vaccinations at 40 cents each, during the period from July 31 to December 31. The auxiliary corps which was appointed during the epidemic, are to receive 20 cents for each person treated whether the vaccination was successful or not.

Honorary Distinction.—Dr. W. W. Keen has been elected honorary president of the First Egyptian Congress of Medicine, which will convene December 19-23, 1902, but will be unable to act because of the demands of his practice. It is reported that this is the first time an American has ever been selected for honorary president of a foreign medical congress.

The University of Pennsylvania will open a spring course in medicine extending from April 28 to July 1, 1902, for the benefit of practising physicians who dwell remote from large centers. The work will be entirely postgraduate and will lie largely along the line of research, embracing anatomy, chemistry, bacteriology, physiology, pathology, experimental therapeutics, clinical medicine, pediatrics, general and orthopedic surgery, genitourinary surgery, gynecology, nervous and mental diseases, otology, dermatology and ophthalmology. The fee for the entire course is \$100; the fee for individual courses will be \$15 and \$25.

SOUTHERN STATES.

Hospital for Infectious Diseases at Annapolis.—A bill has been passed by the United States Senate for its establishment.

Osteopath Bill.—A bill to grant a separate examining board to osteopaths, which was recently introduced in the Virginia Legislature, has been killed by the General Laws Committee of the Senate, to which it was referred.

The Eye, Ear, and Throat Hospital of Baltimore reports that during 1901, 555 new patients were treated, and 17,745 visits made to the hospital dispensary. Since founded medical aid has been given to 52,729 patients, 5,906 surgical operations performed, and 180,969 visits have been made to the dispensary.

New Orleans Sewers.—After a thorough investigation of existing mains by the Sewage and Water Commissioners and a committee of the Municipal Council, the city decided, upon the recommendation of expert engineers, to buy the plant from the company who had done about \$200,000 worth of work, although it was still uncompleted. Negotiations were commenced and finally a compromise effected by which the city got control for \$295,000. This sum, although in excess of the original, was requisite in order to obtain a clear title and avoid litigation, which would greatly delay work. The action of Councils is unanimously approved and it is proposed to commence immediate operation upon the long-delayed sewer construction.

WESTERN STATES.

Osteopathy in Ohio has been given official recognition by the passage of a bill in the House which provides for a committee to examine osteopathy and to regulate practice by that system. The osteopaths will not be permitted to administer drugs or to practice surgery.

Compulsory vaccination for negroes is to be enforced in Chicago. The health officers have notified employers of negroes to insist upon vaccination, and prosecution is threatened if they do not comply with the law. Of the last group of smallpox cases reported three-fourths occurred among the colored population.

St. Vincent's Charity Hospital, in Cleveland, Ohio, has just opened a new department limited exclusively to surgical diseases of women. It consists of a five-story building with all modern equipment and containing 60 beds, 20 for charity patients and 40 private rooms. The cost of the building was \$40,000. The services of the manager, physicians and nurses are all free. The free dispensary will have a capacity for treating 10,000 patients a year.

San Francisco's Mayor on Bubonic Plague.—Mayor E. E. Schmitz, on March 25, removed from office as members of the Board of Health of the city and county of San Francisco, Drs. J. M. Williamson, R. W. Baum, V. P. Buckley, and W. B. Lewitt, "for continued injury and injustice to the people and city of San Francisco, and of the State of California and to their commercial and financial interest, in declaring, proclaiming, and publishing, under their official sanction, and without proper foundation or justification in fact, that bubonic plague exists in San Francisco, and that it has existed there since March 6, 1900." In place of the deposed members, the following were appointed: Drs. J. Coplin Stinson, A. S. Adler, T. A. Rottanzé, and M. E. Van Meter. Editorials in the San Francisco daily papers refer to the outgoing members as "deposed fakery" who did everything in their power to "hamper commerce; to expend money unnecessarily in stamping out something that did not exist," and who did other things "calculated to put a spoke in the wheel of progress, and otherwise injure the city."

CANADA.

Smallpox in Canada.—In order to protect cities from the danger of infection from the return of shantymen from camp, the Quebec authorities will establish quarantine stations at Gracefield, Cologne and Waltham.

The Canadian Medical Association will hold its annual meeting in Montreal on September 16, 17 and 18, 1902. The president is Dr. Francis J. Shepherd; the local secretary, Dr. C. F. Martin, and the general secretary, Dr. George Elliott, 129 John street, Toronto. Dr. William Osler, professor of medicine in Johns Hopkins University, will deliver the address in medicine, and Dr. John Stewart, Halifax, Nova Scotia, the address in surgery. Arrangements are already well in hand for a very large meeting.

FOREIGN NEWS AND NOTES

GENERAL.

Cost of Epidemics.—It is estimated that the smallpox epidemic in London has cost \$5,000,000.

Plague.—A severe outbreak is reported in Australia, particularly in New South Wales; its dissemination has been traced to rats, against which a vigorous crusade is instigated.

Cures for Inebriety.—A committee has been appointed in Victoria, Australia, to make an investigation of the various cures for inebriety in practice. A number of persons have volunteered to undergo treatment.

The medical laws of Australia, passed in 1901, admit to practice physicians who have taken a five-year-course in medicine before taking a degree. This debar from practice there all graduates of American medical schools.

Foreign Practitioners in Brazil.—Although this country offers a promising field for the practice of medicine, surgery, and dentistry, the examinations which foreigners must pass before they are entitled to practise are made so severe that the foreign practitioner is almost debarred from following his profession in that country. These examinations, which are held at the medical colleges at Bahia and Rio Janeiro, include languages and other branches not found usually in the medical curriculum and which it would require probably two or three years extra preparation for the majority of the applicants to pass successfully. According to a recent report the law hereafter is to be even more rigidly enforced, especially in regard to dentists.

The fourteenth International Medical Congress under the patronage of the King and Queen Regent, will convene in Madrid, April 23 to 30, 1903, with Dr. Julián Calleja as president, and Dr. Angel Fernández Caro as general secretary. All governments are asked to send representatives, and invitations have also been extended to all universities, medical schools and the principal medical societies of all countries to send delegates. The work of the congress is to be divided into 16 sections as follows: Anatomy, descriptive, comparative, etc.; Physiology, including Biology; General Pathology, including Bacteriology; Therapeutics, including Hydrology and Pharmacy; Internal Pathology; Nervous Disorders, including Insanity and Criminal Anthropology; Diseases of Children; Dermatology, including Syphilography; General Surgery; Ophthalmology; Otorhinolaryngology; Odontology; Obstetrics, including Gynecology; Military and Naval Medicine; Public Health and Legal Medicine, including Toxicology. Applications for membership, to which medical practitioners, pharmaceutical chemists, and veterinary surgeons are eligible, are to be sent as early as possible to the general secretary at the Faculty of Medicine, Madrid. The names, titles, qualifications, and addresses of the applicants must be clearly written, and they should specify which section they wish to join. A check on Madrid for 30 pesetas (about \$5) should accompany the application. They will receive a copy of the transactions of the section, and will be at full liberty to take part in the business of any other section. Ladies accompanying members may obtain a special card of admission to official entertainments upon payment of 12 pesetas. It is requested that all communications respecting the congress should reach the executive committee before January 1, 1903. The languages spoken will be Spanish, French, English, and German.

GREAT BRITAIN.

London Hospital last year treated 13,000 in-patients; there were 3,591 minor operations performed, and 2,439 of a more serious nature.

For the differentiation of smallpox from chickenpox, the London City Council has published a list of medical practitioners, resident in different sections of the city, who may be consulted in doubtful cases of chickenpox, the Council being responsible for the fee.

London Water Supply.—Among many plans for its increase is that of the retiring engineer to the City Council, who proposes to bring by gravitation a daily supply of 200,000,000 gallons from Wales, and if this amount should prove insufficient the plan provides for a second line of aqueduct to convey yet another 200,000,000 of gallons per day.

London's Population.—According to the completed census report there are 1,019,546 families in London, the average family numbering slightly over 4.4 persons. These families share the services of 234,398 female and 15,425 male servants. In the general population females exceed males by 252,371. The number of pauper inmates in workhouses is 46,646.

Hospital Fund.—The report of the General Council, which was adopted at the annual meeting for King Edward's Hospital Fund for London, shows that a steady and continuous increase marked the past year's work. The receipts for the year were £53,188 as against £51,549 of the previous year. The income, however, is still far short of what the King anticipated when he established the Fund four years ago. The Prince of Wales, who presided over the meeting, hopes the permanent income of the Fund will reach £50,000 a year.

Women Surgeons.—At the annual meeting of the new Hospital for Women in London, attention was directed to the work done by the women surgeons. It was stated that full opportunity had been given for testing their work in all the most important operations, with the result that all prejudice which had hitherto existed against them had been dissipated, and that they now held a sound reputation for ability in this line of work. There had been nearly 1,900 cases of maternity treated at the hospital without one death due to that cause. In the aggregate there were 577 major operations, with a mortality of less than 6%.

Causes of Leprosy.—Dr. Jonathan Hutchinson, who recently returned to England after studying the causes of leprosy in South Africa, concludes that the primary cause of leprosy is the eating of badly cured salt fish which is sent inland from the west and south coasts to the farmers and industrial centers. He does not believe that leprosy is infectious or contagious in the accepted sense of these words, but holds that it can be communicated by food contaminated by lepers' hands. He suggests as prophylaxis legislative control of the fish-curing establishments, the diffusion of information in regard to the danger of communication, and the establishment of isolation homes for lepers, during the stage of the disease involving risk of contracting it.

Arsenic in Beer.—Dr. E. S. Reynolds, who was the first to discover the cause of the outbreak of alcoholic neuritis in Manchester in 1900, has presented some interesting information before the Royal Commission on Arsenic Poisoning. Since the epidemic the Manchester brewers have taken infinite pains to the end that no arsenic shall be found in the beer, by the most delicate tests, and in consequence alcoholic neuritis as understood for years in Manchester has nearly disappeared and herpes and skin pigmentation have greatly diminished. Alcoholic heart, to which much attention had been directed formerly in that city, several monographs having been written on the subject, can no longer be found. Dr. Reynolds drew attention to two symptoms which he considered especially indicative of arsenic—pigmentation and keratosis, and also to the fact that a large quantity of arsenic is sometimes present in reduced iron (ferum redactum Br. Ph.) in some instances as much as 1%, and suggests that the benefit sometimes derived in anemia from administration of iron may be due to the arsenic contained in it.

CONTINENTAL EUROPE.

Treatment of Lupus.—The donation of \$2,000 by the Emperor of Austria for the establishment of an institute for the treatment of lupus is announced.

Pure Food.—The Norwegian Parliament has passed a bill imposing a special duty of $\frac{1}{2}$ cent (United States currency) per kilogram on syrups containing over 25% of glucose.

Increase of Drug Habit.—The startling increase of the drug habit in Paris is instanced in the use of absinthe, the amount consumed having doubled within the past five years. A late report states that at least 8,000,000 bottles are drunk in a year.

Tuberculosis.—A new edition of Dr. S. A. Knopf's "Monograph on Tuberculosis as a Disease of the Masses, and How to Combat It," has been published by the Imperial German Central Committee of Tuberculosis in Berlin. This edition brings the number of this prize essay that have been issued up to 300,000.

The Zambaco Prize of 800 francs, it is announced by the French Society of Dermatology, will be awarded in 1903 for the best work on any subject in dermatology or syphilography received before November 30, 1902. Essays should be sent to the secretary, Dr. Hallopeau, 91 Boul. Malesherbes, Paris. The

name of the author must not occur on the article, but accompany it in a sealed envelope.

Pure Food.—The League of Small Tradesmen, an organization of Paris, has posted in conspicuous places petitions to the people beseeching them to oppose the appointment of medical men to serve as experts in hygienic matters in the Chamber of Deputies, claiming that the pure food fad has almost reached the point where every food vender will be obliged to establish a laboratory to demonstrate to the customers the purity of each article on sale.

A new monthly periodical, entitled, "Annali de Eletticità e Terapia Fisica," was begun at Naples, under the direction of F. Piccinino and A. Di Luzenberger with the present year. The journal will be devoted to "experimental and practical electrotherapy, and all the newer branches of electrotechnics," including such subjects as electrochemistry and electrobiology. Other departments of physical therapeutics, such as massage, aerotherapy, hydrotherapy, phototherapy, radiology, medical gymnastics, and climatology will also be represented.

Cancer Research.—A representative of the German Government has had a hearing before the Budget Committee of the Reichstag concerning an appropriation for cancer research. He stated that statistics of 12,000 cases seemed to indicate positively the contagiousness of cancer, and mentioned districts where there is recurrent contagion. Since 1892 there has been noted a large increase in the disease and its occurrence in individuals of an earlier age than formerly. Though women are more liable to it than men the relative immunity of the latter is decreasing. The government proposes to establish a branch cancer research in Berlin, and to devote two departments of the charity hospital to the treatment of patients.

OBITUARIES.

Albert Horatio Gallatin, at one time professor of chemistry in New York University, March 25, aged 63. He was a grandson of Albert Gallatin, secretary of the treasury under Jefferson and Madison. He was graduated at New York University. After studying in Europe, where he devoted all his time to chemistry, he returned to enter the College of Physicians and Surgeons, and received the degree of M.D. in course. In the Civil War he served two years in the field as surgeon, with the rank of lieutenant.

Gerald O'Farrell, of Philadelphia, March 27, aged 70, while on his way to see a patient. Dr. O'Farrell was born in County Galway, Ireland, and came to this country when quite young. He was graduated from the University of Pennsylvania with the class of '62. He served throughout the Civil War as surgeon of the Sixty-Third and Two Hundred and Fifteenth Regiments, Pennsylvania Volunteers.

J. R. Theobalds, of Weston-Super-Mare, England, March 7, aged 80. He entered the Indian Medical Staff in 1848 and after 32 years' service retired with the rank of surgeon-general. His surgical skill and his control of the various hospitals under his management are commended very highly in the government reports.

Charles R. Burks, of Sherwood, Va., March 26, aged 70. He was graduated from Jefferson Medical College, Philadelphia. During the Civil War he served in the Confederate Army as a lieutenant in the First Virginia Cavalry, Company C.

Edward G. Horne, of Philadelphia, March 23, aged 74. He had practised dentistry for nearly half a century at Ashland and Berwick, Pa., prior to 1897, when he took up his residence in Philadelphia and retired.

William Elliott Huger, Jr., of Charleston, S. C., at Johns Hopkins Hospital, March 29. He graduated at the University of Virginia and studied medicine in the Johns Hopkins Medical School.

Daniel W. Richards, of Easton, Pa., March 24. Dr. Richards was graduated from Jefferson Medical College, Philadelphia, and served as a surgeon in the Union Army during the Civil War.

J. H. Morton, of Courtland, Ore., drowned while pursuing his professional duties, March 9. (Erroneously reported as Dr. R. E. L. Morton, who is his surviving brother.)

Sir William Guyer Hunter, honorary surgeon to King Edward of England, and Consulting Physician to Charing Cross Hospital, March 14, aged 73.

Joel J. Rogers, of Huntsville, Pa., March 23, aged 84. He had practised in the vicinity for 55 years.

Thomas S. Butcher, formerly of Philadelphia, at Monterey, Mexico, March 28, aged 55.

Athol Archibald Wood Johnstone, of Brighton, England, March 16, aged 82.

Uriah Gilman, the oldest practitioner in Woodstown, N. J., March 24.

Moses T. Babcock, of Hammondsport, N. Y., April 1, aged 77.

Orin H. Sargent, of Boston, in Philadelphia, March 28.

Robert P. Davis, of Portland, Ind., March 23, aged 66.

S. Townshend, of Oakland, Md., March 24, aged 65.

G. W. Bishop, of Sanford, Fla., March 20.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

AN IMPROVED TUBE FOR INTRAVENOUS INFUSIONS, ALSO A RETRACTOR TO AID IN SPONGING THE CULDESAC OF DOUGLAS IN SUPRAPUBIC SECTIONS.¹

BY

PHILANDER A. HARRIS, M.D.,

of Paterson, New Jersey.

I cannot now say how many times I have injected the veins with normal salt solution. In almost every instance the need of intravenous infusion has come so abruptly that in only a few of all of these cases has it happened that everything required for performing this operation has been at the moment exactly as I desired it.

Certain items are essential for the giving of normal salt solution. First a fountain, with a rubber tube leading from the fountain to the patient. A plain fountain syringe, even a very old one, which may be found in almost any house, may be boiled and serve as good a purpose as we require. If a fountain syringe is not at hand, a piece of rubber tubing, five or six feet long, with a sinker attached to the upper end of it, may be dropped in a pitcher, bowl, or large bottle containing the normal salt solution, and made to act by siphonage. Having thus rigged our fountain and tube, leading from it to the patient we still need another and most important fitting, without which we could not make the intravenous infusion. We are told that



an ordinary medicine dropper answers every requirement for this purpose. It is very cheap, easily obtained, excellent fitting and should always be first thought of when one is without a proper instrument.

I have employed all sorts of fittings to connect the rubber tube of the fountain with the vein of the patient. I have used medicine droppers more frequently than any other kind of fitting. I have used filiform canulas, aspirating needles of various sizes, a piece of a very small catheter, and also tubes made expressly for this purpose.

The intravenous infusion tube of Dr. Howard A. Kelly has afforded me greater satisfaction than any other fitting. This tube at its middle portion is bent at an obtuse angle. At a point just above the bending there is on each side of the tube a concave disc, intended to afford a grasping point for the fingers of the operator or his assistant. The upper end of this tube—or at least of the one which I used, and which was sold to me as Dr. Kelly's—would fit snugly in a rubber tube of small caliber, for example, a bit of nursing bottle tubing. But in several instances I found myself embarrassed greatly in trying to connect it with the rather larger tubing of the ordinary fountain syringe. The difficulties which I encountered in this relation led me to change entirely the fountain end of Dr. Kelly's tube. As altered by me, the general formation of its fountain end is conical. Its point is represented by the smallest bulbous formation. Further from the apex there is a larger bulb; still further, a larger one; and so on; so that almost any size of tubing may be instantly and tightly fitted. Unless the tube from the fountain is of extremely large caliber, it is not necessary to even encircle it with a string or ligature.

This conated and multibulbous end is large enough to afford a firm grasp by the fingers, so that the grasping discs on either side of the tube of Dr. Kelly are dispensed with.

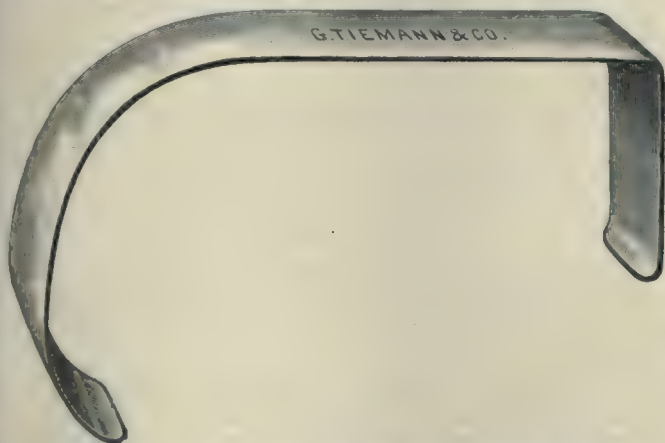
I have also altered the point of Dr. Kelly's instrument, so that in transverse section it would present an ellipse, instead of

¹ Presented to the Gynecological and Obstetrical Section of the Academy of Medicine, New York, at its regular meeting in March.

a true circle. Thus modified, its point more easily finds and enters the slit in the vein. I would advise the conated and multibulbous fitting for any sort of an intravenous tube.

The ease with which almost any rubber tubing may be instantly and tightly secured to this multibulbous fitting is leading me to abandon the ordinary fittings of my uterine and other washouts, and to substitute for them the form which I here present.

A few months since, while experiencing difficulty in inspecting and arresting hemorrhage in the peritoneal culdesac of Douglas, I momentarily improvised a retractor which held



the uterus upward, forward and against the pubes, and afforded so much light and room for work that I afterwards had made the retractor, which I now present in exactly the form you see it.

The assistant grasps the angular portion and passes the larger curved part deeply in the pelvis in such a manner that the sharply bent point of the retractor is brought beneath and against the cervix uteri. The uterine organ now rests so nicely in the embrace of the instrument that a forward, upward movement will open a wide field for inspection and work. The angular end, which is about two and a quarter inches long, I sometimes employ as an abdominal wall retractor.

The instrument is made in two sizes; one has a width of one and a quarter inches, the other is one and three-eighths inches wide. An assistant of mine has named this instrument the "utero-pubic adductor."

CASE OF EXCESSIVE FETAL DEVELOPMENT.

BY

W. H. MORGAN, M.D.,
of Middletown, Ind.

To the Editor of AMERICAN MEDICINE:—I have noticed two communications in recent issues of AMERICAN MEDICINE regarding excessive fetal development. One by Dr. John Kinneman, another by Dr. W. Milton Lewis, which leads me to report a case of my own, which occurred while practising medicine in Chicago.

In January, 1882, I was called to attend to Mrs. R., aged 32. She was a strong, robust, Irish woman, and this was her fifth confinement. Examination showed the pelvic measurements were normal. As the pains were regular, the os just beginning to dilate, and I was extremely tired, I decided to rest for three or four hours. I then examined the patient again and found the os fully dilated, ruptured membranes, and diagnosed vertex first position. About three hours later I made a digital examination, and found the head had made but little progress, although the pains had been regular and strong. I told the patient I would leave the case to nature for another two hours, and then, if necessary, apply the forceps—that is, if she was not making more rapid progress. At end of the time, however, she insisted on leaving it to nature, if I assured her everything was all right.

Sixteen hours after the membranes had ruptured I delivered her of a perfectly normal male child, weighing 16 pounds.

Two and one-half years later I attended the same woman and delivered her of twins—males—weighing respectively 8½ and 9 pounds.

UNSIGNED EDITORIALS, ETC.

BY

CHARLES WARDELL STILES,
of Washington, D. C.

Pathologist of the Bureau of Animal Industry.

To the Editor of AMERICAN MEDICINE:—I have been much interested in reading your editorial on page 412 of AMERICAN MEDICINE, March 15. May I once more call your attention to certain matters in connection with the subject at hand.

First, in regard to the pagination of reprints, your remarks appear to me as an admission that your foreman is not quite so inventive as he might be. The difficulty can be easily overcome in several different ways; for instance, the original pagination could easily be added in the margin in brackets; thus, if you issued a reprint of Dr. Baldy's article, which begins on page 426 of the March 15 issue, you could place on the left margin [426] on a line with "the above title," etc.; [427] on a line with the words "and would be one of the," etc.; [428] on a line with "there existed a rise in the number," etc.; or just above the first line of the article you could place [426]; on the line between the last line of 426 and the first line of 427 you could place the number [427]; likewise [428] on a line between the last line of 427 and the first line of 428. Either of these methods would be very simple and would meet the difficulty without entailing any great amount of extra work on the part of the printer. Again, nearly all American medical reprints have upon their covers an expression like the following:—"Reprinted from AMERICAN MEDICINE, March 15, 1902," while the volume, the number, and the original pagination are all omitted. It is of great value to have the full bibliographic reference on the cover.

You are in error in regard to your premise stated in the following sentence: "That these reasons are good and sufficient is proved by the fact that the great journals of the world, medical, scientific, and lay, do not break with the custom." Permit me to call your attention to the fact that even in the daily papers in Germany, every article can be traced directly to its author, for every article is signed either by a name or by some arbitrary sign, a given writer always using the same sign, or if unsigned, the editor is responsible for it. Again, our great scientific review journals of the world are published in Germany, and it is a rare exception that reviews are not signed, while it is very common to find editorials signed.

Your sentence, "The great newspapers and magazines would certainly do so if it were wise and of advantage," was probably written without recalling the fact that there is a decided movement even in the daily newspapers to have the editorials signed. This plan is being adopted by many of the newspapers in order to give a greater guarantee to their editorials. As one of the papers which has recently adopted this plan, I would mention the *Washington Times*, which was purchased by Mr. Munsey a few months ago.

I find it difficult to adopt your view that there is an error in the position that individual responsibility is of a higher and better kind than editorial or corporate responsibility; let me illustrate with an example. AMERICAN MEDICINE publishes exceedingly valuable editorials, certainly as valuable as we find in any journal in the world; now, let us suppose that an editorial is one on a surgical subject. If written by a truly great surgeon it is bound to carry more weight with it than if written by a comparatively unknown surgeon. There is no way for us to judge who wrote the article unless we are familiar with the style of writing and recognize the man's personality therein. Suppose the editorial involves a question of classification, but is written by a man who has paid more attention to biology; it is manifestly of less value than if written by a systematist. The field of medicine and medical sciences is at present so large that it is an utter impossibility for any one man to form a valid judgment upon all the fine points as brought out, and we must necessarily take a great deal upon authority. The better our authority the more importance we attach to the views; take for instance, the names as used in medicine; the entire system of terminology in medicine is one of authority, not one of principle, for there are no international

rules and regulations to guide us in the acceptance of a name, while in zoology and botany we have such rules. Frequently the name involves a question of classics, such as is shown in your interesting editorial on the termination *-itis*. This editorial clearly involves a knowledge of Greek. Now, I have seen many articles and editorials of this nature which were written by men who were not especially good Greek scholars, and I think you will admit that in a case of this kind the medical profession at large must necessarily accept the views set forth, not because the individual members of the profession are all capable of judging the case at hand, but because the editorial was written by a man who assumes to know something about Greek. If that editorial were signed by a physician who is known to have a classic education, it would have greater weight than if signed by a physician who has had only a high school course.

Let us compare further some of your excellent editorials with those which appear in some of the inferior journals. The cheap medical journal cannot possibly command the ability in its editorial columns that you do, yet its editorials may fall into the hands of persons not well acquainted with medical literature in general, but acquainted with the names of prominent American medical writers. It seems to me perfectly evident that if such a person finds an editorial in either the one place or the other signed by a man who is known to be a specialist in his subject, that is going to influence his ideas more than if he finds an editorial either unsigned or signed by a totally unknown author. In this line I may refer to certain articles I now have in mind. The question involved is whether it is more proper to use the termination *stoma* than *stomum*. Two scientific men have come out in favor of one of these terminations, while two philologists and two scientific men have favored the other. All of the articles have appeared in journals of approximately equal standing. We must here be influenced by the men, not by the journals.

While "Anonymity teaches the reader to discriminate and judge, not to accept on the authority of a great name," my position simply is that most of us are not able to draw the fine lines of discrimination and judgment upon all of the numerous different fields of work, the literature of which we are obliged to read.

[We gladly give space to Dr. Stiles' courteous letter, but see no reason to change our opinion as to the inadvisability of signed editorials, etc. "Even in the daily papers," by no means convinces us, and "in Germany," does not add seemingly to the strength of the argument. It must be noted that we speak only of medical journals. Even in other scientific serials would it not be better to draw the anonymous editorial up to trustworthiness rather than make all journalism so personal? The plan may be held advisable in the daily papers which possibly by that method may secure some confidence on the part of their readers that the gathering of news and statements of fact have some guarantee of truth through the initials of the names of their usually unknown correspondents. But how does continental journalism stand as to character and honor when compared with the best English and American journalism? Could one secure the consent of the *London Times*, *The Spectator*, *The Nation*, *The New York Evening Post*, *The Lancet*, *British Medical Journal*, etc., to give up anonymity in their editorials? If they did so, there would at once be a most decided drop in the public appreciation and confidence, and these great journals know this perfectly well. Our correspondent continues to forget the dominating fact that it is utterly impossible to get the few existing masters in any subject to write the thousands of editorials, etc., required in lay, medical and scientific journals. He, perhaps, does not suspect that if their services could be secured, their editorials would usually be inferior to those now written by a thousand "inferior" men. They have neither the time nor the peculiar talent for this sort of work. It might perhaps be said that it would be all the better if the thousands did not write, good white paper being left uninked, and if the few desirable editorials and reviews were written only by the few authoritative masters. "That is another story," and for another time!

We still think anonymity, besides helping in the education of a large number of men who do the writing, is of profound benefit to the general reading public of professional and scientific men, by training them to judge independently, and not to take their opinions on authority. It certainly conduces to independent journalism, to the development of the social and the scientific conscience.

As to the bibliographic aspect, have we not already a sufficiently plethoric literature to consult without including in the catalogs references to editorials, reviews, etc.? Lastly, should the catalogs give references to reprints which have not the files of the original periodicals? We agree, however, to a proper reference in reprints to the original pagination, volume, number, etc., and have so ordered our printer.—Editor AMERICAN MEDICINE.]

A CASE OF ADDISON'S DISEASE.

BY

FREDERICK G. CANNEY, M.D.,

of San Francisco, Cal.

An interesting case of Addison's disease occurred in my practice a few months ago, and it has occurred to me that a brief history and the subsequent necropsy might be interesting to others.

CASE.—A. C. H., aged 32. The patient was an American dentist. His height was about 5 ft. 4 in., and his usual weight about 125 lbs. He was of a nervous disposition, and a hard student. His father died of lupus, but there was no other family history of importance.

Five months before he died he applied for a life insurance policy for \$5,000, which was granted. The examining physician incidentally remarked that he would recommend him for insurance if he wanted to increase his policy to \$50,000, showing that he considered the risk good, although at that time he had lost five pounds in weight. The loss of flesh increased gradually and slowly, and he soon complained that he did not feel so strong as usual. He was working very hard, and, as he threw himself completely into his work, little was thought of his increasing weakness, except his friends thought he needed a vacation. He soon found that he had to take a stimulant in the morning before he had sufficient strength to undertake his day's work. The asthenia increased gradually, until April 15, he gave up work and went to the country. So soon as he relaxed in the country with no morning "bracer," his condition became one of absolute prostration, with entire loss of appetite. He had his attendants cooking all sorts of dishes, which he could not touch when brought to him. He returned home May 15 in a desperate condition, and was waited on by Drs. Currier, Manning and myself. The pulse was weak and thready, ranging between 125 and 140. This was the first time he came under a doctor's care, as he had looked upon his case in the very lightest manner. He was himself an M.D. as well as a D.D.S. Anorexia was now almost complete; the tongue was coated, breath foul, frequent hiccup and intense restlessness. He complained of a feeling of weight in the epigastrium. The urine was absolutely normal. A blood-count was suggested, but his weakness was so intense that we had not the heart to request it. The bronzing of the skin was very slight on the exposed parts of the body; indeed so slight that we could not be sure that it was not caused by exposure to the sun during his month in the country. We agreed, however, that as so many of the classic symptoms of Addison's disease were present, we would administer suprarenal extract, although we all felt sure that nothing would avail. He died May 28, less than two weeks after he came home.

On autopsy we found the suprarenal bodies enlarged, each weighing one ounce, about eight times the normal. I made a microscopic examination of the suprarenal body, and found the characteristic evidences of the disease. Caseous areas were present throughout; also many large giant cells in almost every field of the microscope. The normal histologic structure of the organ was apparent only in a few places.

This patient was an interesting case to me. He was a life-long friend of mine, and I had seen him very frequently up to the time he went to the country. We all thought he overworked, but, like many others, we take chances which are unwise. Five months before he died there was not bronzing enough to attract any comment from his friends, and even one month before death there was not bronzing enough to attract attention. Many of his friends can look back and remember that his complexion was not clear, but its cause was unsuspected until about May 15.

ORIGINAL ARTICLES

THE FUNCTION OF THE ARMY MEDICAL SCHOOL.

The Address at the Annual Commencement of the Army Medical School, at Washington, April 4, 1902.

BY

GEORGE M. STERNBERG, M.D., LL.D.,

Surgeon General United States Army.

After an interval of four years the Army Medical School resumed its sessions last November and we are assembled today for the purpose of bestowing diplomas upon the members of the present class who have completed to the satisfaction of the faculty the prescribed course of instruction. While the War with Spain and subsequent events made it necessary to suspend for a time this course of instruction, its value has been emphasized by the experience of the past four years. The members of former classes have, as a rule, rendered exceptionally valuable services and have demonstrated the importance of the special training received at the Army Medical School in preparing them for the efficient performance of the varied and responsible duties of a medical officer of the army. If the duties of a medical officer were simply to care for sick and wounded soldiers the necessity for an army medical school could scarcely be maintained, for successful candidates for admission to the Medical Corps are graduates in medicine whose professional qualifications have been passed upon by an army medical examining board. But even more important than the successful treatment of disease and injuries is the prevention of disease among our soldiers. The efficiency of an army is not measured by the number of names on the muster rolls but by the number and physical endurance of those who are fit for active service. Many a general has seen his well-matured plans frustrated by the unexpected prevalence of some infectious disease among his troops. History shows that, where new levies of troops are concerned, this is a factor which so frequently decides the fate of a campaign that no commanding general is justified in ignoring it. Given certain conditions as to the environment of soldiers recently enlisted and assembled in camps of instruction and the prevalence of typhoid fever may be predicted with certainty. To ignore this danger is a reckless assumption of risks which may compromise the military situation and without doubt will result in great suffering and loss of life. The responsibility rests upon officers of the Medical Department to point out to commanding officers of troops in garrison or in the field conditions which are likely to have an unfavorable influence upon the health of their commands and to indicate the proper measures to be taken for the relief of such conditions. It is evident that such recommendations, to be of value, must be based upon exact knowledge with reference to the etiology and prevention of those diseases which have been found by experience to present the greatest dangers as regards the health of troops and the efficiency of armies. The most important function of the army medical school is to make the student-officers practically familiar with all that is known upon this subject and prepare them to give expert advice upon all matters relating to the prevention of disease among our soldiers under the various conditions of service. This has become doubly important since we have come into possession of the Philippines, as our soldiers are there exposed to various infectious diseases which are of rare occurrence or practically unknown within the limits of the United States.

The measures to be taken for the prevention of disease among our soldiers naturally fall under two principal headings, viz: (a) Those which relate to the main-

tenance of a high standard of resisting power on the part of the individual units of the army; and (b) those which relate to protection of these individuals from infection by any of the various disease germs which have been proved by experience to be the principal causes of sickness and mortality among soldiers. Under the first heading we have to consider food, clothing, ventilation and heating of barracks, exercise, etc. The second involves a precise knowledge of the morphological and biological characters of all known disease germs, of the mode in which they gain access to the human body, and of the best means of destroying them. There was no scientific basis of preventive medicine until this precise knowledge with reference to the etiology of infectious diseases was obtained. The effort to combat epidemics of cholera, plague, etc., by the firing of cannon and burning of bonfires was not irrational in the middle ages in view of the theories then held. But we now know that disease germs are not disseminated through the atmosphere of infected localities, and, having a precise knowledge of where to find them and how to kill them, are able to formulate directions for the prevention of these pestilential diseases which, if fully carried out, would no doubt lead to their utter extinction. We have a recent example of the importance of precise knowledge with reference to the mode of transmission of an infectious disease as a basis for measures of prophylaxis in the discovery that yellow fever is transmitted by mosquitoes of the genus *Stegomyia*. The practical application of this knowledge in the city of Havana has apparently resulted in the complete extinction of yellow fever in that city. At least there have been no deaths from this disease for a period of more than three months. Major Gorgas, Surgeon, U. S. A., Chief Sanitary Officer of the city of Havana, says in his report for the month of December, 1901:

"If we take the months of October, November and December from 1890 to 1900, inclusive, we find that the smallest number of deaths for these months is 52, in 1898; the largest 631, in 1896, and the average 144.54. In 1901, for the same period we had no deaths. Nineteen hundred and one is the only year in which any attention has been paid to mosquitos in connection with yellow fever. In the two preceding years of American occupation, 1899 and 1900, every means known to science and which money could command, backed by unlimited military authority, was used to destroy fomites, on the theory that fomites were the means of propagating yellow fever. In 1901 the same efforts were directed to the destruction of mosquitos, on the theory that the mosquito is the only means of propagating this disease, and the hygiene of yellow fever was carried out from this point of view, the effort to destroy fomites having been entirely laid aside."

I referred a moment since to the theory which formerly prevailed that during epidemics the germs of infectious diseases are present in the atmosphere of infected localities. In connection with this assumption there was a vague idea that the infected atmosphere extended its limits in some mysterious way and that such diseases as plague, influenza and cholera could spread from country to country and even across the ocean from continent to continent quite independently of the ordinary means of transportation and of human intercourse. Learned doctors in these prescientific days discoursed of epidemics as extending in pandemic waves. Even so recently as the year 1885 at the meeting of the International Sanitary Congress at Rome, the delegates from Great Britain insisted that cholera extends from the endemic foci of the disease in India throughout Europe and even across the Atlantic ocean to America quite independently of ships or of human intercourse. We now know that the cholera spirillum is a delicate microorganism which is quickly destroyed by dessication and cannot survive exposure to direct sunlight for an hour or two. It may be conveyed through the atmosphere for short distances when attached to the feet of flies which have been in contact with the discharges of cholera patients. In the same way the typhoid bacillus may be carried from the excreta of typhoid patients deposited upon the ground

or in undisinfected sinks, to contaminate articles of food exposed in the company kitchen. We also know that the malaria germ may be carried through the air in the bodies of infected mosquitos, but in all of these instances the distance which the germs of the diseases mentioned can travel is limited by the capacity for flight of the insect which serves as a carrier.

This brief outline will indicate to those who may be disposed to inquire as to the necessity for an army medical school some of the subjects which engage the attention of the student officers. They learn to recognize the various disease germs by the use of the microscope and of culture methods; they learn to differentiate between the mosquito that serves as an intermediate host for the germ of malarial fever and of yellow fever; they are instructed as to the best methods of destroying these pernicious insects or of protecting soldiers from infection through their stings; they learn to detect the presence of pathogenic microorganisms or of injurious inorganic impurities in drinking water; they learn to make an early diagnosis in malarial fever, typhoid fever, bubonic plague, diphtheria, etc., by the use of scientific methods, some of which have been discovered very recently and all of which were unknown when the present speaker was a student of medicine. Indeed when I look back 41 years to the period when I was a recently appointed assistant surgeon of the army and consider how many things of the utmost importance for the prevention of disease, for diagnosis, and for treatment of which I was ignorant are now taught in the Army Medical School, I can scarcely help regretting that I am not a member of the graduating class equipped as you are for the important duties which await you. During the Civil War the clinical thermometer had not come into use; the microscope was not recognized as of any special importance for the practising physician, and was not issued for the use of medical officers of the army until many years after the close of the Civil War; the antiseptic or aseptic treatment of wounds was one of the undreamed of benefactions of science and the military surgeon, like his civil confrere, introduced a dirty finger or an infected probe into a wound for the purpose of exploration, in blissful ignorance of the fact that his procedure was a principal cause of the suppuration which invariably followed. To reduce the inflammation caused by the unseen and unknown pathogenic microorganisms thus introduced into gunshot wounds we were in the habit of applying unsterilized water from any available source, and thus another certain source of infection was brought to bear to ensure the suppuration which was generally regarded as an essential feature in the process of repair. Disinfection we attempted to practise, but in the absence of any precise knowledge as to the nature of disease germs or where they were to be found, our efforts were misdirected and often futile. The excreta of a patient with typhoid fever or cholera, or the pus expectorated by a patient with pulmonary consumption, was not known as infectious material which should be promptly destroyed as an essential measure in the prophylaxis of these diseases, and we had no experimental evidence upon which to form an opinion as to the comparative value of disinfectants. In the matter of diagnosis we were without many valuable instruments and methods now in common use. Typhoid fever was called by some other name in a considerable proportion of the cases, and unfortunately this error is still a common one among physicians who are not familiar with the methods of blood examination, by which we detect the malarial parasite, and the application of the Widal reaction as a test in a suspected typhoid case.

In the rapid progress of scientific medicine during the time included in the period of my active service, medical officers of the army have borne an honorable part, and especially so since the establishment of the Army Medical School in 1893. My own research work was prosecuted in the face of many difficulties and at a time

when there was no bacteriologic apparatus at any military post. Indeed, when in 1880 I went to the Johns Hopkins University to prosecute my studies in this direction, there was no bacteriologic laboratory in this or, so far as I am informed, at any other university in the United States, and I not only had no one to look to for instruction, but I was alone as a student of this class of microorganisms. At present every military post of any importance has a well-equipped laboratory with all of the apparatus necessary for chemic or bacteriologic investigations; and it is expected of the young gentlemen who go out to day to assume the duties and responsibilities of medical officers of the United States Army, that they will avail themselves of the facilities thus afforded, not only for purposes of diagnosis in the interest of their patients, and of prophylaxis, in the interest of the command with which they are serving, but also in the interest of scientific medicine and their fellow man in general. In other words, you are expected, when opportunity offers, to do research work with a view to increasing our knowledge of the etiology, pathology, prevention and treatment of those diseases which you may encounter in which this knowledge is incomplete.

In our tropical possessions you will have ample opportunities for the investigation of some of the unsolved problems in medicine. The brilliant results recently achieved by Reed and Carroll in elucidating certain essential facts relating to the etiology of yellow fever should serve as an incentive to all of those who have had the privilege of attending a course of instruction in which they have had so prominent a part. Already much good work has been done in the Philippines by our board for the study of tropical diseases, but many questions remain unsolved. Among those which suggest themselves at this moment I may mention the following: What are the essential factors in the etiology of beriberi, of sprue, of tropical ulcers? What are the principal harmful intestinal parasites in these new possessions of ours? Why is it that malarial fevers prevail in the more elevated regions rather than in the vicinity of the paddy fields of valleys near the sea level? What is the principal habitat of *Amoeba dysenteriae* outside of its human host? These are but a few examples of the questions which will confront you and which your special training in the Army Medical School should prepare you to investigate. But I must warn you that there is no easy road to success and renown in this field of investigation and you must not be discouraged if you are baffled again and again. Often one little point gained will serve as a beacon to some future investigator to whom the credit of success may be accorded. But this is a small matter. I would not have you work for the glory of achievement but for the result itself, quite independently of its bearing upon your own fortunes or reputation. To add to the sum of useful knowledge and to feel yourself that you have accomplished something for the promotion of medical science should be reward enough.

For the information of those who are not familiar with the course of instruction at the Army Medical School I would say that it includes many important subjects in addition to those already referred to. The Judge Advocate General of the Army gives to the student officers a most valuable course of lectures on military law, a subject of the utmost importance for all officers of the Army. Medical officers often have independent commands in charge of General Hospitals, schools of instruction for the hospital corps, etc., and the senior surgeon of every military post or independent command is directly responsible for the discipline of the detachment of the hospital corps attached to the command with which he is serving. Again, medical officers are frequently detailed as members of courts martial and formerly it was no unusual thing to detail a medical officer as judge advocate of a general court martial.

After the Civil War, during my early frontier service I not infrequently acted as judge advocate of a general court and was several times by virtue of my rank, president of such courts. Evidently the young medical officer who has had the privilege of hearing the lectures of the Judge Advocate General has a great advantage in the performance of such duties and in starting upon his military career with an adequate knowledge of military law.

The course of instruction in special branches of scientific medicine includes a series of lectures and practical demonstrations upon animal parasites. We are so fortunate as to have in Washington a leading specialist in this department of biology and pathology. Through the kindness of Prof. Stiles and the courtesy of his chief, the Secretary of Agriculture, the student officers have been able to obtain valuable information relating to the animal parasites of man and the lower animals from a master of the subject. It is doubtful whether any medical school in the country affords equal facilities for obtaining such special knowledge. In military medicine, military surgery, and military hygiene, they have the opportunity of following the instruction of professors who by long experience and study are especially well qualified to give them such information and practical work as will best fit them for the responsible duties which await them. And in the Army Medical Museum, which I trust they find time to visit at frequent intervals, they see a large collection of pathologic specimens of special interest to the military surgeon.

In addition to the various subjects referred to relating to their professional advancement there are many matters which have an important bearing upon their usefulness as medical officers in which they receive instruction by lectures and practical work. Among these I may mention hospital administration, property responsibility, the preparation of reports and returns, army regulations, customs of service, hospital corps drill, etc.

A most important part of the duties of medical officers is to impress upon officers of the line in command of troops the fact that a majority of the diseases which contribute to the nonefficiency of soldiers, including all of those which prevail as epidemics, are preventable. This is generally recognized as regards smallpox, which, before the time of Jenner, constituted a veritable scourge of armies as well as of the civil population; but it is not so generally recognized as regards typhoid fever, which within the past four years has been the cause of an enormous mortality in our own camps of instruction during the Spanish-American War and among the British troops in South Africa. Dr. Leigh Canney, London, has recently published an important paper with reference to the prevalence of typhoid ("enteric fever") among the British troops in South Africa. He says:

"The paralysis of an army produced by water-borne disease is often so complete that the army fails to accomplish the work set before it. During the Civil War in England neither of the opposing forces moved for many months on this account, though encamped in adjoining counties. From this cause, in recent times, the first army sent to the Crimea was practically wiped out by a deathrate exceeding that of the Great Plague, and led ultimately to the enforced abandonment of part of the enterprise the army was designed to accomplish." Still later, the Russians in Western Asia had to abandon their projected policy by the paralysis of their mobilized army, produced by enteric fever. In Madagascar the slightest serious resistance would have practically annihilated the whole French army, paralyzed and decimated as it was from this cause. In the present war I will draw attention to two instances in which the incidence of enteric fever led, in the one case, to grave disaster and delay, and in the other case, to the very verge of one of the greatest disasters that the reputation of the army could have been called upon to receive. I refer, in the former case, to Paardeberg and Bloemfontein, and in the latter case to Ladysmith. In the case of the Bloemfontein epidemic, no one can deny that the delay involved in transporting all the food, hospitals and equipment, required by a division of soldiers in bed with typhoid or other water-borne disease, and that required by their staff of attendants, must have had a disastrous effect in delaying many days the subsequent advance and the delivery

of effective blows. . . . In this particular case to obtain an effective force of 35,000 men at the objective, it was necessary to carry 500 tons of transport daily, and to have some 10,000 men in addition in hospital *hors de combat* from water-borne disease. . . . In the case of Ladysmith, not only military policy was on the point of receiving a severe check from this same cause, but national respect was on the verge of suffering a grave disaster."

During our Civil War typhoid fever was the principal cause of mortality, and without doubt the number of victims from this disease alone exceeded the number who were killed in battle or died of wounds (93,969). The total number of deaths from disease was nearly twice as great (186,216). During the period commencing May 1, 1898, and ending April 30, 1899, the loss to our armies by disease was 5,438 and by wounds, injuries or accidents, only 968.

The question why a preventable disease is not prevented applies to the civil population as well as to armies. Just at present smallpox is widely prevalent in many parts of the United States and in England, simply because the well-known means of prevention have been neglected by a considerable portion of the population, and because there is no adequate authority for the enforcement of vaccination. So to as regards typhoid fever; many of our cities and towns continue to suffer severely from this disease as a result of the use of water contaminated by sewage and other insanitary conditions which have been repeatedly brought to the attention of those most interested. Sanitarians generally have learned by experience the difficulties attending an effort to restrict the ravages of infectious diseases in towns and cities. They have to contend with the ignorance and reckless indifference of a large part of the population, including often those having the authority to make and execute sanitary regulations. The same conditions exist to a certain extent in the army, and especially among new levies of troops commanded by inexperienced officers. In this connection I beg leave to quote the concluding paragraphs of my paper on "Sanitary Lessons of the War," read at the meeting of the American Medical Association, at Columbus, Ohio, June 6, 1899:

"A trained medical corps, hardly adequate for an army of 25,000 men, cannot control the sanitary situation when this army is quickly expanded to 250,000. Physicians and surgeons from civil life, however well qualified professionally, as a rule are not prepared to assume the responsibilities of medical officers charged with administrative duties and the sanitary supervision of camps. The proper performance of such duties cannot be expected from a physician without military training or experience, no matter how distinguished a position he may have held in civil life.

"Courage and patriotism on the part of line officers and enlisted men cannot take the place of knowledge and experience; new levies of troops are, as a rule, ignorant of the first principles of camp sanitation, and reckless as to the consequences of their neglect of prescribed sanitary regulations. Therefore, training and discipline are essential factors in the preservation of the health of soldiers in garrison or in the field.

"The value of the aphorism, 'In time of peace prepare for war,' has received additional support. This preparation should include a corps of trained medical officers larger than is absolutely necessary for the army on a peace basis, and systematic instruction in military medicine and hygiene for the medical officers of the National Guard as well as for those of the Regular Army; also instruction of line officers in the elements of hygiene and especially in camp sanitation. It should also include the establishment of camping grounds in various parts of the country, having an ample supply of pure water, a proper system of sewers, etc. If our volunteers could have been assembled in such camps during the late war a saving in lives and money would have resulted which would, without doubt, have demonstrated the economy of such preparation for war in time of peace."

Inasmuch as commanding officers of troops are, and must be directly responsible for the carrying out of all necessary sanitary improvements and regulations in garrison and in camp, it appears to be evident that they should be instructed in the essentials of military hygiene as a part of their professional education. This has been repeatedly urged by the Surgeon-General of the Army and by visiting boards to the Military Academy. The

Board of Visitors for the year 1901 reported as follows:

"The question of the establishment of a course on military hygiene has received the careful attention of the committee. They beg to submit to the board for indorsement and approval the following propositions, some of which are extracted from a previous report upon the same subject made by the chairman:

"1. The establishment of such a course has been repeatedly recommended by Boards of Visitors and Surgeon General, and has been approved on more than one occasion by the Secretary of War.

"2. As long ago as 1894 the Board of Visitors argued in support of the establishment of such a chair, to the effect that the mere rudiments of hygiene in relation only to personal health cannot be acquired by the cadets in so short a course as was then, and is now, given at the Academy (ten hours altogether of lectures and recitations); and when, in addition, the important questions of the proper or improper feeding, clothing, housing, and physical training of the soldiers in peace and during the exigencies of war; the prevalence and prevention of disease, which makes far greater inroads upon the effective strength of an army than do the shot and shell of the enemy, and the complicated problems of the effective yet practicable sanitation of barracks and camps are considered, thorough instruction in this department is seen to be not only desirable but urgent, and in fact, necessary.

"3. The American Medical Association, representing the profession of the entire country, has recently (June 7, 1899) unanimously recommended 'that a professor of military hygiene be appointed at West Point to instruct the cadets in the principles of sanitation,' and resolved that a committee be appointed to wait upon and present this and other resolutions to the President of the United States for his favorable consideration."

The objection made by the faculty of the Military Academy to carrying out this recommendation has usually been that the time of the cadets is so fully occupied by the prescribed course of studies that it is impracticable to add another subject. In reply I would say that for officers who are to command troops a knowledge of hygiene is more important than the higher mathematics or certain other branches taught at the Military Academy; and that in view of the fact that the fate of armies is often decided by the prevalence of preventable diseases rather than by the military prowess or superior numbers of the enemy, it would appear to be the part of wisdom to instruct the commanders of future armies in all that relates to the prevention of disease among troops, either in garrison or in the field. The idea, which has apparently prevailed to some extent among line officers, that typhoid fever and other "camp diseases" are necessary evils connected with the assembling of new levies of troops, would be quickly rejected if these officers were well informed with reference to the etiology of this disease and the methods by which its epidemic prevalence may be prevented. In this connection I beg leave to again quote from the paper by Dr. Leigh Canney, already referred to. He says:

"The object of war is to force upon the enemy surrender or annihilation. It is manifest that to wilfully allow oneself or one's men to be killed by the enemy's fire, or to be spending weeks in bed at the critical moment with preventable disease, before this result has been attained, is neither business nor war. The vast extent of the latter evil in this war led the House of Commons into a long discussion, in which it was assumed that this evil was unpreventable, and it was induced to send out a commission to inquire if our men were comfortable with their typhoid at Bloemfontein, Kroonstad, and other places. In that House it was stated that 'In no previous campaign had the sufferings been more mitigated,' as if the object of war, medically, were only to see how many thousands could be 'comfortably' treated. This debate revealed a total disregard of the scientific work that has been done in the past 25 years for prevention, and of the serious risks to the army that might thus follow from diminished efficiency, leading to possible total destruction, and inability to advance or to accomplish its object. * * *

"The result of the Hospitals' Commission then is, the reform of the Medical Service, but provides no glimmer of light as to the avoidance in future of the actual disasters which called it forth. The main issue—prevention—has been obscured. It is the object of this paper to fix attention on the main question, that before the grass has grown over the mounds of typhoid dead we shall have resolved that these disasters shall not occur again, and that any steps taken in contemplation of such disasters-to-come, in pursuance of the idea that such disasters are inevitable, cannot be tolerated."

Our own experience since the disastrous summer of 1898, when 250,000 volunteers were quickly assembled in camps of instruction not previously prepared for their reception, shows what can be done in the way of prevention. The infected camps were abandoned and the troops moved to new camps where proper sanitary regulations were, as a rule, strictly enforced. As a result of this and the experience gained by officers and enlisted men, the typhoid mortality quickly fell from a maximum of 1,541 deaths in the month of September, 1898, to 809 in October, 365 in November, 201 in December, and 180 in January. No doubt the investigations and recommendations made by the so-called "typhoid fever board" had much to do with this rapid improvement. This board consisted of Major Walter Reed, surgeon, U. S. A., Major Victor C. Vaughan, surgeon, U. S. Vols., and Major Edward O. Shakespeare, surgeon, U. S. Vols. Comparing the calendar year 1898 with the year 1899 we find 20,926 cases with 2,192 deaths were reported in 1898, and that in 1899 there were only about one-tenth as many, viz: 2,184 cases and 258 deaths. Comparing the mortality rate per thousand of strength we find that it was 14.83 in 1898 and 2.44 in 1899. In 1901, notwithstanding the unfavorable conditions to which our troops have been subjected in the Philippines, the typhoid admission rate for the whole army has been reduced to 9.74 per thousand of strength and the deathrate to 1.63 per thousand. These figures represent an enormous saving of life as a result of the efforts of the Medical Department to secure the enforcement of proper sanitary regulations.

Young gentlemen, while you are at the outset of your careers as medical officers of the army, and have your faces turned toward the Orient, I have nearly reached the end of my active service and my eyes are fixed upon the setting sun, after a long day crowded with stirring events and strenuous exertion. I find it hard to realize that the young assistant surgeon of my name who came to this city early in 1861, and soon after marched out with a regular regiment constituting a part of General McDowell's army to the disastrous battle of Bull Run, is identical with the individual now addressing you. Between that time and this very important chapters in the history of our country have been written, in all of which the achievements of the Medical Corps of the Army are entitled to an honorable place. Of the 21 men who were appointed assistant surgeons in the class of May 28, 1861, I am the sole survivor on the active list, and very soon all of the participants in the War of the Rebellion will have disappeared from view. For you the events of this war are already ancient history, but the experience gained by officers of the Medical Department during that gigantic and protracted struggle is a part of your heritage, and I may say for the medical officers of that day that if we knew less of scientific medicine than it is your good fortune to possess, we had high ideals as to duty and loyalty both to the country and to the Medical Corps of the Army. It is for you to sustain and perpetuate these high ideals, and you have just reason to be proud of the fact that you have been admitted to a *corps d'élite*, access to which can only be obtained through merit. You will find that officers of the line and of other staff corps are always ready to treat you with the consideration due you as officers of the army and members of a learned profession, unless in some way, by your own actions, you forfeit their esteem or good will. Let your conduct always be such that they will not only recognize and rely upon your professional skill, but will honor and confide in you as gentlemen "*sans peur et sans reproche*." Be loyal to your superiors and just to your inferiors, painstaking and thorough in all you undertake, not over-exacting as to your rights and privileges, and never enter upon a controversy, personal or official, unless you are sure that you are right and that the subject is of sufficient importance to justify you in an effort to prove it. Never fail

to respond to professional calls in the families of officers and enlisted men on the ground that they are not entitled to your services or that the ailments complained of are trivial. It is much better to make unnecessary visits than to gain the ill will of those who summon you believing that your professional assistance is necessary. Do not seek personal advantages through irregular channels. The chief of your corps can best judge whether a particular assignment which you may desire would conflict with the interests of the service or the rights of others. If not, and in his judgment your request is reasonable, it will always give him pleasure to grant it. But an attempt to escape a duty or to secure an assignment through outside influence shows an indifference to the best interests of the service and the rights of others, and is evidence of disloyalty to the chief of the corps which cannot fail to give him an unfavorable opinion of one who would resort to such methods.

Finally, do not forget to apply practically the knowledge of hygiene which you have acquired for the preservation of your own health. Aside from any personal interest you may have in the matter it is your duty to do so; for, if you contract a preventable disease through your own neglect of the proper measures of prophylaxis, or are prematurely retired from service for Bright's disease, cirrhosis of the liver, or some other chronic ailment caused by excesses of any kind, you deprive the Government of the services of a valuable trained officer. But enough of advice; you are liberally educated physicians of mature age and I do not doubt that you will go out after your brief period of special training in the Army Medical School fully equipped for the duties which await you and fully cognizant of your obligations to yourselves, to the profession, to the Medical Corps of the Army, and to your country. With best wishes for the fullest measure of success and happiness in the prosecution of your life work I wish you "God speed."

NOTES ON SOME DISEASES OF THE KIDNEY AND BLADDER IN INFANCY.¹

BY

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Holt and Jacobi have done more than anyone else in this country to emphasize the importance of the examination of the urine in infancy and to call attention to the frequency of diseases of the urinary organs at this period of life. In spite of their efforts, the literature of the subject is still very scanty and but few seem to appreciate its importance. Examination of the urine in infancy is still, I fear, even with careful diagnosticians, the exception rather than the rule. Spurred on by their example, I have examined the urine of every baby admitted to my service at the Infants' Hospital for the last two years, as well as of many in private practice. The results have interested me greatly, and have convinced me that the examination of the urine should never be neglected in the diagnosis of the diseases of infancy. These results, with gleanings from the literature of the subject, form the basis of this paper. It is in no way complete but, led by the cases, merely touches a few points here and there.

The Urine in the Newborn.—The first urine, drawn by catheter, is acid, almost always clear and but little colored. During the first four or five days it is usually more or less cloudy, from the presence of epithelial cells from the urinary passages, and uric acid salts. The specific gravity averages about 1,012. Small amounts of albumin are almost always present. The sediment

always contains normal epithelial cells, various forms of uric acid crystals and now and then hyalin casts. The amount of urine is small. This is due in part only to the insufficient supply of milk, as the amount is also small in bottle babies. It increases rather rapidly on the fourth day, 20 to 50 cc. being passed in the first three days, and about 100 cc. on the fourth day. In the second week it averages between 200 cc. and 300 cc. The proportion of water eliminated in the urine to that taken in the food is greater after the fourth day, averaging 22% to 25% before and 50% to 60% after.

Albuminuria of the Newborn.—A small amount of albumin in the form of nuclealbumin is almost constantly present in the urine during the first four days of life. It often persists for two weeks, and not infrequently for two months. There is much difference of opinion as to the cause of this albuminuria. It has been attributed to the changes in the circulation at birth, to hyperemia resulting from the changes in the metabolism after birth, to renal disease in the mother, and to irritation from uric acid. It is doubtful if any of these explanations are correct. The latest investigations show that albuminuria is no more common in the children of women suffering from nephritis or eclampsia than in others. If uric acid is the cause its action is probably as a chemic rather than as a mechanic irritant. Many observers regard this albuminuria as physiologic. It is hardly safe to consider it so, however, until more is known about the metabolism and the changes due to nourishment and disturbances of nutrition in the newborn. Whatever the cause, it is certainly not a serious condition, and ought not to be looked upon as the forerunner of chronic nephritis in later life.

Uric Acid Infarctions.—The evidences of uric acid infarctions are present in the urine soon after birth. They are most marked in the second half of the first day and on the second day. They rarely continue more than a week. They are urates of various forms, single and in masses, large and small cylinders more or less encrusted with urates, and irregularly shaped hyalin masses covered with urate spheres and granules. The urates are mostly in the form of ammonium urate.

The evidences of infarction in the urine are not synchronous with the pathologic processes in the kidney. Uric acid infarctions are very seldom present at birth, and are rarely found before the second day. They persist for a considerable number of days, but seldom more than 14, although they sometimes last for more than two months. They are found in more than 40% of autopsies in the first week or two of life.

The explanation of this discrepancy in time is that during the first day, while the infarction is developing, the particles are small and easily detached. During the second day they have not had time to form solid masses and are easily washed away. After the sixth day the urine passes through the open tubules only and small particles are redissolved in the urine in the pelvis and bladder.

The Urine in Infancy.—The odor is slight; the color pale. It is usually clear, sometimes slightly opalescent, and not infrequently turbid from mucus. The reaction is feebly acid. The specific gravity varies from 1,003 to 1,008 in the first six months, and from 1,006 to 1,012 up to two years. The urine of breast fed babies almost never contains indican, that of the artificially fed baby usually but slight traces. Urobilin is never present in that of the breast fed, seldom in that of the artificially fed. It does not contain albumin, and sugar is absent with the ordinary reagents. The sediment is slight and consists entirely of cells. One-third to $\frac{1}{2}$ gram of urea per kilo of body weight is said to be passed in 24 hours. Figures are of but little use, however, as the amount of urea varies with the character of the food. It is pretty certain, nevertheless, that from 40% to 50% of the nitrogen ingested appears in the urine. The amount of urine is relatively large. It varies between 200 and 500 cc.

¹ Read at a meeting of the Philadelphia Pediatric Society, March 11, 1902.

from one to six months, and between 250 and 600 cc. up to two years.

Hematuria.—Hematuria is found in infancy under the same conditions as in adult life. It may also occur as a symptom of hemorrhagic disease of the newborn, and is a not infrequent accompaniment of infantile scurvy. In this disease it may be one of the earliest symptoms, as in the following case:

John W., a somewhat delicate baby of nine months, began on September 27 to pass bloody urine. It was red, slightly acid, specific gravity 1.008, and contained $\frac{1}{2}\%$ of albumin. The sediment contained normal blood and a few renal cells. Except that he was rather more fussy than usual there were no new symptoms, and nothing was found on physical examination to account for the condition of the urine. In spite of alkalies and urotropin the hematuria persisted. On October 17 the nurse reported that his back seemed to hurt him and that he disliked to be bathed or handled. The physical examination failed to reveal any other signs of scurvy, but as the combination of hematuria and tenderness suggested this disease he was given orange juice. The tenderness disappeared in a few days and the urine was entirely free from blood by the first of November.

Gee, Thompson, Roberts and Barlow early called attention to the fact that hematuria may be the only symptom of the scorbutic state in infancy. Their statements hardly seem to have received the attention which they deserved, however, and scurvy is seldom thought of, I fear, as a cause of uncomplicated hematuria. My experience leads me to believe that it is one of the most common, if not the most common, cause of this condition in infancy. The following cases are examples:

Lalish P., 7 months old, was perfectly well, except that she was not gaining in weight. About the first of February her mother noticed that at times the urine stained the napkins red. This was attributed by the physician in charge to uric acid. The staining continued intermittently up to the first of March, when the urine was examined and found to contain fresh blood but no casts. There were no other symptoms whatever, except failure to gain in weight. Orange juice was begun the next day. The urine was clear in less than two weeks, and has so remained. The child also at once began to gain in weight.

Sally T., 6½ months old, was perfectly well, except that she had lost her appetite and ceased to gain. About the middle of May her mother noticed that the urine stained the diapers red or brown. She did not report it, however, until the first of June. The urine was then red, alkaline and contained $\frac{1}{2}\%$ of albumin. The sediment showed much normal blood with an occasional hyalin cast and renal cell. The physical examination was entirely negative. Orange juice was begun at once. Improvement in the color of the urine was noticed in 24 hours. It was clear in five days and so remained. The appetite improved almost at once, and gain in weight began and continued.

Acute Nephritis.—Jacobi states that "after birth the renal artery and the kidneys do not develop proportionately; the transverse section of the former increases out of proportion to the volume and weight of the latter. This disproportion between the size of the artery and the condition of the renal tissue establishes a predisposition to congestive and inflammatory conditions of the organ. Moreover, the resistance in the capillary net of the young kidney is unusually great. Experiments prove that the permeability of the capillaries is greater, and that within a given time a proportionately larger amount of water can be squeezed through them in the adult than in the young." These anatomic peculiarities would lead us to expect diseases of the kidney to be more common in infancy than in adult life. The general opinion, however, is that they occur less frequently. Is this opinion justified, or is it founded on imperfect and incomplete observations? Is nephritis really uncommon in infancy, or is it unrecognized and mistaken for other diseases? May not this apparent rarity be due in part, at least, to the general neglect of the examination of the urine at this age? I personally believe that it is. The fact that Goulkewitch found evidences of nephritis in 22 of 220 autopsies of infants from 2 to 9 months old is evidence corroborative of this belief. While not prepared to express an opinion as to the relative frequency of acute nephritis in infancy, childhood and adult life, I feel certain that it occurs far

more frequently in infancy than is generally supposed, and that the careful and systematic examination of the urine will show a great increase in the number of cases. It is difficult to determine what influence these nephritides may have on the future life of the infant, and whether or not they eventually lead or predispose to chronic processes. Owing to the enormous reparative power of the infant's tissues it is probable that their power of harm is less than in adult life. In considering the acute nephritides of infancy a distinction should be made between the primary and secondary forms.

Primary Nephritis.—Holt has contributed more than any one else to our knowledge of this subject. In 1887 he reported eight cases of this disease and collected 15 others from the literature of the previous 50 years. In 1891 he reported two others. In the discussion of this paper Jacobi stated that he had himself seen 20 or more cases, but did not give any data. Although many single cases have been reported since then, the only other considerable series which I have been able to find is one of 12 by Andriotaki. The pathologic diagnosis in three of Holt's cases was acute diffuse nephritis; in two, acute interstitial nephritis, and in one acute parenchymatous nephritis.

Holt found from the study of his own cases and of those collected from the literature, that the quantity of urine was not diminished enough to attract attention, except in the severest cases. Fever was usually present, not infrequently prolonged, and sometimes high. Gastrointestinal symptoms were common. The respiration was peculiar in a number of cases, being rapid or dyspneic. Dropsy was not a prominent symptom. Nervous symptoms were present in almost every case—restlessness, excitability, drowsiness or convulsions.

He concludes that mild cases are not at all rare, although they escape notice, and that even the fatal cases often pass unrecognized because the symptoms are misleading and tend to attract attention to other organs. The urine should be examined in every case of convulsions, persistent vomiting without evident cause in the stomach, unusual prostration in other diseases, disturbed respiration without evidence of pulmonary disease, and sudden high temperature without evidence of local disease.

The case which I have to report resembles the adult type of the disease so closely that it could hardly have escaped notice:

Samuel C., 22 months old, was the son of a physician. He had always been perfectly well and had had no sore throat or disease of any sort. Pallor was noticed about the middle of March. As he seemed well in other ways, little was thought of it. The eyelids were a little puffy on the 29th, and on the 30th his face was considerably swollen. Although slightly less active than usual, he did not seem sick. The physical examination showed nothing abnormal except marked pallor, slight edema of both upper and lower lids as well as of the dorsums of the feet, and a small amount of free fluid in the abdomen.

The urine was slightly dark and contained between 1% and 2% of albumin. The sediment contained many hyalin, fine granular and epithelial casts, renal cells, and a small amount of normal and abnormal blood. The amount of urine was not much diminished.

Recovery was rapid and uneventful.

My experience has been that while nephritis is seldom recognized in infancy, other conditions are not infrequently mistaken for it. Edema has given rise to most of the mistakes, for although edema is not a prominent symptom of nephritis, it not infrequently develops in other diseases. It is not at all uncommon in severe cachectic, anemic or toxic conditions. It is needless to say that the examination of the urine will prevent such mistakes in diagnosis. Cassel, however, thinks that nephritis may occur in young children without albuminuria. He reports nine cases of edema, eight of which followed other diseases. In three there was also ascites. The urine was examined repeatedly, but never contained albumin or casts. Autopsies were made in two cases.

The pathologic changes found hardly warrant the diagnosis of nephritis. It seems far more probable that the edema was due to some change of toxic origin in the capillary walls. (Filatow—Anasarca without Albuminuria in Childhood).

I have several times seen a diffuse urticaria in the course of gastroenteric disturbances attributed to nephritis. The character of the swelling should, of course, at once suggest the proper diagnosis. The examination of the urine would confirm it. The following case is an example of this condition:

Mary D., 15 months old, was sent to the hospital with a history of diarrhea for three days, followed by swelling of the legs and feet, with much pain. Both persisted up to the time of her entrance to the Infants' Hospital, three days later. The diagnosis which came with her was "kidney trouble and rheumatism."

The skin was covered with erythematous blotches. Faint urticaria was marked. Both feet, both legs and the left thigh were considerably swollen, reddened and hot, but did not pit on pressure. There was a suggestion of the same condition in the hands and forearms. The temperature was 99.5° F.

The urine was pale, acid, 1,012 and contained no albumin.

Uric acid stains have frequently been mistaken for blood and have thus led to a false diagnosis of nephritis.

Secondary Nephritis.—In estimating the frequency of secondary nephritis in infancy, as in adult life, much confusion arises because of the difference of opinion as to what conditions in the urine justify the term "nephritis." The chemists, clinicians and pathologists all have a different terminology and seem unable to agree on a classification. According to the point of view, secondary nephritis is very common or very uncommon.

It is well known that in the course of acute diseases at all periods of life, albumin and casts may be found in the urine. These disappear during convalescence, and are not of unfavorable prognostic import in the present or in the future. The chemists ascribe this condition to hyperemia of the kidney, designate it "acute hyperemia," and deny its right to the term "nephritis." They claim to be able to determine from the urine whether this condition or a "nephritis" is present. They base their diagnosis on the amount of albumin, casts and blood, as well as on the amount of urine and urea. Some go so far as to say that there is no acute nephritis without edema. The pathologic findings, however, do not justify these distinctions. They always show degeneration of the epithelium of the tubules, not infrequently necrosis, and often albuminous exudation in the glomerular capsules and in the tubules. Degenerative changes are never absent. They certainly cannot be attributed to a simple hyperemia. In fact, there is no pathologic proof that a simple hyperemia can cause the appearance of albumin and casts in the urine. Moreover, in this condition the appearance of the kidney at autopsy is frequently not that presented by hyperemia. On the contrary, it is often pale and somewhat swollen. In addition to the degenerative changes, all degrees of proliferation of the glomerular endothelium and epithelium, as well as of proliferation of the cells in the intertubular tissue, may be found. Comparison of the urinary analyses in cases showing only degenerative changes with those in cases showing in addition mild proliferative changes, fails to show any differences upon which to base a diagnosis. Analyses of the urine also fail to show, except in the most general way, the degree of the proliferative changes. It seems justifiable, therefore, to discard the term "acute hyperemia," and to designate that condition in acute disease in which small amounts of albumin and casts are found in the urine, as "acute degenerative nephritis," realizing, however, that the term "degenerative nephritis" carries with it no more unfavorable diagnostic or prognostic import than the term "hyperemia." The cases in which the urine shows more marked changes or in which the clinical manifestations are more severe, still deserve the term

"nephritis," hemorrhagic, glomerular or interstitial, as the case may be. That is, the term "nephritis," as used, does not signify inflammation, but is a general expression meaning "disease of the kidney," no matter whether that disease is to be considered solely degenerative or exudative. It is very probable that in all degenerative processes of the kidney an albuminous fluid is secreted by the glomeruli. It makes no essential difference whether this exudation is or is not considered inflammatory.

My experience does not lead me to agree with von Jaksch that febrile albuminuria occurs less frequently in infancy than in adult life. I believe rather that febrile albuminuria and acute degenerative nephritis occur as frequently and under the same conditions in infancy as in later years, while the severer forms of secondary nephritis are more common. Acute degenerative nephritis rarely produces any symptoms. Those of the severer forms are the same as those of primary nephritis, but are usually masked by the symptoms of the causative disease.

Nephritis complicates the eruptive fevers in infancy as in childhood, but seems to develop more commonly in the pneumonias of infancy than of later life. The following case is an example:

Samuel E. entered the Infants' Hospital January 9, after an illness of about a week. There was complete solidification of the right upper lobe. Except for slight evidences of rickets the physical examination was otherwise negative and so remained. The urine was high, acid, and showed a large excess of urates as well as more than 0.5% of albumin. The sediment was composed of renal cells, a little normal blood and many hyalin, fine granular and epithelial casts.

The temperature fell several degrees on the eleventh, but immediately rose again. There was no extension of the process in the lung, but no evidences of resolution appeared. He passed but little urine, became restless and sleepless, and died on the twentieth after a number of severe convulsions. The urine on that day was high, turbid, acid, and contained more than 0.5% of albumin. The sediment contained many renal cells, a little normal blood, many hyalin, fine granular, brown granular and epithelial casts and a few fibrinous casts.

Goulkewitch in his series found that nephritis occurred more often with pneumonia than with other diseases and that glomerulonephritis was more frequent in pneumonia than in any other disease.

Miller recently reviewed the literature of nephritis in influenza and found but one case in infancy beside his own. He therefore concluded that nephritis is a complication of influenza almost unknown in infancy. I think that it would be found more common if the urine were more often examined.

More attention has been paid to the renal complications of the acute enteric diseases of infancy than to those of any others. The great majority of those who have written on the subject have been convinced of the frequency of these complications. In a series of 70 cases which I studied some years ago I found evidence of renal involvement in only 15%. In no case was anything more severe than an acute degenerative nephritis suggested. It may be that my cases were of a milder type than those of other observers. Careful study of these cases failed to show any relation between the presence of albumin or renal elements in the urine and any symptom or set of symptoms. Koplik considers excitement, alternating with stupor or severe vomiting, characteristic. Lesmé and Merklen think that edema, dyspnea and myosis are the only clinical signs which show functional disturbance of the kidney.

Nephritis may also occur in infancy as a complication of eczema and suppurative otitis media. It is of frequent occurrence in general tuberculosis and may occur in congenital syphilis. Its recognition in this disease is of great importance because of the specific treatment.

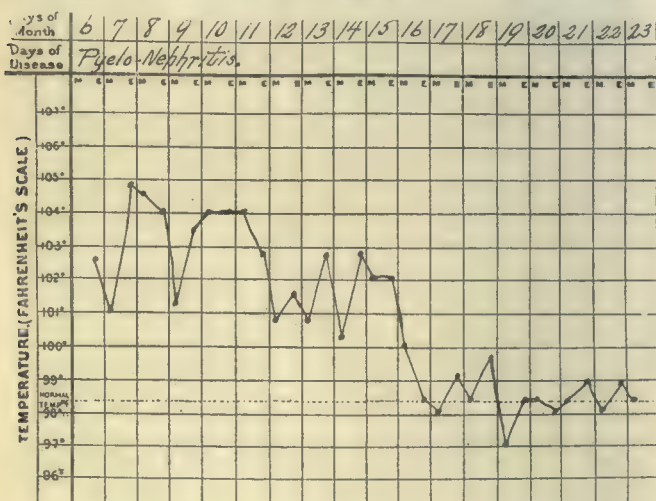
Albuminuria and nephritis are uncommon in the more chronic diseases of infancy, such as rickets, anemia and atrophy. The urine in severe cases of atrophy often has a peculiar opalescent appearance. This is due to some

intermediate product of tissue change, the chemic nature of which has not been determined (Blacher). The specific gravity is low. The amount is diminished, except during periods of improvement, when it rises again.

Chronic Nephritis.—Chronic nephritis is of necessity very uncommon in infancy, partly because of the absence of the usual causes of this disease and partly because of the lack of time for its development. A few reports of cases, however, are scattered here and there through literature. In a number of these, heredity seems to have been of etiologic importance. I have never seen a case.

Acute Pyelitis and Pyelonephritis.—Acute pyelitis and pyelonephritis occur not infrequently in infancy. A short time ago 2 of 18 babies in my service at the Infants' Hospital were suffering from them. They may be primary, or develop in the course of other diseases. The secondary form is the more common. The type may be mild or severe, the mild being much the more usual. They are seldom due to ascending infection from the bladder. The secondary form occurs most often in diseases of the intestine. Both mild and severe types are usually due to infection by *Bacillus coli communis*. The diagnosis can only be made by the examination of the urine. It is important, moreover, to remember that in these diseases the character of the urine may vary from day to day or from hour to hour, at times being normal and at others not. A single negative examination is not sufficient, therefore, to exclude them. The symptoms seem often to point to the gastroenteric tract as the seat of trouble. Constipation is more common than diarrhea. The temperature is irregular, often resembling that of intermittent fever. In a case of Holt's there were numerous chills. The prognosis is generally good. The following case is very characteristic:

John P., 6 months old, had never been well fed, and although never sick, had not been vigorous or gained properly. He began to cough a little on December 30, and vomited occa-



sionally after January 2. He had "inward convulsions" on the fifth. He was admitted to The Infant's Hospital on the sixth, with a diagnosis of "bronchopneumonia."

He was fairly developed and nourished, and of fair color. There was a slight rosary. There were a few rales in both backs at entrance. These were gone the next day, and did not reappear. The right membrana tympani was reddened. This was punctured on the fourteenth, and a few drops of serum exuded. The discharge ceased in a few days. Both the rales and the middle ear inflammation were undoubtedly complications, and in no way important.

The urine was of normal color, turbid, and slightly acid. It contained $\frac{1}{2}\%$ of albumin. The sediment contained much pus, not in clumps, caudate cells, a few hyalin casts, and no crystals. The amount of urine was much diminished.

The temperature was irregular. He took but little food, and that with a dropper. He vomited occasionally. The bowels were constipated. The amount of urine continued small and of the same character, except that fine granular and

epithelial casts also appeared in the sediment. His weight had fallen from eleven pounds at entrance to a little under nine pounds on the twenty-fourth. Soon after this he began to pass more urine. The examination on the thirtieth was as follows: Pale, highly acid, 1,004, slightest possible trace of albumin. There was a little pus, a very few caudate cells and hyalin casts in the sediment. From this time on he improved rapidly in every way. The albumin was gone from the urine on February 6.

Cystitis.—Cystitis may be either primary or secondary. Primary cystitis is decidedly uncommon, and is usually not of a severe type. Secondary cystitis is very common, and occurs in a great variety of serious diseases. It, too, is generally mild in type, but may be severe. It is seldom the result of the extension of a vulvovaginitis or urethritis upward. Both forms are almost always due to the colon bacillus. The most usual source of infection is probably in the rectum, but in little girls with short urethras, direct contamination from the feces may take place. Severe ascending infections involving the kidneys are very unusual. (Hutinel, Finkelstein.)

The symptoms of the primary form are fever, restlessness, and colicky pains. These symptoms are easily misinterpreted, and the real condition not suspected. The diagnosis can only be made by the examination of the urine. The symptoms of the secondary form are presumably the same. They are usually masked, however, by those of the primary disease and pass unnoticed. The urine is usually acid in both forms.

The following cases are good examples of the two types:

Ella S., 9 months old, was a striking example of blooming health, the only trouble being slight constipation. Without any evident cause she began to be restless at night, and soon developed severe colics, crying for an hour or two at a time. There was no fever. There were no symptoms relating to the digestive tract, and physical examination showed nothing abnormal. In the course of a few days micturition became painful, although there was no increase in frequency. Analysis of the urine at this time was as follows: Pale, highly acid, 1,010, slightest possible trace of albumin, no excess of urates. The sediment contained pus, large and small round-cells, and a few squamous cells, but no casts or crystals.

James D., 14 months old, was suffering from a moderately severe fermenting diarrhea, which he had had for a week. No symptoms referable to the bladder had been noticed. The temperature was normal. The urine was pale and turbid, slightly acid in reaction, and of a specific gravity of 1,006; it contained a slight trace of albumin. The sediment showed much pus and a few large round and squamous cells. He continued under observation for nearly three weeks, at the end of which time the urine was pale and turbid, slightly acid, specific gravity 1,002, and contained the slightest possible trace of albumin. The sediment consisted of pus and a few squamous cells.

My experience leads me to believe, therefore, that diseases of the kidneys and bladder are not at all uncommon in infancy, and that the examination of the urine will render a diagnosis possible in many doubtful cases and throw light on many obscure symptoms. It is not enough to examine the urine only in cases in which diseases of the urinary organs are suggested, because the symptoms of these conditions in infancy are not only almost never characteristic, but usually misleading. It should be examined as a routine procedure, otherwise most of these cases will be missed, and diseases of these organs will continue to be as uncommon in the future as they have been in the past. If it is examined as a routine measure, I feel sure there will be a very sudden increase in the frequency of these diseases, an increase, however, apparent rather than real.

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THE USE OF EGGS AS A MEDIUM FOR THE CULTIVATION OF *BACILLUS TUBERCULOSIS*.*

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The cultivation of tubercle bacilli upon artificial media directly from animal tissues has always been a matter of difficulty, although many widely different culture media have been recommended for this purpose. Little advance has been made over the original slow and troublesome blood serum method of Koch, unless the recently-described brain agar and brain serum of Ficker¹ which gave such abundant growths from pure cultures has proved in the hands of some to be equally satisfactory when attempts are made to cultivate the tubercle bacillus directly from the tissues of tuberculous animals.

The large number of tuberculosis experiments now under way in this laboratory, under the general direction of Dr. E. A. de Schweinitz, has made it desirable to obtain a more certain, rapid, and less troublesome method for cultivating *Bacillus tuberculosis* than the blood serum method upon which we have heretofore relied. No animal substance seemed to possess so many of the desired qualities as eggs, which are rich in proteids and the glycerids of the fatty acids and also phosphoric acid, which very necessary substance is present in the easily assimilable form of glycerophosphoric acid and its salt, lecithin. In addition the egg can be readily coagulated by heat in a blood-serum oven. A medium consisting solely of the coagulated contents of hens' eggs was therefore prepared, and it has given such uniformly good results in this laboratory, is so much more easily prepared, and the growth of *Bacillus tuberculosis* has appeared so much more rapidly than on the hardened dog's serum which we have been accustomed to use, that it has been thought best to publish now a description of the method and a statement of the results thus far obtained.

After this method had been in use for some time, and after the work herein described was practically complete, my attention was called on looking over the literature, to the paper of Capaldi² on the addition of egg yolk to culture media. He prepared his medium by the addition of three or four loops of sterile egg yolk to agar which had been melted and cooled to 45° to 47° C. The yolk was mixed well with the agar and the tubes allowed to harden in an inclined position. This medium has been used by Capaldi chiefly for the cultivation of the diphtheria bacillus, although he says that tubercle bacilli grow as well upon the egg yolk agar as upon blood serum.

Nastukoff³ employed media made from eggs for the cultivation of various pathogenic organisms, but makes

no mention of having attempted to cultivate the tubercle bacillus upon them.

I have also understood indirectly from conversation that one of Dr. Adami's former pupils, while working abroad, used an egg medium quite similar to Capaldi's, but his results were never published.

I have used three different media, consisting of portions of hen's eggs, as follows:

1. The whole egg contents, white and yolk mixed.
2. The yolk of the egg separated as far as possible from the white.
3. The white of the egg alone.

Perfectly fresh eggs were generally used and seemed to give slightly more rapid growths than older eggs, though quite abundant growths were obtained from eggs of uncertain age purchased at a grocery store, which, however, were apparently fresh. I prefer eggs not more than one week old, or which are not more than 2% acid to phenol phthalein.

1. The whole egg contents.

The eggshell is broken carefully, and the entire contents dropped into a wide-mouthed sterile flask. The yolk may be broken with a sterile platinum wire. Gentle shaking of the flask will now serve to mix the white and yolk of the egg quite thoroughly. Care should be taken, however, not to shake the flask so much that a foam will be produced, otherwise an uneven and unsatisfactory surface will be obtained when the medium is hardened. When the mixing is complete the egg is poured into tubes, care being taken to avoid foaming, and the tubes, containing about 10 cc. of the medium are then inclined in a blood-serum oven and hardened at a temperature of 70° C. This hardening will usually require two days, four or five hours each day. Sterilization will be accomplished at the same time. A higher temperature may be used and the medium be hardened much more quickly. The growths of the tubercle bacillus have seemed to be more vigorous when the egg is hardened at 70° C., and, in addition, the prolonged heating probably insures a more certain sterilization. The medium after hardening is opaque, and yellowish in color, and usually dry, there being practically no water of condensation in the tube. The egg tubes should be kept in an ice-box to prevent further drying. Just before inoculation, three or four drops of sterile distilled water should be added to each tube to supply the moisture required for the satisfactory development of the tubercle bacillus.

2. The egg yolk medium.

In making the yolk tubes, the egg yolk is separated from the white as well as possible and dropped into a sterile flask. The yolk alone is quite viscid and I have found it desirable to add to the yolks of three or four eggs, 5 or 10 cc. of sterile water in order that this medium may be of practically the same consistency as the whole egg medium before heating. The egg yolk medium is put into tubes, inclined, hardened and water added before inoculation just as in the case of the whole egg medium.

3. The medium made from the white of the egg.

Negative results were always obtained when the white of the egg alone was used as a culture medium, so it will not be considered further.

In all of the eggs I have used, the white of the egg has been alkaline and the yolk acid to phenolphthalein. The degree of acidity or alkalinity of these two substances appears to vary considerably in the case of different eggs, and as a rule the older the egg the less alkaline the white and the more acid the yolk becomes so far as I have examined them. In most cases in which the whole egg has been used the medium has been found to be slightly acid to phenolphthalein, 100 cc. of the mixture requiring from 1 to 2 cc. of normal sodium hydrate solution to neutralize it. In the light of observations upon other media this is probably the optimum reaction for the tubercle bacillus, and the whole egg is thus well suited for *Bacillus tuberculosis* on account of its reaction as well as its chemie constitution although, as will be shown later, I have obtained cultures from guineapigs upon the egg yolk alone when the reaction was +6% to phenolphthalein.

The cultures from guineapigs have been made in the following manner: A small tuberculous focus in the spleen was torn out with sterile forceps and crushed as well as possible between the prongs of the forceps. It was then transferred upon a platinum loop to the egg in the culture tube and rubbed well over the surface, care being

*This paper, which is part of a bulletin on tuberculosis soon to be issued, is published at this time by the consent of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry.

used to avoid breaking the egg and the bit of tissue being allowed to remain in the tube. I have as a rule used bits of tissue about 2 mm. in diameter. The cotton plug of the culture tube is now cut off even with the mouth of the tube, the upper portion saturated with paraffin and the tube completely sealed with the paraffin. The tubes are then placed in an incubator at 38° C. in an inclined position so that the surface of the culture medium may be kept moist.

Owing to the opaque character of the medium and the color, which is frequently almost white, it is difficult to say at what time the growth would be sufficiently far advanced to be seen if the medium were transparent, but at the end of seven or eight days I have usually been able to see upon the whole egg medium minute tubercles dotted over the surface of the egg or a slightly dull, ground glass appearance around the bit of tissue which was placed in the tube. Carefully made cover-glass preparations have shown a distinct increase in the number of tubercle bacilli by the end of the third day upon the whole egg medium and on the fourth, fifth or sixth days I have found the characteristic rope-like portions of colonies, the quantity of growth depending in great part, no doubt, upon the number of tubercle bacilli in the tissues.

The colonies of tubercle bacilli gradually increase in size from the minute dots which are first seen, until by the tenth or fourteenth day they are very apparent, round, white slightly elevated points all over the surface of the medium; in fact from the appearance of the growths and the number of bacilli introduced, as shown by smear preparations, I am inclined to believe that practically all active bacilli introduced, no matter how isolated they may be, are able to multiply upon this medium.

Cultures upon the whole egg medium have been made from 16 guineapigs. Nine of these animals were inoculated with human tuberculous material or a pure culture, four with a bovine culture, two with a swine culture, and one with a culture of horse tuberculosis. From 15 of these animals I have obtained growths easily visible in 10 days, and some were quite abundant, the colonies having coalesced and formed a layer over the surface of the medium. The one failure was in the case of one of the bovine guineapigs. This animal died within two weeks of the date of subcutaneous inoculation, and although the spleen was large, very few tubercle bacilli were found in smears from that organ. The cultures developed a rather abundant growth of a streptococcus in a day or two and the failure of the tubercle bacillus to develop, was no doubt due to the presence of this organism.

The colonies upon the egg yolk do not develop so rapidly as upon the whole egg, nor is the growth so abundant, but the colonies can usually be seen at the end of two weeks. I have made cultures upon egg yolk from only five guineapigs, and from all of them I obtained a slow and scanty growth, consisting of minute colonies scattered over the surface. This failure of the tubercle bacillus to grow so well upon the egg yolk alone may be due to the greater acidity of the egg yolk, which was enough to require 5.5 cc. to 6 cc. of normal sodium hydrate solution to neutralize 100 cc., using phenolphthalein as an indicator.

I have compared the egg medium only with hardened dog's serum; potato and glycerinized agar are so much poorer than the serum that they were not considered.

I regret that a lack of time has prevented a comparison with Ficker's acid brain media. He gives results with the use of a pure culture only and makes no mention of having attempted to cultivate tubercle bacilli direct from the animal body upon his brain-agar and brain serum.

The effect of the egg medium upon the morphology and virulence of the several varieties of tubercle bacilli has not been determined definitely. Both of the cultures

from guineapigs inoculated with a swine tuberculosis culture showed many long individuals in which the beaded staining was so prominent that they resembled short chains of streptococci. In the case of egg cultures made from pure cultures on beef broth of human and bovine tuberculosis, a decided shortening of the human bacillus has been noted. This was especially true of an attenuated human culture which had been growing upon artificial media for a long time and had always been long and slender. Upon an egg-yolk culture, first generation, the individuals were rendered extremely short, in some cases resembling micrococci. No conclusions can be drawn from this observation, however, as it will of course be necessary to cultivate the organism upon the egg for a number of generations in order to establish the modifications, if any, which are produced in its form. It has been interesting to note in cultures two weeks or more old the sucking in of the paraffined plugs, which is no doubt due to a consumption of the oxygen within the tube.

I have not obtained upon the egg such rapid and abundant growth as Ficker secured from pure cultures upon the brain medium, but it must be remembered that all of my cultures were made directly from animal tissues, and a comparatively small number of bacilli were introduced in this way. In addition the tubercle bacilli were being required to establish a saprophytic existence.

The egg medium is so easily prepared and a growth of the tubercle bacillus can be expected so quickly and with such comparative certainty in cultures made upon it that I believe it will be found to be of value to those engaged in experimental work in connection with the study of the organism which is at present exciting such general interest.

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THE SURGICAL USES OF THE HAIR-PIN.

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The more extensive the field of usefulness of a surgical instrument, the greater its value to the profession, and to the general practitioner in particular, and an instrument which enables one to successfully deal with a great number of regular or emergency conditions, should be most widely and intimately known. Strangely enough, though the utility of the hairpin has been recognized by surgeons for many years, until within three years, its uses have been almost entirely traditional, being handed down from preceptor to pupil and from teacher to student, and in such a manner preserved in the great volume of unwritten but practical surgery, the knowledge of which has always been a part of the equipment of the successful surgeon.

Though the present paper was planned and partially written six years ago, a series of circumstances prevented its completion until recently, so that when Dr. M. Eberson, of Tarnow (*Zeitschrift für Krankenpflege*, 1899, No. 1), published a short article recording some of the frequent surgical uses which are made of the hairpin, his paper was the first record of the kind in literature. He, however, mentions but nine such uses commonly practised, and inasmuch as there are numerous others of equal importance, it seemed to me of sufficient value to the profession to publish a classified list of these so far as I have been able to collect them. In this list is included the list of

Dr. Ebersson, and his initial has been placed after those he recorded.

Because of its almost universal presence, this small article lends itself to very many purposes, and he who remembers some of the practical ones will not infrequently have at hand the means of dealing with an emergency which otherwise might result disastrously. In a household one has but to ask for a hairpin and he is supplied with it; still, it will be found advantageous to carry some of them in one's pocket-case or instrument-case at all times. Its chief points of usefulness are: Its almost universal presence, its ease of sterilization, convenience of size, adaptability to any desired shape by bending or twisting, and its cheapness. After being once used, especially if used in an infectious or contagious case, it may be thrown away or by being passed through a flame, it may be rendered safely sterile.

In seeking for different varieties of pins, I was able to collect about 11 distinct ones (see cut A), any of which might be utilized for some purpose other than that for which it was made, but of course certain ones are more suitable than others for certain cases, as will be readily seen by the variation of their thickness, length, etc. In their variations they are found plain, enameled, straight, curved or wavy, soft, hard, dull, sharp, thin, thick, long, short, but all of them of value in various emergencies. The principal distinctions, however, are in the length, thickness, sharpness of the ends, and in the temper, the japping or enamel being of no importance,



A.—A few varieties (counting from left to right).

- | | |
|-------------------------|-------------------------|
| 1. Steel points | 7. "Cupid." |
| 2. Heavy wire (japped). | 8. "Invisible" light. |
| 3. Glided wire. | 9. Medium wire. |
| 4. Medium wire. | 10. "Invisible" medium. |
| 5. Heavy wire, "wavy." | 11. "Self-retaining." |
| 6. Different curves. | |

as it can be easily removed by heating. The curved ones, also, may be easily straightened, and so made to serve the same purposes as the originally straight ones.

For the purpose of tabulation, we will consider its uses under three headings:

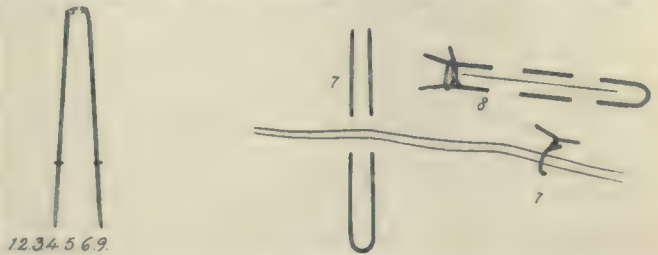
First—When used in its natural shape.

Second—When straightened.

Third—When bent or twisted into various shapes.

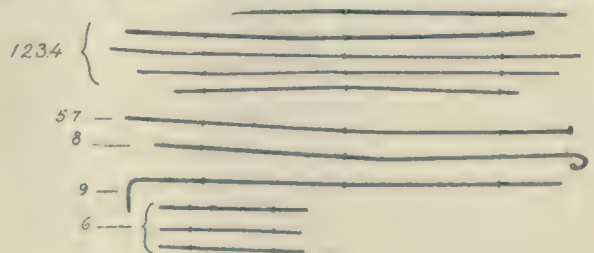
The Natural Shape. (See cut B).—1. To hold the hair away from the shoulders or neck during an operation. This requires no comment as its application is understood by all. 2. To pin on dressings or bandages. (Dr. E.). For this purpose, unless the dressings or bandages are made of gauze, the points should be sharp, so that they will more easily penetrate the material. Lest the patient be injured by them, the points should be buried in the dressings; or if this is not feasible, they should be protected by a cork or other substance. For this same purpose, it may be readily bended into the shape of a safety-pin, which shape will be less likely to slip out of the dressings from movements of the patient. 3. To remove concretions or foreign bodies from any sinus, natural canal, or opening. (Dr. E.). For this purpose the hairpin is a very satisfactory instrument as it can generally be passed over such an object and there is but slight risk of injuring neighboring structures, the rounded end being the one inserted. In this connection I wish to mention a method of bending suggested to me by Prof. Orville Horwitz, of the Jefferson Medical Col-

lege, which facilitates very much the removal of a body from a canal such as the urethra. The rounded end is bent on the flat to an angle of about 10° or 15°. As this is introduced into the urethra it passes over the object, and when it is withdrawn, the compressor muscles close firmly about it and tend to hold the object in the loop between the prongs. This is one of the practical points born of experience which it is my aim to transcribe and so preserve. 4. As a dull curet (Dr. E.). For the removal of soft granulation-tissue or any softened or broken-down material the hairpin will be found as useful as any dull curet devised; and if the granulations are deeply situated in a sinus or cavity, the pin may be firmly grasped in forceps and satisfactorily used. In many such cases dry gauze on a forceps is very satisfactory, but the hairpin will be found slightly more effective for isolated masses of the tissue.



B.—Natural shape.

5. As an esthesiometer. In the absence of a regular esthesiometer, the points of a hairpin may be set close or wide and the sensitiveness of a part quite satisfactorily determined, the separation of the points being measured by the eye or a ruler. One point may also be made sharp, and the other dull to determine further the tactile sense of the part. 6. To catheterize a female. If the case is urgent and a regular catheter or other tube is not at hand, the female bladder may be very easily emptied by the insertion of the rounded end of the hairpin through the urethra, the pointed ends being firmly held to prevent the instrument from slipping entire into the bladder. If the ends are bent slightly outward, the danger of such an accident will be entirely obviated. My father, Dr. J. W. Rugh, a country practitioner of over 50 years' experience, has frequently had occasion to



C.—Straightened.

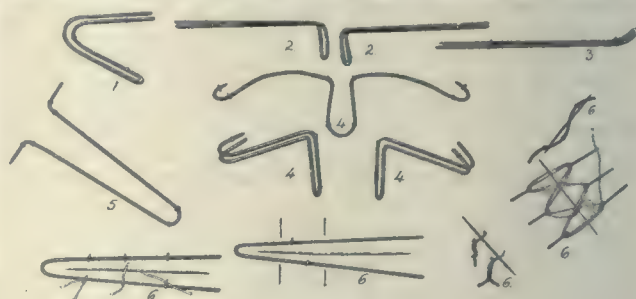
use the hairpin in this manner, and has had no untoward or unfavorable effects at any time. 7. To run under a bloodvessel and, with a figure-of-eight ligature or by twisting the ends, make compression to arrest hemorrhage (Dr. E.). If one should chance upon an accident in which there is bleeding from a distinct vessel, as, for instance, a ruptured varicose vein or a superficial artery, the hairpin can be passed (one or both times) underneath the vessel and compression accomplished by twisting the ends together, or by running a figure-of-eight ligature about the ends and across the vessel. Passing the pin through a flame or immersing it in boiling water for a short time renders it thoroughly sterile, and the procedure is carried out as successfully as though all the appointments were in every respect modern. 8. To close a wound. The surgeon very seldom meets a case in which suturing cannot be postponed until some regu-

larly employed suture material can be procured, but should such occasion arise, a wound or tear in the skin may be quite easily closed, as illustrated in cut B or D. After the ends have been introduced as shown, the curved end is seized by a forceps and the two tines pressed more closely together in order to approximate the lips of the wound and bring them in better apposition. The ends may be still more closely and firmly held together by a wire or string passed about them. A similar effect obtained with sutures and hairpin is shown under heading three (cut D). 9. As a calipers or compass. A short distance may be measured and the length accurately preserved by spreading the forks of the hairpin to the desired points. The rigidity of the steel wire will prevent any alteration of the record by ordinary handling until such time as it may be transferred to paper or measured with a graduated instrument of measure. In a child, the comparative thickness of such joints as the elbow, wrist, ankle, knee, etc., may be satisfactorily observed by means of this instrument and by using a separate one for each joint, the comparison is made more accurate and striking.

Straightened.—(See cut C.) 1. As a probe (Dr. E.). 2. As an applicator (Dr. E.). In the straightened form, the hairpin has doubtless been used much more extensively for probing sinuses or making applications than for any other purpose; and as such its use is not confined to the examination of sinuses alone. It may be employed as a lacrimal probe or to explore any natural duct. (In a recent case I easily explored Stenson's duct with a hairpin to determine the presence of a calculus.) If silver nitrate, chromic acid or other caustic be fused upon it a very satisfactory application may be made to a deep sinus or cavity. As a cotton carrier in nasal work it is equal to the regular applicator. 3. To wire the bones together in resections or fractures. Silver or platinum wire is preferable for wiring the bones in a fracture or resection, but if such is not at hand the iron wire may be used, just as formerly iron screws and nails were similarly used. In case it is used the spot where the sutures are buried should be properly marked so that if they occasion irritation or suppuration at some future time they may be easily removed under local anesthesia. The marking is best done with a knife, as a small scar is permanent while any other mark is not. 4. To rupture the membrane in labor. Ordinarily the fingernail is sufficient for this purpose, but sometimes an instrument must be used, and if none other is at hand a hairpin can be very conveniently sterilized and used with as great satisfaction as the proverbial knitting-needle. 5. Heated, to cauterize parts (Dr. E.). When the crypts of the tonsil become more or less occluded, following inflammatory or other conditions, causing retention of the sebaceous secretion, it is advisable to enlarge the openings to allow free exit to this material, which is so susceptible to infection. The end of a hairpin, heated red in a flame and passed into a crypt once or twice will produce the desired result, as the burned portion will slough out and leave a large opening. The same effect may be produced with the caustic applications before mentioned. If the end is curled upon itself (see cut C, Fig. 7), the heat will be retained longer, and the cauterization, therefore, made much more effective. This same form (No. 5 or 7) may be used (as suggested to me by Professor J. Chalmers Dacosta, of the Jefferson Medical College) as a urethral probe for a child; and in case of spasmodic retention of urine, relief may be afforded by passing it into the bladder and so overcoming the spasm of the sphincter. In the same manner, it may be used to sound a child for stone in the bladder, though of course a regular and larger probe is better. 6. As harelip pins. When cut into short lengths it serves admirably to approximate the edges of a wound, as in harelip, etc. Other methods of suturing and of approximating the edges of wounds are shown under the first and third headings. 7. To sound a child for

stone in the bladder. This has been spoken of under No. 5, and needs no further comment. 8. As a hook to extract foreign bodies from canals and sinuses. As indicated before (No. 3, *Natural Shape*), the hairpin is of value in removing foreign bodies from the nose, ear, etc., but sometimes it cannot be passed over or beyond the object to be extracted. Under such circumstances one end may be bent into the shape of a hook of greater or less size, and this used to complete the work. (9) As a tenaculum. If the hook is made large and the point is sharpened, one has a very fair tenaculum for emergency work, as I can attest from my experience on more than one occasion.

Bent or twisted.—(See cut D). 1. As a nasal speculum. A very good view of the interior of the naris may be obtained by inserting the free end of a hairpin, bent as shown in the figure. The two ends are compressed in the same manner as the ordinary wire nasal speculum, and after being inserted into the opening of the nose, are allowed to separate and so expose the interior. For the same purpose the pin may be



D.—Bent or twisted.

bent as shown in Fig. 2, which form also suffices for retractors in other cavities and openings. 2. As a retractor for a wound or any of the natural openings of the body, as the eyelid, nose, lips, labia, etc. (Dr. E.). 3. As an aneurysmal needle. As the hairpin is of more especial use in emergency work, we mention its use in drawing a ligature under a vessel or around a pedicle, which in the course of an operation it has been found necessary to ligate. The edge, of course, is a little more blunt than that of the regular needle, but it will be found quite practical in the absence of such an instrument. 4. In lieu of a tracheotomy tube. (Dr. E.). The hairpin as a retractor for wounds has just been mentioned, but it is of such signal use in this class of cases that we give it special mention. No physician doing general work knows when he may be called upon to perform tracheotomy as a life-saving measure, and but few men have with them a series of tubes which will permit them to complete the operation at once. One or two pins bended as shown in Fig. 4, and introduced into the tracheal wound, will suffice to maintain an opening until the proper tubes can be obtained for introduction. If the single one is used, tapes or strings attached to each end and securely tied at the side of the neck will retain it in place. If both pins are used (as shown), the tapes should be fastened in a similar manner, but care must be observed that the pins are well bended, as otherwise they will slip out. A rubber tube or catheter may be substituted for these if desirable, but if not at hand they will suffice. 5. As a drainage-tube. For this purpose the pin is bent in the same manner as recommended for catheterizing the female, to prevent it from slipping into the bladder. It may be introduced as deeply as necessary and kept at the required depth by bending the prongs at the level of the skin. If two are introduced with their vertical plane at right angles, the sinus will be maintained more open. 6. To approximate the edges of a wound whether smooth or uneven. As previously indicated, there are several methods of approximating the edges of a wound, and five of these are shown

under Fig. 6. When the pin is placed with one prong on each side of a wound, much greater support is afforded to the tissues and the strain on the separate stitches, and the tissues included in them is much lessened. The wires may also be used as ordinary sutures, but for such purpose they should be thin and pliable like silver wire.

In connection with suturing material in emergency work, the old method of using hairs from the mane or tail of a horse should not be forgotten. For ordinary work not requiring very strong sutures this material will be found as satisfactory as any, after it has been thoroughly sterilized. It is not to be expected that any one surgeon will ever employ the hairpin in all the ways mentioned, but if he bears in mind its omnipresence and the range of its utility he will find himself better equipped to deal with accidents and emergencies of various kinds than he would otherwise be.

REPORT OF A CASE OF *BACILLUS AEROGENES CAPSULATUS*, PROBABLY INVADING THE BODY FROM A GANGRENOUS LUNG; GAS CYSTS IN THE BRAIN OF A GENERAL PARALYTIC.

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The following case is of interest chiefly because of the probable invasion of the body by *Bacillus aerogenes capsulatus* from a gangrenous lung, and also because of the presence of gas cysts in the brain of a general paralytic.

CASE.—Mary R., aged 23, was admitted to the hospital June 15, 1901, from Long Island Hospital, where she had been since October 10, 1900. There was no history of insanity in the family, and she had never been insane before. The first mental symptoms were noticed about two years ago, at which time the patient became depressed. One year ago she was still very depressed, her memory was distinctly impaired, and she was troubled with sharp paroxysmal headaches. She complained at times of being dizzy, and would then often fall if not supported. One pupil was noticed to be distinctly larger than the other. Her eyesight has grown poor, and she has lately complained of specks and blotches before her eyes. She has lost much weight and strength. A note from Long Island Hospital states that while there she suffered from severe headaches, was very depressed, irritable and quarrelsome.

The following are the important points in the examination at time of admission. The patient was a small, emaciated woman. The right pupil was considerably larger than the left, with practically no reaction to light or accommodation; the left reacted slightly to accommodation only. The tongue was protruded straight and was markedly tremulous. There was some tremor of the lips and facial muscles. Test phrases were pronounced very imperfectly. The left knee-jerk was absent; right much diminished. Her handwriting was very tremulous, and letters were frequently omitted or wrongly used. Ophthalmoscopic examination revealed nothing of importance. The patient was quiet, though emotional. Answered questions in a relevant but somewhat confused manner. She showed some appreciation of her condition, stating that she had been hysteric and very nervous for about a year, and that she had had several "shocks," during which she would lose all power of movement and speech. She was much depressed, said she wanted to die; was not oriented as to time or place, and on the whole seemed much demented. It was difficult to get her to take food at first, and she soon refused it entirely, then the nasal tube was resorted to, and was continued for about six weeks. After that it was possible to give her sufficient food with a feeding-cup. However, she was usually fed with difficulty. She continued depressed, almost never spoke, but at times complained of headaches. Her body was often held very rigidly, and she would frequently grit her teeth for hours at a time. Her breath was always very foul; saliva collected in her mouth, and she was noticed to have some difficulty in swallowing. September 6 she was seized with a chill. The temperature could not be taken satisfactorily, and little could be done in the way of an examination. The temperature ranged between normal and 101°, so far as could be ascertained. There was no expectoration, her breath continued foul, no subcutaneous emphysema was noted. Death occurred September 14.

Abstract of Protocol.—The autopsy was performed 30 hours after death, the body having been kept in an ice-chest. The body is that of a small, very much emaciated woman. Rigor

mortis is present. There is dark discoloration of the abdomen and sternal region, with abdomen a little distended. No subcutaneous emphysema is present. Pericardial sac is distended with gas, and contains a dark red fluid somewhat in excess of the normal amount. The serous surfaces have lost their gloss, and are covered with a slight fibrinous exudate. Weights of the organs are excluded, as the gas which they contained materially reduced their weight.

Heart.—Superficial vessels contain gas. Gas is also present in the cavities of the heart, under the pericardium and endocardium, and in the substance of the muscle. Muscle is soft and pale, the valves are normal. Aorta is somewhat atheromatous.

Lungs.—The left pleural cavity contains 200 cc. of dark red fluid, and it probably also contains gas, though this is not certain. The visceral and parietal surfaces are covered with a fibrinous exudate. The right pleural cavity contains no fluid, and is free from adhesions. The lower lobe of the left lung is almost entirely consolidated, portions sinking readily in water. An irregular area involving about half of the lower lobe, and extending from the side to the base, is gangrenous, and emits a very foul odor. Bubbles of gas are readily discerned. Several small areas of consolidation are found in the lower lobe of the right lung; no gangrene. Gas bubbles not so numerous as in the left lung.

Liver.—The surface is dark brown, and has a very distinct spotted appearance due to numerous gas bubbles just beneath the capsule. When one of the larger bubbles is pricked, and a flame applied, a sharp snap is heard. On section the substance is seen to be riddled with gas cysts, some of them being two or three times the size of a pea. About the cysts, a zone of pale tissue is distinctly seen. The substance of the liver is soft, and the markings are not distinct. The gallbladder contains a small amount of bile, and is somewhat distended with gas.

Spleen is somewhat enlarged, crepitates very distinctly, and on section, the substance is found to contain many gas bubbles. The cut surface is dark red, and the malpighian bodies are not distinct.

Kidneys also crepitate distinctly, and gas bubbles are seen beneath the capsule. The capsule strips with ease. The cut surface is soft and pale, and presents many gas cysts, each surrounded by a pale zone. **Adrenals** normal. There is considerable gas in the loose tissue about the **pancreas**.

Stomach contains a moderate amount of yellowish fluid. Small ecchymosis on the posterior wall. A few gas bubbles under serosa.

Intestines.—Areas of injection and small ecchymoses are scattered through the lower ileum and colon. A few small gas bubbles are seen under the serosa in places. Mesentery contains a few gas bubbles. **Uterus** is small. Appendages are normal. **Bladder** is normal.

Brain.—Dura is firmly adherent to cranium. The pia arachnoid is thickened, a little edematous, and cannot be removed without tearing away portions of the brain, which is rather soft. The vessels are thickened, and somewhat tortuous. Many gas bubbles are seen both in and outside of the vessels. Small gas cysts in the brain were not discovered until hardened specimens were examined. Convolutions are rather narrow, and the sulci wide. The cortex seems thin. Lateral ventricles moderately dilated.

Anatomic Diagnosis.—General paralysis; bronchopneumonia with gangrene; pleurisy with effusion; pneumothorax (?); pericarditis with effusion; pneumopericardium; gas in the heart, vessels, lungs, liver, spleen, kidneys, and brain, due to *Bacillus aerogenes capsulatus*.

Bacteriologic Examination.—Smears from the heart's blood, gangrenous area of the lung, liver, spleen, kidneys, and brain, stained by Gram's method, showed in all, numerous large, straight bacilli, with rounded or sharp ends, which stained deeply. Few other bacteria were seen, except in the smears from gangrene. There were a few scattered cocci, and an occasional medium-sized bacillus, which decolorized by Gram's method. Anaerobic cultures on blood-serum were made from the heart's blood, gangrenous area, liver, kidney, and brain, in all of which grew a large bacillus, staining by Gram's method, and forming bubbles of gas in the fluid of condensation. A few other organisms were also present, among which were cocci and a medium sized bacillus, decolorizing by Gram. Several loops of material were taken from the gangrenous area, and from the liver, suspended in 1 cc. of sterile water, and each injected into the ear vein of a rabbit, which was killed in 15 minutes, and put in a thermostat. Six hours later, both rabbits were very much distended with gas. The autopsies were performed at the end of 20 hours. There was then very marked subcutaneous emphysema, the abdomen was greatly distended, and gas which was escaping through a trochar burned with a pale, blue flame. Gas was present in the heart and bloodvessels, and all the viscera were typical "foamy organs." Smears from the blood and organs, stained by Gram's method, showed a large bacillus in great numbers. Anaerobic cultures on blood-serum were taken from the heart's blood, groin and liver. In all, the large bacillus grew well, formed gas in the water of condensation, and was the predominant organism. The large bacillus is usually straight, varies somewhat in length, ends usually slightly rounded, occurring singly, in pairs, clumps or short chains. It is nonmotile, and capsules are especially to be observed in smears from tissues. No spores can be found. The bacilli

in the tissues stain by Gram's method very well, but from the cultures, they stain fainter and more irregularly. Gas forms in the water of condensation, and when the bacilli are injected into a rabbit, abundant gas formation is noted in six hours. The gas burns with a pale, blue flame.

Microscopic Examination.—The hardened tissues were fixed in Zenker's fluid, mounted in celloidin, and stained in hematoxylin and eosin. The heart, spleen, liver and kidneys show many gas cysts, large and small. All of the tissues stain poorly, and there is usually a zone about the cysts in which the nuclei do not stain at all, and the tissue is compressed and much disintegrated. In other portions of the tissue, especially in the liver, the nuclei are often much swollen, and the portion which stains is confined almost entirely to the periphery. In all, Gram's stain shows large bacilli in great numbers along the walls of the cysts, in the bloodvessels, and somewhat scattered through the tissues. A few cocci are also seen.

Lungs.—Sections from a consolidated area in the right lung show the alveoli to be filled with the ordinary exudate, the nucleated cells predominating. The tissue stains rather poorly, and especially so about the cysts, a few of which are seen. The alveoli in the sections taken at the edge of the gangrenous area are also filled with exudate. The gas cysts are distinctly more numerous than in the section from the right lung, and certain areas not associated with the cysts are necrotic, showing marked disintegration and fragmentation of the nuclei. Gram's stain reveals many large bacilli in sections from both lungs, about the cysts, and a few in the vessels and scattered through the tissue. In the sections taken near the gangrenous area, the large bacilli are more numerous and more generally distributed. Other organisms are present in great numbers.

Brain.—Stains: Van Gieson's, hematoxylin and eosin, Gram's.

The sections were taken from the frontal regions. The pia arachnoid is very distinctly and irregularly thickened. It is composed largely of dense fibrous bands, the lymph spaces being mostly obliterated. In most places, it is attached to the cortex, but here and there, it is elevated apparently by gas. Round-celled infiltration is slight.

There has been a very marked diapedesis of red cells pretty generally through the membrane. Only a few leukocytes are present. An occasional hematoidin granule is seen. There are a few groups of proliferated endothelial cells. The vessel walls are distinctly thickened and the change seems to have been mostly in the perivascular tissues. There is a moderate round-celled infiltration about some of the vessels. The cortex is thinner than normal. Neuroglia cells not made out well. Many of the perivascular spaces are pretty well filled with round-cells. These spaces are dilated, and in places distinctly more so than is ordinarily seen in general paralysis.

Cysts.—A moderate number of small gas cysts are scattered through the sections. The brain, as a whole, was not hardened, and we only know that these cysts were present in sections from the frontal region. The largest cysts are readily seen on holding the sections up to the light, while others are microscopic. Some are quite round, others irregular. The walls of some are smooth, and of others ragged. There is no evidence of a lining membrane.

Gram's stain shows many of the large bacilli in the pia arachnoid and superficial portions of the cortex. Almost all are outside of the vessels. An occasional rod is seen in the perivascular spaces in the cortex, and a few are seen in the walls of the cysts.

In the above case it is probable that the gas bacillus gained entrance to the body through the gangrenous lung. The process in the lung seems to have started as a bronchopneumonia, arising from inspired material. For some time the patient had given a great deal of trouble in feeding; the saliva had collected in her mouth and at times she had had difficulty in swallowing. It seems likely that the gas bacillus entered with the infected material and developed more or less during life. This would seem to be confirmed, somewhat, by the fact that in the sections from the edge of the gangrenous area the gas cysts were more numerous, and the gas bacilli in greater numbers and more generally distributed than in sections from the consolidated portion of the other lung. The distribution of the gas bacilli from the gangrenous area probably occurred post mortem or just before death. We know that this organism may reach distant parts by actual growth along the vessels. Only a few cases are on record in which the gas bacilli have invaded the lung during life, or gained admission to the body through the lung. Welch and Flexner¹ report two cases of hemorrhagic infarction of the lung which were invaded by the gas bacillus. They were unable to say whether the bacilli were conveyed to the lungs through the air or through the circulation, though they seemed to favor the latter.

In one of these cases there was pleurisy with effusion, and in the fluid, gas bacilli were abundant. They call attention to the fact that pneumothorax may have been present before death, though it was not detected by examination of the chest during life, and the presence of gas in the pleural cavity was not certainly demonstrated at autopsy, as such a condition was not suspected. Likewise, it is of interest to observe that in the present case the same condition may have existed, though we have here also no certain proof. Interest is lent to these cases by the observation of Levy² of a case of pneumothorax without perforation, following repeated aspirations of fluid from the left pleural cavity. A week after the appearance of pneumothorax, gas bacilli were found in the fluid withdrawn. It is also worthy of notice that in our case, at autopsy, gas was present in the pericardium, together with a small amount of fibrinous exudate and bloody fluid. The conditions were much the same as in the left pleural cavity, and a pneumopericardium may have been present before death. Nicholls³ has reported such a case, in which gas bacilli were probably present. Guillemot,⁴ in a careful research into the bacteriology of pulmonary gangrene, reports 13 cases, in 10 of which the bacteriologic examinations were satisfactory. In one out of the 10 cases he was able to isolate the gas bacillus. (*B. perfringens*).

The case from which the gas bacillus was isolated, is described as a case of embolic pulmonary gangrene, which had arisen in a child suffering from mastoid disease, with thrombosis of the sinuses. The gas bacilli may have been carried from the region of the ear by emboli. Rist⁵ has found the gas bacillus (*B. perfringens*) in the discharge from chronic ear disease in several cases. In three other cases, Guillemot found on smears, a large bacillus resembling the gas bacillus, but was not successful in obtaining them in culture. He concludes that gas bacilli are not very frequently present in pulmonary gangrene. Rist⁶ has found the gas bacillus (*B. perfringens*) in a case of gangrenous pneumonia, and Welch⁷ states that Flexner has also cultivated this organism from a gangrenous lung. I have been unable to find reports of any other cases.

Cysts or cavities of the brain have long been recognized, much has been written about them, and a variety of explanations offered. In many cases, the appearance of the brain bore such a striking resemblance to Gruyère cheese, that the condition became known by that name. The description of these cases corresponds almost exactly with the condition which we now know may be produced by gas-forming bacilli. This fact was first pointed out by Reuling and Herring, and also by Howard⁸ in 1899, both articles being published in the same journal, and each reporting one case. Since then, Howard⁹ has published three other cases of gas cysts in the brain, one of which was due to *B. mucosus capsulatus*; making in all, five cases of gas cysts in the brain, four being attributed to *B. aerogenes capsulatus*, and one to *B. mucosus capsulatus*. In all these cases, the brain was free from chronic lesions, while in the great majority of the earlier cases that were reported, the cysts appeared in connection with general paralysis or some form of chronic insanity. For instance, J. Lochart Clark¹⁰ in 1867, reported a case of general paralysis in order to bring out the fact that the brain contained numerous cysts. He describes the cut surface of the brain as presenting a striking resemblance to Gruyère cheese. These cysts, he thought, were formed by the dilation of the perivascular lymph spaces and were a part of the pathology of the disease from which the patient suffered. The cysts were in all probability gas cysts.

In 1884, Savage and White¹¹ discussed thoroughly the causes of "holes in the brain." They classified them under nine headings. The Gruyère cheese condition they include as one, and under a separate heading,

speak of general cystic degeneration affecting the brain, together with the other viscera. They refer to two cases of general paralysis, with general cystic degeneration of the kidneys, liver, lungs, heart muscle and brain, and believe that the condition in these two cases was essentially different from that described as the Gruyère cheese condition. They are somewhat at a loss for an explanation, but are inclined to think that some sort of degeneration of the nerve-cells had gone on, which resulted in disintegration of cells and formation of cavities. Here again the cysts in the brain and viscera were almost certainly gas cysts, and Reuling and Herring¹² bring out the very striking resemblance between these brains and that of the case they report.

The case under consideration seems to be the first case reported, of cysts in the brain of a general paralytic, known to be due to gas-forming bacilli. In this case the cysts were small and the dilation of the perivascular spaces only a little more than is often seen in general paralysis, and for this reason their true nature might have passed unnoticed, and, perhaps, have been considered a part of the pathologic process which the brain had undergone in connection with the general paralysis.

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- ¹² Loc. cit.

A CONTRIBUTION TO THE ETIOLOGY OF APPENDICITIS.¹

BY

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The object of this paper is twofold: *First*, to encourage the recognition of that form of appendicitis having its origin in an infection derived from some other part of the gastrointestinal tract; *second*, to urge that we profit by this knowledge and act vigorously in all cases of gastroenteritis and colitis, and by treatment, having for its object elimination and internal antiseptics, endeavor to counteract a tendency to the development of appendiceal complications. It is, I believe, quite generally accepted at the present time that appendicitis is an infectious disease, that bacterial invasion is the primary cause of an outburst of inflammatory reaction in this organ. That fecal concretions, foreign bodies and trauma may determine the infection in the appendix, is well known, but I believe there is another cause, one whose significance is often lost sight of, and one at whose door may be laid a large proportion of all cases of appendicitis—namely, secondary infection from general gastrointestinal disturbances. This is the theme upon which I wish to elaborate.

It may not be necessary to remind you, though it may be as well to mention it, that the small lumen of the appendix and the position it holds with reference to the cecum, make drainage of its secretions very imperfect, and since a free outlet to secretions is the first essential to the proper action of any organ that is secreting discharges, be they normal or pathologic, it is readily understood why the appendix, once infectious material has entered its channel, reacts to this invasion and becomes a focus of inflammatory activity. The degree of inflammatory reaction is proportionate to the virulence of the microorganismal infection, and because

of the unfavorable conditions existing in the appendix, and its low resistance, there results an irritation of greater intensity than would follow the same degree of infection in the bowel proper. Furthermore, it has been proved that the toxicity of microorganisms present in the bowel of an individual who is suffering from a diarrheal or other inflammatory intestinal condition, is greater than that of the same microorganisms taken from a normal intestine.

Granted then, *firstly*, that appendicitis is due to bacterial invasion and infection, and *secondly* that under conditions of inflammation the bacterial action in the intestine is more virulent than in the healthy state. I wish to add *thirdly*, that appendiceal inflammation is in many instances a secondary infection, the result of an afferent wave of bacterial invasion from an irritated intestinal tract.

To illustrate: We are frequently confronted with a symptom-complex interpreted as an attack of gastroenteritis; there is a history of the ingestion of rich or indigestible food, followed by vomiting, general abdominal pain and some sensitiveness, and possibly purging. The suspicion may or may not exist that we are dealing with an attack of appendicitis, and at any rate, many hours or several days must frequently elapse before the mask is cast off and the true condition recognized; then the general abdominal pain and sensitiveness have disappeared, the gastric irritability is quiescent, and all the symptoms are centralized in one rather small area, the right iliac fossa; in other words, the disease has become localized and the diagnosis is clear.

The general conception of these cases is that they have been cases of appendicitis from their incipency, but that the gastrointestinal features were temporarily predominant. Again we are frequently confronted with a similar group of symptoms, in fact an identical attack of gastrointestinal disturbance, in which our experience leads us to anticipate or suspect a developing appendicitis, but which, however, does not materialize as such, and with the subsidence of symptoms, complete restoration to a healthy condition follows. These illnesses are of course extremely common. What is it that determines the appendicitis in one case, and in another only an enteritis or gastroenteritis?

It must not be understood from this citation of symptoms that I would make the first group of symptoms that leads on to an appendicitis, and the second that begins as and remains a gastroenteritis, identical in all cases, for that there are many cases in which reflex gastric and intestinal symptoms usher in or accompany the appendicitis proper, is undeniable, but I do believe that many cases with the symptom-complex of gastrointestinal irritation, begin with an indifferent aim, and only secondarily become appendiceal. How else can we explain those cases in which, after a known dietary indiscretion followed by stomach and intestinal disturbances, or after an attack of colitis, several days elapse after the onset of general symptoms before their localization in the appendix is apparent? The association of appendicitis with typhoid fever must also find explanation in like manner. I do not wish to ignore the fact that foreign bodies including fecal concretions, catarrhal conditions and traumas, predispose the appendix to and invite the elements of disease. We may say, that an infection originally in the small or large intestine, may, aided by peristaltic action and continuity of tissue, travel beyond its original confines, and seeking a place of less resistance, find such in the appendix, an organ which by reason of anatomic relations and the proneness to disease that it shares with other rudimentary structures, becomes structurally and *de facto* a bacteriologic culture tube. In proof of this contention let me cite the following case:

Mrs. R., aged 35, is the mother of 3 healthy children. One year ago she suffered from an attack of rather severe "stomach ache," but there was a known cause and she recovered without

¹ Read before the Milwaukee Medical Society, December 10, 1901.

treatment. Other than this there is nothing in her previous history that might have a bearing upon her present illness. She is quite an active woman, her health has generally been good, and she enjoys the good things in life and has indulged in them freely. The history of her present illness begins with the evening meal of Thursday, July 26, 1901. Among other things she partook freely of watermelon and corn. To this she attributes the symptoms of the morning of the second day following (Saturday), viz., severe cramps, diarrhea and headache. Her family physician was called and she was given a preparation of opium. On Sunday, the headache continuing severe, an analgesic was prescribed. This was followed by marked cyanosis, without disagreeable subjective symptoms. Whisky and hot external applications gave entire relief. Because of some disagreement with the physician in attendance I was called on Sunday evening. I found her suffering greatly from headache and much intestinal pain; the entire abdomen was sensitive, there was no distention, temperature 101.6°, pulse 90. There was much nausea, and the stomach was nonretentive. Gas eructations were frequent. The bowels had not acted this day. I ordered calomel in divided doses and cold applications to the head. On the following morning the patient felt much improved, inasmuch as the headache had left her. The bowels had been very active; there were numerous evacuations during the night, the individual movements being small in quantity, watery, and containing considerable mucus; rectal tenesmus existed to an annoying degree. The abdominal pain and sensitiveness were still quite general; temperature 99.2°. On the evening of the same day the temperature was 100°, though in other respects there was no change. The evacuations had been numerous and the tenesmus persisted. A high enema was ordered and much relief followed. On the next morning the general abdominal symptoms had diminished, but there was distinct pain and sensitiveness to pressure in the right iliac fossa. There was no distention, but relatively increased resistance of the right rectus muscle. At noon her condition was about the same, and in the evening there was an exaggeration of the pain and tenderness in the same region. There was practically an absolute absence of pain in any other region of the abdomen, all symptoms being concentrated and McBurney's point exquisitely tender. No tumor could be felt. The irritable stomach continued. A diagnosis of simple appendicitis was made, and it was deemed probable that the appendix was in an upward position, lying entirely behind the cecum. This diagnosis was concurred in by a consultant. There had been much vomiting and the stomach was extremely rebellious. Gaseous eructations were constant. Much pain in the back had been complained of during the day. For two days the condition remained in *statu quo*. Then, on the sixth day of illness, there followed a change in some symptoms and an amelioration of others; the pain, localized for 60 hours in the right iliac fossa, was much reduced and again became more generalized; the sensitiveness now followed the course of the transverse and descending colon. With this the evacuations became more frequent and the mucus much increased. After several days all these symptoms gradually subsided, and the temperature returned to normal, with slight evening elevation. A degree of sensitiveness persisted two weeks more, and the condition of the bowels slowly returned to normal. General weakness was extreme during the illness, but through supportive and tonic treatment recovery was uneventful, save for the occurrence of an erythema, probably of intestinal origin. A short review of the case would then be as follows: A lady previously in good health is attacked, for known or unknown reasons, with symptoms of an illness that may be called a gastroenterocolitis. In the course of the illness, while general symptoms are in abeyance, new features present themselves, and the case becomes one of simple appendicitis; these localized symptoms after an existence of several days then slowly subside, only to be followed by a reappearance of the symptoms of a colitis.

There is but one way to interpret this succession of symptoms, and that is that the appendicitis was an intercurrent affection occurring in the course of an attack of enterocolitis, and caused by a direct infection from the diseased intestinal tract.

Let me cite another, which is a type of cases frequently encountered:

Miss J. H., aged 18, attended an evening dinner party, and there partook of an exceptionally rich assortment of viands and in fair quantity. Several hours after returning to her home vomiting and distress set in. Seeing her on the following morning and again in the evening, gastric sensitiveness was found, and no distention, or abdominal pain, save slight soreness, not localized, existed. On the following day the gastric irritation had subsided, but the abdominal pain was greater, with a tendency to localization on the right side. On the evening of the same day the diagnosis was clear, and operation the following morning revealed a gangrenous appendix. No fecal concretion existed. Recovery was uneventful.

Here again there can be no question but that the stomach and small intestine first rebelled at the intrusion of indigestible foreign-acting substances, and that

the appendix only secondarily joined in the fray and in most vigorous manner.

Let me then summarize as follows:

1. Because of its anatomic characteristics and relations the appendix is an organ of lower vitality and less resistance than are other parts of the intestinal tract.

2. Microorganisms are normally present in the intestine, and await but an opportune moment when, in the presence of irritating secretions, they may excite an inflammatory reaction.

3. While appendiceal inflammation may undoubtedly originate *de loco*, there is no question but that—

4. In many cases the appendiceal inflammation is a secondary infection, the primary focus being in the intestine proper, the result of an acute indigestion or a catarrhal inflammation.

5. While we can rarely make the positive assertion that a disease has through our efforts been aborted, I believe that prophylaxis is the price of health, and that it may even be possible to do much toward the prevention of attacks of appendicitis, especially in the case of patients who have previously suffered, by careful attention to the regulation of diet and intestinal habit in health, no less than in securing good intestinal drainage and antiseptics in the various gastrointestinal illnesses.

NOTE.—In the December 7, 1901, issue of the *Medical News*, in an editorial entitled, "New Discoveries in Intestinal Peristalsis," experimental evidence seems to confirm these conclusions. Reference is made to a report, as yet unpublished, by Dr. Walter B. Cannon, to the Boston Society of Medical Sciences, of experiments made on the dog, which go to prove that the movements of the large intestine are antiperistaltic, that is, from the left end of the transverse colon to the ileocecal valve. The valve was found to be perfectly competent for the normal solid contents of the gut, but liquid enemas readily passed upward into the small intestine. The editorial continues: "Perhaps, too, the cause of certain common cases of appendicitis is revealed, the possibility now appearing that violently toxic substances from the rectum may be passed backward by the antiperistalsis and into the even normally closed appendix."

Baltimore Sewerage System.—After a struggle of two months on the part of the Legislature to come to an agreement upon the personnel of a commission to whom should be entrusted the expenditure of an appropriation of \$12,000,000 for the establishment of a sewage system for Baltimore, the bill providing for it finally passed both Houses without dissent. After an hour's recess, a motion was passed in the Senate to reconsider the vote, and the bill is again hung up, with little chance of enactment.

Native-born Population.—A comparison of the census reports for the past 50 years clearly demonstrates that the native-born population is slowly dying out, while the population derived from the foreign-born is increasing far more rapidly than is generally realized. This decrease is especially noticeable in the northern states, and in Massachusetts, by comparison of the annual birthrate of the entire native-born and the entire foreign-born population we find that the births of the foreign-born are about three times as numerous in proportion. As the deathrate of the native-born is about one-fifth larger than the foreign-born, the complete disappearance of the native population is only the question of time.

Against Tuberculosis.—It is calculated that there are about 2,700 cases of tuberculosis in Havana. Although the mortality from this disease has been greatly reduced within the past few years, it still remains the chief factor in the deathrate. An active crusade has been inaugurated, with a view to diminish the number of cases. The investigation which is being pursued has resulted thus far in the location of 1,642 cases in the city. The names and addresses of these persons have been carded and arranged for easy reference. Information as to the nature, spread, and prevention of the disease is being scattered among the people by means of lectures, circulars, etc. A plan to establish a public sanatorium for the tuberculous near Havana has received the support of General Wood and is now being actively pushed by Major Gorgas. It is proposed to divide the sanatorium into two sections. One for the incurables will be situated somewhere on the outskirts of the city, while the other, for the treatment of cases that seem to be curable, will be located at least five miles out in the country. For the latter institution 100 acres of land will be purchased and work commenced as soon as the charter is secured. The sanatorium will be supported by the Cuban government, and is established with a view to accommodating as many as possible of the infected poor in the tenement houses, especially those who are bedfast and consequently a great source of infection.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 29, 1902. [Vol. XXXVIII, No. 13.]

1. The Use of the Gallbladder to Restore a Prolapsed Liver. A. F. JONES.
2. End-to-end Approximation of the Broad Ligaments and Other Points of Technic in Abdominal Hysteromyomectomy. E. C. DUDLEY.
3. Anemias Secondary to Gastrointestinal Disease, with Report of Two Cases. G. W. MCCASKEY.
4. The Anatomic Factor in the Production of Baldness. GEORGE ELLIOTT.
5. Ocular Lesions Associated with Constitutional Diathesis. H. ISAAC JONES.
6. The Prostate. JOHN B. MURPHY.
7. Case of Typhoid Fever Complicated by a Thrombophlebitis of the Long Saphenous Vein. A Severe Hemorrhage from the Bowel, Infection of the Clot, with Recovery. GEORGE C. ARMSTRONG.

1.—See AMERICAN MEDICINE, Vol. III, No. 2, p. 52.

2.—End-to-End Approximation of the Broad Ligaments.—In the usual method of closing the uterine stump and the wound in the broad ligaments by continuous sutures running from side to side the ligaments retract and no longer support the bladder, vagina and rectum, thus permitting rectocele and cystocele and such close relations of bladder and rectum as to increase possibility of infection. After the usual steps in freeing the uterine mass from the ligaments and peritoneal investment around the cervix Dudley separates it from the vaginal portion of the latter by a wedge-shaped incision so directed that suturing may be from before backward. Removal of the entire uterus is indicated when the cervix is diseased and is best when vaginal drainage is required. When the cervix is accessible the first incisions may be made as for vaginal hysterectomy. When the whole operation is abdominal the bladder is stripped off the cervix as far down as possible and the anterior wall of the cervix divided longitudinally with sharp scissors, thus allowing the finger to pass into the vagina and serve as a guide while incising the uterovaginal attachments. The sutures that unite the broad ligaments nearest to the vaginal wound should catch the cut end of the vagina also, uniting it to the stumps at the point where the ligatures surround the uterine arteries. This draws the vagina strongly upward and covers exposed surfaces between the vagina and broad ligaments. Cuts illustrate various steps in the operations, including the continuous anteroposterior suture uniting the two broad ligaments. [H.M.]

3.—Anemias Secondary to Gastrointestinal Disease.—Hemolytic effects from bacterial processes are the result of varied and indifferent toxins, results further depending on the vulnerability of the blood itself and blood-making organs, which varies widely in different individuals at different times. It depends also on the condition of the intestinal epithelium and the liver structure, important intermediate laboratories between the gastrointestinal contents and the blood. There is good reason for assuming hemolytic action upon the erythrocytes under many if not most of the conditions which produce leukocytosis. The granular degeneration produced by lead suggests that there may be other structural changes not demonstrable by present methods produced by other chemic agents circulating in the blood. The hemolytic action of certain alien serums points to the probability of many agents as factors in lowering the resistive power of the red cells. [H.M.]

4.—The Anatomic Factor in Baldness.—In no other region of the body, as in that above the level of the temporal ridges and the superior curved line of the occipital bone, is there so extensive an area of skin which does not receive adequate exercise through either underlying or adjacent muscles. There is nothing anatomic or mechanical to interfere with arterial supply. The action of the hat on arterial trunks is infinitesimal, but upon the return flow in the veins and lymphatics the hat has its influence. The functions of the papillas may be stunted by the slow return. There is nothing to accelerate this but the inactivity of the epicranial aponeurosis, and, perhaps, gravity. At the borders of the dome the fall is precipitate, and underlying muscular structures come into play, and this region is rarely involved. The absence of baldness in the female is accounted for by the greater amount of exercise given in

dressing the hair. When the scalp has become bound down, no measure of relief can avail because it can be no longer exercised. Massage should be performed both night and morning to preserve the hair. [H.M.]

5.—Ocular Lesions and Constitutional Diathesis.—Asthenopia, due to vasomotor paresis affecting the retinal vessels, is mostly a reflex from genital disorders. The aching is more constant and less relieved by rest than that from errors of refraction. Through the lenticular ganglion the path from the pelvic plexus of the sympathetic is almost a straight road. Intermission is characteristic of ocular gout. There may be pain in the ciliary region, troubles of accommodation which no glass will correct and floating specks in the vitreous. These disappear with attention to the systemic trouble. Phlyctenular disease is a manifestation of struma and associated with alimentary disturbances. Diseases of the eye are often closely related to those of the teeth, ear and nose. The general condition of the patient should always be studied. [H.M.]

6.—The Prostate.—After considering the anatomy and physiology of the gland, the etiology, pathology and medical treatment of enlargement, Murphy reviews the results and opinions of other surgeons on the various operations for its reduction. From clinical reports and experience, it seems evident that in extreme cases prostatotomy is the operation of election, but the practice of today should be timely. Not to mention discomfort, the continued use of the catheter menaces life with cystitis and its sequels. Prostatectomy gives the best permanent result and is little more dangerous than prostatotomy. Suprapubic prostatectomy should be limited to enormous intravesical enlargements, as it endangers sphincteric control more than the perineal operation, is more sanguinary and more difficult. The perineal is the most direct route, admits of a large opening and permits the prostate to be drawn into the open before it is attacked, gives least liability to disturbance of the internal sphincter or injury to the bladder wall or retina, and affords the best drainage. A Y-shaped incision is best with a Sims speculum for posterior retractor. The prostate is drawn out with hook and retractors and separated from the bladder from behind forward. There should be intracapsular enucleation *en masse*, allowing the anterior isthmus to remain. The permanent catheter should not be introduced until the perineal drain is removed. The patient should be kept in a semisitting posture for 72 hours, and be out of bed by the fifth day. He should drink large quantities of water. Anesthetic is sub judice. [H.M.]

Boston Medical and Surgical Journal.

March 27, 1902. [Vol. CXLVI, No. 13.]

1. The Suture of Arteries. J. C. HUBBARD.
2. A Contribution to the Study of Catgut as a Suture and Ligature Material. HUGH CABOT.
3. Neglected Methods for the Sterilization of "Gum-Elastic" Catheters. F. J. COTTON.
4. Two New Methods of Operating for Retrodisplacement of the Uterus. FREDERIC COGGESHALL.
5. The Influence of School Life Over Health. FRANK W. WRIGHT.

1.—Suturing of Arteries.—Hubbard gives a history of efforts at suturing arteries, recounting the fruitful experiments of Jassinowsky, Murphy, Dörfler, Abbe, Payr and others. The first attempts were marked by failure. Later it was found that if the sutures were passed only through the media and adventitia success attended the operation very frequently; and still later fine silk sutures were passed through the entire wall of the artery with success. The author has performed some experiments on dogs which while not wholly satisfactory lead him to believe that with better facilities and more careful technic much better results may be secured. [A.B.C.]

2.—Catgut as Suture and Ligature Material.—In order to ascertain the length of time which buried catgut retains its strength, and likewise the time necessary for its absorption, Hugh Cabot buried ordinary catgut of sizes 0, 1, and 2, from such makers as Lee, Peak, Leavens, Van Horn, and Countie, in the hind leg of a rabbit. Chromicized catgut of the same sizes and from the same makers was subjected to the same experiment. His findings were as follows: *Plain catgut.*—Prepared by heating under pressure in alcohol, a method very generally employed in the moist preparations. The strength of these

materials when removed was estimated by an attempt to break them. When they could not be broken in short lengths of 1½ to two inches, they were considered of full strength; when broken only with difficulty they were considered of good strength; when broken easily worthless. No. 0, good strength at four weeks (two cases); No. 1, full strength, four to six weeks (seven cases); No. 1, prepared by dry heat nearly absorbed in three weeks (two cases); No. 2, unsterilized and not hardened, full strength four weeks (one case). *Chromicized catgut*.—The following results include the product all makers considered together, as the methods of preparation do not differ widely. They are all prepared by the moist method, and sterilized by superheating in alcohol in closed tubes; No. 0, little strength at four weeks (two cases); No. 0, moderate strength at six weeks (one case); No. 1, full strength five to eight weeks, present and of some strength eight to ten weeks (five cases); No. 2, full strength eight to 12 weeks, nearly absorbed 16 weeks (four cases). Briefly stated, his conclusions are as follows: (1) That in rabbits chromicized catgut of No. 1 size is retained longer than is desirable in a suture material for surgical use; (2) that plain catgut of No. 1 size is retained a sufficient length of time—that is to say a minimum of three weeks; (3) that catgut prepared by dry heat is more rapidly absorbed than that prepared by moist methods; (4) that the time required for absorption increases very rapidly with the increase of size, as No. 2 gut took from two to three times as long to absorb as No. 1. Stress is laid upon the following points: (1) In order to get the best results from catgut, care must be taken to select the size and preparation best suited for each occasion; (2) the use of too large sizes is one cause of unsatisfactory results; (3) care in tying and cutting catgut ligatures is essential to safety. No. 0 catgut is the best size for the peritoneum, No. 1 for aponeuroses, and No. 2 for the skin when so used. [A.B.C.]

3.—Sterilization of Gum-elastic Catheters.—Cotton, after a series of experiments with the ammonic sulfate method of Herman, and the salt solution method of Claudius, comes to the following conclusion: All the gum-elastic catheters, bougies, and fliform bougies ordinarily sold may be boiled repeatedly and for long periods in saturated (or something less than saturated) solutions of ammonium sulfate or sodium chlorid without essential damage. New instruments show no damage whatever, used instruments only a deterioration that is of no great consequence. As to a choice between the two, I feel a little surer of the ammonium sulfate, perhaps, but would choose it not so much because of this as because it is easier to handle and spatters less when it boils down than does the common salt. The tests made with the weaker solutions of common salt are too few as yet to be conclusive and their use has the disadvantage of lowering the boiling point. [A.B.C.]

4.—Two New Operations for Retrodisplacements.—Coggeshall describes the technic of Goldspohn's modification or extension of Alexander's operation. This extension is the opening of the peritoneum, admitting entrance into Douglas' pouch; then the adhesions can be broken up, tubes and ovaries on either side drawn down, inspected, resected or removed if necessary. Its immense superiority over the ordinary Alexander operation, is that the round ligaments are not shortened until after any adhesions which may hold the uterus back have been broken up, and that any diseases of the tubes or ovaries which may have been complicating the case have been removed. Its advantage over the median incision is that there is practically no danger of hernia. Gilliam's operation is a substitute for ventral suspension or fixation, and was first described by him in September, 1900. It has since been used in eight cases by Coggeshall with satisfactory results. Its essential feature is that the uterus is fastened forward by means of the round ligaments, which are attached to the abdominal wall at a point about two inches from each other, and in such a manner that about an inch of the end of each ligament has been left inside the abdominal cavity. These operations are, of course, only applicable to women who are not old enough for the round ligaments to have undergone atrophy. They leave the stronger proximal portion to afford support and dispense with any dependence upon the thin distal end of the ligament. [W.K.]

5.—School Life and Health.—Many of the failures of manhood are due to indolent habits engendered by badly ventilated and poorly lighted school-rooms. Wright sums up the requisites for a hygienic schoolhouse. Many failures in health are due to the school hours, requiring an early breakfast and late dinner. The diseases most common to school life are near-sightedness, spinal deformities, disorders of the nervous and digestive symptoms, consumption and the contagious diseases. Vaccination is the first great requisite. Any disease that can be contracted at school and carried home should be rigorously excluded. Pupils should have nothing in common. The writer describes an antiseptic cap for pencils, a drinking fountain requiring no cup, and separate coat rooms. Medical inspection should include sanitation of buildings, daily examination of pupils for contagious diseases, periodic examination of eyes and ears and investigation of causes of absence. [H.M.]

Medical Record.

March 29, 1902. [Vol. 61, No. 13.]

1. The Relation of Surgery to Obstetrics. EDWIN B. CRAGIN.
2. The Study of Quarantine in the Light of Modern Progress. ARTHUR H. GLENNAN.
3. A Fatal Case of Gangrenous Appendicitis without One Cardinal Symptom in the Course of the Disease. SAMUEL M. EVANS.
4. Cosmetic Considerations Not the Only Ones in Cases of Strabismus.—The Importance and the Possibility of Securing Binocular Vision. RICHARD H. DERBY.
5. The Treatment of Internal Hemorrhoids. W. DUFF BULLARD.
6. Is the Mind an Entity? H. H. STONER.

1.—Relation of Surgery to Obstetrics.—The relation between surgery and obstetrics is now, and in the future is likely to be, so intimate, that the best preparation for obstetric work of the highest type is thorough surgical training. Cragin thinks that the secret of success in obstetrics is based largely upon asepsis, and this is far better secured by one who has had surgical training. In dealing with hemorrhages surgical principles and training are of constant service; and if you are face to face with ectopic gestation surgery is essential. The repair of lacerations occasionally demands the attention of every obstetrician, and this with proper care of all details is rarely done without surgical experience. So in obstructed deliveries and in eclampsia surgical judgment and skill are often invaluable aids. If in case of eclampsia emptying the uterus is advisable the surgeon's training in dilation of the cervix is needed to avoid laceration of the uterus. In cases of infection where the problem is to remove the secundines from the uterus without opening new avenues of infection by scraping too deeply, injuring the endometrium and opening vessels and lymphatics skilled uterine surgery is required; for it is easy for the inexperienced to mistake both with the finger and the curet the uterine wall for foreign material, and scrape not only beyond the limit of safety, but even through the uterine wall. Cragin further believes that it will in the future be regarded as fully within the sphere of the skilled obstetrician to treat all displacements of the uterus beginning or recurring during the puerperium. As such displacements are most likely to occur when the uterus is large and the ligaments relaxed so they are more easily corrected soon after their occurrence, and it is therefore only rational that the obstetrician should be trained in the maintenance of the normal position of the uterus during its involution. [W.K.]

2.—Quarantine.—The history of quarantine is briefly reviewed. As we come to understand the origin of disease and prevent its propagation quarantine as a means to an end is proportionally relaxed and finally becomes unnecessary. Glennan quotes in full the rules formulated at the City of Mexico by the Pan-American Congress as a fitting summary of the present state of sanitary thought. [H.M.]

3.—Fatal Gangrenous Appendicitis Without One Cardinal Symptom.—Evans reports the case. During the past five months a girl of 9 had several attacks, characterized each time by prostration, nausea, vomiting, rapid pulse, some fever, obstinate constipation and some abdominal soreness. The last illness was preceded by a week of ailing, followed by the above symptoms, increasing in severity till death. The patient was really sick for five days. Every 24 hours marked a decided advance in the pulse and toxemia, the pulse increasing from 20

to 30 each day. The temperature remained practically negative from the fourth day after the beginning of the first symptoms until 30 hours before death, and there was not a cardinal symptom of appendicitis nor peritonitis at any time. Necropsy showed a gangrenous appendix. [A.B.C.]

4.—Strabismus and Binocular Vision.—Squint amblyopia may mean either simple dulness of the retina or impaired power of fixation, or one-half of the retina may have better vision than the fovea. In the last form chances of improvement are small. In the second, especially in children, good results can be secured. Of first importance is correction of the refractive error made under complete atropinization followed by training of the visual acuity with the good eye screened for a half hour once or twice daily. To revive a desire for binocular vision the stereoscope is the best device and should be used daily. [H.M.]

5.—Treatment of Internal Hemorrhoids.—Bullard condemns the injection method of treatment and the Whitehead operation. Internal hemorrhoids should be treated by either the clamp and cautery method or the ligature method. Personally he prefers the clamp and cautery method, as convalescence is shorter, after-pain is less, secondary hemorrhage is not so apt to occur, there is less liability of infection, and recurrence is less frequent. [A.B.C.]

New York Medical Journal.

March 22, 1902. [Vol. LXXV, No. 12.]

1. Epignathus. CHARLES JEWETT.
2. A Skiagraphic Study and Researches in the Direction of Obtaining Pictures which are Both Shadow and Substance of Bone, Muscle and Ligaments. J. RUDIS-JICINSKY.
3. Remarks Concerning the Practice of Aseptic Surgery. CHARLES MCBURNEY.
4. Tuberculous Joint Disease. H. AUGUSTUS WILSON.
5. Tripartition in the Study of the Female Pelvis. A. ERNEST GALLANT.

[In our abstract of Dr. Tyson's article, on page 523 last week, the types made us say monumental sodium instead of monovalent.]

1.—Epignathus.—A primipara of 24 gave birth to this anomaly, delivered at the seventh month of gestation, the tumor presenting. The specimen was an immature female fetus, from the widely gaping mouth of which protruded a lobulated tumor. The entire bulk was nearly equal to that of the fetus itself. The growth presented four lobes consecutively attached one to another by narrow pedicles. Each lobe except the proximal one was made up of numerous lobules. The tumor sprang by a narrow pedicle apparently from the sphenoid bone. In discussing these tumors the author says that they present essentially the same structures that are found in dermoid cysts and in teratomas of the ovary and other organs. They are teratoid tumors of the base of the cranium, the product of aberrant ectodermal and mesodermal cells displaced in the formation of the hypophysis duct. [C.A.O.]

2.—A Skiagraphic Study.—Rudis-Jicinsky says if we wish to make a skiagraph in a given case of the muscles, ligaments, bones, and sometimes even some arteries, of a human body, place two or more sensitized x-ray plates, with the film sides up, in a casket or within yellow and black envelopes. Use two Crookes' tubes of about the same vacuum, one under the subject and the other over the same. All of the plates will be affected but in decreasing degree. Against the film of one plate we may lay a calcium tungstate intensifying screen of very fine grain, and may get one picture showing the internal structure of the bones, muscles, ligaments, etc., exclusively; while the second plate, for instance, is a full exposure for certain parts only, and may show the muscles, ligaments, and a shadow of the bones without the internal structure; the third one the muscles only, etc. Quite a number of plates or films may be exposed this way at once to the x-rays, and thus an equal number of varying revelations of the same case may be obtained by one exposure. [C.A.O.]

3.—Aseptic Surgery.—McBurney says our efforts should be directed to the accomplishment of two objects: First, the reduction to the smallest number possible of bacteria which enter a wound; second, the perfect preservation of the self-protecting power of the tissues of the wound. He condemns all use of the naked hand in operations as inconsistent with cor-

rect ideas of asepsis, and considers thin, well-fitting India-rubber gloves absolutely essential to the practice of aseptic surgery and that the objections which have been made to their use are purely theoretical. He calls special attention to the aseptic handling of septic wounds and diseases, and maintains that it is possible, by exercising sufficient care, to obtain clean aseptic healing in a wound which is originally septic. In his practice even in extensive septic cases salt solution has been used for washing and sterile gauze for packing and drainage to the entire exclusion of solutions of mercuric chlorid, carbolic acid and iodoform gauze and powder. The perfect and unceasing removal of septic discharge is a most important item in the postoperative treatment of septic wounds, and all "stimulating applications," such as silver nitrate, carbolic acid, balsam of Peru and iodoform are, in his opinion, practically worthless. [C.A.O.]

4.—Tuberculous Joint Disease.—Heredity plays a conspicuous part in the etiology, although traumatism is an undoubted factor. Gibney analyzed 596 cases of tuberculous joint disease, and found tuberculosis in the parents in 68%. Taylor analyzed 845 cases of Pott's disease and found 34% in which there was hereditary history. The apparent trivialty of the earlier symptoms often prevent an early diagnosis. The later persistency of disability, changing from intermittency to constancy, the frequent occurrence of night-cries, the failure to obtain relief from the remote pains often ascribed to rheumatism, cystitis, colic, bronchitis, and the occurrence of abscess formation and deformity, force a diagnosis and the localization of bone tuberculosis. Muscular rigidity is a constant and reliable sign and is always present until muscle atrophy and joint stiffness occur. Muscle atrophy has been observed as early as the eighth day. In making an examination an anesthetic should not be given, as it eliminates the reflex muscular spasm and makes it easy to inflict traumatism upon the joint. The striking of the heel or the knee in examining for coxalgia is a reprehensible practice, because of the trauma thus produced. The greatest reliance can be placed upon the manner in which the functions of the joints are performed, and this may be determined by critical inspection and careful comparison with the corresponding joint. Based upon modern clinical and pathologic research the principle of rational treatment would appear to be to aim to secure ankylosis rather than to attempt to avoid its occurrence. By so doing, ankylosis will not necessarily result, but, instead, normal or approaching normal function may gradually be established in those cases where correct diagnosis in the incipency favored early application of appropriate remedial measures. [C.A.O.]

5.—Tripartition in the study of the female pelvis is discussed by Gallant. He arranges the components of the female pelvis (anatomic, functional and pathologic) in natural groups of "threes"—*Tripartition*, and illustrates the same by specimen charts and outlines. [C.A.O.]

Medical News.

March 29, 1902. [Vol. 80, No. 13.]

1. The Present Status of Serumtherapy in Typhoid Fever. JAMES EWING.
2. Surgical Complications of Typhoid Fever. ROBERT ABBE.
3. The Detection of Typhoid Bacilli in the Feces as a Diagnostic Test of Typhoid Fever, and a Comparison of this Test with the Widal Reaction. HENRY A. HIGLEY.
4. Remarks upon Some Experiences with the Widal Reaction. E. LIBMAN.
5. Some Observations in Typhoid Fever. FRANK SHERMAN MEARA.
6. Adrenal Substance in the Intestinal Hemorrhage of Typhoid Fever. WARREN COLEMAN.
7. Pathology of Typhoid Fever. R. ALEXANDER BATE.

1.—Serumtherapy in Typhoid Fever.—Typhoid differs from diphtheria (1) in being a septicemia rather than a toxemia; (2) the bacterial agent shows wide variation in biologic characters and in the quality of the agglutinating substance elaborated; (3) the toxic products differ radically in their clinical qualities from diphtheria toxin while their relation to symptomatology is uncertain. The bodies of typhoid bacilli contain poisons which do not diffuse rapidly in fluids and are incapable of producing the specific lesions of typhoid fever. Procedures rendering animals immune to the bacillus do not protect against infections of the products and macerated bodies

of these bacteria. The serum must be principally bactericidal, not antitoxic. Strongly protective serums may have much or very little agglutinating power. Agglutination depends largely on the character and condition of the bacteria themselves. Bockenham aimed at producing a polyvalent serum, i. e., one that would protect against a variety of races concerned in the disease, each requiring an extremely specialized bactericidal agent. Another step in advance followed the recognition that protective substances are not equally distributed in the body, and are probably the product chiefly of the colorless blood and lymph cells. Results from treatment with visceral extracts encourage further research. [H.M.]

2.—Surgical Complications in Typhoid Fever.—Abbe calls attention to the many and varied surgical complications which may rise during typhoid fever, mentioning abscess of bone, abscess of muscle, of synovial sheaths, of joints, etc., ulceration or abscess of the laryngeal cartilages, femoral phlebitis with resulting surgical complications, parotitis, etc. Special attention is called to perforative peritonitis resulting from typhoid fever. The author insists upon early exploratory laparotomy so soon as a strong suspicion of perforation exists. He reports five of his own cases. In four of these the surgeon was called too late to operate in the opportune time and they resulted fatally; the fifth recovered. [A.B.C.]

3.—Diagnosis from Typhoid Bacilli in the Feces and the Widal Reaction.—Higley records a study of 21 cases showing that during the second week when technical aids are of the greatest value isolation of bacilli from the feces gives slightly better results than the Widal test. The two methods in combination render material aid in diagnosis previous to distinctive symptoms. [H.M.]

4.—The Widal Reaction.—Libman reports a study of 3,514 tests made in 860 cases, 334 being typhoid fever. In 3.9% of these there was no reaction. In 526 nontyphoid cases there was not one positive reaction. Dried blood less than four hours old was used. He describes the preparation of the cultures. One-third of the cases gave a positive reaction by the end of the second week, two-thirds by the end of the third week. With a positive reaction the patient must be questioned as to a former attack. A positive reaction means that typhoid is or has been present. Partial reactions are absolutely to be ignored. A negative reaction does not exclude typhoid, as it may occur when the reaction has disappeared, or before it has appeared. The culture may be at fault; or the case may be clinically typhoid without reaction, or the disease is not typhoid. A positive reaction may occur when the case clinically is not typhoid and yet autopsy may show typhoid bacilli in some part of the body. In many cases by the reaction alone can the diagnosis be established. It is advisable to test early, then, if negative, a later positive reaction cannot be attributed to a former attack. [H.M.]

6.—Adrenal Substance in Intestinal Hemorrhage.—Coleman reports favorable results from its use. Five-grain powders are kept in the sick room for emergencies with instructions to administer on the first sign of blood in the stools, repeating every hour until the physician can be reached. When nausea follows, 10 grains may be given by rectum. Intravenous injections of two or three grains may be tried if this fails. [H.M.]

7.—Pathology of Typhoid Fever.—This paper does not lend itself to abstracting on account of the wide range and minute detail of its subject matter. [H.M.]

Philadelphia Medical Journal.

March 29, 1902. [Vol. IX, No. 13.]

1. Paresis. A Clinical Study of 149 Cases Occurring at the Philadelphia Hospital. WILLIAM PICKETT.
2. Somnolence Caused by an Ear Lesion. W. G. B. HARLAND and CHARLES H. BURNETT.
3. A Second Contribution to the Study of Anesthesia by Nitrous Oxid Gas and Ether. PRESCOTT LE BRETON.
4. The Supraorbital Reflex—an Explanatory Note. D. J. MCCARTHY.
5. Arteriosclerosis and the Nervous System. CHARLES LEWIS ALLEN.
6. A Case of Herpes Zoster Ophthalmicus. W. S. DURAND.

1.—Paresis.—Pickett gives a detailed study of 149 cases of paresis. The varieties of insanity most frequently confused with paresis of the simple form are the so-called organic demen-

tias, chiefly those due to hemorrhage, thrombosis, embolism, etc., presenility, dementia præcox, epilepsy, and alcoholic insanity. In his opinion, immunity from paresis rests not on freedom from the great infection (syphilis) alone, but, as the older writers believed, on abstinence from all excesses; and that in the diagnosis much depends upon a practical acquaintance with the "paretic manner." [F.C.H.]

2.—Somnolence Caused by an Ear Lesion.—Harland gives the history and treatment of a case of somnolence due to a slight impaction of cerumen, under which there was pus, which had escaped through the perforated drum. The somnolence disappeared after the removal of the cerumen and without other treatment. On several occasions the somnolence returned and was immediately relieved by the removal of the impacted cerumen and cleansing of the auditory canal. Burnett has contributed to the article a study of somnolence from otitic influences. This condition is rare and the etiology obscure. He believes that the somnolence in the case herein reported was due to meningeal irritation of otitic origin, caries having passed from the drum-cavity into the labyrinth. [F.C.H.]

3.—Anesthesia by Nitrous Oxid Gas and Ether.—In this his second contribution on the subject, Le Breton advocates the following changes in the technic of administration. The rubber mouthpiece may be kept sterile by placing it in a weak formalin solution after each operation; the quantity of ether inhaled may be determined by using as a holder a graduated nursing bottle with a cork perforated by two metal tubes, such as is ordinarily used to drop chloroform on a chloroform inhaler; by boring a small hole in the metal cylinder which holds the gauze, and inserting into it the end of one of the tubes in the cork of the nursing bottle, the ether is allowed to trickle upon the gauze quietly and rapidly (as suggested by M. D. Mann); about 20 seconds after starting the gas the first dose of ether may be run in, and at the end of the second minute, by which time the gas has made the patient unconscious, the gauze in the cylinder has been well saturated with ether; at the end of the fourth or fifth minute a return to semi-consciousness is sometimes noted, but continued small doses of ether quickly control the situation. [F.C.H.]

4.—Supraorbital Reflex.—McCarthy maintains that not only is the supraorbital reflex justified, but that his original explanation of the phenomenon as a pure sensorimotor reflex is correct. [F.C.H.]

6.—Herpes Zoster Ophthalmicus.—Durand reports a case which was successfully treated with a solution of adrenalin chlorid. Nux vomica, gelsemium and potassium iodid were given internally. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Prophylactic and Therapeutic Indications in Pulmonary Tuberculosis, Founded on a Knowledge of the Nidus.—In a recent number of the *British Medical Journal*, the Paris correspondent gives an interesting account of some recent work in pulmonary tuberculosis by Robin and Binet. At the recent Tuberculosis Congress, these writers showed that in 92% of tuberculous patients, while there is a diminished respiratory capacity, there is a considerable increase in the respiratory exchanges—the quantity of air expired is increased 80%; the carbonic acid expired is increased 64%; the total oxygen consumed is increased 70%; the oxygen absorbed by the tissues is increased 94%; and they express the belief that these facts are of value not only in the diagnosis of the disease, but also in the detection of predisposition to infection. At a recent meeting of the Académie de Médecine de Paris, they detailed the results of their extended researches. They find that 60% of the descendants of tuberculous patients show these phenomena, which are found also in such conditions as alcoholism and overwork that predispose to tuberculous infection. It follows from this research that the primordial condition of the pretuberculous state consists in

an exaggerated vitality or autoconsumption, and not a lowered vitality, as has been taught heretofore. In consequence they consider that the main line of prophylactic and therapeutic treatment of tuberculosis should be radically changed. Instead of tonic preparations the physician should select such remedies as diminish the power of the organism to fix an excess of oxygen and to produce too much carbonic acid. Having studied the effect of 40 drugs and physical agents from this point of view, they find that the drugs that in tuberculous patients diminish from 10% to 27% in one month, the exaggerated respiratory exchanges are more especially codliver oil, sodium arseniate, Fowler's solution (5 mg. daily), sodium cacodylate (5 cg. daily for 10 days followed by an interval of 10 days), and tartar emetic (1-5 cg. daily). The preparations of arsenic are said to produce an opposite effect if the dose be doubled. The authors believe that cold climates suit tuberculous patients and those predisposed to the disease, provided the surface of the body be kept warm and cooling down be avoided; and that warm climates may be born if the patient breathe air that has been cooled. They believe also that before deciding whether a stay at the seaside or in the mountains is likely to be of benefit to any particular patient, an examination of the respiratory exchanges should be made before and after a week's stay at the place selected. And this should also be done in order to determine the effect of drugs in those affected with the disease as well as in those predisposed. They urge that just as we vaccinate against smallpox, so should we treat preventively, be means recognized as capable of modifying the chemic or vital conditions of the nidus—that is, the exaggerated respiratory exchanges and the organic demineralization, after an examination of the respiratory exchanges, all persons recognized as predisposed to tuberculosis and thus liable to contract the disease. Finally they maintain that the treatment of confirmed pulmonary tuberculosis should no longer be limited to antibacillary treatment, but that it should take into account the state of tuberculosis that renders the organism liable to infection and modify this concurrently, not by tonics and stimulants, but by such measures as restrict the tuberculosis and the fixation of oxygen by the tissues, and by such food and drugs as shall divert a portion of the combustion which is consuming the organism. It is from such investigations as these—investigations that take into account the chemic side of the human organism, that we may hope for enlightenment in the future. Specifically the researches of Robin and Binet form an interesting addition to the literature of tuberculosis, and they tend to reveal at least one mode of operation of drugs long held in esteem, such as codliver oil and the like.

Bacteriohemagglutinins and Antihemagglutinins.—Kraus and Ludwig¹ show that various microorganisms produce, in addition to hemolysins, also bacteriohemagglutinins, which, like the former, are very unstable and are destroyed at 58° C. The normal serum of animals is not capable of paralyzing the hemagglutinins, but does paralyze the hemolysins. Both are paralyzed by specific immune sera. There is no connection between the two phenomena, however. Hemolysis and hemagglutination are separate and distinct processes. [D.R.]

An Early, Constant Sign of Arteriosclerosis.—Cury² gives the result of his investigation of the early sign of arteriosclerosis described by Friedman. The latter states that while in healthy individuals, the aortic sounds are heard at their greatest intensity on a level with the spine of the scapula posteriorly, in cases of beginning arteriosclerosis the point of greatest intensity is situated on a line running from the angle of the scapula to the spinous process of the seventh dorsal vertebra; in other words, it is notably lowered. Cury gives the following results of his investigation of the value of this sign:

(1) In 89 patients presenting the classic signs of arteriosclerosis, it was found in all of them. (2) In patients between 38 and 45 years of age, presenting no classic sign of arteriosclerosis upon auscultation of the second aortic sound or percussion of the arch of the aorta and the right subclavian region, it was recognized six times. (3) In four patients presenting hypertrophy of the left ventricle, one case of physiologic hypertrophy of pregnancy, two cases of aortic regurgitation without insufficiency, one case of Bright's disease, this displacement was not found. The author believes that when present this sign is pathognomonic of arteriosclerosis. [L.F.A.]

The Practical Results of Recent Investigations Concerning Malaria.—Plehn³ refers to the practical immunity from malaria enjoyed by the negroes of the Cameroon district, and discusses different methods of obtaining an artificial immunity for white settlers in the tropics. From his experience he finds two methods of prophylactic value: the one in which large doses of quinin (1 to 2 grains) are given at intervals of about eight days, thus causing either the death or absolute nongrowth of the parasites and producing an artificial immunity due to the constant presence of large quantities of quinin in the blood; and the other, in which smaller doses (0.5 grain) are given at shorter intervals (5 days), resulting in a partial growth of the parasites accompanied by slight febrile symptoms but without serious results, thus gradually producing a natural immunity in the patient, due to the formation in the blood of protective bodies, rendering it an unfit medium for the growth of the malarial parasites. Plehn regards the latter method safer and more rational. [H.H.C.]

The Harmlessness of the Milk of Tuberculous Cows for Man.—Ruata⁴ supports Koch's recently expressed theory that neither the milk nor the meat of tuberculous cows, nor any other tuberculous material, when introduced into the gastrointestinal canal, is harmful for man. He bases this belief upon the high mortality among the newborn from tuberculosis of all types; at this time milk certainly cannot be considered a causal factor. He believes the disease in these instances to be hereditary, inasmuch as it develops very slowly; and even if the mother has no well-defined form of pulmonary tuberculosis, postmortem records teach us that 60% of the cases have latent tuberculous foci. The mortality from tuberculosis diminishes after the first few months of life, continuing to do so until after the fifth year, in spite of the large amount of milk consumed during this period. After the fifth year, the mortality again increases, but the cases are almost entirely of the lungs—the only variety which the author considers primary, as it is the only one which may be acquired through inhalation. [E.L.]

On the Etiology of Infectious Diseases.—Menzer⁵ points out that healthy individuals are constantly harboring in the mouth, nose, throat and other cavities the specific microorganisms of infectious diseases, and that these live and thrive there as harmless saprophytes until some injury or a cold or other slight indisposition furnishes them an opportunity to become pathogenic—in other words, that the blood of normal man contains antiserums against all the ills that flesh is heir to. [J.C.S.]

Thallium Alopecia.—The occasional use of thallium acetate in the treatment of night-sweats of tuberculosis lends interest to the fact that Bettemann,⁶ of Heidelberg, has succeeded in producing alopecia in animals by the administration of this salt. [C.S.D.]

Plague.—The essence of an exhaustive article on this disease by Kolle and Martin⁷ may be thus stated: (1) Bacteria of pneumonic plague possess greater virulence than other plague bacteria. (2) The reduction of mortality by serum treatment is slight, though life seems to be somewhat prolonged thereby. (3) Prophylactic inoculations afford feeble temporary protection and are practically worthless in combating an epidemic. (4) Plague is preeminently a rat disease which occasionally and under favorable circumstances may be transmitted to man. A single rat that succeeds in eluding quarantine vigilance is,

¹ Wiener klinische Wochenschrift, January 30, 1902.

² Bulletin Général de Thérapeutique, Vol. 142, No. 20, 1901, page 796.

³ Deutsche medizinische Wochenschrift, December 5, 1901.

⁴ Klinisch-therapeutische Wochenschrift, January 5, 1902.

⁵ Berliner klinische Wochenschrift, January 6-13, 1902.

⁶ Münchener med. Woch., Jan. 21, 1902.

⁷ Deutsche medizinische Wochenschrift, January 2, 9, 16 and 23, 1902.

therefore, infinitely more dangerous than a human plague patient. (5) Flies, fleas and other parasites are probable carriers of the contagion. Fortunately, the authors say, fleas and other vermin infecting rats do not bite human beings, even when hungry. Their crushed bodies have, however, been found to contain plague bacilli. To successfully quarantine against plague one must consequently quarantine against rats and mice and against flies and other insects that feed on their dead carcasses. [J.C.S.]

A Sample Method of Conservation for Purposes of Microscopic Diagnosis.—To preserve cells and other organic elements contained in urine, sputum, stomach contents, etc. Rohnstein¹ permits the fluid to sediment, removes the supernatant albuminous liquid and replaces it for purposes of fixation and preservation, with a solution devoid of albumin (2% formol). This mixture he shakes up thoroughly, again sediments, pours one-half of the liquid off and substitutes it with a solution of formol 20.0; glycerin 125 and water 200. By the use of this method he has been able to preserve sediments for as long a term as three years. [E.L.]

Gonococci in the Blood in Gonorrheal Polyarthrititis.—Unger² reports a case of gonorrheal polyarthrititis in a young man of 18, and describes his method of demonstrating the existence of gonococci in the blood. According to Unger, three principal factors are necessary to the success of the technic: First, a comparatively large quantity of blood should be withdrawn, in order to obtain the largest possible number of cocci; second, the blood should be well diluted in order to reduce its natural bactericidal action, and at the same time add to its culture strength; and third, the choice of a culture-medium adapted to a rapid and untrammelled growth of the gonococci—a fluid medium by preference. [H.H.C.]

A New Reaction of Human Milk.—Moro³ finds that if a drop of human milk is added to hydrocele fluid, the latter promptly coagulates. The addition of cow's or goat's milk has no such effect. The addition of human blood has an action upon the hydrocele fluid similar to that of human milk, but is much feeble. As hydrocele fluid contains fibrinogen, the thought suggests itself that milk contains a fibrin ferment; but if the milk is boiled or heated in the water-bath, it does not lose its coagulating power. This fact rather tells against the ferment theory. A much longer time, however, is required than when fresh milk is added. [D.R.]

Typhoid Fever in South Africa.—Elliot and Washbourn⁴ give the details of 262 cases of typhoid fever studied in South Africa. They state that the type of the fever is not different from that generally observed in England and America. The mortality and the incidence of complications are much the same as in the variations met elsewhere. Phlebitis, however, occurred in 5.6% of the cases. It is believed that inoculation has no marked influence either in preventing or in modifying the disease. [A.O.J.K.]

On Experimental Cholecystitis and Cholangitis of Autoinfective Origin.—Stoltz⁵ points out the difficulty of procuring inflammatory processes in the gallbladder by artificial infection so long as the gall stream is unimpeded; and the ease with which even slightly virulent material sets up inflammation after an impairment of the motility of the gallbladder. His experiments on dogs, in which sterilized glass beads or pledgets of cotton were introduced into the gallbladder, gave positive results which serve as an explanation of those cases in which serious and sudden inflammation arises, and where gallstones have long existed without giving rise to any serious symptoms. [C.S.D.]

The Nature of Fever.—From his experimental researches Aronsohn⁶ concludes that fever is the result of an abnormally increased stimulation of the heat centers by means of which the motortrophic apparatus of the body and vascular musculatures are stimulated to greater warmth production, increased metabolism and change in the quantity of heat given off. The types of fever are determined by the character of the stimulation,

which in the case of the infectious diseases varies to a great extent, and are also influenced by other cortical centers and organs. The ground type represents a rise in temperature due to direct mechanical, electric, or chemic stimulation of the heat center to the exclusion of any other disease of the body. [H.H.C.]

Nævus Verrucosus Associated with Certain Anomalies of Pigment.—Taylor¹ records a case of nævus verrucosus occurring in a boy of 19, and interesting particularly on account of the manner in which the lesions are rigorously confined to the right side of the body, their distribution in the track of certain cutaneous nerves, the alternation of deeply pigmented papillomas with merely the presence of pigment in the skin, and the merging of this pigmented condition into decolorized patches. The lesions occurred on the right side of the chest, to the right of the umbilicus, on the right side of the scrotum and penis, and on the right side of the nose, forehead and chin. [A.O.J.K.]

Concerning a Common and Little-known Symptom in Cancer.—Leser² calls attention to the existence in cases of cancer of small angiomas of the skin. They consist of minute nodules, varying in size from a mere point to a lentil seed, are bright red or bluish-red in color, appear slightly elevated, are sharply circumscribed, and do not disappear upon pressure. They are most common upon the trunk, more rare upon the extremities, and never found upon the hands and feet. Of 50 cases of cancer of various parts of the body, angiomas were present in every instance but one. Although the lesions occur under other circumstances, they do so principally in advanced life. Their appearance in comparatively large numbers at an earlier period has a diagnostic value as regards carcinoma. In controlling his observations, the author suggests that the following points be noted: (a) Are their lesions present even before the first symptoms of carcinoma, and do they multiply afterward when the tumor has reached its development? (b) are their rudiments congenital, and are they, in that sense, connected with the carcinoma, bearing in mind the embryonal theory of this tumor? (c) are they to be considered consequences of the carcinomatous disease? or (d) are they merely a frequent concomitant. It is also to be noted whether the distribution of the angiomas bear any relation to the situation of the carcinoma. [D.R.]

Glycolysis.—Lépine,³ in reply to the criticisms of Bendix and Bickel, says that having carefully guarded against the possible errors they point out, there was found after one hour in the normal defibrinated blood of a dog at 39°: (1) A marked diminution in power of turning the plans of polarization to the right (or increase in left rotation power); (2) a strong diminution of reduction power; (3) complete or nearly complete disappearance of fermentable sugar. In the blood of a dog whose pancreas had been removed there was, on the contrary, only a slight diminution of reduction power, but no appreciable loss of fermentable sugar. The author further mentions that already in 1900 he had, in collaboration with Boulud, succeeded in extracting from the urine of various patients (diabetics and others) a crystallizable substance which, injected under the skin of guineapigs or into the kidneys of dogs, caused glycosuria, and experimentally they had proved that this substance hindered glycolysis, and that it was destroyed in passing through the living pancreas. [J.C.S.]

The uricometer is the name given by J. Ruhemann⁴ to a graduated tube which he has devised to meet the need for a convenient and reliable means of obtaining hourly or daily quantitative estimations of the uric acid in urine. The test employed is accurate and so simple as to be available to every busy practitioner. [C.S.D.]

Clinical Observations Concerning Plasmotropic Intoxication in the Organism.—Grawitz⁵ distinguishes two distinct processes in hemocytolysis or the destruction of the red blood-corpuses, due to the action of some poison. In the one process, which he terms "plasmotropic," the toxin, whatever it

¹ Fortschritte der Medicin, January 15, 1902.

² Deutsche medicinische Wochenschrift, December 19, 1901.

³ Wiener klinische Wochenschrift, January 30, 1902.

⁴ Lancet, January 18, 1902.

⁵ Berliner klinische Wochenschrift, January 6, 1902.

⁶ Deutsche medicinische Wochenschrift, January 30, 1902.

¹ Lancet, January 11, 1902.

² Münchener medicinische Wochenschrift, December 17, 1901.

³ Deutsche medicinische Wochenschrift, January 23, 1902.

⁴ Berliner klinische Wochenschrift, January 13 and 20, 1902.

⁵ Deutsche medicinische Wochenschrift, December 26, 1901.

may be, does not affect the erythrocytes in the circulation, but exerts a deleterious influence on the red cells within the liver, spleen, and bone marrow, thus causing anemia. In the other process that known as "plasmolysis," the toxin causes an actual destruction of the red cells in the circulation, producing hemoglobinuria and its resulting pneumonia. Some poisons, as for instance pyrodin, have either a plasmotropic or a plasmolytic action, according to the dosage. Others have a purely plasmotropic action, no matter what the dosage, as is shown in the case of lead. Curiously enough, the hemoglobin absorbed into the system from large quantities of ingested blood or from hemoglobin preparations has, owing probably to the action of the saprophytic bacteria within the intestine, a plasmotropic action on the red bloodcells of the organism. The symptoms of this action soon disappeared, but the fact that it occurs at all is a matter to be taken into consideration in the administration of blood or hemoglobin preparations to anemic patients. [H.H.C.]

The Relation of Human and Bovine Tuberculosis.—

Cattle¹ having summarized the opinions of different investigators states that we cannot as yet deny the possibility of tuberculous infection by milk and that the assumption that the frequency of tuberculosis in early life is due chiefly to tuberculous milk is in one direction too narrow and in another erroneous. An exclusive milk theory, while it ignores the greater incidence of tuberculosis on the lungs than on the bowels in young children, fails also to take account of other sources of infection. There can be no doubt that certain infantile diseases—measles, whooping cough, bronchitis, bronchopneumonia—serve as powerful predisposing causes to tuberculous mortality. They leave behind them constitutional weakness, catarrh of the respiratory, and often of the intestinal passages. Under these conditions the widely disseminated bacilli of human tuberculosis gain a footing, attaching themselves to the most susceptible organs—in the majority of cases the lungs or their related glands, in other cases the intestine, ear or neck glands. Milk may be responsible for some cases, but the fact that thoracic tuberculosis is so common at an early age suggests the conclusion that the human bacillus (in the one case inhaled, in the other swallowed) mixed with the bodily secretions or with the food, is the cause of chest trouble in the one case and of abdominal trouble in the other. [A.O.J.K.]

The Bacteriology of Scarlet Fever.—Baginsky and Monti² have made a careful bacteriologic study of scarlet fever, examining the pharynx, occasionally the fluid obtained by lumbar puncture, and the urine during life, as well as the blood and the organs after death. In 411 cases, smears from the pharynx showed the presence of streptococci in short and long chains, almost constantly associated with other cocci, particularly the pneumococcus, staphylococcus and other diplococci; at times with yeasts, Leptothrix, Spirochaeta and Sarcinae. In 22 the diphtheria bacillus was also present. In 138 cases culturally examined, Streptococcus was found in all but four, in mixed culture. The lumbar fluid in the two examined cases contained streptococci, as did also the urine. From the autopsy material studied, the streptococcus was isolated in every instance, and nearly always in pure culture. The virulence of the organism was most variable, but by passage it was possible to intensify it greatly. Agglutination with the blood-serum of children just convalescing from scarlet fever was not obtained. Attempts were made to protect animals against the streptococcus by injecting emulsions of organs, such as the spleen, liver, brain, kidney, and bone-marrow, without any result. The injection of sterile blood-serum from convalescent patients seemed in two instances to prolong life; in four, it was entirely ineffectual. The article contains no conclusions regarding the relationship of the streptococcus to the disease. In a long appendix of 42 pages the histories of 82 cases are given. [D.R.]

The Chemic Nature of Tetanus Toxin.—Hayashi,³ from a series of experiments, concludes that tetanus toxin is, in all probability, a protein body, and does not belong to the globulin or albumin group, but is a primary albumose. [D.R.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

Resection of the Gasserian Ganglion.—For several years severe cases of facial neuralgia have been successfully treated by the removal of the Gasserian ganglion. The operation has been practised by but comparatively few surgeons, however, and some surgeons have doubted its advisability. About twelve years have now elapsed since Rose, of London, reported his operation in the *Lancet*, 1890, Vol. 2, p. 914, and it may be worth while to review the development and present status. In considering the results of the operation we may divide the twelve years into two periods: The first from the publication of Rose's paper up to 1896, when Tiffany collected from the literature 108 cases of intracranial operations on the fifth nerve (*Annals of Surgery*, Vol. 24, p. 575), and the second period of six years from 1896 to the present date. It is interesting to note that Andrews (*Chicago Medical Record*, 1891, Vol. 1, p. 322) devised independently practically the same operation as that performed by Rose, attacking the ganglion from below, but was later in performance of operation and its publication. This method of operation was soon superseded by attacking the ganglion from the side of the skull through the temporal fossa, an operation also devised independently by an American and continental surgeon; Hartley, of New York, and Krause, then of Altona, Germany. It is also interesting to note that of the 108 cases collected by Tiffany in 1896, 79 were performed by American surgeons and 29 by European surgeons, and up to October, 1900, 108 operations had been reported by American surgeons. Perhaps a better idea may be obtained of the present status of the operation by taking the results of a few operators who have performed by far the largest number of operations than can be obtained from a study of a tabulation like Tiffany's from the entire literature. For such tabulations necessarily include the results of many individual operators who have only had experience in operating upon one or two cases, and whose results are necessarily less satisfactory than those of wider experience. Up to the present time five operators have performed nearly as many operations as were reported by Tiffany in 1896 from 47 different surgeons; namely, Krause, 27 cases; Keen, over 20 cases; Horsley, 21 cases; Lexer, 15 cases; Tiffany, 12 cases. The question as to whether the gasserian ganglion should be resected will be influenced by three important conditions: the mortality of the operation, its efficiency as a means of permanent cure, and its other disadvantages, specially the possible loss of the eye on the side operated upon. With a mortality of 22.2%, as shown by Tiffany's paper, it is readily seen that the operation in the hands of the average operator is likely to be one of considerable gravity. Modern methods and increased experience of individual operators have considerably lessened this mortality, however. For example, in 21 operations Horsley had but 2 deaths; in 27 operations Krause had 3 deaths, and in 15 operations Lexer reports but 1 death, or in all a mortality of less than 10%, less than half the mortality in the cases tabulated by Tiffany six years ago. In considering the causes of death in Krause's three fatal cases he states that one man of 72 recovered from the operation, but died six days after from heart failure, a woman of 60 died 21 days after the operation from inflammation at the base of the brain, and a woman of 58 died of collapse. In Horsley's two fatal cases the cause of death in a man of 62 is stated as staphylococcus infection occurring two months after the operation. This was quite likely contracted from extensive syphilitic ulceration in the nose which existed at the time of the operation. The second fatal case occurred in a woman of 82 who recovered from the operation without symptoms of shock but died two days later with symp-

¹ British Medical Journal, February 22, 1902.

² Archiv f. Kinderheilkunde, 1902, Bd. xxxiii, Hfte. I. u. 2.

³ Archiv f. experimentelle Pathologie u. Pharmakologie, Bd. xivii, 1902, Hfte. I. u. 2.

toms of apoplexy. At the necropsy a small hemorrhage into the pons was the only source of death which could be discovered. This was probably caused by the separation of the sensory root of the ganglion, hence directly attributable to the operation. One death out of Lexer's 15 cases occurred in the case of a woman of 73 who died four days after the operation from meningitis. Though the mortality even with these experienced operators is still high a study of the causes of death shows that the results are not as bad as it first seems, for most of the patients were of advanced age and in many of the cases conditions were present at the time of operation which would have been considered unfavorable to the performance of any major operation. As to the efficiency of excision of the gasserian ganglion as a means of permanent cure Krause and Horsley state that all of their patients that have recovered from the operation remained entirely free from pain. There was a recurrence of pain in one of Keen's cases attributable to an endothelioma affecting the brain itself and in Lexer's cases 12 remained entirely free from pain, one had a recurrence on the opposite side, remaining free from pain on the side operated upon, and one had a recurrence apparently of central origin. In many of the cases in which a recurrence of pain has occurred after the operation this has been due, no doubt, to incomplete removal of the ganglion in the hands of inexperienced operators. Probably the recurrences are not more than 1% or 2% taking all the cases together and with the best operators there have been practically no recurrences. Apart from the mortality the chief danger of the operation is the loss of vision, if not of the eye. Horsley, Keen and several other operators have seen this accident occur. Horsley believes that trouble with the eye usually results from exposure to the irritating vapor of the anesthetic or getting antiseptic solution into the eye accidentally during the operation. The vitality of the eye being of course considerably lessened by removal of the nerve the result of such an accident is very grave. To prevent such injury Keen and Horsley advise stitching the eyelids together temporarily, the stitches being taken out at the end of the operation or soon after. Lexer reports cloudiness of the cornea in one case, permanent paralysis of the external rectus in one case and incomplete paralysis in a second case. Lexer's paper (*Arch. f. klin. Chirurgie*, 1902, Bd. 65, p. 843), is the latest contribution to this subject. He appends a tabulation of 201 operations which he has collected from the literature. The mortality in all these cases was 17%. He agrees with all other surgeons of experience that the operation should be performed only in severe cases in which peripheral operations have been tried without success in relieving the pain. He emphasizes the importance of removing the entire ganglion and advises caution in selecting cases, as the result of hysterical or neurasthenic neuralgias which are sometimes difficult to separate from true neuralgias are of course very unsatisfactory. The duration of the operation in his cases was never more than 1½ hours and in most cases averaged about 45 minutes. He modifies the Hartley-Krause operation by temporarily resecting and turning back the zygoma and he removes the bone entire instead of turning back a flap. Horsley also removes the bone altogether. Because of the possibility of wounding the middle meningeal artery Lexer advises ligation in all cases. Elevating the head and upper part of the body during the dissection of the ganglion is of great importance in arresting venous hemorrhage. This may be quite profuse in certain cases even with every precaution and like Keen and several other operators he found it necessary to pack and complete the operation later in the case of a weak old man upon whom he operated.

The satisfactory results reported by the surgeons of greatest experience with this operation have seemed to indicate that the operation should be accorded a recognized place in brain surgery. There are no doubt hundreds of people throughout the country who are

suffering agony, the intensity of which can hardly be estimated, from this most painful affection and to whom the risks of the operation, even though they be quite great, would be a small consideration when compared with prospects of complete relief. The possibilities of this operation deserve to be more generally recognized by the medical profession as a whole. It offers the only permanent relief in this extremely painful affection and if properly performed there can be no doubt that the relief will be permanent. Even in the hands of experienced surgeons it is an operation of considerable gravity and it should certainly not be undertaken by any one without a thorough knowledge of surgery and the anatomy of the parts involved. Practice upon the cadaver should in every case precede the operation on the living subject. Such operations for more or less chronic conditions have none of the urgency of acute abdominal cases and should be turned over to those surgeons who are sufficiently interested in this special line of work to perfect themselves in its technic.

It seems unfortunate that pathologic examinations of the ganglions, such as were made in Keen's recent cases by Spiller (*American Journal of Medical Sciences*, 1898, Vol. cxvi, p. 503) and in Cushing's cases by Barker (*Journal of American Medical Association*, Vol. xxxii, 1900) have not been made in a greater number of cases. Aside from the scientific value of such studies, a broader knowledge of the pathology might lead to more rational views as to early treatment.

Surgical Scarlatina.—R. de Bovis,¹ Professor of Surgery at Reims, gives a thorough review of this subject. He states that attention was first called to surgical scarlet fever by Sir James Paget in 1864. Since that time 147 observations have been reported and numerous writers have discussed the subject. Some believe that the occurrence of scarlet fever together with traumatism is a pure coincidence; others that it follows as a result of lessened resistance of the tissues and still others that the injury forms a portal of entry for the disease; de Bovis believes that there is now sufficient evidence to show a direct relation between scarlatina and traumatism in a large number of cases. The condition is less frequently observed at present because of increased precautions in isolating patients and the better development of antiseptics in hospitals. True surgical scarlatina appears a short time after injury, either as a direct inoculation or appearing at the point of lessened resistance. It does not differ in general from ordinary scarlet fever. Minor differences are: a shorter period of incubation, the fact that the eruption appears in the vicinity of a wound which may take on a diphtheric or gangrenous appearance and that the throat symptoms are much less marked. Traumatism certainly predisposes to infection with this form of virus and surgeons who come in contact with patients suffering from scarlet fever should stop operating for some time or at least take most thorough antiseptic precautions. [M.B.T.]

Rachitropacocainization.—Karl Schwarz² reports 100 operations performed under medullary tropacocain analgesia. He injects 5 cg. tropacocain dissolved in 5 cc. water between the fourth and fifth lumbar vertebrae. Complete analgesia of the lower half of the body, and sometimes as high up as the neck, with hypalgesia of the head, sets in, and lasts usually from one to two hours. Among operations performed are many for hernia, suprapubic lithotomy, ventrification of uterus, extirpation of submucous uterine myomas, vesicovaginal fistulas, operations on the rectum, amputation of thigh, resection of kneejoint, several necrotomies (femur and tibia), amputation of penis and also of the breast for carcinoma with scraping out of axillary glands, etc. In a young person (17 years) 4 cg. suffice, while 6 cg. is the maximal dose. The injection of 7 cg. in a powerful man of 21 was followed by alarming symptoms: A severe chilly cyanosis, a scarcely perceptible pulse, vomiting, but respiration unchanged, mind clear, temperature 38.3° C. Cyanosis disappeared in an hour and the sensation of cold in two hours. Following cocain analgesia cold perspiration and

¹ La Semaine Médicale, January 29, 1902.

² Münchener medicinische Wochenschrift, January 28, 1902.

cyanosis are usually observed, vomiting occurs in $\frac{1}{2}$ the cases. Severe headache is an almost constant accompaniment and may last a whole day, while the temperature rises to 39° or 40°. In tropacocain analgesia these unpleasant effects are either wholly wanting or but slight. Vomiting occurred twice in 100 cases, headaches were not severe (some complained of light headache two or three days after operation), and temperature never rose above 38.2°. [J.C.S.]

The Symptoms and Treatment of Cervical Rib.—Borchard¹ reports four cases in which operation was done for symptoms caused by cervical rib in v. Bergmann's clinic in Berlin. One of the patients had suffered from severe pain in the right arm for two years. The operation was followed by a perfect recovery. In a second case the patient had suffered for many years from a disagreeable crawling sensation in the left arm with more or less weakness which had gradually increased. The operation was followed by complete paralysis of the arm, probably caused by forcible dragging on the brachial plexus during the operation. The patient recovered from the paralysis and though there was some weakness of the arm she was freed from disagreeable symptoms. In a third case the patient had suffered from severe pains in the right arm, the breast and the back with a feeling of pressure in the neck and hoarseness. There was decided weakness and numbness in the right arm. After the operation the nervous condition was slightly, if any, changed. In a fourth case the patient suffered from pain in the neck and paresthesia of the left arm. There was also decided muscular weakness. Three weeks after the operation the patient was entirely relieved from symptoms. The studies of Küster and Pilling, which are quoted by Borchard, seem to show that in most cases this condition gives rise to no symptoms. In all, these writers have collected 139 cases. In only 28 cases was the condition diagnosed during life and in only half this number were there any symptoms present. So it appears that the symptoms are present in probably not more than 5% to 10% of all cases. When symptoms represent there is usually disturbance of circulation and characteristic nervous symptoms, together with the feeling of a tumor in the neck. The disturbance of circulation arises from the close proximity of the rib to the subclavian artery. In these cases operation is justifiable only when aneurysm of the subclavian is caused which gives rise to disagreeable symptoms or which from increase in size seems likely to endanger life. The nervous symptoms consist in severe neuralgic pains and disagreeable disturbance of sensation, such as formication, numbness, crawling sensations, etc. In some cases there is considerable disturbance of the motor nerves. If the patient's condition is not benefited after one or two months of electrical treatment operation is justifiable. Cervical rib is not infrequently combined with nervous diseases which may give rise to paralyses and disturbances of sensation. Syringomyelia is mentioned as specially frequent. Hence in such cases the entire nervous system should be carefully examined before an operation is advised. [M.B.T.]

Intestinal Obstruction Caused by Enterolith. Operation.—R. E. Wilson² reports a case of intestinal obstruction in a woman of 60, complicated with general peritonitis. Operation revealed an enterolith about the size of an English walnut fixed in a pocket in the walls of the ileum. A linear incision about one and a half inches in length was made in the gut and the foreign body removed. The incision was closed after the method of Lambert, and the abdominal wound closed without drainage. One-eighth grain of calomel was given every half hour or hour until the second day, when a bottle of magnesium citrate was given. The bowels moved freely and the patient made an uneventful recovery. [C.A.O.]

A Gunshot Wound of the Brain.—Dewald³ reports the case of a cadet who in an attempt at suicide shot himself through the forehead with a rifle. The bullet was a steel-coated lead projectile of 8 mm. caliber, such as are used in modern weapons. It passed through the skull and into the ceiling of the room, where it lodged and was flattened from its force.

The patient was admitted to the hospital a short time after the injury in good general condition. Just above the root of the nose there was a blackened wound of entrance from which brain substance was escaping—9 cm. obliquely upward and to the right, 2 cm. from the median line was a similar opening from which blood and brain substance were escaping. The scalp was thoroughly cleaned under chloroform anesthesia and splinters of bone were removed. The wounds were then sutured. The patient's recovery was without rise of temperature or other important reaction. He left the hospital about two months later without any noteworthy nervous or psychic disturbance having resulted. [Recoveries after gunshot injuries of the brain are quite uncommon. M.B.T.]

Excision of Spina Bifida and Encephalocele.—Lithgow⁴ reports operation upon a child of 10 months, suffering from spina bifida in the lumbar region. Flaps of skin were dissected from the sides of the tumor and the pedicle grasped with phymosis forceps, the sac being punctured at the same time, thus permitting the fluid to escape. Catgut sutures were then passed through and through between the forceps and the spine, the sac excised and the skin flaps sutured over the stump of the pedicle. The child made a complete recovery. The author reports a similar operation for excision of a large encephalocele from the head of an infant. The child recovered from the operation but died in convulsions some 10 days after the operation. [A.B.C.]

Extensive Resection of the Small Intestine.—Lauwers⁵ considers the excision of anything more than 2 meters of the small intestine an extensive resection. He has collected from the literature 10 cases of this kind and adds 2 cases of his own, making 12 in all. In 10 of the cases less than 330 cm. of intestine was removed, and in all these cases recovery followed. In most of them there was a tendency to diarrhea after the operation, sometimes accompanied by vomiting. In his first case he resected 90 cm. of the small intestine, together with 160 cm. of the large intestine for gangrene; this case has been reported in full previously. His second operation was performed on a rachitic woman of 65. When the patient was 35 she gave birth to a child, but her pelvis was so deformed that cesarean section was necessary. She made a good recovery, but a large umbilical hernia appeared in the scar. Strangulation of the intestine occurred in this hernia lasting 3 days and resulting in a fecal fistula, and when the patient came under observation large quantities of yellowish liquid were pouring out over the skin causing a great deal of irritation and excoriation. The patient's condition was such that an extensive operation was considered justifiable. On opening the hernial sac it was found to contain loops of small intestine intimately adherent, and on attempting to separate the adhesions several abnormal communications from adhesion and perforation were found between adjoining loops. The adhesions were so dense that the intestine was ruptured in one or two places on attempting to separate them and it was decided to excise the entire hernial mass. End-to-end anastomosis was then performed. An uneventful recovery followed. On measuring the intestine removed it was found to be 265 cm. long. The patient took solid nourishment on the eighth day after operation, but this caused diarrhea and indigestion. She recovered readily from her gastrointestinal disturbance however. The mortality in these extensive resections has been 16.6%. In 37 less extensive resections the mortality was found to be 28%. Lauwers concludes that the prognosis depends more upon the gravity of the lesion necessitating operation than the extent of intestine removed up to certain limits. [M.B.T.]

A Case of Gastric Perforation, with General Peritonitis.—Wiesinger⁶ reports a case of gastric perforation in a man of 36, in which operative relief was delayed for four days owing to uncertainty in the diagnosis. Upon operation, an extensive peritonitis was found to exist, owing to an escape of stomach contents from a small perforation between the cardiac and pylorus in the region of the lesser curvature. The opening was closed with some difficulty by suturing and with the aid of a

¹ Berl. klin. Wochenschr., Vol. 38, No. 51, p. 1,295.

² St. Louis Medical Review, December 21, 1901.

³ Wiener klin. Wochenschr., January 23, 1902.

⁴ British Medical Journal, January 18, 1902.

⁵ Journal de Chirurgie et Annales de la Société Belge de Chirurgie, January, 1902.

⁶ Deutsche medizinische Wochenschrift, January 30, 1902.

Mikulicz tampon. The patient finally recovered, although the convalescence was delayed by the necessity for opening the abdominal cavity twice—once on account of further peritonitic complication, and again because of the development of an intra-abdominal abscess. The recovery of the patient was further retarded by a ventral hernia, which developed along the line of the abdominal wound, and was closed by means of four Hagedorn plates, and by the perforation of a subphrenic abscess into a bronchus, resulting in the coughing up by the patient of a large quantity of pus. [H.H.C.]

Resection of the Liver for Syphiloma.—Leguen¹ reports two cases in which he has performed resection of the liver. A woman of 38 had had a tumor in the right flank which had grown slowly, and during its development extreme cachexia had developed. A carcinoma of the liver seemed the most likely diagnosis, but as [this could not be made positively, an exploratory celiotomy was considered justifiable. On opening the abdomen a large tumor on the anterior surface of the liver was discovered, which was thought to be a syphiloma. This was removed after hemostasis by tying with catgut, and after freeing the gallbladder of adhesions. Histologic examination of the growth showed infiltration with embryonic cells, and confirmed the diagnosis of syphiloma. The patient made a good recovery. In a second almost exactly similar case, a successful result also followed operation. [M.B.T.]

Late Posttraumatic Meningitis.—Fujisawa² reports the case of a girl of 10, who, one year after a fall resulting in severe cranial lesions and depression of the left frontal region, developed symptoms of acute purulent meningitis, ending in death. The necropsy confirmed this diagnosis, but at the same time revealed an area of softening in the left frontal lobe which, during life, had given rise to no symptoms whatsoever. In all probability the meningitis was due to an infection gaining entrance through a basal fissure in the region of the nasopharyngeal cavity. [H.H.C.]

Skin-grafting by the Wolf-Krause Method.—The entire thickness of the skin is transplanted. Disinfection should extend over several days, and all antiseptics should be washed away by salt solution. In excising the diseased part, care must be taken not to soil the vivified surface. Gray³ reports nine cases, in most of which the grafts were from the trunk, a horizontal strip generally being taken about one inch wide and from 5 to 25 inches long, and cut into suitable lengths. This is immersed in warm salt solution to prevent cooling and infection, and sutured at intervals of 1 to 1½ inches. By taking the strip from the trunk the patient's movements are less confined, the wound is less painful, and the edges are more easily approximated than elsewhere. If relaxation strips have been firmly applied the patient may get out of bed in 36 hours. The grafts are nourished by transudation for three or four days, then small vessels can be seen growing in. To prevent rupture, dressing should be changed as little as possible. If asepsis is sure, results in a lower extremity are better if first dressings are kept on four weeks or more. Supporting bandages should be used from six to eight weeks in the upper part of the body, and twice as long in the lower. Movement of the part should not be allowed within six weeks. This method is preferable to Thiersch's, because it gives a more natural looking, more resistant and less contractile surface in a shorter time.

"Stammering" Bladder and Urethra.—Fenwick⁴ calls attention to what Sir James Paget termed "stammering" bladder and urethra, i. e., the condition whereby young males are unable to micturate if observed or when surrounded by unusual objects and conditions. This, he asserts, is due to spasm of the compressor urethra muscle, and permanent and complete relief is afforded by a division of this muscle, or tenotomy. The condition is purely functional. But the author is of opinion that in obstruction in patients having stricture the relief afforded by perineal section is largely due to division of this muscle; likewise, perineal drainage in the male and stretching of the urethra of the female, for tuberculosis, affords temporary relief. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Therapeutic Value of the Placenta.—The organs, tissues, and secretions of animals were extensively employed as therapeutic agents by the ancients, and constituted a prominent part of their disgusting and nauseating medicinal armamentarium. Pliny informs us that the ancient Greeks and Romans ate the testicles of the ass for the purpose of curing impotence, forestalling the later investigations of Brown-Sequard by hundreds of years. In 1852, Dr. Jackson, of Philadelphia made a definite attempt to apply animal tissues to the cure of disease by administering the blood of bullocks, carefully dried *in vacuo*, in doses of five to ten grains, as a tonic. The use of glandular extracts was revived in 1889 by Brown-Sequard's advocacy of orchitic extract for impotence and certain nervous affections, and the interest profoundly stimulated by the results which Professor George R. Murray, of the University of Durham, in 1891, obtained by the use of thyroid extract for the cure of myxedema. Since that period medical literature has been flooded with a deluge of reports of all kinds of extracts. Cerebrine, medulline, cardine, and many others too numerous to mention, have been presented to the profession, tried in crucible of practical experience and found woefully wanting. And now, according to Turner¹ we find that Bouchereourt, at a recent meeting of the French Society of Biology, has made remarkable statements on the therapeutic value of the placenta. Tocovesco has carried on experiments which have shown that good results can be obtained by the use of placenta in chronic metritis. In China the placenta is considered the best aid in parturition, and as a specific against chlorosis. The placenta of a sheep has been tried recently in Paris by Dr. Brindeau, and has produced an increase in the size of the breasts. The eating of the placenta is instinctive in all animals, and evidently was intended by nature to subserve some useful purpose, whether as a uterine tonic, or as an article of food for the substance of the animal comparatively isolated and weakened by parturition, it is difficult to determine. There are certain tribes in Brazil, Asiatic Russia and North America in which the habit of placenta eating is carried out; and it has been observed among some of the foreign colonies located in the United States that fragments of placental tissue, properly seasoned, are administered as a routine plan to the puerperal woman. There is an element of repulsiveness in the use of what seems to be an excreted organ which has so evidently served its purpose as a medium of nutrition and respiration between mother and fetus. No doubt if the value of human placentas as a therapeutic agent is proved, maternity hospitals may add to their income by a thrifty sale of these organs to enterprising drug firms; and we can easily imagine the ubiquitous midwife with characteristic avarice, "mailed in impudence and bent on lucre," disposing of her deluded patient's placental appendages to the best advantage. Our only hope is that the increased value of the placenta will lead to added care being exercised in the removal of all the fragments of that valuable organ from the interior of the uterus, thus diminishing the danger of sepsis from decomposition of retained secundines. Seriously, it is only by experimentation even with the nauseous and repulsive that the true value of such therapy can be ascertained; and although the placenta will have to bear the brunt of this ruthless experimentation and investigation, it is highly improbable that it will ever supplant other remedial agents in the treatment of metritis, chlorosis, or uterine inertia.

Pseudohermaphroditism.—Neugebauer² reports an interesting case of an individual whose early life had been spent as

¹ Revue de Chirurgie, November, 1901.

² Münchener medizinische Wochenschrift, November 5, 1901.

³ The Scottish Medical and Surgical Journal October, 1901.

⁴ British Medical Journal, February 1, 1902.

¹ Therapeutic Gazette, March 15, 1902, page 216.

² Centralblatt für Gynäkologie, January 15, 1902.

a female, but whose real sex he was unable to determine by any physical examination. Only celiotomy could decide it. He quotes similar cases from other writers. In one instance a supposed man married at 27 a woman older than himself, lived with her 30 years. When he died at 59 an autopsy showed that he was a female hermaphrodite, the cause of death being uterine carcinoma. [w.k.]

Tuberculosis of the Cervix.—E. Allerthum¹ states that frequently tuberculosis of the cervix assumes a great similarity in form to a malign neoplasm and can be differentiated only by microscopic examination of excised tissue; he gives the history of a case of this kind with a full description of the pathologic conditions shown by the examination. The epithelial growths, above all, were superficial; there was a breaking down of the cells in the neighboring tissues; a strong hyperemia and reactive inflammation. In place of high cylindric cells with nuclei at the base, the cells were round, polygonal, or crescent-shaped; the nuclei were in the middle of the cells, varied in form and were slightly colored. These with other peculiarities left no doubt as to the diagnosis of tuberculosis subsequently confirmed by the finding of tubercle bacilli. In the writer's opinion the significance of the case is that we are in a position to diagnose tuberculosis of the cervix by the characteristic epithelial changes. [w.k.]

Abdominal Hysterectomy for Cancer of Uterus.—O'Callaghan and Dardenne² report two cases deemed of special interest. In the first case a woman of 36, who had been married 17 years and had never been pregnant, underwent amputation of the cervix for cauliflower cancer. Soon after her recovery from this operation she became pregnant. Labor came on at seven months, but as the lower uterine segment was now an indurated cancerous mass, cesarean section was necessary, from which operation she died. The right breast and axillary gland were also affected. The second case was one of epithelioma of the cervix, and the patient recovered after the removal of the uterus, tubes and ovaries by abdominal section. [w.k.]

Vaginal Myotomy and its Relation to Total Extirpation.—Thorn³ discusses this subject at length, reviewing the opinions and experiences of many authors. Martin gives as an important condition of enucleation the complete mobility of the myomatous uterus, and says that there should be exploration and enucleation at the same time through a previously dilated cervix. Thorn holds this condition essential only in slightly enlarged uteri and that in case of submucous or submucous intramural myomas a previous exact examination of the cavity is indispensable. Such growths give ground for operation only when springing from the anterior or posterior wall; or when subserous they exert a permanent pressure on bladder and rectum; or when purely submucous they are developed in the cornua or extend into the uterine cavity. If a submucous myoma extends so deeply into the uterine wall as to require a high splitting of the uterus, he prefers anterior colpotomy. The opening of the peritoneum will be required in cervical and small tumors of the body. If the myoma is soft, morcellement can be readily employed. In the case of deep seated tumors, enucleation leaves a dangerously extended wound, and total extirpation is preferable. Today the tendency is to use myotomy only in favorably situated, purely subserous and submucous myomas. Usually operations are performed only upon strong indications, and the effort is to produce a radical cure rather than to avoid an artificial climacteric. Amputation and total extirpation guarantee this permanent cure with more certainty and are therefore chosen. Thorn, as the result of his experiences, uses vaginal enucleation less frequently than formerly. He believes that the choice of operation must eventually depend upon the individual case and upon the individuality of the operator. But he concludes that vaginal myotomy has shown such favorable results that it should receive wider study; and that Frisch's principle must remain, that when a vaginal operation can be done then a vaginal operation should be done. [w.k.]

Uterine Castration.—Ludwig Pincus¹ advocates uterine castration by atmokausis as a means of prolonging life in cases of certain diseases of the lungs or liver producing severe anemia. By this method loss of strength through great menstrual flow or the strain of pregnancy is avoided and life prolonged. He reports a case thus treated in which an intrauterine application of steam at a temperature of 110° C. for 40 seconds, repeated in three weeks for 50 seconds caused cessation of menses and complete atrophy of the uterus. This result was obtained with little pain, without incurring any danger, or using any anesthesia. Pincus closes the article with the suggestion that this method of producing sterility might be of service to Malthusianism. [w.k.]

Puerperal Insanity.—Jones,² in concluding his article upon puerperal insanity, discusses the prognosis, pathology and treatment of the three types. The deathrate was highest among the insanities of pregnancy, and least among the puerperal cases. In his total of 259 cases there was a recovery rate of 63%, and a deathrate of 15%, divided as follows: In the insanity of pregnancy 48% recovered, and 21% died; in insanity of the puerperium 73% recovered and 10% died; in insanity of lactation 60% recovered, and 16% died. The general treatment of the first type is that of the parturient woman—a light dietary, gentle exercise, bright surroundings, attention to the bowels by saline aperients, and sleep by mild hypnotics, the best of which are chloral and bromid in combination. The insanity of the puerperium needs more specific treatment, both local and general; but the patient should generally be treated at home for at least the first six weeks. Sleep must be obtained, but opium and morphin are both unsuitable for this purpose; sulphonal and paraldehyd are satisfactory, but most so are chloral and bromid in combination. Jones has obtained little benefit from the use of either antistreptococcus serum or thyroid extract. [w.k.]

Salpingitis.—West³ gives an excellent summary of this disease and considers it impossible to disassociate from it abscess of the ovary and pelvis, as they are often due to a direct continuation of the same morbid processes. He thinks that about 22% of the cases of pyosalpinx are due to the gonococcus, and believes that at least 95% of all the cases of salpingitis are absolutely preventable. Nearly all the cases of the suppurating form are due to the introduction of the specific cause from without. The profession should take up this disease as they have puerperal sepsis and fight it. It should be emphasized that no instrument or finger should at any time or under any circumstances be introduced into the uterus, except under the same aseptic conditions as those employed in a properly performed operation. The remains of an abortion should be promptly and completely removed. The slightest trace of gonorrhea in the male is a bar to marriage, in his opinion, and if in spite of warning, the subject persists in having marital relations, he is subjecting his victim to the danger of a foul infection which entails long suffering, sterility and possibly death. He does not consider vaginal hysterectomy a proper procedure in the treatment of pyosalpinx and ovarian disease. Four illustrative cases are detailed. [F.C.H.]

Posterior Parametritis a Disease of the Intestines.—Because of the proximity of the rectum and sigmoid flexure to the uterus, there is a close relationship between the diseases of these organs. Mueller⁴ thinks that very often the habit of obstinate constipation of the female, even in early life, irritates the membranes of the intestines, starts a local inflammation, which gradually spreads to the adjacent organs, promoting adhesions, causing pain, backache, and ultimately producing many disorders of the genital apparatus. This tendency is increased by a sedative life, and sometimes prevented or remedied by bodily exercise, turning, twisting and other movements; or it may be modified by the exigencies of a married life. He emphasizes the necessity for active treatment medical and otherwise, to break up the habit of constipation with its attendant evils, for he concludes, after careful study and observation, that the diseases which other authors have

¹ Centralblatt für Gynäkologie, February 22, 1902.

² Lancet, March 8, 1902.

³ Centralblatt für Gynäkologie, March 15, 1902.

¹ Centralblatt f. Gynäkologie, February 22, 1902.

² British Med. Jour., March 15, 1902.

³ The Postgraduate, March, 1902.

⁴ Centralblatt für Gynäkologie, March 1, 1902.

described as posterior parametritis, proctitis, pathologic antelexion of the uterus, dysmenorrhea, retroversion, and inferior peritoneal adhesions, which complex symptoms the French have designated as "syndrome uterine," arise mostly from disease of the rectum at the point where it is embraced by the uterosacral ligaments. It is very seldom that the uterus is the original point of these distressing conditions. [W.K.]

Retroperitoneal Hematoma.—E. Waldstein¹ reports a case of retroperitoneal hematoma the size of a man's head, containing 3 to 4 liters of brownish semiviscid fluid and blood-clots, mistaken in diagnosis for an ovarian cyst with twisted pedicle. The size and situation of the tumor, which was connected with the suprarenal capsule, prevented the bimanual examination from finding the ovaries, which were lying in the Douglas' sac, but were otherwise normal. The hematoma was doubtless due to an injury sustained two years before when the patient suffered severe pain after a fall against the corner of a table, and was unable to resume work for several months. [W.K.]

Etiology and Therapy of Pruritus Vulvæ.²—Pruritus vulvæ, according to Seeligmann, is primarily a microparasitic local infection, but may also occur secondarily as a sequence of gonorrheal or other pathologic secretion, or diabetes mellitus or some severe hyperemic condition. Macroscopically it can be differentiated from kraurosis vulvæ as follows: In pruritus vulvæ the skin is more edematous, rosy red in color, with a moist and glittering surface; in kraurosis there is a crumpled, dry, grayish-white appearance. In case of doubt a microscopic and bacteriologic examination will make certain a differentiation most important, since in kraurosis no medical treatment is of any avail; the only remedy is the removal of all diseased parts or a total extirpation of the vulva. In making cultures from pruritus, Seeligmann found that a 10% solution of "guajakolvasogens" in five minutes completely destroyed all the diplococci. Hence he employed this as a remedial agent and in a wide experience has found it most effectual. After thoroughly cleansing of the vulva and after healing somewhat the excoriated parts by the use of ointment, the 10% solution of "guajakolvasogens" is applied to the itching parts, preferably at night, repeating it if necessary, though often one or two applications suffice to produce the desired result. If, however, a 10% solution fails, use 15% or 20% solution, with a strong medium that will produce some irritation of the skin. This therapy has proved effectual in healing cases of many years' standing. [W.K.]

Treatment of Abortion.—H. Seltheim³ gives the history of a case of abortion in which the obstetrician, in using Winter's forceps to remove the uterine contents, penetrated the uterine wall and drew downward through the uterus a portion of the intestines. The patient was taken to the hospital in a state of collapse. The uterus with the appendages was removed, the intestine sutured, and the woman finally recovered. Seltheim then reviews the proper method of treatment in complete and incomplete abortion, and points out the dangers to be avoided. He deprecates the use of the sound, curet or any other instrument when the uterus is in a soft or tender condition, preferring the hand or the fingers of the operator whenever possible, for either diagnostic or remedial purposes. Infection is one of the most dangerous complications and any instrumental injury to the uterus increases the liability to infection. Uterine perforation is always an alarming complication and needs prompt treatment for which any required assistance should be speedily summoned. [W.K.]

A Third Series of Thirty Operations for Cancer.—Wertheim⁴ reports upon a third series of 30 operations for uterine cancer, showing considerable reduction in mortality; for whereas the first series had 12 deaths, the second five, in the present series there were only three deaths, one from embolism of the pulmonary artery, one from shock, and the third from peritonitis. From the history of the third series he believes that the extirpation of the glands was the chief cause of the improvement in enduring results. [W.K.]

The Diagnosis of Carcinoma of the Corpus and Cervix Uteri.—Cumston¹ emphasizes the importance of early detailed pelvic examination in all women who have a bloody discharge subsequent to the menopause; the same rule applies when menorrhagia is present. The relationship of menorrhagia to uterine carcinoma is discussed. In cases of suspected cancer of the uterus, although microscopic examinations of specimens obtained by the curet or otherwise may be negative, reliance should be placed upon the clinical evidence when these differences arise. Attention is called to the apparent frequency of uterine malignancy under the age of 30. The diagnosis of cancer of the cervix and the body of the uterus, and the differential diagnosis between this disease and some of the more frequent diseases with which it may be confounded is detailed. [F.C.H.]

Traumatic Granulomas in the Female Bladder.—From his observation in a limited number of cases Kolischer² is convinced that there is a type of diseases of the bladder in which, because of some previous injury, phosphatic granulomas are formed in the bladder which are the cause of disagreeable subjective symptoms, such as scalding, and sense of fulness increasing as the warmth increases when resting in bed. The objective symptoms are twofold, copious and frequent bleeding from the bladder and the passing of granules of phosphate in the urine. The cystoscope shows on the edges of the scars of former injuries, cherry-like, bright-red swellings with blood-clots hanging from some points. These should be snipped off with the scissors and the wounds scraped and cauterized. Palliative treatment for the inflammation due to these growths does not suffice. It is far better to remove them by an operation rendered comparatively easy and certain by the use of the cystoscope. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

The Icepack vs. the Brand Method.—In a recent article Dr. Leslie Roos proposes to substitute the icepack for the Brand method in typhoid fever. The constant endeavor to discover some efficient substitute for tubbing that shall be free from the practical drawbacks and inconveniences of the method is an unconscious tribute to the great originator of the rational treatment of typhoid fever. That tubbing is inconvenient and expensive for the patient's family, when he is treated at home, and more or less distressing to the patient himself is not to be denied, and we agree with most of the arguments against the method. Nevertheless some of the disadvantages seem to be somewhat exaggerated. A great deal is made of the danger of chilling the patient while the bath is being prepared. Surely this is an objection that can readily be obviated, even if it were as serious as the author would have us believe. As a matter of fact, a patient with a high temperature, even when it is due to pneumonia, which is the complication that we are told is chiefly to be dreaded, is not so likely to catch cold as a normal individual. It is this bugbear of "catching cold" that is largely responsible for much of the opposition to the use of hydropathic measures in the treatment of disease, but it is not an argument that one expects to hear from physicians. The only really valid objections to the full bath treatment are the distress it occasions to the patient, and the inconvenience and expense. In regard to the former it is to be observed that the sufferings of the patient, in all but a very few instances in which tubbing may have to be abandoned, are largely mental and can be much alleviated by appealing to his common sense and fortitude. The danger of hemorrhage and perforation is a graver objection; it does not, however, appear to be well founded. In the first place, while it is true that the body is rubbed during

¹ Wiener klinische Wochenschrift, March 8, 1902.

² Deutsche medizinische Wochenschrift, February 27, 1902.

³ Münchener medizinische Wochenschrift, March 11, 1902.

⁴ Centralblatt für Gynäkologie, March 8, 1902.

¹ Annals of Gynecology and Pediatrics, March, 1902.

² Centralblatt für Gynäkologie, March 8, 1902.

the bath, which would be unbearable without this comforting procedure, "shaking" and rough handling of any sort is especially deprecated and is perfectly avoidable. The observation that hemorrhage and perforation commonly occur after a bath loses much of its force when it is remembered that the patient is practically always in the condition either of having just had a bath or being about to have one, so that it might be said with equal truth that these complications usually develop just before the patient is placed in the tub. But there is one important feature of the bath treatment that is entirely lacking in the ice-pack as described by Roos, and on which the latter does not lay sufficient stress. It is the mechanic stimulation brought about by vigorous rubbing, and it is quite as essential a part of the procedure as the exposure to the low temperature of the water. The ice-pack described in the article is practically a graduated cold wet pack, consisting of successive applications of cold ranging from 70° to 40° F., followed by the application of ice to the body; the procedure lasts two hours. This is an excellent sedative measure, as the writer claims, but it does not appear that it has any stimulating influence. The use of the wet pack in typhoid fever is not a new departure; it has been tried by others and abandoned because it was found wanting in this important particular, the stimulation of the nervous system. If the object of our treatment were to abstract heat, the ice-pack or any other continuous, mild application would fully meet the indications, but the fallacy of the antipyretic treatment is now universally acknowledged. We cannot agree with Roos's prediction that the ice-pack is destined to supersede the Brand treatment, and since, according to Brand, typhoid fever is absolutely curable if the case comes under treatment before the fifth day, his prophecy that "the mortality of typhoid fever will be cut down to about one-fourth of its present number" loses much of its force. That the ice-pack, or graduated cold wet pack, is a more convenient and less heroic measure than tubbing is undeniable; that it is as effective is, on theoretical grounds, extremely doubtful. It remains to be seen whether actual experience will demonstrate its usefulness in spite of theoretical considerations.

Lumbar Puncture in Tuberculous Meningitis.—J. K. Friedjung (*Pediatrics*, January 1, 1902) does not attach great diagnostic or therapeutic value to this procedure. Headache may sometimes be relieved by it, and life may possibly be prolonged slightly, but this is doubtful. As regards diagnosis, a clear fluid obtained on puncture indicates a tuberculous rather than a purulent process; but the converse is not true, and cloudy serum may be obtained in tuberculous cases. During the stage of irritation the tubercle bacillus can be found in spreads in 33% of cases, in the stage of pressure in 50% and in the stage of paralysis in 75%. During the earlier periods, when its aid is most needed, this method is least helpful, and when it might give positive results the clinical picture is too clear to require confirmation in this way. [L.F.A.]

Quinolin-bismuth-sulfocyanate (Edinger) as an Anti-gonorrheic.—After experimenting with various preparations for the treatment of gonorrhea, Jacobi¹ finds that quinolin-bismuth-sulfocyanate ($C_6H_7N \cdot HSCN$)₃ Bi (SCN)₃, seems to combine in a marked degree both the bactericidal and astringent properties so important in the treatment of the disease. This salt, which has been used by Joseph extensively in the treatment of leg ulcers, under the name of crurin, is employed by Jacobi in 0.5% to 1% suspensions, the injections being often advantageously combined with the protargol treatment. The reaction is slight and the progress of the disease is checked both in extent and intensity, the gonococci often disappearing in from 10 to 20 days. [H.H.C.]

Injection of Artificial Serum in the General Treatment of Typhoid Fever.—Bosc (*Bulletin Général de Thérapeutique*, March 30, 1901) has employed subcutaneous injections

of saline solution since 1896 in the treatment of typhoid fever. From 25 to 30 ounces are injected at once in an adult. The beneficial effects appear in from 3 to 5 hours after the injection. The blood pressure is raised by each injection, and is maintained for a variable length of time. The pulse, at first accelerated, diminishes in frequency and the force is increased; its diastolic decreases. Each injection increases the heart force and lowers the temperature 1° to 1½° or even 2° in from 3 to 8 hours. Sometimes the antipyretic action is rapid, the temperature falling suddenly from 104° to 100° or even to 98°. The urine in the 24 hours becomes more abundant, the skin becomes moist, the perspiration increases and the general condition improves. The author states that saline injections may be employed in all cases, at all periods of the fever; they have no contraindications. [L.F.A.]

Hot Water Irrigations of the Bowel in Scarlatinal Nephritis.—Saundby (*Birmingham Medical Review*, September, 1901) considers that irrigation of the colon with hot water as recommended by Kerley, is the best means of restoring the functions of the kidney in scarlatinal nephritis. It should be employed whenever the quantity of urine is diminished, or when convulsions occur. In a child of three years, 1 to 1½ pints of water at a temperature of 110° F., should be introduced by means of a rectal tube. If the water is returned at once, the injection must be repeated. Irrigation should be repeated every six or eight hours. The kidneys generally begin to act after the third or fourth injection, and abundant diuresis follows. [L.F.A.]

General Rules for the Preparation of Predigested Foods of All Kinds.—The meat should be lean and finely hashed. Starch should be boiled. The mixture is brought to about blood heat, the ferment added, and the heating continued at this temperature for ½ hour (milk), or 2 or 3 hours (meat). Pepsin is the most useful ferment for the digestion of meat; pancreatin is somewhat more active, but carries the digestion to the unutilizable leucin, etc. Pancreatin is especially useful for milk, since it also contains a ferment acting on carbohydrates. The curdling of milk may be accomplished by rennet. Diastase in the form of extract of malt, prepared at a low temperature, is most useful for the digestion of starch.

The quantity of ferment to be employed and the reaction of the medium are as follows, using the United States Pharmacopeial preparations: *Pancreatin, Milk*: For 1 pint take 5 grains pancreatin and 20 grains sodium carbonate. *Rennet, Milk*: For 1 pint take ½ dram Liquor Seriparus, N.F. *Pepsin, Meat*: For 1 pound take 3 pints water, 2 drams pepsin, 1 ounce dilute HCl, U.S.P. Flavor with meat extract.

Fats and Fat substitutes.—"Fats are the most extensive source of energy, and they may to a certain degree save proteids. They are especially useful in conditions of emaciation, such as are found in tuberculosis, etc.

"The digestion of fats in large amounts presents considerable difficulty. Since they are practically insoluble, it is evident that their absorption will be largely facilitated by having them in very fine subdivision; in other words, by emulsification. This emulsification is very greatly favored by the presence of free fatty acids, which can form soaps with the sodium carbonate of the intestinal fluid; these soaps act as emulsifiers.

The digestibility of the different fats is therefore generally proportionate to the amount of free fatty acid contained in them. This is probably the explanation of the almost specific action of cod-liver oil. This oil also contains small quantities of ptomain-alkaloids, as well as some iodine and phosphorus, but in quantities too small to justify us in attributing to them any of the actions. It is best given in the form of emulsion, because in this the fat is already subdivided, and because it makes possible the flavoring of the preparations.

An artificial substitute for cod-liver oil has been made by adding 1 part of oleic acid to 6 parts of olive oil (*lipanin*). This shares some of the qualities, but on the whole is not as efficient. So-called *tasteless preparations* of cod-liver oil, said to contain its valuable alkaloids, must be considered worthless as nutrients.

Emulsions of petroleum have also been introduced as nutrients, but are entirely unabsorbable and without action, except as intestinal emollients.

¹ Deutsche medicinische Wochenschrift, December 26, 1901.

Intestinal Obstruction from Impaction of a Gallstone Successfully Treated with Atropin.—Pritchard (*Münch. med. Wochenschr.*, August 13, 1901—from *Treatment*, Vol. v, Nr. 8, 1901) reports the case of a patient aged 62, who had had one attack of gallstone colic two years previously. An injection of $\frac{1}{16}$ grain of atropin was given on the appearance of decided symptoms of intestinal obstruction. Three hours later the condition was improved and an injection of $\frac{1}{16}$ grain of atropin was given, making in all $\frac{1}{8}$ grain. Two ounces of olive oil were administered at the same time. The next day there was a copious stool containing a quantity of thin, offensive fluid and a gallstone the size of a walnut. The passage of the gallstone into the intestine was not accompanied by pain. No unpleasant symptoms were noted except dryness of the throat. [R.M.G.]

A New Iodin Preparation—Iodogenol.—Pepin and Le-boucq (*Bulletin Général de Thérapeutique*, July 15, 1901) describe a new combination of iodine which they call iodogenol. This is prepared in the following manner: The iodine is combined with white of egg, and the combination thus obtained, containing 13.45% of iodine, is then peptonized; the solution is afterward concentrated so that 16 minims will contain $\frac{1}{2}$ of a grain of iodine. The combination is very stable, nearly tasteless, and with starch paste shows no trace of free iodine. Administered to an adult for 7 weeks, the iodine produced no symptoms of intolerance by the stomach. The results obtained from this preparation of iodine have been better, in the author's experience, than any other. [L.F.A.]

Action of Simaruba.—Bardet (*Bulletin Général de Thérapeutique*, May 23, 1901) calls attention to the irritant properties of simaruba which many have considered identical with quassia in composition, and have therefore used it in the same conditions. Analysis shows that simaruba contains an irritant resin and an active principle—simarubin—which possesses the same composition and gives the same reactions as aspidospermin derived from quebracho. The author cautions against its use as a bitter tonic to the stomach interchangeably with quassia. [L.F.A.]

Chronic Nephritis.—Broadbent (*Cyclopedia of Practical Medicine*, December, 1901) advocates venesection upon the occurrence of uremic convulsions. Sixteen or 20 ounces of blood should be withdrawn, and this followed by a calomel purge. The venesection may be repeated if a single withdrawal does not arrest the convulsions. The greatest benefit is observed in cases of acute tubular nephritis. The most important indication to be met is reduction of intravascular pressure. The tetranitrite of erythrol is regarded as more efficient and more permanent in its action than nitroglycerin and the other nitrites, but the most reliable remedy is mercury, a single grain of pilula hydrargyn or hydrargyrum cum creta, with rhubarb or colocynth and hyoseyamus being given once, twice or three times a week, according to the degree of arterial tension, as shown by the pulse. It is said to exert a good influence on the course of the disease, besides relieving symptoms. The following indications for surgical interference are suggested by Harrison (*British Medical Journal*, October, 1901): (1) Progressive signs of kidney degeneration, as shown by the persistence or increase of albumin; (2) total or partial suppression of urine; (3) the appearance of marked disturbance of the heart and circulatory apparatus in the course of inflammatory renal disorders. The capsule or the parenchyma may be incised or, according to Chicken, the lumbar region merely scarified, as the connection between renal circulation and that of the overlying tissues is very intimate. Drainage is an essential part of the treatment, and the tube may be left in place for weeks; as a rule it is removed after ten days. [R.M.G.]

Want of Nutritive Value of Albuminoid Materials Administered Subcutaneously.—M. E. Laborde, of Toulouse, (*Bulletin Général de Thérapeutique*, May 23, 1901) finds that the hypodermic injection of albumin, casein, globulin, albumoses, or peptones, is always followed by disorders of the kidneys; albumin and casein are better tolerated by the rabbit than the globulin, albumoses, and peptones; and that under their influence the elimination of nitrogen, of sulfur, and of phosphorus increases in the urine, then generally decreases about 24 hours before the animal dies. Laborde admits that these injections cause destruction of the fixed albumin, and that it is to this last

cause that the increase in the elimination of urea is due. He concludes that these substances do not supply the losses in the organism, and hence are not suitable for therapeutic application. [L.F.A.]

Cactus Grandiflorus.—Huchard (*Journal des Praticiens*, May 4, 1901) has used cactus grandiflorus successfully in the treatment of functional diseases of the heart. The drug acts as a tonic to the heart, increasing the systole and diminishing the diastole, and at the same time raising arterial pressure. No accumulative or diuretic effect was produced by its use. He employs the tincture of the drug in the dose of from 10 to 40 drops 2 or 3 times a day; the fluid extract in doses of from 20 to 40 drops, and the aqueous solid extract in doses of $\frac{1}{2}$ to 1 grain in pills. [L.F.A.]

Epistaxis: Its Causes and Treatment.—Yearsley (*Treatment*, Vol. v, No. 8, 1901) finds that the commonest cause of epistaxis is the simple ulcer that so often develops on the anterior inferior portion of the cartilaginous septum. At this spot lie the remains of Jacobson's organ, which is rudimentary in man. Functionally inactive organs are prone to degenerate, a fact illustrated by the vermiform appendix, the faucial tonsil, the intermaxillary bone and the undescended testis. Plugging the nostril with strips of antiseptic gauze or by means of Cooper Rose's epistaxis bag, which is introduced collapsed and distended with air *in situ*, is justifiable as a temporary measure. The plugs should be left in place 48 hours at most. Plugging with loose absorbent cotton soaked in a 15% solution of hydrogen dioxid is recommended by Gleason. The practice of plugging the posterior nares is condemned, as, in Yearsley's opinion, it is never necessary. As soon as possible, the source of the hemorrhage must be sought and the bleeding area touched with the galvanocautery, under cocaine or eucain anesthesia, after which the spot is anointed with vaselin or parolein until healing has taken place. In hemophilic cases chlorid of calcium, two grains three times a day, is recommended, combined with plugging the nose daily for 20 minutes with cotton soaked in a 5% solution of suprarenal extract. In a case of uncontrollable postoperative hemorrhage from the posterior portion of the septum, which was ultimately arrested by ligating the external carotid of the corresponding side, Yearsley found hydrogen dioxid more useful than adrenal extract, or any other substance for arresting the hemorrhage temporarily. During the two weeks the patient was under treatment this drug was finally selected as the most reliable. Good effects appeared to follow the use of gelatin both internally and as a local styptic. Plugging with slices of bacon, a method recommended by many, was tried in this, as well as in other cases of postoperative hemorrhage, without success. The method which is most effective and in the end least troublesome for the patient, consists in plugging the posterior nares, a soft catheter being used in preference to a Bellocq's canula. Yearsley has never seen any ill effects from this procedure. [R.M.G.]

Treatment of Accidental Wounds.—Beck (*La Semaine Médicale*, August 14, 1901), employs the ordinary tincture of iodine in the treatment of all infected wounds. He considers that all wounds not made intentionally under rigid aseptic precautions are infected. The tincture of iodine is applied freely to the wound, which has been previously dried. Wounds treated in this manner remain sterile and cicatrize rapidly. No general disturbances have resulted from this procedure, although in two cases the characteristic reaction of iodine in the urine was obtained three and four hours after the application. [L.F.A.]

Pyrogallol in the Eczema of Children.—L. Leistikow (*Bulletin Général de Thérapeutique*, May 30, 1901) employs pyrogallollic acid with excellent results in the treatment of eczema in children. An ointment containing from $\frac{1}{2}$ % to 2% of pyrogallol is applied to the affected parts. This strength may be gradually increased to 2% or 3% in severe cases. Pyrogallol was always well borne when used in this way. The urine should be watched when this drug is used, although no discoloration occurred in Leistikow's experience. Should any erythematous eruption of the skin suddenly appear during treatment, an ointment of zinc oxid or of ichthyol should be applied for a few days, and then a return made to the pyrogallol. [L.F.A.]

Bromipin.—McIntyre (*Medical Bulletin*, xxiii, No. 5, from *Treatment*, Vol. v, No. 8, 1901) says that bromipin is free from the drawbacks associated with the bromids, and is therefore appropriate in the treatment of epilepsy. It is a yellow, oily fluid, containing 10% of bromin, and is administered in emulsion in doses of 1 to 4 fluidrams three or four times a day. [R.M.G.]

The Employment of Strong Doses of Antidiphtheric Serum.—Thomas (*Bulletin Général de Thérapeutique*, July 15, 1901) employs strong doses of antidiphtheric serum, and the results obtained justified the following conclusions: (1) The serum must be injected in strong dose the first day of treatment and when the case is recognized as having a serious character, or when it is a case of croup. (2) The following day must be one of expectancy and of watching the effects obtained. (3) One ounce and a half is considered as a maximum amount to be given the first day of treatment, especially in severe angina and croup. [L.F.A.]

Hydrotherapy.—Vogl¹ extols cold water treatment in scarlatina, pneumonia and typhoid fever, claiming for it better results than are obtained by any other therapeutic procedure. Treatment should be begun early, and should be thorough and persistent. Immersion for $\frac{1}{2}$ hour in water of 20°–15° C. every two hours as soon as the temperature in the rectum rises above 39° will prevent high fevers, delirium, heart failure and other dangerous complications. Thus nephritis following scarlatina will be of less frequent occurrence and milder. In incipient tuberculosis the application of cold water is a most valuable tonic and aid to open-air treatment, increasing cell metabolism and food assimilation, allaying irritability of the cutaneous nerves, and strengthening the temperature-regulating processes. In cardiac atony its effects surpass those of any other remedy, and according to indications, the heart may be strengthened either by gymnastics or by rest. Immersions, cold packs, compresses, douches (cold, or alternating hot and cold, or beginning with tepid water and gradually cooling) are methods employed. [J.C.S.]

Whey in Enteric Fever.—Prideaux Selby (*Lancet*, November, 1901; *Monthly Cyclopaedia of Practical Medicine*, Vol. iv, No. 12, p. 467, N. S.) prefers whey to milk in enteric fever because milk in many cases forms hard, cheesy curds in the stomach, and these passing into the intestine, cause pain and scrape the raw surfaces of ulcers; the distention of the bowel from the large amount of gas evolved keeps the ulcers stretched and thins their floors; and finally, *Bacillus typhosus* grows rapidly in milk. As a result of giving whey instead of milk Selby claims that the deathrate was reduced from 15.5% in the previous seven years to 2.7% for 73 cases. Whey is prepared by adding two teaspoonfuls of rennet to each quart of milk. This is warmed slowly in a pan until it curdles, which takes about twenty minutes, and it is then strained through fine muslin. A quart of milk yields about six ounces of curd. The quantity of whey given varies from 1 $\frac{1}{4}$ to 6 pints daily. [R.M.G.]

A Case of Scleroderma Much Improved by Mineral Mud of Dax.—Lavielle, Bourretère and Labatut (*Bulletin Général de Thérapeutique*, July 15, 1901) report the case of a woman suffering from scleroderma which began eight years previously with cyanosis, chilliness, numbness and tingling in the extremities. For four years past the least noise has caused loss of consciousness, the patient at the same time taking an unnatural attitude, with the head inclined forward, the arms forming an angle with the body in the vertical position, the third phalanges flexed at right angles to the second. The movements of the upper extremities were limited, flexion being reduced by half, extension at a minimum. The phalangeal extremities were very thin. The hardened skin gave the sensation of wood or stone to the touch. There was no edema, the face was thin, calm and immovable, the forehead smooth, the lips thin, shortened and stretched on the dental arches, the mouth small, the ears hard, rigid and close to the head. The nose was thin, the nares shrunken. The face was mummified, the neck and thorax hardened and immobilized as by a cuirass. Sensibility was normal, and the patient complained of a general sensation

of cold and of constriction. She was sent to Dax, where she remained five months during which time she took 90 baths, 150 hot douches, massage and gymnastics. This treatment was well borne, and she left there very much improved. The authors, however, do not claim this to be a radical cure. [L.F.A.]

Albumin Tannate Hontin.—A. Bolognesi (*Bulletin Général de Thérapeutique*, May 23, 1901) describes a new albumin tannate called hontin, which is useful in acute, subacute or chronic affections of the intestinal tract. Because of the stability of the drug, and the slowness of its decomposition, it is enabled to pass into the large intestine, where its action is manifested as well as in the small intestine. In intestinal catarrh hontin is said to form an insoluble solid precipitate over the mucous membrane, protecting the inflamed nerve endings from the action of irritating materials, and thus diminishing the pain usually present. This lessening of pain, combined with a direct astringent action of the drug, causes a constriction of the superficial bloodvessels, resulting in a considerable reduction of the abundant pathologic secretions. Hontin may be given in doses of 150 grains daily, without producing any disagreeable symptom. Bolognesi considers it of particular utility in the intestinal disorders of infants, to whom it may be given in doses of from 5 to 10 grains, three or four times a day. [L.F.A.]

The Assimilation of Iron and Its Relations to Blood Formation.—Abderhalden, of Basel (*Therapeutische Monatshefte*, Vol. xv, No. 9, 1901, p. 472), arrives at the following conclusions in regard to the effect of iron on increase in body-weight and blood formation: The body-weight is rapidly increased by the administration of inorganic iron when the diet is deficient in ferruginous constituents. The addition of hemoglobin to a diet of the same character has no influence whatever on the body-weight. The same result is obtained when inorganic iron and hemoglobin, respectively, are added to a normal diet; that is, one containing a sufficiency of organic iron compounds, such as the yolks of eggs, meat, spinach, and the like. In regard to the effect on the absolute or relative amount of hemoglobin in the blood, the results were as follows: When inorganic iron is given with a diet deficient in ferruginous constituents, only a slight increase in the percentage of hemoglobin results in most cases. The addition of hemoglobin to a diet of this character is always followed by marked increase in the percentage of hemoglobin. When inorganic iron is given in combination with a normal diet, the percentage of hemoglobin is increased, and this increase far exceeds that observed when the diet is deficient in iron. Finally, the addition of hemoglobin to a normal diet exerts no influence whatever on the percentage of hemoglobin. The technic employed in carrying out the experiments is described in detail, and appears to leave nothing to be desired in the matter of accuracy. Abderhalden draws from his experiments the remarkable practical conclusion that the practice of prescribing iron in drug form to increase blood production has no rational basis, since the ordinary foods, such as spinach, meat, the yolks of eggs, and the like, contain in abundance the iron necessary for blood production. He admits, however, that in chlorosis iron may be of some value in stimulating the function of the blood-producing organs. In the same journal A. Jaquet, whose article on the assimilation of inorganic iron and its role in the treatment of chlorosis, published in *La Semaine Médicale*, Vol. xxi, No. 7, p. 49, is answered in Abderhalden's paper, repeats his assertion that the failure of Abderhalden's animals to produce hemoglobin when they were fed on a diet deficient in iron, was due to the fact that their food did not supply them with the necessary amount of albumin. He also takes issue with Abderhalden on the question of the advisability of giving iron in chlorosis, and says that his attempts to treat the disease without iron, merely by putting the patient to bed and ordering a nutritious diet, have never been successful. [R.M.G.]

[The unvarying experience of practising physicians that iron is both useful and necessary in the treatment of chlorosis is a factor in the problem; and laboratory students are not justified in ignoring it. No question can be decided except in the light of all the evidence. Clinical evidence must be criticized and controlled; but its facts are of equal weight with facts of any

¹ Münchener medizinische Wochenschrift, January 21 and 28, 1902.

other class. In practical therapeutics they are of greater weight than any others. That iron in massive doses is curative of chlorosis, there is no shadow of doubt; and that massive doses are effective while small doses are not, is equally positive. The method of action remains to be solved, but the action is still to be availed of by the clinician, empirically. s.s.c.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended March 29, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles.....Mar. 1-15.....	6	
	Sacramento.....Mar. 8-15.....	1	
	San Francisco.....Mar. 8-16.....	13	
Colorado:	Denver.....Mar. 8-15.....	8	
	Belleville.....Mar. 15-22.....	2	
Illinois:	Joliet.....Mar. 1-15.....	8	
	Evansville.....Mar. 15-22.....	5	
Indiana:	Indianapolis.....Mar. 15-22.....	14	
	Clinton.....Mar. 15-22.....	1	
Iowa:	Wichita.....Mar. 15-22.....	5	
	Covington.....Mar. 16-23.....	8	
Kentucky:	Portland.....Mar. 15-22.....	4	
	Boston.....Mar. 15-22.....	19	2
Maine:	Cambridge.....Mar. 15-22.....	3	1
	Fitchburg.....Mar. 15-22.....	3	
Massachusetts:	Lawrence.....Mar. 15-22.....	4	
	Malden.....Mar. 15-22.....	2	
Michigan:	Somerville.....Mar. 15-22.....	2	
	Detroit.....Mar. 15-22.....	13	
Nebraska:	Grand Rapids.....Mar. 8-22.....	4	
	Ludington.....Mar. 15-22.....	19	
New Jersey:	Omaha.....Mar. 15-22.....	29	
	Elizabeth.....Dec. 28-Feb. 15.....	12	1
New York:	Hudson County.....Mar. 9-16.....	48	
	Jersey City.....Mar. 9-23.....	78	1
Ohio:	Newark.....Mar. 15-22.....	25	5
	Binghamton.....Mar. 15-22.....	1	
Pennsylvania:	New York.....Mar. 15-22.....	66	13
	Yonkers.....Mar. 14-21.....	2	
Rhode Island:	Cincinnati.....Mar. 14-21.....	25	
	Allegheny City.....Mar. 15-22.....	1	
South Carolina:	Philadelphia.....Mar. 15-22.....	35	3
	Pittsburg.....Mar. 15-22.....	4	
South Dakota:	Providence.....Mar. 15-22.....	5	
	Greenville.....Mar. 8-15.....	7	
Tennessee:	Sioux Falls.....Mar. 15-22.....	4	
	Memphis.....Mar. 15-22.....	13	
Washington:	Tacoma.....Mar. 8-15.....	10	
	Wheeling.....Mar. 15-22.....	2	
West Virginia:	Green Bay.....Mar. 15-22.....	23	1
	Milwaukee.....Mar. 15-22.....	3	

SMALLPOX—FOREIGN.

Belgium:	Antwerp.....Mar. 1-8.....	18	3
	Halifax.....Mar. 15-22.....	9	
	Hamilton.....Mar. 15-22.....	1	
Canada:	Quebec.....Mar. 15-22.....	22	
	Winnipeg.....Mar. 1-15.....	9	
	Hongkong.....Feb. 1-8.....	1	
China:	Cartagena.....Mar. 3-9.....		1
	Panama.....Mar. 10-18.....	50	
Colombia:	Paris.....Mar. 1-8.....		3
	Leeds.....Mar. 8-15.....	2	
France:	London.....Mar. 1-8.....	555	80
	North Shields.....Feb. 22-Mar. 8.....	16	2
Great Britain—England:	Swansea.....Feb. 22-Mar. 1.....	1	
	Tottenham.....Feb. 22-Mar. 1.....	1	
Scotland:	West Ham.....Feb. 22-Mar. 1.....	7	
	Dundee.....Mar. 1-8.....	1	
India:	Glasgow.....Mar. 7-14.....	95	2
	Leith.....Mar. 1-8.....	1	
Italy:	Bombay.....Feb. 18-25.....	8	
	Calcutta.....Feb. 15-22.....	8	
Russia:	Karachi.....Feb. 2-23.....	14	5
	Madras.....Feb. 8-14.....	5	
Spain:	Naples.....Feb. 22-Mar. 1.....	9	1
	Palermo.....Feb. 22-Mar. 8.....	27	5
Straits Settlements:	Rome.....Jan. 18-25.....	1	
	Odessa.....Mar. 1-8.....	2	
Uruguay:	St. Petersburg.....Feb. 22-Mar. 1.....	11	
	Warsaw.....Feb. 15-22.....	2	
Porto Rico:	Barcelona.....Mar. 8-15.....	5	
	Singapore.....Jan. 18-25.....	2	
Yellow Fever:	Montevideo.....Jan. 26-Feb. 8.....	152	14
	San Juan.....Feb. 22-Mar. 1.....	14	

SMALLPOX—INSULAR.

Porto Rico:	San Juan.....Feb. 22-Mar. 1.....	14	
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YELLOW FEVER.

Mexico:	Vera Cruz.....Mar. 8-15.....	4	2
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CHOLERA—INSULAR.

Philippines:	Manila.....Mar. 24.....	18	
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CHOLERA—FOREIGN.

China:	Canton.....Mar. 17.....	2	
	Fatshan.....Mar. 19.....	Raging	

India:	Bombay.....Feb. 18-25.....	5	
	Calcutta.....Feb. 15-22.....	84	
	Madras.....Feb. 8-14.....	10	
Straits Settlements:	Singapore.....Jan. 18-25.....	21	

PLAGUE.

Australia:	New Castle.....Mar. 21.....	Present	
	Bombay.....Feb. 18-25.....	701	
India:	Calcutta.....Feb. 15-22.....	176	
	Karachi.....Feb. 2-9.....	53	45
	".....Feb. 16-23.....	52	48

Changes in the Medical Corps of the U. S. Navy for the week ended March 29, 1902:

DuBOISE, W. R., surgeon, ordered to the Wisconsin, and to report to the commander-in-chief of the Pacific Station as fleet surgeon—March 22.

Changes in the Medical Corps of the U. S. Army for the week ended March 29, 1902:

WATKINS, VICTOR E., contract surgeon, is granted leave for one month from about April 3.

ROBINS, Major ROBERT P., surgeon, leave granted February 24, is extended one month.

CARTER, Major EDWARD C., surgeon, leave granted March is extended one month.

STEWART, Captain WILLIAM J., assistant surgeon, will proceed to Fort Slocum and report for temporary duty pending the departure of recruits, which he may be destined to accompany to San Francisco, Cal.

JONES, JOHN F., contract surgeon, leave granted for seven days is extended 23 days.

CLOUD, First Lieutenant MARSHALL M., assistant surgeon, having been found by an Army retiring board incapacitated for active service, his retirement from active service, March 25, 1902, under the provisions of Section 1251, Revised Statutes, is announced. Lieutenant Cloud will proceed to his home.

OWENS, GEORGE F., contract surgeon, will proceed from Washington, D. C., to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

SPAETH, LOUIS A., contract surgeon, now at Fort Sheridan, is relieved from further duty in the division of the Philippines, and will proceed to Jersey City, N. J., for annulment of contract.

HORNE, LOUIS S., contract surgeon, now at Fort Sheridan, is relieved from further duty in the division of the Philippines, and will proceed to his home, Marlin, Tex., for annulment of contract.

MCDERMOTT, FRANK E., contract dental surgeon, now at Webster, Mass., will proceed to Fort Crook for duty.

YOUNG, CHARLES C., hospital steward, Fort McDowell, is transferred to Fort Niagara, to relieve Hospital Steward George Kliemand. Steward Kliemand will be sent to Manila, P. I., for assignment to duty.

KIMBALL, Colonel JAMES P., assistant surgeon, is directed to report to Major General John R. Brooke, president of the Army retiring board at Governor's Island, N. Y., for examination by the board.

NEWLOVE, GEORGE, contract surgeon, is granted leave for two months to take effect upon the arrival of First Lieutenant William M. Roberts, assistant surgeon, at Fort Sill.

THOMPSON, LOUIS A., contract surgeon, extension of leave on account of sickness granted January 23, is still further extended two months on account of sickness.

DECKER, GEORGE M., contract dental surgeon, is relieved from duty in the department of Cuba, to take effect April 30, when he will proceed to Fort Logan for duty.

BACON, ALEXANDER P., contract dental surgeon, is relieved from duty in the department of Cuba, to take effect April 30, when he will to Fort Clark for duty.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended March 27, 1902:

WHITE, J. H., surgeon, to proceed to Baltimore, Md., for special temporary duty—March 21, 1902.

CARRINGTON, P. M., surgeon, to proceed to Fort Bayard, East Las Vegas and Santa Fe, N. M., for special temporary duty—March 17, 1902.

GEDDINGS, H. D., passed assistant surgeon, to proceed to Baltimore, Md., for special temporary duty—March 21, 1902.

GREENE, J. B., passed assistant surgeon, granted leave of absence for seven days from March 18, 1902, under Paragraph 181 of the Regulations.

ADAMS, F. B., acting assistant surgeon, granted leave of absence for 20 days from April 1—March 26, 1902.

KINSELL, B., acting assistant surgeon, granted leave of absence for 10 days from February 10—March 21, 1902.

RODMAN, J. C., acting assistant surgeon, granted leave of absence for three days from March 27—March 28, 1902.

TOWNSEND, F., acting assistant surgeon, granted leave of absence for one month from March 15—March 24, 1902.

WETMORE, W. O., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Wetmore for 14 days revoked—March 26, 1902.

Board Convened.

Board convened to meet at the Bureau, March 24, 1902, for the physical examination of candidates for admission to the engineer corps, R. C. S. Detail of the Board: Passed Assistant Surgeon H. D. Geddings, chairman; Assistant Surgeon B. S. Warren, recorder.

Appointment.

RICE, W. E., of Maine, appointed acting assistant surgeon for duty at Bath, Maine—March 21, 1902.

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The Payment of the Medical Staff in President McKinley's Case.—In our issue of December 28, 1901, we stated that the payment of the attending physicians in the case of President McKinley "is no more in the hands of the President's family than was the punishment of the murderer." We also advised that no bills should be rendered, thus leaving the matter entirely to Congress. It is gratifying to state, as we are authorized to do, that this wise and honorable course has been pursued. Despite all urging and in contradiction of many newspaper reports, there have been no bills whatever rendered by the attending physicians, and they have had nothing to do with fixing the total amount which has been asked for in the sundry civil appropriation bill, now before Congress. We may add that we are extremely sorry that this amount, \$25,000, is so small. It is an ungenerous and inadequate sum to divide as an honorarium among those upon whom was thrust such a momentous responsibility. From private patients many of these surgeons have received fees several times as large as the nation proffers for the services to its President. It is a profound cause for congratulation, however, that the profession is conscious of the dignity and honor reflected upon it by the conduct of its representative members.

Harvard's Medical Endowment.—American physicians regardless of local affiliations rejoice in the magnificent provision that has been made for medical education in the completion of the \$5,000,000 endowment of the Harvard University Medical School. The *Boston Medical and Surgical Journal* gives expression to the liberal spirit so characteristic of Harvard in the statement that "the real question at issue is not how many buildings may be built or how complete the facilities for students may be made, but rather how the best interests of the whole profession may be fostered and invigorated, and thereby the greatest good of the people at large be subserved." It has been facetiously asserted that "Boston is not a city but a state of mind!" and in much of the highest intellectual life of the American people is this characteristic state of mind recognizable. It would be difficult to find more convincing evidence that the value of the spirit fostered by Harvard is recognized; and the fact that this great gift is accepted with a broad interpretation of the duty im-

posed, proves the wisdom of the donors' choice in the location of their munificence. *American Medicine* in extending congratulations to the Harvard University Medical School congratulates the profession generally.

Science vs. Sensationalism.—During Easter week Professor Loeb, of the University of Chicago, delivered at Columbia University, in New York City, a series of lectures on "The Dynamics of Life." These lectures contained discussions of most of the subjects that have been so sensationally exploited during the last year in the daily newspapers, some of them heralded as wonderful revolutionary discoveries that revealed the mystery of life, or of reproduction, or some hitherto insoluble problem in biology. The reports of the lectures show that Professor Loeb's Columbia lessons were only simple statements of recent advances and theories in biology. People who went to be startled by hearing from the discoverer himself the details of his supposed sensational work must have been sadly disappointed. No presumptuous claims were made, and the recent observations were shown in their connection with preceding discoveries and in their suggestive possibilities for future biologic progress, but with none of the inane prophecy of mystery-solution of the original report in the newspapers. It is unfortunate that this more temperate publication did not come in the first place. The recent observations would have attracted less widespread attention, but it is doubtful if it is ever worth while to split the ears of the groundlings and make the judicious grieve. As it is, the disappointment of finding the import of the American work in biology of so much less significance than originally announced, will doubtless be reflected in an increased distrust of practical scientific truths that are of importance in the regulation of sanitation and the like. For though it may be illogical, scientific problems that have even a distant connection with life and its principles, are classed as medicine by the public, and the announcement of great discoveries followed by the silence that shows original overvaluation brings discredit of even firmly-established cognate truths.

Cleveland's Experience with Smallpox.—In a paper published in the February number of the *Cleveland Medical Journal*, Dr. Martin Friedrich, the health officer of Cleveland, gives a spirited account of

the methods adopted by him to prevent the spread of smallpox. He did not rely on vaccination, maintaining that this is a drawback rather than an advantage in the fight with that disease. The reasons given for this heterodox opinion are: (1) Vaccine is a delicate product, and is readily destroyed by exposure to high temperatures and other agencies; (2) it may be improperly applied by the physician; in his eagerness to avoid sepsis, he may employ an antiseptic solution on the arm by which the vaccination is prevented from taking, or in an effort to prevent the drawing of blood he may not sufficiently denude the skin, or on account of being in a hurry he may not take sufficient time to rub the virus in well, or, lastly, he may not allow sufficient time for the vaccine to dry before letting go of the arm; (3) persons may submit to vaccination, but may afterward use means to destroy its effect, such as immediately washing the arm; (4) the lymph which has been on the market for the past two years has frequently caused very sore arms, without affording protection against smallpox. Thus, Dr. Friedrich was able to vaccinate with some of this lymph a man who had had the disease only six months previously.

For these various reasons, vaccination was entirely abandoned by the health authorities of Cleveland, and reliance was placed upon a house-to-house disinfection with formaldehyd. The mayor gave his support to the plan, and on July 29 disinfection was begun, and was continued until November 9. Dr. Friedrich was aided by 40 medical students from the colleges in Cleveland. They disinfected every section of the city in which there had been cases of the disease, and every house in the section, whether there had been smallpox in it or not. Every nook and corner of the house was visited, and special attention was paid to the winter clothing, which had been stored away, presumably full of germs. Care was taken not to overlook the water-closets. The tact of the students and of the sanitary police prevented the people from offering any serious objections to being chased out of their dwellings while the latter were filled with the suffocating gas. In addition to disinfection, a crusade was begun against dirt of every description, and the people were enjoined to clean their yards and barns, drain all puddles or fill them in, abate all nuisances, clean all closets, and establish sewer connection wherever there was a sewer in the street. The health officers were also instructed to examine all dumps and vacant lots, and to compel their owners to keep them in a sanitary condition. The police and the fire department aided the health officers in cleaning the wards which most needed it.

It was found that smallpox developed most frequently and was hardest to eradicate along those streets that had neither sewer nor pavement. When this was realized, a great many of the streets were paved and sewered; and this work is now being pushed ahead at such a rate that soon no street in Cleveland will be without a sewer and a pavement. The cleaning of the streets was found to be one of the most important sanitary measures; as Dr. Friedrich says: "What the people of Cleveland spend in cleaning the streets, they save in doctor's bills."

Quarantine was enforced in as rigid a manner as pos-

sible. If a doctor wanted to visit a smallpox patient he had to have a written permit from the health office, since anyone might grab a satchel and say to the guard, "I am a doctor; let me in." Cats and dogs were treated in the same way as persons. On one occasion Dr. Friedrich found a dog in bed with a boy that had the smallpox. When the doctor entered the boy's mother chased the dog out of the bed and opened the door; and before the doctor could interfere the dog was outside. As a necessary incident to the fight, every suspicious case of any eruptive disease, particularly measles and chickenpox, was investigated. Whenever a case of smallpox was found, the following questions, in addition to the usual ones regarding name, age, etc., were asked:

1. Who has visited you during the last two or three weeks? [The difference in time depended upon the state of the eruption.]
2. Whom have you visited during the last three weeks?
3. Have you been at any public meeting during that time? Where? Who was present, to your knowledge?
4. Where do you work?
5. Where do the children go to school?
6. Where does the family attend divine worship?

This information obtained, all the addresses given were visited; and the foreman, preacher, or teacher was asked for the names of all the sick or absentees from shop, church, or school during the last month. These were then visited.

The results were as follows: In 1898, Cleveland had 48 cases of smallpox; in 1899, 475; in 1900, 993; and from January 1 to August 23, 1901, 1,230. On the latter date the last case developed in Cleveland. Eight cases have been imported since then, however; but for six months the scourge has been practically exterminated from the city.

If the proof of the pudding is in the eating, then Dr. Friedrich's method is certainly the most efficient yet devised; for it has apparently achieved all that could be asked of any sanitary measure. The result, however, is that Cleveland has a vast population of nonvaccinated, nonimmune persons, who are safe only so long as they remain in a clean city, and who may at any time come in contact with a patient during a trip, or with one imported into Cleveland from some less fortunate locality. Dr. Friedrich states that he is not opposed to vaccination; only to its performance with impure lymph or in a careless manner. By giving all the credit to formaldehyd, however, he has certainly given "aid and comfort" to the enemies of vaccination. In Philadelphia, a city several times the size of Cleveland, vaccination did more than anything else to check the spread of the disease. Moreover, the objections urged against vaccination by Dr. Friedrich are all more or less trivial. Should the vaccine be at any time inert, the thing to do is to repeat the operation; and as for persons endeavoring to destroy its effects by washing off the virus immediately after vaccination, that would certainly happen but rarely, and may be entirely disregarded. Besides, there is the control of having those people come back after a week or ten days for inspection. So far as sore arms due to impurity of the lymph are concerned, the persons in the majority of cases are, after all, protected; and bad effects due to hurry and carelessness are very infrequent compared with vast number of good and successful

vaccinations. Dr. Friedrich would vaccinate with humanized virus in "time of peace," when the physician has plenty of leisure; we fear, however, that during times of peace he would have great difficulty in persuading people to be vaccinated. The best plan is to vaccinate when there is a scare, and then we shall have an immune population.

Although making these criticisms, we do not wish in any way to dim Dr. Friedrich's glory; for he has done a noble work, and not only Cleveland, but also the country at large, owes him a debt of gratitude. He has shown what an intelligent medical health officer can do when he brings to the performance of his duties enthusiasm, executive ability, and tact. His success, however, does not in the least lessen the duty and necessity of proper and thorough vaccination.

Special Compartments for the Sick in Steamships and Railway Cars.—We have received from Dr. Henry Sewall, of Denver, this letter:

The following chain of circumstances has just formed a part of my professional experience:

A patient afflicted with pulmonary and laryngeal tuberculosis was advised to return to his home in Norway. This gentleman, though seriously ill, is able to be about and is not offensive in appearance or habits, and, moreover, is attended by a brother who is well. Through the Denver agent of a well-known railway, first-class passage was secured through to Norway via the Scandinavian-American line of steamers. I was congratulating myself on the conveniences of modern methods of transportation when the steamship ticket, paid for in Denver, was forwarded from Chicago. On the back of this ticket was printed a list of "notices to passengers," prominent among which was an emphatic warning that no one suffering from tuberculosis (or other contagious disease) would be admitted to passage on that line, with the added statement that persons suspected of such disease would be subject to examination by the ship's doctor. The steamship agent, on being interrogated, answered by wire that this rule was absolute. A representative of the railway then visited the agencies of the various Atlantic lines in Chicago, stating the nature of the case and endeavoring to secure passage for my patient, but was everywhere refused. Finally, the sick man has been obliged to content himself with the promise of transportation on a Canadian line of slow and small boats steaming from St. Johns, New Brunswick. Perhaps some colleague living nearer the sea will be able to explain the whole meaning of this embargo.

In our issue of August 10, 1901, we advised the provision and construction of a special sick-room in modern private houses. Dr. Sewall's letter leads us to go further, and to suggest that steamship and railway companies should provide suitable accommodations for patients suffering from such diseases as typhoid fever and tuberculosis. There is often great hardship following the exclusion of those sick with certain diseases from these public conveyances. A recent case has come to our notice in which a railway company would not allow a patient with typhoid fever to occupy a stateroom in a sleeping-car running between New York and Philadelphia. The law can hardly distinguish between cases that may be sources of danger to the community and those that are not, and there is difference even in medical opinion as to the degree of danger of infection of tuberculosis and typhoid fever. Moreover, the other passengers must be considered. In a crowded steamship not even a physician disbelieving in the contagious-

ness of tuberculosis would wish to occupy a berth below or in the same stateroom with a patient in the late stages of tuberculosis. The public carrier must obey the law, and our own country's law orders the deportation of those suffering from tuberculosis and other "contagious diseases." Even if a similar law does not exist in Norway, the steamship company cannot construe the law to apply only to the ocean-passage in one direction. We do not counsel law-breaking, but we think in cases like the two herein cited there was no necessity of specifying the nature of the disease of the patients. Typhoid fever and tuberculosis have not that degree of contagiousness that requires absolute exclusion from public conveyances of those suffering from them, and as we all know such persons are, in fact, constantly traveling. The laws should rather be recast or modified so that specially constructed rooms, isolated, tiled, etc., in cars and steamships should be provided. The rigid exclusion from the steamships, with deportation, is only justifiable, temporarily, in the case of highly contagious diseases, and otherwise solely on the principle of avoiding the reception of the paupers.

Prospects in Electrotherapy and Phototherapy.

—As the result of Professor Loeb's application of the electrophysicochemic ideas of Arrhenius, Von t'Hoff, and Ostwald to physiology, we shall doubtless have an attempted revival in electrical therapeutics. For if it is, as Arrhenius states, "the ion that acts," that is to say, the chemic atom bearing its charge of electricity and not the atom alone, and if this is the most potent influence in all biologic processes, it will almost be a matter of course to assume that some form of electric energy can stimulate or at least modify the physiologic electric reactions and so act as a natural alternative in disturbed metabolism. With this prospect in view we note that the pioneers in this work deprecate any such practical conclusion. They point out that the advance of our knowledge rather dims the prospects of electricity in medicine. Electric currents even of such high potentials as those suggested by d'Arsonval fail to affect intracellular electric conditions. Immense charges may, by causing mechanic disturbances in the large ganglion cells of the central nervous system, produce sudden death, but as a rule the body is thoroughly protected from variations in its electric status that might be brought about by extraneous electric phenomena. The human skin, in its dispersing and insulating power, is an armor that completely protects from variations in the electricity of the medium in which the body is placed. While the absence of a sense organ for the detection of electric waves such as we have for light and heat waves has made the phenomena of this mode of wave-motion more mysterious and obscure than its congeners in the physical world, there seems no reason to think that this form of energy can ever have any more power for therapeutic good than the others. In fact, the new physiology appears to look upon light rather than electricity as the hopeful form of wave-motion for medical purposes. While electricity has apparently no more than a mechanically disturbing influence, light has a subtler power that makes itself felt on all living protoplasm.

There is scarcely a being that does not depend on light waves for its proper development at some stage of its existence. Professor Loeb thinks that he is able to trace some mysterious but demonstrable connection between light influences and sexual and reproductive manifestations in the lower invertebrates. Even the x-rays seem to owe their therapeutic power and general effect upon cell life to their accompanying optical attributes and their relationship to light waves rather than to any essential electric character. In the meantime, while the encouragement of phototherapy may lead to its more enthusiastic development, medical men generally may be forewarned of the probable irrationality of electric theories founded on the recently introduced ideas.

Illuminating Gas and the Public Health.—When financial interests are involved, public health too often is less considered than profits. There has long been a demand from the consumer for lower prices for illuminating gas, but there has been no corresponding inclination on the part of stockholders for smaller dividends. But, several decades ago, it was found that by using a liberal admixture of water-gas, an illuminant of fair quality could be furnished at a price much lower than coal gas and yield greater dividends. This was sufficient motive for energetic work by lobbyists in different states to secure the repeal of laws limiting the proportion of carbon monoxid in illuminating gas to 10%, practically prohibiting water-gas, which contains at least 30% of this lethal agent. Following the repeal of these laws in Massachusetts, there has been a most remarkable increase of deaths and of accidents attributable to illuminating agents. In the thirteen years prior to the introduction of water-gas the number of deaths registered as due to illuminating gas was only eight, all from the inhaling of gas as a suicidal agent. In the thirteen years following the introduction of water-gas the number of deaths due to this cause is stated to have been 459, and there have been a number of accidental asphyxiations with recovery. These figures take no account of the many cases of chronic gas-poisoning, due to leakage from pipes. Water-gas is far more penetrative than coal-gas, and those interested in sanitation claim that it has a corrosive action on metals leading to a far greater escapement of carbonic oxid. This seems evidenced by the saturation of the soil in the vicinity of mains, leading in many instances to the destruction of all plant life. There can be no reasonable doubt that, with the great affinity of the carbon monoxid for the normal oxygen of the blood, constant absorption of the gas in small quantities will eventually produce a condition of general ill-health, greatly increasing the liability to disease and at the same time lessening the resisting-power of the organism. Many puzzling cases of decline in physical vigor possibly have their origin in a constant admixture of illuminating gas having a high percentage of carbon monoxid with the air of homes insufficiently ventilated. In view of these facts it should be made incumbent upon all gas companies to give public notice of the use of water-gas with a caution as to its dangerous character, and there should be in addition municipal legislation limiting the proportion of carbonic oxid in the resident

section, after midnight at least, to not more than 10% and regulating the character of the gas-burners and their fittings, with appropriate penalties to secure enforcement.

The Haines Murder Trial.—This sensational trial has reached its conclusion with a celerity characteristic of New Jersey justice. Whatever one's private opinion may be as to the facts of ill-treatment, there can be no doubt that the decision of the jury acquitting the prisoner of murder was the only one justified by the evidence. The prosecution attempted to prove that the arsenic found in the child's body after death had been administered during life; but there had been no evidence of symptoms of arsenic poisoning antemortem, nor were the characteristic lesions of arsenic poisoning found postmortem. It was, therefore, possible for the defense, which supplemented its testimony with animal experiments, to sweep away the sole ground upon which the contention of arsenic poisoning rested; and the judge very properly ruled out all of the evidence bearing upon this phase of the subject. It is probable that this judicial action tended to discredit, in the minds of the jury, the evidence and arguments of the prosecution upon the other point in dispute—namely, the significance of the head injuries. One interesting fact not generally known to the profession was brought out at the trial, viz., that arsenic, when introduced into the human body after death, by the process of embalming, and without the puncture of any viscus, will diffuse through all the tissues, and may be found in the walls and contents of the stomach, in the brain, and even in the muscles of the lower extremities, provided that sufficient time has elapsed between its introduction and the examination. Another question which was brought up at the trial, but not definitely settled, is whether acute arsenic poisoning can occur without producing inflammation of the stomach. It was admitted by the experts of both sides that a few such cases are recorded in the literature; but the defense contended and the judge ruled that the fact of the administration of the arsenic must be proved from other sources before a case of such rare character can be accepted in a judicial procedure. The expert testimony was, on the whole, marked by dignity; was stated with all due qualification and in precise language; and, in consequence, showed less of the flagrant disagreement that has characterized medical expert testimony in the past.

The Value of Medical Counsel in Criminal Cases.—The Haines trial affords an admirable illustration of the value of medical counsel to the side employing it. A lawyer who is not also a medical man—and there are but few who combine a knowledge of these two professions—cannot always see the best line of questioning to adopt in cases in which the proof must rest upon medical facts. By associating with himself an intelligent physician he may, however, overcome this difficulty. The latter, by pointing out the weaknesses of the medical evidence of the other side, and by suggesting the queries to be propounded on cross-examination, as well as by bringing out in direct examination the strong points of his own side, can be of incalculable

assistance. Moreover, by aiding in making the issue clear and definite, he may help to promote the interests of justice. This is true for the prosecution, as well as for the defence. In the Haines trial, the attorney for the accused associated with himself a physician of broad reading and possessed of an incisive mind, who directed the questions of the defence as regards the two main contentions of the prosecution: the weight to be attached to the admitted presence of arsenic in the body, and that appertaining to the relation between the asserted meningitis and the head injuries. The medical testimony for the defence was not given by the medical counsel, but by others,—a coroner's physician, a teacher of pathology, a teacher of pharmacodynamics, and an expert chemist. The medical counsel in this case, by not going upon the witness stand, set a good example, which should be generally followed. By assisting the attorney in formulating the medical questions to be asked, by procuring expert evidence, and by marshalling this in the order in which it is to be presented, he may be of much greater service than by giving testimony. It is not improbable that the Haines trial, having attracted the attention of the entire country, will induce lawyers engaged in practice in the criminal courts to secure the help of such unofficial medical counsel, and that in time a class of physicians will spring up whose services will be sought more as advisers than as expert witnesses.

Dr. Woodbury's Raffle Plant.—An experiment that will be watched with interest by the street-cleaning and health authorities throughout the United States is that now in progress in New York City, where Dr. John W. Woodbury, Commissioner of Street Cleaning, is constructing a specially designed plant for disposing of the household waste or raffle, which forms nearly 60% of the bulk of household waste, ashes and garbage combined, and the disposal of which has heretofore cost over \$385,000 a year. Those who frequent summer resorts along the Atlantic coast will rejoice if New York City has at last discovered some effective method for the destruction of the vast amount of unsightly household waste, broken furniture, old mattresses, fruit crates, baskets, old newspapers, etc., which, under the usual system of dumping at sea, serve to litter the coast as far south as Cape May. The sensation produced by contact with a water-soaked rag-doll or tenement house mattress, with their suggestions of filth and disease, serves to render sea-bathing anything but attractive. The esthetic gain is, however, secondary to the sanitary and economic advantage secured by the prompt and complete destruction of the infection-bearing raffle of a great city.

"Like Children as to Commercial Matters."—In his "Caesar-will," Mr. Rhodes appeals to Oxford to improve its medical schools, but Caesars have little genuine sympathy with or comprehension of the needs and beneficence of scientific medicine. In proof it is noted that the Rhodes' system of scholarship is tenable for only three years, whereas the medical course at Oxford now takes five years, after which one or two years of postgraduate study are required. Moreover,

Oxford has not the hospitals necessary to train the clinician in practical medicine. "It is no use for us to have big ideas if we have not the money to carry them out," was one of his mottoes, which he should better have heeded, so far as medicine is concerned. In one thing, however, he might have given the medical profession most sound advice. He told the Oxford Dons that from the nature of their life-work they were in financial affairs "like children," and he urges them to seek and follow the advice of men trained and successful in the management of commercial matters. The revolution in the management of hospitals and medical colleges which has lately taken place in our country, whereby lay trustees and administrators have replaced medical men, is a proof that Mr. Rhodes would have been right if he had spoken in the same tone to us. What is still needed is some wise mentor to tell every practitioner that he should do the same in the management of his personal monetary concerns. Almost every medical man needs a trustworthy business adviser. The great tragedy of our lives has been and remains due to trusting to our untrustworthy financial judgment. The typical busy practitioner is indeed too often like a child in such things. In the ordinary matters of bookkeeping, charges, collections of bills, life insurance, investments, purchases, etc., he too often lacks system and foresight. But when, as now, hundreds of sharpers are on his track with cunning schemes of a hundred degrees of badness, he should be doubly on his guard. A little money and ingenuity spent in securing professional advice for instance of a good business lawyer, would pay far better dividends than the undertaking of the brilliant promoter or self-seeking friend.

The Modern Paracelsus and His Scientific Homunculus.—From the *Current Encyclopedia* of January we quote an account of the creation of "a living organism":

"I succeeded eventually . . . in producing an active protoplasmic mass containing distinct nucleus-like centers, which exhibited amoeboid movement. It assimilated nutriment, it gave the reaction to aniline dyes that organic cells do, it had a protoplasmic reticulum, it showed selective affinity, and it even made feeble attempts at perpetuation of its species. It split into four or five cells, which exhibited the same qualities as the mother-cell. After a period of activity varying in differing experiments from half an hour to three weeks, the cells lost their power and became inert masses. My cells fulfil all the conditions of living cells, such as amoebae, except as to the power of perpetuating their kind indefinitely. I think we shall soon discover the necessary element to make a complete and living organism. Professor Loeb's discovery seems to point the way for the search for the male element, which appears to be lacking for my cells. I am now trying to find a solution which will impregnate the cells produced from the chemicals, and then the problem of creating life chemically will be solved."

The delightful indefiniteness of this and its naïve impertinence remind one of the departed Keely of motor fame. We would suggest to the new Paracelsus that he also needs only to "focalize the vibrators" and then "the problem will be solved."

Exhibition Meetings of Pathological Societies.—The March number of the *Proceedings of the Patho-*

logical Society of Philadelphia contains a list of the specimens exhibited at the Second Annual Exhibition Meeting, held January 9, 1902. The specimens shown illustrate a variety of pathologic subjects, which are, as it were, questions of the day. Such meetings should be encouraged in every city as they are professionally advantageous from all points of view. The publication of the lists of specimens exhibited is not only of present but also of future interest, giving to the student of medical history in the future an idea of the topics that were of paramount importance at any given time.

"Twenty-five per cent. of the fees collected" is being offered by some private sanatoriums to physicians who refer cases. Both for the "sanitarium" and for the "doctor" the plan is as bad policy as it is bad morals. No one would deny that it is harmful to the profession. When he hears of it, as he certainly will, the victimized patient will abundantly curse both the bribe-giver and the bribe-taker.

EDITORIAL ECHOES

A Refuge of Dependants.—There are too many people in the almshouse. The energy of the state has been exerted to take care of the unfortunates, rather than to prevent men and women from becoming unfortunate. Out of a total of 2,936 inmates of the almshouse on Blackwell's Island, only 564 were born in the United States; 2,382 were foreign born, and of this number 1,617 were born in Ireland alone. There is a law forbidding the immigration of paupers, but from this it would appear that the law is being evaded. Of these, 2,729 were admitted for destitution, helpless, in the main, because they had yielded to the desire for drink until long-suffering friends could no longer bear the burden of their existence and had to turn them over to the state. It is not within the province of my paper to say how many of these persons could have been made self-respecting and self-supporting if the environment that first led them in the downward path had been minimized or swept away altogether.—[John W. Keller, Commissioner of Public Charities, New York City.]

The Trained Nurse.—A nurse, like a poet, is born, not made. The greatest care should be exercised, without fear or favor, in accepting candidates for this important course. Simple good health, willing hands and fair education are not enough to insure the turning out of a good nurse. There is, in the first place, an undefinable something, which we may call sympathetic disposition, which can, under circumstances, make a good nurse of an ignorant person, and the absence of which cannot be compensated for by the most thorough instruction in the duties of a nurse. Where we find this quality combined with thorough training we find an ideal nurse. We do not mean a weak, sentimental sympathy, than which nothing can be more detrimental to good work on the part of a nurse, but a quality which expresses itself, not in words, but in the manner of performing even the least office for the patient—a certain something which enables its possessor to do everything for the patient as if from the promptings of good-will and sympathy, and not from measured, mercenary motives. The sick are generally hypersensitive, and are very ready to feel a perfunctory performance of duty.—[*The Hahnemannian Monthly*].

AMERICAN NEWS AND NOTES.

GENERAL.

Cholera.—There are 90 cases with 72 deaths reported from Manila.

The American Climatological Association has arranged a tour to California for the period from May 26 to July 2, 1902. A small number of men eminent in the profession have been invited as guests.

Smoke Nuisance.—An invention recently patented, it is believed, will effectually abate the smoke nuisance in the large business centers. The coal is reduced to a powdered state, and the gaseous substances eliminated. After it is mixed with other materials and heated, it is placed into moulds and subjected to a hydraulic pressure of 20,000 pounds to the cubic inch, which forms it into blocks ready for use. Tests made of these blocks show that the volume of heat is greatly intensified, that it burns from three to four times longer than the loose coal, and that there is practically no smoke.

Pure Food Bills.—Two pure food bills are now before Congress. One, the Corliss bill, is supported chiefly by the Retail Dealers' Association. The Hepburn bill was framed by the National Pure Food Congress, and prohibits the introduction into any state from another state, or the shipment abroad, of any article of food or drugs which is adulterated or misbranded. The Agricultural Department is given supervision over the analyzing, etc., to determine questions of adulteration, and is to have the assistance of a board of food experts, chosen from the army and navy medical service, the Marine-Hospital Service, and from scientists in chemistry, hygiene, commerce, and manufactures. The bill also gives specific definitions of adulterations as applicable to certain foods and drugs. It also fixes severe penalties for offenses against the various provisions.

Food Adulterations.—Dr. H. W. Wiley, Chief of the Bureau of Chemistry of the Department of Agriculture, has reported to the House Committee on Commerce the result of his investigations regarding the preparation of food-stuffs. Examinations were made of samples of preserved fruits, jams, honey and wine which are sold in the open market. Analysis of a sample of preserved fruit from California showed it contained a red anilin dye. An Ohio wine was found to consist of coal tar dye, alcohol and sugar, without any product of the vine. Examination of samples of jams and jellies demonstrated that the manufacturers were right in their contention that a stock jelly made from apple skins and cores was flavored with a fruit and then labeled and sold under the name of the fruit whose flavor had been added. Of two jars marked "pure honey" one was found to contain the real article, while the other was made of glucose, with enough honey to supply the flavor. The difference between beet and cane sugar was clearly demonstrated, an offensive odor, due to the salts of potash and other soapy substances contained in the beet, being very pronounced in the raw material and also readily detected in the refined product. Samples of alleged coffee made of wheat and molasses and molded into the shape of the coffee berry were also shown with many other adulterations.

NEW YORK.

Memorial.—A beautiful art window, in memory of Dr. Alexander J. C. Skene, has been placed directly over the altar in the St. Paul's Protestant Episcopal Church, Flatbush.

Against Alcohol.—The New York Red Cross Hospital, recently incorporated, has decided that alcohol, or any product thereof, shall never be used in the hospital as an internal medicine or beverage.

Public Health.—An ordinance has been introduced in New York compelling elevated railroads to provide special cars for "spitters." The cars are to be properly placarded and provided with cuspidors, one to each seat. The cost of maintenance is to be borne by the city and raised by taxation.

The Memorial Hospital for Women and Children will be continued along the same lines on which it was organized and as a hospital for the treatment of women and children exclusively. The Board of Directors has accepted the resignation of Mrs. John H. Burtis, who was president for many years.

Pure Food.—The New York Board of Health is making a vigorous crusade against the venders of impure foods, and endeavoring to prevent the sale of viands exposed in public places, partly decayed fish and vegetables and polluted milk. Formaldehyd has been extensively used for preserving milk since the use of boracic acid was prohibited, and it is feared that if radical measures are not taken to restrict its use, there will be great loss of life among the children of the poorer classes during the summer months. A number of offenders have been arrested and fined in sums ranging from \$15 to \$30. The total amount of fines collected during March were \$7,000.

Dentistry Bill.—A bill introduced in the New York Legislature provides that a degree in dentistry shall not be conferred unless a three years' course in an institution registered by the regents has been satisfactorily completed, or else five years' actual practice in operative and mechanic dentistry was had subsequent to the registration of a certificate as student of the Board of Examiners.

The state charities bill has been signed by Governor Odell. It provides for the appointment of a fiscal governor at a yearly salary of \$6,000 to supervise expenditures made by state charitable institutions, and for a state board consisting of the governor, the state comptroller and the President of the State Board of Charities to control plans for additions and improvements to the institutions.

Fined for Spitting in Public Places.—Fifty persons have been prosecuted by the New York Board of Health for spitting in public places. The general excuse given was colds caused by the changeable weather; 18 were imprisoned for several hours, while others were fined \$5.00 each; all were warned that if caught again they would be given the full penalty of a \$500 fine, a year's imprisonment, or both.

Hanford Hospital Bill.—A bill passed recently in New York, provides that contracts for hospital treatment may be made between the municipality of one county and the hospital authorities of an adjoining county in a neighboring state, provided that the county seeking such assistance does not maintain a hospital of its own. The measure also legalizes the action of village boards in making appropriations for this purpose, and provides that they must be paid.

Vaccine Virus and Antitoxin.—A representation of manufacturers to protest against the manufacture and sale of vaccine virus and antitoxin by the Board of Health has been delegated to meet Mayor Low. The Health Board is charged with commercialism and with exercising an "unfair advantage" in competition with the regular manufacturers. It is claimed that the manufacture and sale of such products by municipal authorities is "unnecessary, undesirable, pernicious and impolitic." There is no opposition expressed to the free distribution of virus and antitoxin to the poor. On the other hand, it is claimed for the Health Board that only a limited amount of these products are manufactured, that such manufacture is not undertaken as a commercial enterprise, the proceeds from the sale of the surplus stock being used to help pay the staff of vaccinators. Further, only the absolutely perfect product is dispensed, and so long as the Health Board holds this high standard a higher degree of perfection will be required from the regular manufacturers. It is held that physicians practising in the congested tenement districts are now able to obtain antitoxin for little or nothing, and this is only made possible because municipal aid is extended.

Ward's Island.—The New York County Medical Association has passed unanimously the following resolutions:

To His Excellency, the Governor of New York:

WHEREAS, Lunacy Bill No. 368, recently passed by the Legislature, has abolished the positions of the two medical superintendents at Ward's Island, New York, it has placed two officers under one head, thus putting over four thousand insane patients under one management; and

WHEREAS, The supplemental bill amending Bill No. 368 is now before the Legislature, restoring these positions, so that the divisions of the hospital as they formerly existed—one for men and one for women—may be maintained,

Resolved, That the New York County Medical Association heartily indorses this amendment and advocates its immediate passage.

The New York Academy of Medicine has also adopted resolutions as follows:

WHEREAS, Lunacy Bill No. 368, recently passed by the Legislature, places about 4,000 insane patients of Ward's Island under the medical supervision of a single superintendent, and

WHEREAS, In the opinion of the New York Academy of Medicine, the magnitude of such a burden as that is far too great to be wisely and safely borne by a single head, be it therefore

Resolved, That the Fellows of the New York Academy of Medicine do hereby respectfully register their objection to such a course of action, and earnestly petition his honor, the Governor of the State, that not less than two superintendents be placed in charge of said patients.

Resolved, That a copy of this resolution be forwarded by the Secretary of the Academy to the Governor at Albany.

PHILADELPHIA, PENNSYLVANIA, ETC.

University of Pennsylvania.—The board of trustees has accepted Dr. S. Weir Mitchell's offer to establish an annual prize of \$50 for the best original investigation on the "Autumnal Coloration of Plant Parts." The competition is open only to students in biology.

The Pittsburg Board of Health complains that the State Board gave no assistance in the suppression of smallpox in Allegheny county. The city itself has given no trouble, but the railroad camps and outlying districts are where the epidemic exists and are the sources of infection, and the city authorities have no power to act.

Cost of Maintaining Municipal Hospitals.—During the recent epidemic of smallpox in Camden, the Board of Health expended \$9,915.97 for the erection of an isolation hospital, and \$10,341.81 for equipments and running expenses.

The Use of Borax.—The meat packers of Pennsylvania and those from other states doing business here have been notified by Cope, the dairy and food Commissioner, that all meats preserved by means of borax and boracic acid must be withdrawn from the market by August 1. The suits already pending against dealers vending such meats will not be abandoned, it is announced.

SOUTHERN STATES.

New Public Bath.—A second bath house has been presented to Baltimore by Mr. Walters. It is 40 feet by 70, built in free colonial style at an expenditure of \$27,000.

Osteopathy.—An osteopath in Biloxi, Miss., has been convicted of practising medicine without a license and fined \$20 and costs. The court announced that the statute governing the practice of medicine included osteopathy and all other treatment for which remuneration is received.

The Association of Military Surgeons will convene in Washington June 5, 6, 7. The President has been asked to open the meeting and the Secretary of War, Secretary of the Navy, Commanding General of the Army and Admiral of the Navy are invited guests. Over 500 delegates are expected to attend and a large number of interesting papers have been promised.

Recent Legislation.—Two bills which have been passed in Kentucky are of interest. One provides for the registering and licensing of barbers, for education that will better prepare them for their work and for the observance of sanitary precautions in barber shops as an aid in preventing the spread of disease. The other bill is a measure to establish and maintain free public libraries in cities of the first class. Louisville will therefore now have an opportunity to accept the \$250,000 offered by Carnegie for the establishment of a building for library purposes. Efforts will be made to induce the Mayor to appoint a physician as one of the 12 trustees, in order that a good medical library will be inaugurated as one of the departments.

Medical College.—A medical department will be opened in connection with the North Carolina University at Raleigh, next September. Students who have taken a two years' preparatory course in the University can graduate in medicine after two years in the medical school. The board of aldermen, of Raleigh, has adopted resolutions for the establishment of a free dispensary at the Rex Hospital building, where the city physician will be required to attend outdoor charity patients of the city, instead of in his own office. Further, that the students of the University of North Carolina Medical College will be allowed the privilege of visiting the dispensary and of being instructed in the methods of examining patients under the supervision of the city physician.

WESTERN STATES.

Pulque, the Mexican intoxicant made from the agave, is reported as efficacious in tuberculosis when freshly fermented and taken in large quantities.

Reciprocity.—Certificates to practise medicine and surgery in Iowa will hereafter be issued without examination, providing the applicant shows a certificate from a state extending a like privilege.

Cocain Bill.—The sale of cocain without a physician's prescription has been prohibited in Ohio. It must be labeled "poison," and the druggist is required by law to keep a record of the name of the purchaser and the person for whom it is purchased.

Barbers, Osteopaths and Opticians.—Bills now pending in the Iowa Legislature create three state boards to control and regulate barbering, osteopathy and optometry. The osteopathy bill provides that certificates may be issued to osteopaths as osteopaths and not as medical practitioners.

Raising the Standard.—The Academy of Medicine of Stark County, Ohio, is endeavoring to educate the local newspapers to such a moral standard that they will reject all advertisements that appear to be objectionable. The accomplishment of such a task would be of benefit to the whole country.

The Physicians' Guarantee Company of Fort Wayne, Ind., has been debarred from doing business in Ohio. The State Superintendent of Insurance says that insurance laws do not provide for the kind of business carried on by this company. The courts will be asked to decide the question at issue.

Compulsory Vaccination.—A case of sporadic smallpox in the University at Berkeley, Cal., has caused the president of that institution to issue an order that all persons connected with it shall be vaccinated. Considerable opposition is manifested by the 2,600 members, but failure to comply with the order will result in dismissal.

An epidemic of "pink eye" in Chicago is said to be due to the influenza bacillus. The Board of Health has suggested that all cases be examined bacteriologically. If *Bacillus Influenzae* is found in the secretions, treatment is obvious and a cure may be effected in 48 hours. Examinations will be made in the laboratory for physicians without charge.

Smallpox Notification.—The Health Department of Chicago has notified hotel and lodging-house keepers and restaurant owners that as soon as a case of smallpox is reported among their employees, their places will be quarantined. The majority of employers are indifferent to the surroundings of their help, in many cases not even knowing where they live.

The Medical Society of the Missouri Valley held its semi-annual meeting at Lincoln, March 20, with a large and representative attendance. Dr. Richard C. Moore, of Omaha, president, in the chair. Chicago was represented by Drs. Moyer, Findley and Coulter. Three sessions were held, and 16 interesting papers read. The *Medical Herald* was again made the official journal of the society. The next annual meeting will be held in Sioux City, Iowa, September 18, 1902.

State Care for Indigent Crippled Children.—A bill introduced in the Ohio Legislature provides that the state shall care for indigent, crippled and deformed children. It is suggested that a board of five persons, who will serve without pay, shall be appointed. This board shall be vested with authority to contract with hospitals, institutions, etc., for the proper care of the little ones. An appropriation of \$10,000 for each of the coming two years is asked, to defray the expenses entailed in providing for this class of sufferers.

Gregory Testimonial Banquet.—Among others, the following will respond to toasts: Drs. DeForest Willard, Philadelphia; Walter Wyman, Surgeon General United States Marine-Hospital Service; N. B. Carson, President St. Louis Medical Society; J. D. Griffith, President Missouri State Medical Society; Chancellor Chaplin, W. G. Moore, and C. H. Hughes. Dr. A. M. Dockery, Governor of Missouri will preside, and will respond to the sentiment of the State of Missouri. Dr. F. J. Lutz will act as toast master.

Daily Hospital Inspection.—A recent order creates "a medical officer of the day" for the Cook County Hospital, Chicago. The 12 senior internes will in turn undertake the duties of the new position, and visit all the wards of the hospital and the operating-room and listen to the complaints of patients. Each day a complete written report must be submitted of the conditions of the wards, complaints of patients and any neglect upon the part of physicians, attendants or other employees. It is hoped by this plan to add to the efficiency of the hospital service.

The physicians of Chicago are planning for a home for the medical organization of that city on the lines of the Academy of Medicine in New York, where in a building owned by the various medical organizations and located in the most convenient center may be secured laboratories for research work, libraries, lecture halls and parlors where thousands of physicians may gather socially. The plan includes cooperation with the Crerar Library in the collection of a large reference library in medical science, and aims at the establishment of a medical center in the West.

CANADA.

Blackmail.—A Toronto man recently attempted to extort \$200 by false charges from two physicians who had attended his wife and child. The matter was carried into the courts and after a poor defense the offender pleaded guilty. Sentence will be pronounced.

Toronto University has passed a statute which will enable a candidate to obtain the degree of Bachelor of Arts in four years, that of Bachelor of Medicine in six years. The studies will be so arranged by the introduction of anatomy as an option in the third and fourth years that the fourth year in arts may be transferred to the third year in medicine.

The health report of Montreal for 1900, recently issued, conveys information somewhat startling to the public. The prevailing impression that Montreal is a very healthy city is contradicted by the statistics. The total number of deaths is given as 7,351, a rate of 25.46 per 1,000 persons. Comparing these figures with those of large cities the rate is found to be enormously high, in fact with the exception of Savannah, Ga., it is the highest percentage in the country. The marriage rate fell from 8.12 per 1,000 in 1899 to 7.76 per 1,000 in 1900, and the birth rate from 34.45 per 1,000 in 1898 to 34.26 per 1,000 in 1900. The health board claims that the existing sanitary conditions are to blame for the excessive mortality, which is especially heavy among infants, there being as many as 125 deaths of infants reported for some weeks during the summer. The department contends that the existence of "privy pits" has much to do with the heavy death rate and that in spite of repeated warnings the obnoxious pits still exist. The statement is made that with proper sanitation the average mortality would not exceed 100 deaths per week.

FOREIGN NEWS AND NOTES

GENERAL.

Cholera.—For the week ended March 29, there were 928 deaths reported from the disease at Mecca in Arabia, and 61 deaths at Jeddo.

Operations for Cataract.—Duke Carlo Theodore, of Bavaria, a specialist in eye diseases, has performed 4,000 operations for cataract.

Title Conferred.—Professor Franz Soxhlet of the Munich technical school and director of the agricultural experimental station, has been made chevalier of the Order of Merit of the Bavarian Crown.

Triennial Prizes.—The surplus of about 40,000 francs which was left after settling the expenses of the last international medical congress, will be used as an endowment of a triennial prize to be awarded at future congresses.

Cholera in Mecca.—It is estimated that 240,000 Mohammedans are making the yearly pilgrimage to Mecca. Coincident with this overcrowding and consequent insanitary conditions cholera has appeared, 280 deaths being reported in a single day.

GREAT BRITAIN.

Smallpox.—The epidemic in London is reported to be still spreading. This is said to be due to the mistaken diagnoses that are being constantly made.

Singular Result of Vaccination.—At an anti-vaccination meeting held recently in Bournemouth one of the speakers, according to the *London Globe*, reported a case in which vaccination had affected the brain. A gentleman had ordered all his servants to be vaccinated, and the gardener's insanity after vaccination took the form of abnormal craving for work.

Port Sanitation.—An official statement says that from November 24 to December 31, 1901, 2,919 vessels were inspected in the port of London. There were six cases of plague and 13 cases of typhoid fever reported. The crusade against rats was vigorously enforced and up to January, 1902, there were nearly 100,000 destroyed. On one steamer alone nearly 1,000 were found after fumigation.

Investigation of Disinfectants.—A joint report by Drs. Klein, Houston and Gordon on the result of experiments in disinfection has been issued lately by the London City Council. Carbolic acid (1 in 5), sodium permanganate (Condy's fluid), bleaching powder and corrosive sublimate (1 in 1,000) among fluid disinfectants were experimented upon. Of gaseous disinfectants formalin and sulfurous acid gas were tested. The typhoid bacillus was killed by all the disinfectants except Condy's fluid and bleaching powder. Condy's fluid was of negative value and bleaching powder failed with one hour's exposure for the disinfection of wood and cloth infected with this bacillus. The same result was obtained in the case of the vibrio of cholera, except that bleaching powder though not always efficacious on one hour's exposure was successful within 24 hours. *Bacillus pyocyaneus* and *Staphylococcus aureus* were acted upon in much the same way and killed by all except Condy's fluid and bleaching powder. *Bacillus diphtheriae* was killed by formalin and sulfur dioxide; anthrax spores were only destroyed with certainty by corrosive sublimate—as the other disinfectants failed almost invariably when wood and cloth were the materials to be acted upon. For tubercle bacilli the only efficacious disinfectants were carbolic acid and corrosive sublimate; Condy's fluid and sulfur dioxide were negative and the others unreliable. Neither formalin nor sulfur dioxide were efficacious for wood or cloth infected with this bacillus.

CONTINENTAL EUROPE.

Compulsory Vaccination.—A law which has become operative in France, requires that a child must be vaccinated during its first year, revaccinated at the age of 11, and again at 21.

Child Labor.—The Roman Chamber of Deputies has passed a bill restricting the employment of children under the age of 12 in mines and factories, it also prohibits the employment of women at night.

A Journal's Munificence.—The *Münchener med. Wochenschrift* which is owned and published by a board of 11 prominent medical men last year declared a dividend of 4,400 marks, which was distributed among various medical aid associations. This year there was a surplus of 9,300 marks, of which 5,000 marks were given to the Pettenkofer Memorial building fund, and the remainder to societies for the relief of the widows and orphans of medical men.

A Tabooed Hospital.—At Gross Lichterfelde, a suburb of Berlin, the new and lavishly equipped hospital with capacity for 350 patients is always notably free from the chronic over-

crowding which prevails in the other Berlin hospitals, and has been from the first a source of trouble to the council of the district of Teltow, to which it belongs, owing to the peculiar methods of treatment and management which obtain there under the chief medical officer, Dr. Schweninger, who attended the late Prince Bismarck and whose natural energy enabled him to cope with the exigencies of an intractable patient, and who by suggestion was able to relieve Prince Bismarck's nervous trouble. In gratitude for this he obtained for him the appointment as professor in Berlin University in the face of the unanimous opposition of the medical faculty. This promotion to an important professorship of one who had never advanced medical knowledge was very astonishing and caused animated debates in parliament, and his peculiar views caused him to be looked on with disfavor. He regarded modern medicine as a failure and held that diagnosis was not necessary for the purpose of treatment: that a physician should be as much at home in the kitchen as in the laboratory; and declared his intention to found a new medical school for the promulgation of his own principles. His appointment as chief physician to the Lichterfelde Hospital presented an opportunity for practicing his therapeutic system, but early there was a general strike on the part of the nurses; then Professor Schleich, of anesthetic fame, the chief surgeon, resigned because Professor Schweninger wished to decide in every instance whether a surgical operation was necessary or not, thus relegating the surgeon to the position of mere operator. No other surgeon was found to accept the position. In consequence fractures of the femur were treated by massage and strangulated hernia by the application of plaster bandages and carcinoma was never operated on, being in Professor Schweninger's opinion a constitutional disease. The enormous death-rate from diphtheria, 64.7%, attracted the attention of the medical profession and the authorities, and Dr. Rabnow, president of the medical association of Schöneberg, a town in the Teltow district, published a statement that the physicians of that town declined to send patients to the Lichterfelde Hospital; the municipal council of the town also declined to pay its annual contribution of 50,000 marks and other places in the district following this lead financial difficulties arose. At a late meeting of the Teltow district council the governor (Landrath) of the district advanced an opinion that the charges made against Dr. Schweninger were due to the hostility of the medical profession and that the health officer of the district had instituted an investigation in which the findings were favorable, the hospital in good condition and the patients satisfied. This statement, however, is controverted by the leading journals, both medical and non-medical, and great disapproval is expressed of the system of treatment followed at the Lichterfelde Hospital.

OBITUARIES.

Thomas Dunn English, of Newark, N. J., April 1, aged 83. He was born in Philadelphia of Norman-Irish ancestry, graduated from the medical department of the University of Pennsylvania in 1839, was admitted to the Philadelphia bar in 1842, engaged in journalism in New York in 1844, and from 1850 practised medicine in Newark until advanced age obliged him to retire. He served as a member of the New Jersey Legislature in 1863-64 and as a member of the lower house of Congress from the Newark district from 1891 to 1895. During a residence of five years in Virginia commencing in 1832, the William and Mary College conferred upon him the title of doctor of laws. Notwithstanding the versatility of his attainments he is most widely known as the author of the old ballad "Ben Bolt."

Lawrence Ashton, of Dallas, Texas, March 6, aged 57. He was a native of Virginia, and was graduated from the Medical Department of the Columbian University, D. C., and later from the University of the City of New York. He was a member of the Medical Examining Board of Virginia until he moved to Texas, where he actively promoted the professional interests of the state, and was made president of the Dallas Medical College and professor of the practice of medicine.

Delavan Bloodgood, for 36 years a surgeon in the United States Navy, in Brooklyn, April 4, aged 71. He received his medical degree from Jefferson Medical College, Philadelphia, and entered the Navy as assistant surgeon in 1857; on his retirement in 1893 he had risen to the rank of medical director. He served with Farragut on the Mississippi during the Civil War.

Patrick T. Manson, son of Dr. Patrick Manson, on Christmas Island, whither he had gone to investigate the cause and treatment of beri-beri, on behalf of the London School of Tropical Medicine.

Tandy L. Dix, formerly of Louisville and Shelbyville, Ky., where he practised for nearly 50 years, at Holly Springs, Miss., March 23, aged 73.

Seymour C. Toller, Professor of Clinical Medicine at the School of Medicine in Cairo, Egypt.

Charles A. Seler, formerly of Allentown, Pa., in Hay Fork, Cal., March 18, aged 82.

Richard T. Ishester, of Chattanooga, Tenn., March 21, aged 45.

Andrew G. Nywall, of Chicago, March 23, aged 30.

O. B. Scott, of Cynthiana, Ky., March 20, aged 43.

SOCIETY REPORTS

AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS.

SECOND ANNUAL MEETING, HELD IN CLEVELAND, OHIO, MARCH 28 AND 29, 1902.

The second annual meeting of the American Association of Pathologists and Bacteriologists, held in Cleveland, Ohio, March 28 and 29, 1902, was a distinct success. The meeting was well attended, about 65 of the members being present. The program was replete with papers of high scientific value and timely interest; most of the papers announced as well as several voluntary papers were read; the discussion were spirited and instructive, and the social features of the meeting did not in the least interfere with the business of the scientific sessions. Two of the sessions were held in the Western Reserve Medical School; one in the Physical Laboratory of Adelbert College of the Western Reserve University, and one in the Pathologic Laboratory of the Lakeside Hospital. The annual dinner was served in the University Club, Friday evening, March 28, and at the same club on Saturday Dr. George Crile, of Cleveland, entertained the members of the association at luncheon. At the opening session, Dr. William T. Howard, Jr., of Cleveland, vice-president of the association, and who had attended to arranging the details of the meeting, was elected president; Dr. Ludvig Hektoen, of Chicago, was elected vice-president; Dr. Harold C. Ernst, of Boston, and Dr. Eugene Hodenpyl, of New York, were reelected secretary and treasurer respectively; and Dr. Herbert U. Williams, of Buffalo, was elected a member of the council. At the final session the following officers were elected for the ensuing year: Dr. Ludvig Hektoen, president; Dr. James Ewing, of New York, vice-president; Dr. Harold C. Ernst, secretary; Dr. Eugene Hodenpyl, treasurer.

Without underestimating the excellence of the forty odd papers read, it may be said that especial interest was aroused by the papers that deal with the lesions produced by the blastomycetes and the relation of these organisms or Plimmer's bodies, to carcinoma, the papers dealing with hemolysis and agglutination of blood, the papers dealing with the growth of epithelium and transplantation of tumors, and the paper dealing with the relation of vaccination to tetanus. Dr. Edward R. Nichols, of Boston, read a paper on the lesions produced by the blastomycetes (torulae) of San Felice and Plimmer; Dr. Langdon Frothingham, of Boston, read a paper on "The Blastomycetic Lung Lesions in the Horse"; Dr. E. R. LeCount, of Chicago, read a paper on the bodies in normal and diseased cells that resemble Plimmer's bodies. These papers excited considerable discussion, more especially as LeCount's paper, based upon very careful cytologic study, tended to show that bodies identical with Plimmer's bodies occurred in a variety of circumstances in normal and diseased conditions having nothing whatever to do with carcinoma. The general drift of opinion in the discussion was toward the nonacceptance of the parasitic theory of carcinoma formation, although Dr. Harvey R. Gaylord of Buffalo, upheld his well-known position of a believer in this theory. Dr. G. N. Stewart, of Cleveland, read a very valuable paper on "The Mode of Action of Certain Hemolytic Agents"; Dr. Simon Flexner, of Philadelphia, read a paper on thrombi composed of agglutinated red blood corpuscles; and Dr. Isaac Levin, of New York, read a paper on "The Influence of the Spleen in Hemolysis." These papers occasioned considerable discussion concerning the phenomena of the much-debated question of agglutination and destruction of red blood corpuscles. Dr. Leo Loeb, of Chicago, contributed several papers and demonstrations on the growth of epithelium and on the transplantation of tumors, a subject written on also by Dr. Maximilian Herzog, of Chicago. The paper on the relation of tetanus to vaccination, by Dr. Joseph MacFarland, of Philadelphia, was of especial interest in that from a careful study of over 100 cases of tetanus following vaccination, Dr. MacFarland felt compelled to conclude that in many of the cases the vaccine virus as supplied by the makers was responsible for the tetanus, rather than that the tetanus was due to subsequent infection of the vaccine wound. In support of this view—at variance with the general opinion of the profession—some rather convincing statistics were adduced. The paper by Dr. Aldred Scott Warthin, of Ann Arbor, on "The Changes Produced in the Hemolymph Glands of the Sheep by Splenectomy, Hemolytic Poisons and Hemorrhage," and that by Dr. Herbert U. Williams, of Buffalo, on "The Lymphomatous Tumors of the Dog's Spleen," were of timely interest, especially as they dealt with subjects with which as yet we are but slightly acquainted. Dr. August Jerome Lartigau, of New York, reported the interesting results of an experimental study of submaxillary gland tuberculosis, and of an experimental study of the bacterial etiology of gallstones. The ever interesting subject of tumors was contributed to by Dr. Francis C. Wood, of New York, who read a paper on "Mixed Tumors of the Parotid Region," in which he maintained that at least 10% of so-called endothelial tumors of this region contain epithelial structures; by Dr. A. O. J. Kelly, of Philadelphia, who reported a number of aberrant adrenal nests

in the kidney, hypernephromas, adenomas, adenocarcinomas, papillomatous epitheliomas and multiple fibrolipomas of the kidney; by Dr. A. P. Ohlmacher, of Chicago, who reported an exceedingly rare example of the medullary form of hypernephroma of the kidney; by Dr. W. W. Williams, of Boston, who reported a case of xanthoma; by Dr. F. B. Mallory, of Boston, who reported a case of subcutaneous glioma over the coccyx; by Dr. Harris Moak, of Albany, who reported on "The Occurrence of Tuberculosis and Carcinoma in the Same Organ or Tissue;" by Dr. John H. Larkin, of New York, who reported a case of "Primary Bilateral Myxosarcoma of the Sciatic Nerves with Metastases."

Dr. A. P. Ohlmacher, of Chicago, read a paper on "Segmentation and Fragmentation of the Myocardium," in which he showed that these changes are due largely to artificial conditions, and that they may be produced in normal hearts by different methods of hardening and cutting the tissue, an opinion shared by Dr. Hektoon, in the discussion. Dr. Alice Hamilton, of Chicago, read the report of an interesting and rare case of polienccephalitis. The following papers on bacteriologic subjects were read: By Dr. A. Libman, of New York, on "Remarks Based on Bacteriologic Examination of a Case of Paracolon Infection;" by Dr. A. Arthman Burère, of Montreal, on "The Changes Produced in the Blood and Blood-forming Organs by the Sapotoxins;" by Dr. Philip H. Hiss, of New York, on "The Staining of the Capsules of Pneumococci and Streptococci by a New Method," and on "A New and Simple Method for the Differentiation of the Colonies of the Typhoid, Colon and Allied Bacilli;" by Dr. William H. Park, of New York, on "The Persistence of Varieties of the Bacillus Diphtheriae and of Diphtheria-like Organisms." Papers were read also by Dr. Gaylord on "The Pathology of Scalled Bone Aneurysms;" by Drs. W. R. Brinckerhoff and E. E. Tyzzer, of Boston, on "The Relation of the Bone Marrow to Leukocytosis;" by Dr. Frederick A. Baldwin, of Ann Arbor, on "Multiple Anemic Infarction of the Liver;" by Dr. Frederic P. Gorham and R. W. Tower, of Providence, on "The Influence of Potassium Cyanide in Living Protoplasm, with Especial Reference to Bacteria;" by Dr. Carl A. Hamann, of Cleveland, on "Spindle-shaped Dilatation of the Ureter in the Fetus," and by Dr. W. G. MacCallum, of Baltimore, on "Glomerulonephritis." Finally one of the most interesting features of a very successful meeting was the exhibition by Drs. G. B. Magrath and W. R. Brinckerhoff, of Boston, of the lesions of smallpox in the skin and other organs.

The next meeting will be held in Washington, D. C., in March, 1903.

TRI-STATE MEDICAL SOCIETY (IOWA, ILLINOIS AND MISSOURI).

TENTH ANNUAL MEETING, HELD IN CHICAGO, APRIL 3 AND 4, 1902.

The society convened at the Great Northern Hotel, under the presidency of Dr. John C. Murphy, of St. Louis, Mo. Dr. Emil Ries made a brief report as chairman of the Local Committee of Arrangements.

Ligation of Arteries: Cocain Anesthesia.—B. Merrill Ricketts, Cincinnati, Ohio, made a plea for a more general use of cocain for local anesthesia, especially in operations upon the head, neck and extremities. It was more efficacious, more desirable, and less dangerous. It had a wide scope of usefulness, although as yet it had been applied to but a limited degree. Cocain anesthesia would not only permit of the ligation of the more important bloodvessels, but celiotomy for various purposes as well. The removal of various neoplasms, malignant and benign, plastic operations upon nerves, cutaneous, muscular and bony structures in a healthy or pathologic state, removal of foreign bodies, or amputation of any part of the upper or lower extremities were advised by it. Amputation at the shoulder had been successfully accomplished with cocain as a local anesthetic, and while there was no recorded case for demonstration, there was no reason why amputation at the hip-joint should not now be accomplished in this manner. The use of cocain for operations was especially indicated in pulmonary, cardiac and renal disease; also in case of exhaustion from any cause. During unconsciousness emergency work might be accomplished by blocking the nerve trunk; in this way further shock might be prevented and much time saved. The constitutional effects of a given amount injected into the head, face and neck were more marked than when injected in other parts of the body or extremities. This was due to more rapid absorption, and its proximity to the brain. For this reason less cocain should be used and the bloodvessels avoided. Laryngotomy, laryngectomy and amputation of the breast could and should be more frequently performed with the subcutaneous use of cocain. Resection of one or more ribs could be accomplished with ease and should be resorted to with cocain in many conditions of the chest requiring surgical intervention. *Method.*—A $\frac{1}{2}$ to $1\frac{1}{2}$ % solution of the best cocain should be secured and the operator should know how to use it. An amount of solution containing from $\frac{1}{2}$ to $1\frac{1}{2}$ grains of cocain need not be exceeded in performing any operation. Subcutaneous injections alone for operations would require more of the drug than where the injections

were confined to the nerve trunks. The amount of cocain necessary for the incision to reach a nerve trunk was but a trifle more than the amount necessary for injecting one or more nerves. If subcutaneous injections alone were resorted to for operations involving more than the cutaneous structures, besides making deep primary injections, it would be necessary now and then to inject sensitive fascia or muscle, or both. *Advantages.*—The danger of the drug was nothing, if properly used, and it could be thus applied, which could not be said of ether or chloroform, nitrous oxid, or any of their combinations. Nausea, vomiting, cephalalgia, nephritis, bronchitis, pneumonia and shock were absolutely avoided. According to Crile, injections into a nerve will not produce degeneration anywhere in its course, but that a needle puncture in the spinal cord will do so. This together with a very high death-rate and uncertainty of anesthesia should be sufficient to condemn spinal anesthesia.

The Technic and Possibilities of Endovesical Operative Procedures.—Louis E. Schmidt, of Chicago, compared the Nitze, the Casper, and the Kolischer operative cystoscope. With the Casper and Nitze cystoscopes he said that the operator worked under indirect vision, while with the Kolischer instrument he worked under direct vision. Most of the endovesical operations can be done under a carefully administered local anesthetic. As a local anesthetic a highly concentrated antipyrin solution is to be recommended, although it requires ten minutes or more before antipyrin gives the desired effect. The urethra should be anesthetized by cocaineization. Previous to any operative step it is advisable to have the bladder in as good a condition as it is possible to bring it with the usual irrigations, instillations, and internal medication. This procedure not only makes the bladder less sensitive, but also brings the localized centers of the pathologic changes into prominence. One of the most frequent indications for this method of treatment is stubborn cases of cystitis. Under this are comprised not only the inflammation of large areas, but also small localized inflammations, as fissures, ulcerations, remnants of cystitis, where the adjacent parts are free from pathologic changes. Fissures, if located at the neck of the bladder, can be healed with a single treatment consisting of cauterization. Ulcer of the bladder following gonorrheal cystitis can be successfully treated by the aid of cystoscopy. The coating and granulations which cover the ulcer must be thoroughly curetted and prompt cure follows. Nodular varicosities of the superficial veins which give rise occasionally to severe hemorrhages are easily removed by cauterization with the galvano-cautery. Foreign bodies of considerable size in the bladder should not be removed by means of the operating cystoscope on account of the unnecessary traumatism. The operative cystoscope plays an important role in the after-control of litholapaxy.

Prenatal Syphilis.—Dr. Ohmann-Dumesnil, of St. Louis, Mo., detailed a case. He condemned the use of the word hereditary or congenital syphilis. He preferred to use the word prenatal, believing that it is more comprehensive and more clearly defines the condition which exists.

Sporadic Infantile Myxedema Resulting in a Cretinoid Condition.—James Frederick Clarke, of Fairfield, Iowa, reported a case. The patient was 20 years of age when first seen, and a marked imbecile of typical cretinoid condition. The family history was negative. The degeneration began at the end of the first year, and was shown by a series of photographs taken every few years through life. Thyroid feeding for the nine months to date showed an increase of $2\frac{1}{2}$ inches in height, and a marked transformation as to intelligence and physiognomy. This was illustrated by a series of photographs taken every two months during treatment. The patient has been taking thyroid tablets, equal to 60 grains of fresh gland, every day.

Pathologic Specimens.—Isaac A. Abt, of Chicago, exhibited some interesting specimens, among them a specimen of diaphragmatic hernia from an infant; a glioma of the cerebellum of the right side from a child 6 years of age; intussusception from a marantic baby 21 months old; a picture of the brain and spinal cord from a case of epidemic cerebellar spinal meningitis; adenoma of the liver from a 21 months' old baby, and a photograph showing the location of a spina bifida during life.

[To be concluded.]

Health of Chicago.—The report of the Health Department of Chicago shows that from January 1 to March 29, 1902, there were 6,638 deaths from all causes, an excess of 608, or 10% more in the actual number and 64% more in proportion to population than for the corresponding period in 1901. The almost epidemic prevalence of the communicable diseases of childhood has caused the Commissioner to renew his efforts to secure the cooperation of the public school teachers in preventing their spread. Through the assistance of School Superintendent E. G. Cooley, a copy of the circular, "Suggestions for the Teaching of Cleanliness Among School Children," is being put in the hands of every teacher, with the request from the superintendent that they be continuously enforced. The gist of these suggestions is that much may be done to restrict the spread of contagion by teaching habits of cleanliness.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE RÖNTGEN RAYS IN MEDICINE AND SURGERY.

BY

LOUIS A. WEIGEL, M.D.,

of Rochester, N. Y.

To the Editor of AMERICAN MEDICINE:—I have read with considerable interest Dr. Corson's communication in your issue for February 8, in which he severely criticizes the recent work on the Röntgen ray, by Dr. Williams, of Boston. While this book may be open to criticism, from Dr. Corson's point of view at least, I would like to call attention to some special points that seem worthy of consideration.

The criticism that the author does not mention a particular book may be passed without comment, as Dr. Williams, in his preface, gives a reason for not referring to a number of important works. The next criticism is the absence of any reference to the intensifying screen. Unless I am very much mistaken, the field of usefulness of such screens is exceedingly limited, and are resorted to by very few, even among the German workers. Gocht,¹ after describing the "Verstärkungsschirm," says: "It is universally admitted that the use of such a screen results in a direct deterioration in the quality of the pictures, as the finer detail is lost. Even though the newer screens may have a very fine grain, it is not possible to produce really good and faultless Röntgen pictures with them. Since the shortening in the time of exposure is obtained at the expense of quality, the indications for their use, even by those who like to work with them, is exceedingly limited." This quotation from one of Dr. Corson's favorite authors amply justifies Dr. Williams in omitting any reference to it.

The main burden of the criticism, however, is the author's failure to state his opinion, in positive terms, as to the relative merits of different forms of apparatus. It has always been a mystery to me why a few coil advocates should have an attack of hysteria every time any one has the temerity to mention the static machine as a satisfactory source of power for x-ray purposes. Unfortunately there is a very large class of persons, both lay and professional, who regard a machine as an *entity* instead of a means to an end, and wholly ignore the greater and more important factor—the personal equation—or "the man behind the gun." So far as I am personally concerned it makes little difference to me whether a man uses a coil, a static machine or a hand organ, as I am quite content to judge him by his results and not by the machine he employs. I know perfectly well that good work may be done with a coil, as I used one for a year; I also know from practical experience that fine results may be obtained with a static machine. I think I have good reasons for preferring the latter, but I am not disposed to quarrel with every one who does not share my opinion as to the preferable apparatus. If, as Dr. Corson says, "the present perfection of bacteriology and microscopy is the perfection of apparatus and methods," why do not all bacteriologists use the same style of microscope and the same make of objective? Why is the work of one man more satisfactory and more reliable than that of another, even though both use the identical apparatus?

In support of the contention that the static machine is worthless, Dr. Corson states that the German authors, naming two, do not even mention this form of apparatus, evidently forgetting what he himself wrote and published not very long ago. In his article on x-ray photography² he tells us that "The German authors (Donath and Gocht) only mention the static machine to condemn it." It appears to me that this is a "mention," even though it be an unfavorable one. In view of the above statement I will quote a paragraph from Gocht's book. On page 27 he says:—"Influence (static) machines have also

been used with success in various quarters. There is no doubt that with them equally useful results may be obtained, at least of the thinner parts of the body, but on account of certain disadvantages they are not specially to be recommended." Of course, this may be readily construed as a condemnation; it is only necessary, however, to read the rest of the paragraph to appreciate the author's ignorance of what is possible and of what has been done in this country. After stating some of the disadvantages of the influence machine, he says:—"Inasmuch as a picture of an adult pelvis, made with an influence machine, has never yet been shown, and as it requires a ten-minute exposure to obtain a picture of a hand, there is no incentive to similar experiences, notwithstanding the quality of the results obtained." In the face of actual facts this is simply absurd and fully as unwarranted as it would be for me to refer to a picture in my possession, which must have been made with a coil, as "the Germans do not even mention the static machine," as an illustration of the worthlessness of the coil for x-ray use. This picture is labeled as follows:—"Röntgen-ray Picture made at the Physical Laboratory at Hamburg. Right Foot of a Man, showing Deformity of the Metatarsal Bones, etc. Time of Exposure, 60 Minutes!"

The reason why the Germans do not mention the static machine is readily explained:—One may travel over the whole continent of Europe and not find a single machine of this type that an American would think of using for x-ray work. Even Professor Röntgen himself when told of the proportions and construction of my static machine, expressed surprise. It is, therefore, simply because our confrères across the water are unfamiliar with our machines that they either say little about them or maintain a discreet silence.

Since your correspondent claims that the static machine is worthless in difficult work, I may be pardoned for relating the following:—Within the past month I was called upon to make a skiagraph of an adult pelvis to determine the condition of one of the hipjoints and had no trouble in getting a thoroughly satisfactory negative, using a tube of low resistance, the quality of tube that Dr. Corson insists cannot be successfully used with a static machine. Several previous attempts had been made by a coil operator to produce a negative of this same case, but he failed to show even an outline of the joint. This particular coil operator is by no means a tyro, but is well known and has the full confidence of Dr. Corson, as he mentions him by name in his communication. If Dr. Corson desires to verify the above facts, it will afford me great pleasure to give him the name and address of the physician for whom the negatives were made, and also the name of the coil operator. No doubt both the coil and static machine negatives could be placed at his disposal for comparison. While this is but a single instance, it is sufficient to prove that the static machine can be successfully used in difficult work. I have something like 700 or 800 other static machine negatives that I am willing to place alongside of an equal number of coil negatives for comparison and to let an impartial critic decide whether or not the static machine is "equal to the coil in the best work."

Since Dr. Corson "swears by Gocht," it may interest him to learn that in September, 1899, I had the pleasure of meeting him in Würzburg and of seeing his work. Gocht's coil outfit was the best I had seen anywhere up to that time. He kindly permitted me to examine a large number of negatives, and strict regard for the truth compels me to say that I never saw a more unsatisfactory lot than those shown me. Gocht apologized for their poor quality by saying that they were made by his assistants—certainly a very inadequate excuse since Dr. Corson claims that the coil makes only good pictures, and these were made with a very fine apparatus.

I note that your critic thinks it absolutely necessary to have a modern coil, with Wehnelt interrupter, Sayen tube, etc., and that without these good work is impossible, and yet Professor Goodspeed, whose work he justly admires, uses an old coil and a very crude mechanic break. As the professor himself says: "If there is any special merit in much of my work, I believe it is due not to new discoveries but to the consistent adherence to one or two features especially antiquated. I do not wish to be

¹Lehrbuch der Röntgen Untersuchung zum Gebrauche für Mediziner. Stuttgart, 1898, page 56.

²Transactions of the American Electro-Therapeutic Association, 1899-1900, page 381.

¹Philadelphia Medical Journal, January 6, 1900, page 61.

understood as implying that nothing which is new is good; but rather that much which is old is also excellent and under some circumstances possibly the best." During my visit to Professor Röntgen's laboratory he showed me the coil he used at the time of his discovery and since, and remarked that it was over 40 years old. On this same occasion he referred to some fine skiagraphs made by an American, that were shown in Berlin. I happen to know that these pictures were made with an ordinary ten plate static machine.

Referring to Dr. Leonard's fine work in detecting calculi, Dr. Corson says it would have been impossible without a Sayen tube. I am amazed that a man of his intelligence should attribute Dr. Leonard's success to one single factor and a quasi-mechanic one at that! Do experience, skill and judgment count for nothing? The Sayen tube is *not* a *sine qua non* for this purpose, and I am prepared to prove by actual demonstration that all the detail and quality of negative that Leonard describes as desirable and necessary in locating calculi, may be obtained without a coil and without this particular make of tube.

In conclusion I would like to ask Dr. Corson how there can be a "general consensus of opinion as to which is the best," when even coil workers do not agree in their preference, and when really good work is done with widely different forms of apparatus and by different methods. This is as true of x-ray work as it is of all other kinds of laboratory work, in which physical apparatus is used for diagnostic purposes. Furthermore, the choice of apparatus may be largely influenced by local conditions and other considerations and I am not disposed to believe that a physician would rely upon any one man's book or opinion in making a selection.

A CASE OF PAROTITIS IODICA.

BY

ENRICO CASTELLI, M.D., LL.D., B.S., B.A.,
of Washington, D. C.

Parotitis is considered by many to be merely a local expression of a general condition. Its specific nature, notwithstanding repeated experiments by Pasteur, Charrin, Olivier, Laveran, etc., remains a doubtful question in our clinical education. We know only that it appears in an endemic form between the ages of 2 and 20 years, and more frequently in the male sex. I desire to report a case of the rare form of parotitis which follows the absorption of medical doses of iodids.

CASE.—A man, aged 47, came to see me January 2. He gave a history of having had syphilis 20 years ago, which had been treated at various times with mercurial preparations. At the present time he complains of pulsatile headache, a ringing in the ears, vertigo, and cramps. He has frequent attacks of epistaxis. His digestion is slow and painful and he suffers from sleeplessness. I diagnosed arteriosclerosis and prescribed as follows:

R
Potassi iodidi..... 10 grams.
Tinct. scilla..... 25 centigrams.
Aquam.....300 grams.

A tablespoonful to be taken three times daily at each meal.

I did not see the patient again until January 12, when he sent for me. I found him in bed. Temperature is 101°. His eyes are watery and the eyelids are edematous. He also suffers from coryza and from pytalism. A swelling exists in the region of both parotid glands, commencing just below the external ear and extending up to the zygoma. Pressure on the parotid, opening of the mouth, swallowing, and mastication are very painful. It was evidently parotitis but the watery eyes, the swelling of the eyelids and the coryza seemed a peculiar phase. I ordered a mouth-wash, kept his bowels active and fed him on milk. I also stopped the iodid. In nine days the swelling and all the other symptoms disappeared. On January 25 the patient recommenced the iodid treatment, on the 26th parotitis reappeared with coryza, watery eyes, edematous eyelids, and fever, I again stopped with the result that all symptoms disappeared within three days.

It seems to me that the evidence of parotitis iodica was undeniable. At the time of the first attack iodid had been administered 10 days, while at the second period it had been given only one day. We know that iodid is absorbed rapidly and is eliminated slowly, and this is probably the reason that the duration of the disease was different in each attack.

What is the reason for this form of parotitis? My explana-

tion for this case is that as the patient was affected with arteriosclerosis, the permeability of the kidney became lessened. Consequently the elimination of iodid by the kidney was retarded and its permanence in the salivary glands became continuous and of sufficient quantity to produce the inflammation.

TYPHOID FEVER; PERIOSTITIS; EXTRUSION OF PORTION OF RIB EIGHT YEARS AFTERWARD.

BY

JOHN A. KENNEY, M.D.,
of Washington, D. C.

To the Editor of AMERICAN MEDICINE:—The following case is of interest not only as illustrating in a striking way one of the sequels of typhoid fever, but also as showing the length of time it takes nature to complete the process of necrosis in an untreated case:

R. R., a colored woman, 26 years of age, entered Freedmen's Hospital, in the service of Dr. Balloch, March 12, 1902, with the following history: She was always healthy until 1894, when she had an attack of typhoid fever. Toward the end of this attack a swelling appeared on left side, just beneath the breast. Two weeks after the appearance of the enlargement she scratched off some of the skin, which caused the swelling to lessen somewhat. There has never been any pain in the swelling itself, but there has been more or less pain in left axilla. Two months after its first appearance there was a discharge of pus from the swelling, which has continued ever since. The trouble has never been treated in any way. Two weeks ago she noticed something hard protruding from the side, and for this she seeks relief.

Examination shows a sinus in the left side, over the sixth rib, in the anterior axillary line. The sinus is surrounded by an elevated rim, composed of sluggish granulations, and gives exit to a thin, watery pus. Protruding from the sinus is a fragment of bone. This fragment was loose and was pulled out easily, and found to be a piece of rib two and a half inches long. After the removal of the bone the wound healed promptly under simple irrigations and moist antiseptic dressings.

CONTAGION OF LEPROSY.

To the Editor of AMERICAN MEDICINE:—I beg to inform Dr. (Professor, I believe) Polotebnoff, of St. Petersburg, who denies that leprosy is contagious, and proposes to organize a committee to test his conclusions, that there is a case in a Chicago Norwegian of 12 years' residence, now in Reetjardet Leper Asylum, who became a leper in America by indirect or direct inoculation. Dr. Sand, of Christiania, believes that this disease was contracted in a Chicago immigrant boarding-house, either by indirect contagion from clothes imported from leprosy regions of Norway, or by direct inoculation by a leper who had roomed with him. Dr. Sand is the medical director of the asylum where he is. Let me also state that I have now a case of leprosy in Rhode Island. This case was the result of massage performed for a long time by a Swedish leper, whose fingers were diseased.

These two instances alone should be enough to prove the inutility of further investigation by Dr. Polotebnoff and his committee. But, alas! American opinion is not conclusive in the eyes of scientific Europe. ALBERT S. ASHMEAD, M.D.

New York City.

METRIC SYSTEM IN MEXICO.

To the Editor of AMERICAN MEDICINE:—I have read with a great deal of interest the protest against the metric system that appeared recently in your journal, and also the paragraph by Dr. Seaman in the issue of February 15.

It may be interesting to the people of the progressive United States to know that the metric system was adopted by the Mexican Government five years ago. Its use is compulsory in this country, and every weight and measure must be stamped by the government to certify that it is correct. In Mexico, where two-thirds of the people can neither read nor write, even the most ignorant "peon" fully understands this system.

EUGENE STADELMAN, M.D.

Descubridora, Dgo., Mexico.

ORIGINAL ARTICLES

WHAT CAN WE DIAGNOSTICATE IN ACUTE APPENDICITIS?¹

BY

WILLY MEYER, M.D.,
of New York City.

Professor of Surgery at the New York Postgraduate Medical School and Hospital. Attending Surgeon to the German and New York Skin and Cancer Hospitals; Consulting Surgeon to the New York Infirmary.

A deliberate discussion of the question "What can we diagnose in acute appendicitis?" seems to me altogether timely. A number of colleagues here and abroad seem to have gained the impression within the last years that it is or should be possible for the examining physician, by means of most careful examination and interpretation of the symptoms observed, to diagnose, in the majority of cases of acute appendicitis, the true pathologic lesion of the inflamed organ. A few have gone so far even as to predict—after having arrived at the gross diagnosis of acute appendicitis—not only the exact nature of the inflammation in the given case, that is to say, whether we have to deal with a so-called catarrhal, gangrenous, perforative, etc., case, but to base on such classification their decision for or against immediate operation. In other words, they no longer adhere to the rule heretofore supreme, of answering the first and principal question: "Must we operate, and if so, *when* must we operate in the given case?" on basis of the clinical symptoms present, but make their decision dependent upon the suspected character of the *pathologic lesion* of the inflamed appendix which has produced the clinical picture as it presents itself in the case in hand.

To discuss the correctness or fallacy of such a standpoint, as well as the advantages that may be derived by the general practitioner and, hence, by suffering humanity, from the former's ability to diagnose the true pathologic lesion of the acutely inflamed appendix—granted this were possible—is the object of this paper.

The question before us tonight, therefore, is not: "How can we diagnose acute appendicitis?" but "What can we diagnose in acute appendicitis?" The diagnosis of acute appendicitis as well as its differential diagnosis are not going to be considered. I start from the premise that the diagnosis of acute appendicitis has been correctly made.

To enter into a discussion of this subject with those colleagues who consider acute appendicitis a surgical disease just as soon as the diagnosis has been established, would obviously be to no purpose. To them it is simply a question of *how* to diagnose the disease. The conclusion "acute appendicitis" to them invariably means immediate operation.

For years I have envied the surgeons who could take this standpoint. They never have to worry, never have to reproach themselves, if, during the careful observation of a patient stricken with acute appendicitis, a sudden unfavorable turn sets in; they need not fear the possible reproach of the relatives in the—fortunately very rare—event of death after an operation on the second day, that they have waited too long, the patient having been seen on the first day of the disease. And yet, I could not thus far make up my mind to join the ranks of these colleagues. As I see matters today, this standpoint is too much in conflict with the experience the family physician so frequently meets, namely, that a patient with acute appendicitis gets through the attack without operation. Nor do I think, in view of our present methods of after-treatment, that we are always acting in the best interests of our patients by adhering to this radical view. It certainly is not an easy matter for

those who always operate during the acute attack to decide in a given case whether drainage be required or not. If drainage be employed a ventral hernia may result, and this could have surely been avoided had the operation been done in the interval.

However, since we have come into possession of methods of technic that are so nearly perfect as to almost exclude the possibility of a ventral hernia occurring, even though the wound had been left partially or entirely open for far-reaching drainage, the question as to the possible consequences of drainage should cause less anxiety. (I have reference to the intermuscular operation of McBurney and the method proposed by Weir, of lengthening the transverse peritoneal incision toward the median line.) Or, if the experiments now carried on by a number of surgeons should prove that we can rely upon the appearance of leukocytosis sufficient to overcome the rest of the infection, after the principal focus of the disease, the inflamed appendix, has been removed, we may even be permitted to close the wound entirely and thus exclude the danger of a hernia. This then would constitute another factor in favor of the radical standpoint of always operating immediately as soon as the diagnosis of acute appendicitis has been made. For I still believe what I said seven years ago in my paper "When Shall we Operate for Acute Appendicitis?"² that "if we could give 100 equally serious cases of acute appendicitis to two equally well trained surgeons, the one who always does an early operation will save a greater percentage of lives than the other, who takes the knife in hand during the attack only when he considers it to be time."

Thus far, however, I have made it a rule (at least for the last seven years of my practice) that if I do not find immediate indications for operative intervention, to place a patient with a rather pronounced first attack of acute appendicitis under most careful clinical observation. Those who can afford it, promptly get a nurse to their bedside, to watch developments from minute to minute, from hour to hour. Those who cannot pay for a nurse, I advise to go to a hospital.

Parenthetically I want to state right here and lay special emphasis upon the point, that these and the following remarks have reference only to clinically more severe cases of acute appendicitis, that are seen on the first, or second, perhaps also third day of the first attack.

In a pronounced second attack, I always urgently advise immediate operation—still more so in the beginning of a third more serious acute attack. I deviate from this course only occasionally in very old patients who have passed a number of attacks.

If then, within the first 24 to 48 hours after the onset of the first acute attack of appendicitis the patient's pulse goes up to 116 to 118 or 120 or more in a minute,³ and has a tendency to stay there; that is to say, if it does not go down within one to two hours; if the subjective pain and objective pressure pain (tenderness) are pronounced, I operate during the first attack. Correspondingly higher temperature is a third sign guiding me in forming my decision to operate. If the temperature be low, just above or even below 100° F., with threatening pulse and marked pain, subjective as well as objective, this still more urgently presses the knife into my hands, a chill also is for me a signal not to temporize, but to proceed at once.

Of course we must not adhere too dogmatically to such careful clinical observation of patients who do not

¹ New York Medical Record, February 29, 1896.

² The physician who relies principally upon the rapidity of the pulse as an indication for operation should count through the whole minute, not for 5 or 10 seconds and then multiply, and he should thus count it again some time after examination when a nervous patient will have quieted down. This is of special value for the consultant. The attending nurse should be instructed to count the pulse also during sleep. In this way we shall not easily be misled in interpreting the result of our observations. It is self-understood, that the history of easy and habitual excitability of a patient, the presence of functional or organic heart affection, require due consideration.

³ Read before the Clinical Society of the New York Postgraduate Medical School and Hospital, February 21, 1902.

appear to be in immediate need of operation when first seen by us, for it may happen that suddenly a prolonged chill will set in on the second or third day of the disease, and the patient then dies in spite of prompt operation and far-reaching drainage. Therefore, if a patient afflicted with acute appendicitis appears to be very sick so far as his general condition is concerned, I operate at once, even if the clinical symptoms of pulse, pain and temperature are less marked; in other words, in cases of doubt I operate.

It is in these cases, where, as a rule, as experience has shown me, we generally have to deal with localized or total gangrene, that I think a defined diagnosis of the true pathologic lesion of the appendix would be of greatest value. The possibility of rendering such a refined diagnosis will be found discussed further on in this article.

It is further necessary to mention the fact that one or the other of these patients, if treated expectantly, passes the threatening stage, but then develops a perityphlitic abscess. If this is opened at the end of the first week of the disease or in the beginning of the second, the surgeon will not always be able, nor will he find it advisable, to break up the adhesions and remove the organ or its remnant. Yet, this remnant may give rise to repeated abscess formation later on, or to a persistent or intermittently forming sinus. Firm adhesions or resulting bands may produce intestinal obstruction. It is easy to understand that the physician who happens to meet some of these cases comes to the conclusion that it is best for his patients to avoid, once for all, the possibility of such a complication by promptly operating upon every case of acute appendicitis that comes under his care. However, it should be borne in mind that the percentage of these cases of recurrent abscess formation or of intestinal obstruction, following operation for perityphlitic abscess, is but small, comparatively speaking, and should, therefore, not carry too much weight in influencing us in favor of immediate surgical intervention in all cases of acute appendicitis.

If the patient gets through the first attack without operation, I emphatically advise the interval operation a few weeks later. For I believe it to be in the best interests of our patients to consider an appendix that has once been inflamed, a diseased organ, representing a menace to life as long as it remains within the abdomen. It is true, not every appendix that has once been inflamed is subject to recurrent inflammation; a certain percentage of patients, who have once passed an attack of acute appendicitis, remain unmolested for the rest of their lives. But, are we able to pick out these cases beforehand? Can we predict *whether*, and if so, *when* and *where* these patients will be stricken down the second time? Are there any prognostic means at our disposal enabling us to conscientiously tell such a patient what he may expect in the future, and whether the next attack will be light or severe? Decidedly not. Whatever we may say in this respect is merely guess work. It is therefore, our duty to present these facts to the patient or his family, and advise the interval operation *after the first attack*. If our advice be left unheeded, the responsibility then rests with them.

To me, therefore, appendicitis is an operative disease, either during or after the first attack.

The country practitioner will do best to propose prompt operation in every case of acute appendicitis, since otherwise the long distances may often cause unexpected delay, which may prove fatal to the patient. If he does not operate himself, and surgical help can not be promptly procured, the patient should be removed without delay to the nearest hospital, provided his condition is such as to permit the transport.

With such views on the subject I may, I think, enter into the discussion of the question "What can we diagnose in acute appendicitis?" or in other words: What are our best and most reliable guides in establish-

ing the indication for or against the necessity of surgical intervention in a given case of unmistakable, acute appendicitis? Are they the three cardinal clinical symptoms just referred to, namely, rapidity of pulse, intensity of pain, subjective as well as objective (tenderness) and temperature, in conjunction with the general appearance of the patient, or the diagnosed pathologic subdivision of the disease, called acute appendicitis?

After having grossly diagnosed a case as one of acute appendicitis, the further refinement of such diagnosis may be directed

- (1) toward the location of the appendix;
- (2) the classification of the true pathologic lesion, and
- (3) toward the degree and extent of the complicating peritonitis in cases in which the inflammation has transgressed the border lines of the organ.

1. DIAGNOSIS OF THE LOCATION OF THE ACUTELY INFLAMED APPENDIX.

It has often been possible for me to map out the position of the acutely inflamed appendix within the first days of the disease, with the help of the *objective* symptom of pressure pain (tenderness) on going over the right half of the abdomen with the tip of one finger. This symptom is very important and rarely misleading when examining a case of appendicitis on the first or second day of the disease. Although McBurney's point will invariably be found to be painful to the touch, still more intense pain can often be elicited on pressing a spot above or below the omphalo-spinous line, or posteriorly to the caput coli in the lumbar region. If, in a case of unmistakable acute appendicitis the greatest pressure pain is found not on, but somewhat above this line and along the crest of the ileum, or, if it is principally marked in the right lumbar region, we shall rarely go wrong in assuming that the appendix is situated posteriorly to the caput coli. I have been frequently governed by such finding in my decision as to the place of incision, and can conscientiously claim that I was never disappointed in thus striking the inflamed appendix where I had expected to find it.

If, on the other hand, digital examination by the rectum or vagina demonstrates the greatest tenderness or a painful mass on the right side of the pelvis, we shall, almost without exception, find that the appendix is in its normal place.

Attempts to directly palpate the acutely inflamed appendix in its entire, or almost entire, length by the fingers of the examining doctor are usually unsuccessful in this class of cases. Now and then, when the position of the appendix is favorable, we may, of course, be able to feel the engorged cord, which then is distinctly painful to the touch. But in the majority of cases of acute appendicitis, the pain caused by pressure is so intense that a thorough and satisfactory, particularly bimanual palpation, is impossible without an anesthetic, and this, of course, is out of the question here. Besides, such a thorough palpation of the inflamed appendix might work a great deal of harm to the patient.

With the kind permission of Dr. S. J. Meltzer, of this city, I would call attention to a method of examination, practised by him for the last few years, which, in many cases, may aid us in establishing the diagnosis of acute or chronic inflammation of the appendix, and sometimes also help us in locating the organ:

Under normal conditions the appendix should rest in the right iliac fossa, that is to say, on the ileopsoas muscle, from which it is separated by the parietal peritoneum, the extraperitoneal or transversalis fascia and the ileopsoas fascia. Active contraction of this muscle will, of course, increase the volume of the belly of the same and therewith raise the appendix thus situated upward toward the anterior abdominal wall. If now the examining doctor's fingers are pressed gently but deeply down into the iliac fossa at or near McBurney's point, and the patient is directed to slowly lift his straightened and outwardly rotated lower extremity so as to form

nearly a right angle with the trunk; in other words, if we direct him to thus make flexion at the hip, such an appendix will thereby be subjected to increased direct pressure and, hence, become still more painful than it was before. It will also in this way sometimes become more or less distinctly palpable.

If, on the other hand, the result of this kind of an examination is negative, I should think we might be justified in concluding, that the appendix is not resting on the ileopsoas muscle, but running in a different direction.

Further observation will of course have to prove the correctness or fallacy of such an assumption under the stated circumstances.

Personally, I am convinced, that this method of examination will often be a valuable aid in establishing the details of our diagnosis. Dr. Meltzer intends publishing the same in the near future.

As it seems, Dr. Elsberg of this city, has also found a new method of locating the inflamed appendix. In a recent paper of his on the same subject I am discussing, read before the Metropolitan Medical Society, it was stated by him, that, by accepting McBurney's point as the base of the organ, its further course might be determined by the spot of greatest *subjective* pain, as repeatedly pointed out by the patient upon being questioned regarding the same. The doctor stated that in this manner he had succeeded in correctly diagnosing the position of the organ in 49 out of 58 cases. Should further experience prove this method, too, to be reliable in the greater majority of cases, it may frequently prove of value to the surgeon.

If the patient persistently locates the principal subjective pain to the left side of the lower abdomen in a case of undoubted acute appendicitis, we may infer that the vermiform is long and hangs down into the small pelvis. Vaginal or rectal palpation will frequently verify such an assumption.

But this diagnosis of the location and possibly also length of the inflamed appendix is of practical importance to the operating surgeon only, because it directs him where to make his incision. I fail to see, that it is of advantage to the general practitioner, the one who is usually first consulted in these cases. With him it is not a question of determining the *direction* of the inflamed appendix, but of recognizing the *clinical seriousness* of the attack and, hence, of deciding, whether or not the patient's condition demands prompt operative intervention.

2. WHAT CAN WE CONSCIENTIOUSLY CLAIM TO BE ABLE TO DIAGNOSTICATE AT THE PRESENT TIME WITH REGARD TO THE PATHOLOGIC LESION OF THE APPENDIX IN ITS ACUTE INFLAMMATION DURING THE FIRST TWO OR THREE DAYS OF THE DISEASE, AS LONG AS THE INFLAMMATION IS STILL CONFINED IN ITS PRINCIPAL PART AT LEAST, TO THE APPENDIX AS SUCH, AND AS LONG (and this point is one that deserves special emphasis) AS NO TUMOR OF ANY KIND IS PALPABLE IN THE REGION OF THE APPENDIX?

In other words, are we able to say, whether we have to deal with an acute, so-called catarrhal, appendicitis, or with a localized or total gangrene of the appendix, or with a strictured organ, or one which contains in its lumen one or more fecal concretions, foreign bodies, pent-up mucus or pus, etc.

If, on basis of my personal active surgical experience with acute appendicitis, extending over a period of more than sixteen years and covering many hundreds of cases, I ask myself this question, I am bound to answer: No, we are not able, in the majority of cases, to diagnosticate the true pathologic lesion with any degree of certainty. Shall we ever learn to do this? Judging from what I have seen in my own practice and have gleaned from the writings of other men, I hardly think so. Of course, I have tried, as well as every other thinking surgeon

probably has, in every instance when I was called upon to operate for acute inflammation of the appendix, to form a picture in my mind of the pathologic condition that I would probably encounter, and often have discussed the matter with my assistants. And, in quite a number of cases, it is true, our diagnosis proved correct; we found a suspected gangrene, stricture, fecal concretion, etc. But, in just as many cases—if I except those of suspected perforation—we were disappointed. The question, however, placed before us after the operation, which had proved or disproved the correctness of the suspected classification: "*Why*" was our diagnosis of the true pathologic lesion of the appendix found to be correct or otherwise? could rarely be answered satisfactorily, inasmuch as the symptoms on which we based our judgment were frequently found to be the same in different pathologic lesions. We have no unmistakable pathognomonic symptoms as yet that will allow us to make such a definite, refined diagnosis with any degree of certainty, and, as just stated, I doubt that we shall ever find such. The picture of an inflamed appendix is too kaleidoscopic, the various pathologic lesions are too often combined to allow of any reliable subclassification. Of course, it is easy to make predictions in this respect, but the findings upon the following operation will only too often prove such claims to have been wrong.

Thus I shall never forget the experience I had a few years ago: I had been called to a neighboring state to see in consultation a young lady, 19 years of age, with unmistakable symptoms of acute appendicitis. I was asked to operate, and advised (it was still permissible) the patient's transfer to a hospital. Before leaving, the colleague, whom I had met in consultation, a surgeon of high repute, asked me: "Doctor, what kind of pathologic changes do you expect to find?" I replied: "I would not venture to express an opinion. I know this much, that the patient suffers from an acute attack of appendicitis which requires prompt operation." He then said: "I will tell you what you are going to find: There is a long appendix, bent at about its middle and hanging down into the small pelvis, with two strictures, one in the middle and one somewhat nearer to the tip. Between them you will find seropus, and in the tip most probably a fecal concretion."

To my regret, the colleague declined my invitation to be present at the operation. What we *did* find was: an appendix about one inch long, much thickened, without a stricture or fecal concretion, pointing horizontally inward.

I believe, therefore, that a previous thorough knowledge of the pathologic condition of the acutely inflamed appendix will underlie our surgical work in only a *very limited number of cases*.

Still, I do not wish to be misunderstood. In making this assertion I do not mean to imply that we should discontinue our efforts at sharpening our diagnostic capabilities with regard to determining beforehand the nature of the lesion of the inflamed appendix in the given case. Every physician treating such cases, not only the surgeon, should do so. Just to prove to myself the fallacy of such pathologic diagnosis in the greater percentage of cases of acute appendicitis, I intend to have slips printed, which I shall use in recording the pathologic diagnosis in its details and the condition found after the operation. I fear, however, the time spent on this work will be lost. The procedure will in the end be found to be a sort of scientific sport. What I do mean to say is simply this, that while such more refined diagnostic ability may be gratifying, its practical value is almost nil. The physician who relies upon his pathologic diagnosis as an indication for or against operation, in my opinion, rests his decision on a most misleading and dangerous basis.

Thus, it almost made me feel sad when some little time ago I read the conclusions which a renowned surgeon abroad—one there considered foremost in the teach-

ings on appendicitis, Prof. Sonnenburg, of Berlin—presented before the last Surgical Congress, at Berlin. He clearly stated that he first diagnosticates the pathologic lesion of the acutely inflamed appendix, and, according to the classification of such lesion, advises for or against immediate operative intervention.

Granted that there be men who are able to invariably bring their pathologic diagnosis to such a degree of exactness as to be justified in making it the basis of the indication for or against the advisability of prompt surgical intervention, granted that they really can do this—I nevertheless consider it wrong teaching to now, on basis of such pathologic diagnosis, lay down rules for or against operation for the guidance of other colleagues, by saying: If such and such symptoms are present, the case must be looked upon as one of gangrenous appendicitis, or one of perforative and gangrenous appendicitis, with complications which need prompt operation. If, on the other hand, such and such signs be noted, we have to deal with an acute, so-called appendicitis simplex, in which the organ does not contain pent-up pus, or with a special class of perforation, in which the patient will get through the attack without an operation; further treatment may, therefore, be left to the medical man. I say, such teaching is wrong. I certainly have seen patients die, others become dangerously ill for many weeks from the so-called acute catarrhal appendicitis, when operated upon too late—that is to say, on the second half of the second day or on the third day of the attack, when an operation done in the course of the first 36 hours might probably have saved their lives, or have materially hastened convalescence, as the case may have been. With such "diagnostic acrobaticism" we shall not help suffering humanity, we shall not be able to save the greater number of lives endangered by this dread disease. Nay, I still hold to the belief expressed some six years ago in my paper entitled, "When Shall We Operate for Appendicitis?" that those who do not believe in immediate operation in every given case will act in the best interest of their patients if they treat them on the basis of most accurate, careful clinical observation. In my opinion the last six years have wrought no changes as regards this most important point.

I am convinced that we shall best serve our patients, if, after the diagnosis of acute appendicitis has been made, we direct our ingenuity: *first* of all, toward establishing the indication as to whether we must operate or not, and *secondarily* only toward ascertaining the classification of the pathologic lesion, without, however, making this latter the decisive factor. Pulse, pain and temperature, as stated above, or pain, pulse and temperature, placed according to their clinical importance, should be our guides.

Let us be satisfied, then, with our ability to diagnose acute appendicitis as such and to diagnosticate clinically, as far as that can be done, the *degree* of acuteness of an inflammation of the appendix: let us be satisfied, in the interest of our patients, with our ability to diagnosticate the given case:

1. As one of *acute* inflammation, which has already transgressed the border lines of the appendix and involves the peritoneal cavity to a greater or lesser extent, in consequence of a macroscopic perforation of the organ, or without the presence of same.

2. As one of *acute* inflammation, that is most probably still confined to the appendix as such, although its immediate neighborhood appears more or less involved.

3. As one of *subacute* inflammation.

Let us allow *such* diagnosis to furnish the indication for or against prompt operation. Let us continue to tell the general practitioner to go on diagnosing acute appendicitis first of all on *these* lines. It is often by no means an easy task for the average man, and in some instances for the specialist, to render the differential diagnosis between acute appendicitis and other acute inflammatory lesions within the abdominal cavity. Let us, there-

fore, not complicate matters still more, by expecting the physician to also diagnose the exact anatomic lesion of the organ, before deciding whether or not prompt surgical intervention be needful.

It has become wellnigh an established rule in New York that the family physician submit this question to the judgment of the surgeon within the first 24 to 48 hours of the disease, surely to the patient's and his own benefit.

3. WHAT CAN WE DIAGNOSTICATE AS REGARDS THE DEGREE AND EXTENT OF A COMPLICATING PERITONITIS?

As soon as the inflammation has transgressed the border line of the appendix, that is to say, as soon as there is a local, or spreading, or general peritonitis, matters are different. Such complicating trouble we are able to diagnosticate with some degree of precision. It is, of course, not my intention to here unfold the vast possibilities involved in this question; but a few points I may perhaps be permitted to emphasize.

In the subacute form of appendicitis the pathologic process is often confined to the appendix as such; the disease runs its course entirely within the same. Not a single adhesion in the surrounding peritoneum, as a sign of a formerly present localized peritonitis, is met in the following interval operation. Viewed externally, the organ appears entirely normal; but on section done immediately, or, after hardening by means of alcohol injections, frequently the most interesting pathologic changes of a chronic character are encountered.

Acute appendicitis, however, in the majority of cases is accompanied by a localized peritonitis. The examining finger-tip elicits pain on pressure not only over the typical spots mentioned before, but also over the entire iliac fossa to the right of the median line, and there is more or less right rectospasm. The early appearance of a localized palpable tumor in the region of the appendix means pus formation or the deposit of plastic lymph with the tendency to pus formation in the greater percentage of cases.

Pressure pain over the *left* of the lower abdomen speaks for a more intense, often spreading peritonitis; details differ in different cases.

The symptoms of paresis of the large intestine, tympanitis, continued vomiting, great tenderness all over the abdomen and on rectal palpation, dulness on percussion in the right iliac fossa or over the whole lower part of the abdomen, induce us to diagnose the presence of a spreading or a full-blown general peritonitis, with or without effusion.

An important sign for diagnosing the extent of the affection of the general peritoneal cavity, I have always found to be the pain on pressure in the left lumbar region, the part farthest away from the usual seat of the disease, if we exclude the region of the subdiaphragmatic space which, of course, is not within our reach.

If there has been a chill, if the other symptoms above mentioned are present, and if there be pain on pressure in the *left* lumbar region, the diagnosis, that the entire abdominal cavity is or soon will be involved, will, on operation, most probably be found to be correct. In these cases we shall also often see double rectospasm. The occurrence of a chill is still a warning signal to me, that macroscopic perforation is threatening or already present; although, I must confess, I have seen a chill occur with all the symptoms of acute sepsis, where no macroscopic perforation could be detected in the extirpated appendix, and we had to assume, that the infectious microorganisms emanated from the basis of an ulcer in the mucosa, or from one of the inflamed mucous follicles of the appendix, spreading infection through the still unbroken serous membrane.

Just a few more words on our ability to render a refined diagnosis in patients with subacute or chronic appendicitis, who call on us in the interval. In many of these cases we shall be able to make a definite diagno-

sis as to whether the attack passed was appendicitis or not, on basis of the history obtained. If a patient was suddenly taken sick with pain in the lower abdomen and consecutive localization of the same in the right groin, but without the simultaneous occurrence of a number of stools, especially of loose diarrheal stools; and, more important still, if nausea and vomiting accompanied the trouble, if gas and feces could not be passed for hours or days, if an increased pulse rate, localized pressure pain and, possibly, rise of temperature were noticed, such a disease was most probably—at least in the male—an attack of acute or subacute appendicitis. If a right movable kidney is present and the attack occurred independently from the advent of menstruation, the probability of the disease having been an attack of acute or subacute appendicitis, gains ground also in the female sex. Further direct examination must clear up such a case. If gynecologic examination be negative, if gallstones can be excluded, if urinary analysis does not point to disease of the kidney, and if we are able to palpate a painful cord, corresponding to the location of the appendix, our diagnosis promises to be correct.

Can we rely on this so-called palpation of the appendix? Can we claim with certainty in the greater percentage of cases, that the cord we felt direct or on bimanual palpation in the usual place of the organ, is the appendix, or even, that it is an enlarged, chronically inflamed appendix? I do not think so. It certainly is frequently very difficult to demonstrate unmistakably on later operation, through the peritoneal buttonhole incision, that the intraabdominal band diagnosed as the appendix, really was the organ. Often I found that such band, diagnosed as the appendix, was the thickened border of the omentum, the longitudinal ligament of the caput coli, etc., or the infiltrated mesenterium of the vermiform.

Nevertheless, there are those who claim to be able, in this way, not only to feel the presence of an enlarged appendix, but to diagnose with precision the presence of fecal concretions, foreign bodies, strictures, a normal or twisted course of the organ, yes, even the character of the liquid between two strictures.

I candidly confess that I am unable to do this, and fear I shall never learn to train myself such a *digitus eruditus*. Nor do I consider it wise to regularly make attempts in this direction. On the contrary, I am convinced that these colleagues may sometimes do a great deal of harm to their patients.

In this connection I would cite the case of a gentleman, operated upon in the interval in apparently perfect health, in whom the appendix was found to be gangrenous throughout, lying in a small abscess cavity that was covered by a very thin shell of serous membrane.

Now, in trying to palpate such an appendix, is it not more than likely that this shell would break and thus an acute perforative peritonitis be produced?

I might mention another interval case, operated upon by myself, in which in the tip of the appendix an ulcer was found, the base of which was separated from the free peritoneal cavity by a very thin lining of the serous membrane. Still further, the case of a young lady operated upon during the interval in apparently perfect health, in which six large fecal concretions were found in the appendix, one of which had produced pressure necrosis, with a part of the wall ready to break.

May we not assume that bimanual palpation in such cases might cause a sudden awakening of the slumbering process, or even immediate rupture of the tiny wall that separates the focus from the general peritoneal cavity?

Therefore, do not let us insist upon such thorough palpation in cases that are otherwise clear to our mind, nor let us too confidently rely on its result. Let us be satisfied rather, also in these cases with answering the question as to whether a given case has been one of acute or subacute appendicitis, regardless of the exact nature of the lesion.

For one who adheres to the principle, as I personally do, that appendicitis is a surgical disease, either during or after the first attack, the answer to the question whether such a patient should be operated upon or not, is, of course, always easily found.

In conclusion I would once more give expression to my belief, that our attempts at improving our ability to diagnosticate the location and the exact pathologic lesion of an acutely inflamed appendix may perhaps, in some instances, be of benefit to the operating surgeon, but certainly not to the general practitioner. For him the question is a mere academic one. If the general practitioner will adhere to the practice of ascertaining—best with the help of a surgeon—whether a given case needs immediate operation or not, he will have acted wisely. And in this respect the question of "What can we diagnosticate in acute appendicitis?" will, for the present at least, practically resolve itself into the pre-eminent and all important one, "When shall we operate for acute appendicitis?"

RHEUMATIC APPENDICITIS.¹

A Study of the Relation of Rheumatism to Appendicitis.

BY

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For the past several years, scattered throughout medical literature, is an occasional reference to the relation of appendicitis and rheumatism, or, as some of the writers prefer to say, to rheumatic appendicitis.

It is the purpose of this communication to trace this relationship, if any exists, and to sum up the present status of knowledge in regard to it. It is not my purpose to consider the relation of appendicitis to infectious diseases, as this has been done so thoroughly by Adrian in his work on *Experimental Appendicitis*, and more recently still by Finney and Hamburger and the various writers who have shown a causal relation between appendicitis and influenza (Abbé, Faisans, Drapper, Adrian), measles, chickenpox, scarlet fever, typhoid fever, mumps and propagated appendicitis (Golubor).

Many of the writers who mention these two diseases as being associated in a causal relation are in England. The other countries, with the exception of our own, make but little mention of the occurrence of the two diseases in the manner under discussion.

The cases cited by Finney and Hamburger, *AMERICAN MEDICINE*, December 14, 1901, are perhaps the most positive showing that has yet been reported of this relationship, or at least of the coexistence of the two diseases in the same individual, although those by Jalaquier are also interesting.

The first case was in a woman aged 23, in whom the previous history of rheumatism was marked; the appendicitis was accompanied by a rheumatic polyarthritis, during the week preceding operation, and lasted the ten days immediately following operation. She recovered and the wound healed per primam. The second case was in a woman aged 25, who had had rheumatic fever in childhood. An attack of appendicitis; appendicectomy; typical multiple rheumatic polyarthritis; recovery. The rheumatic symptoms became pronounced on the third day after operation, were entirely characteristic, and were relieved by sodium salicylate. Wound healed per primam. The third case seems to be the most characteristic, and answers many of the questions in my query sent to medical friends. Briefly, it occurred in a woman aged 28, with a family history of rheumatism. Repeated attacks of rheumatic fever, tonsillitis and pleurisy. Appendicitis during an attack of tonsillitis and rheumatism. Excision of tonsils. Recrudescence of appendicitis, preceded by arthritic symptoms. Appendicectomy. Arthralgia in convalescence. Recovery. Wound healed per primam.

I wish to call especial attention to the fact that all of these wounds healed by first intention, and that if acute

¹ Read before the San Diego County Medical Society.

rheumatism is due to a modified form of streptococcus infection, that these cases do not seem to have presented any avenue for such infection. Jalaguier's was in a young girl suffering from rheumatic polyarthrititis who was suddenly seized with an attack of appendicitis.

Cheadle¹ in a recent communication in my edition of the *Cyclopedia of Diseases of Children*, says that during the last few years the occurrence of appendicitis, usually of mild form, in persons of rheumatic history and predisposition has been observed in a number of instances.

The cases recorded by Grant² and Yeo³ were accompanied by well marked affection of the joints. In the instance related by Armstrong (Cheadle) the family history of both rheumatism and appendicitis were very remarkable. The writer (Cheadle), however, further states that many of the cases recorded are not so definite, in some the evidences of appendicitis and in others those of rheumatism (in some of both) being by no means of unmistakable character.

Of all the English writers Sutherland⁴ seems the most convinced of the existence of appendicitis of rheumatic origin. He dilates on the number of cases of appendicitis which have been recorded in which no adequate cause for its origin could be found. He is in accord with those who state that the appendix is a sort of abdominal tonsil, and that the concretions sometimes found in the appendix are similar to the calculi found in the tonsillar crypts in chronic tonsillitis.

Rheumatism, says Morris,⁵ has been recently spoken of as the cause of some cases of appendicitis. It probably, however, he continues, has no influence in the production of *infectious* appendicitis, *excepting* when it is responsible for proliferating endarteritis of the solitary artery of the appendix, or when it causes *intestinal fermentation with the production of appendix concretions*. (The italics are mine.)

Morris has seen in consultation, in some cases of rheumatic gout, inflammation of the lymphatic tissues of the colon and appendix, but these are not infectious cases. He does not classify them with true appendicitis and they are very readily differentiated from true infectious appendicitis by any one who pretends to be at all expert. He has also seen many cases of chronic appendicitis with rheumatic symptoms due to septicemia, but they were no more cases of rheumatism, than cases of gonorrheal septicemia are cases of rheumatism. In a person of gouty or rheumatic diathesis a chronic infection of the appendix which caused functional derangement of the digestive organs might be expected to increase the tendency to exacerbation of the rheumatism.

Egbert H. Grandin is satisfied that appendicular irritation (call it, if you please, catarrhal appendicitis) may exist as a concomitant of the rheumatic diathesis, even as may tonsillitis. The patients recovered upon the administration of the salicylates, but Dr. Grandin does not classify such cases as examples of true appendicitis which he is satisfied will sooner or later demand surgical interference.

Beverly Robinson, in his paper, *Rheumatism as a Cause of Appendicitis*, *New York Medical Record*, September 14, 1895, and in a personal communication to me January 1, 1900, says: "I am absolutely convinced now, as I have been for many years, that a certain proportion of cases of appendicitis are of rheumatic or gouty origin. I believe this in a similar way to my conviction in regard to suppurative tonsillitis. Some of the latter cases can be abated; some cannot with our present knowledge. The same is true of appendicitis."

James S. Chenoweth, in his paper read before the Louisville Surgical Society, November 23, 1896, said that for the four years previous his attention had been attracted to a seeming connection between the so-called rheumatic diathesis and the occurrence of appendicitis. He was forcibly impressed by several cases in which tonsillitis or other manifestations of the rheumatic diathesis

were associated with or followed disease of the appendix, and also with the apparent beneficial results of treatment directed to this condition. The belief that there was some connection between disease of the appendix and some general constitutional condition was further strengthened by noting the occurrence in more than one instance of the disease in several members of the same family; the frequent occurrence of the disease under certain atmospheric conditions; and finally by the frequency with which a history of unusual muscular exertion, fatigue, and exposure to cold and wet, preceded the appendix trouble.

Haig (Uric Acid as a Factor in the Causation of Disease) reports a case in which he found uric acid deposits and xanthin in a portion of the cecum and appendix of a child aged 12, who died from an appendicular abscess. Haig further continues: "It makes no difference whether it begins in the appendix, the cecum or the lower ileum, as in the case reported by Sir A. Garrod; the only thing that concerns us is that these portions of the intestine contain fibrous tissues, upon which urates may be precipitated if their alkalinity is diminished by such things as dyspepsia, cold or irritating substances, and the irritation so caused may recur and recur and lead on to ulceration and sloughing just as in any other fibrous tissue."

Let us for a moment consider the nature of rheumatism itself in the light of recent discoveries, and see if this knowledge strengthens the evidence of the existence of a rheumatic appendicitis. The belief that rheumatism is an acute infection is becoming more and more generally accepted; a few years ago while editing a work, with which you are all familiar, the question of the classification of rheumatism arose and in discussing the matter with Osler, of Baltimore, he said:—"Personally I believe rheumatism to be an infectious disease, but as yet would not care to so classify it in print." Newsholm (Milroy Lectures, Royal College of Physicians, 1895) has presented a very able paper carrying out this line of thought, and Dock, of Ann Arbor, in a personal communication, writes that he is of the belief that rheumatism is closely allied to the septic infections.

Cheadle aptly says that its occasional epidemic prevalence, its variability in type, the incidence in the young, the concurrence of endocarditis, of pericarditis, of pleurisy, of pneumonia, of erythematous eruptions, the rapid anemia, the tendency to purpuric capillary hemorrhages, the implication of joints, the occasional super-vention of hyperpyrexia, the nervous disturbances and the specific influence of one drug—salicylic acid—are all suggestive of an infectious disease.

However, no specific organism has as yet been isolated and identified as the cause of rheumatism, the organisms most usually found are the staphylococci, that is, the pus forming cocci. Sternberg concludes that the disease is probably due to infection by pus cocci and that those who are immune have a germicidal substance in the blood, whose origin is in the leukocytes and is possibly soluble only in an alkaline medium. His suggestion is that in acute rheumatism there is an excess of acid in the system and that as a result of this the natural immunity against infection by these micrococci is neutralized.

Cheadle asks very pertinently if pus organisms are the active agent of the disease, why is suppuration in any form so conspicuous by its absence? This objection has been met by the suggestion that they are attenuated pyogenic organisms which are no longer virulent and have lost their specific pyogenic action.

We find but little here to strengthen the idea that appendicitis may occasionally have a rheumatic origin. In order, however, to learn the thoughts of the active workers in the field I addressed letters to my friends as follows—"I am engaged in the preparation of a paper entitled *Appendicitis of Rheumatic Origin*, an attempt to elucidate the question of the pathologic relation, if any, that exists between the two diseases, and

I write to ask if you will be good enough to answer the following questions:—(1) Have you seen any cases in distinctly rheumatic individuals? (2) If so, please give age, sex, family history, predisposition, clinical history, joints affected and other rheumatic manifestations, tonsils affected, treatment, result post mortem."

I append the replies which were written me in January, 1900:—

H. C. Wood, of Philadelphia: "I have never seen a case that I can remember, or have notes of, in a distinctly rheumatic individual."

George Dock, of Ann Arbor: "I have not seen a case that I thought belonged to that category, although I see a good deal of appendicitis."

H. A. Hare, of Philadelphia: "I have never met any such cases, and therefore am unable to give you any information concerning this condition."

Rudolph Matas, of New Orleans: "I cannot think of any instance in which the condition was distinctly associated with a rheumatic history or diathesis."

J. H. Musser, of Philadelphia: "I have never had a case of appendicitis which I could make myself believe was of rheumatic origin."

Hunter Robb, of Cleveland: "I cannot recall any case operated upon for appendicitis in the development of which rheumatism seemed to be especially concerned."

J. B. Murphy, of Chicago: "I have never had a case which I considered was rheumatic appendicitis. I saw one case in which such a diagnosis had been made. I operated, found the appendix perforated and approximately a pint of pus and seropurulent fluid in the peritoneal cavity."

William Osler, of Baltimore: "I don't think that I have ever seen a case of appendicitis that I could say was definitely of rheumatic origin."

S. Solis Cohen, of Philadelphia: "I cannot, at the present moment, recall any cases in which there seemed to be any connection between appendicitis and rheumatism. I have had several cases of chronic appendicitis in persons belonging to rheumatic families."

Norman Bridge, of Los Angeles: "I have had no experience which would lead me to discover any relation whatsoever between the two diseases."

J. M. DaCosta, of Philadelphia: "I have no notes of any cases showing a definite and positive relation."

R. H. Fitz, of Boston: "I never had any reason for supposing that appendicitis was of rheumatic origin."

B. F. Curtis, of New York: "I have occasionally seen cases apparently of rheumatic origin. I have kept no records which would be of interest on the subject."

T. M. Rotch, of Boston: "I have not any cases of the class which you require which I can recall."

John B. Deaver, of Philadelphia: "I am not able to say that I have had any cases of rheumatic origin. I certainly have not had any accompanied by joint or tonsillar affection."

Charles McBurney, of New York: "I do not remember to have ever met a case of appendicitis, the history of which could in any way suggest rheumatism as a cause or as a complication."

Henry C. Coe, of New York: "I have no cases to record."

Herman Mynter, of Buffalo: "I have never seen a case of appendicitis in which I could recognize, or thought I could recognize, a rheumatic origin in which there were joint affections, tonsillitis, or any other rheumatic affections."

J. C. Wilson, of Philadelphia: "I have observed a joint affection, more or less marked, usually subacute, in some of the graver cases, but have regarded it as a local manifestation of general infection rather than as an essentially rheumatic process."

A. T. Cabot, of Boston: "I do not remember one which had any rheumatic manifestations which impressed themselves on my mind."

Egbert H. Grandin, of New York: "I am satisfied that appendicular irritation (call it, if you please, catarrhal appendicitis) may exist as a concomitant of the rheumatic diathesis, even as may tonsillitis."

W. W. Keen, of Philadelphia: "No."

R. Abbe, of New York: "It is most improbable in my mind that rheumatism can have any etiologic relation to the morbid state of the appendix."

J. M. Baldy, of Philadelphia: "I have seen no cases in which I was led to believe there was any connective relation whatever other than coincidental between these two diseases."

Howard A. Kelly, of Baltimore: "No relationship has been able to be shown so far, in the cases upon which he has operated, between rheumatism and appendicitis."

W. B. Cheadle, of London: "I have no cases to give in illustration. My experience is entirely negative. Nor has it ever come within my observation that individuals who contract appendicitis are of rheumatic strain."

Alfred Stengel, of Philadelphia: "I have no observation of appendicitis of rheumatic origin which would be of any value. I have seen symptoms suggesting appendicitis in rheumatic individuals and in which the terminations were not such as one would expect in genuine appendicitis, but such observations at best are unreliable."

The testimony of these observers is, as you see, almost unanimously against the existence of a condition styled rheumatic appendicitis, so as to sum up I would say that (1) the present state of our knowledge does not warrant the use of the term rheumatic appendicitis; (2) there seem to be but two conditions in which rheumatism can at all be considered in etiologic relation with appendicitis and these are when a rheumatic endarteritis of the single appendicular artery exists and the blood supply is greatly diminished thereby. It seems to be pretty well conceded that the entrance of fecal matter of itself does not necessarily give rise to appendicitis, but it is probable that the inflammation may have its origin in the microorganisms conveyed to the interior of the organ by the fecal matter. Even if rheumatism is an infectious disease, and the infection is due to staphylococci, whose seat is in the gastrointestinal tract, it may be probable that the feces in these cases are unusually toxic, but this again is far from proved, so that when considering a so-called rheumatic appendicitis we must resort to the old Scotch verdict—"not proven."

Finney and Hamburger's conclusions are so interesting in this connection that I conclude by quoting them verbatim:

"There seems occasionally to be an intimate relation between polyarthritides and appendicitis. There may or may not be a family history of rheumatism. It is important to note that the articular disease may or may not precede as well as accompany or follow the appendicular inflammation. Otherwise, one might deny any etiologic relation and incline to the view that an intercurrent affection like appendicitis, or a trauma such as is involved in an operation, had called into activity a latent rheumatic infection. It is well known that an acute disease or a trauma may provoke an attack of gout, and postoperative and posttraumatic malaria are quite familiar to us. The articular disease under consideration may present all gradations from simple pain to an inflammation which entirely corresponds to the picture of rheumatic fever. However, it is not all rheumatism that inflames a joint. The question arises: Are these examples of arthritis true rheumatism or analogues of the pseudorheumatic affections, such as gonorrheal, scarlatinal and dysenteric arthritides? Unfortunately, there is as yet no criterion by which to judge the rheumatic nature of a joint affection. The history of hereditary and individual rheumatic antecedents, the absence of a definite etiologic factor and the course of the polyarthritides are often the only tests we have. Applied to the polyarthritides associated with appendicitis these tests are satisfactorily enough fulfilled, and until more definite knowledge of the cause of rheumatism is acquired, this polyarthritides should be regarded as rheumatic. It is equally reasonable to assume that the appendicitis in these instances is a rheumatic manifestation, in view of the proof adduced in the case of influenza and the collateral support afforded by the production of appendicitis by infecting the blood of animals."

"Therefore, we conclude as we began, 'For purposes of treatment, appendicitis is rightly regarded as a local disease, subject to serious accidents readily explained by anatomic and bacteriologic factors. The inflamed appendix is a menace to the general peritoneal membrane and hence to the life of the patient.' Every variety of appendicitis is today essentially a surgical disease, the legitimate and grateful domain of surgical art."

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A Medal for Chicago.—The Chicago Health Department has been awarded a gold medal by the directors of the Buffalo Exposition, on its exhibit of means used in sanitation and the treatment of contagious diseases. The exhibit included maps, charts, specimens of the literature circulated by the department and other objects used. The jury was unanimous in giving the award. A similar prize was won by the department at the Paris exposition.

Child Labor.—A modification of the bill prohibiting child labor in factories has passed the Iowa Senate; as it now reads children under 14 are prohibited from working in any mine, factory or shop for more than six hours daily except on the certificate of the president of the school board of the district in which the child resides that its parents or brothers or sisters need the support it can give, and the further certified fact that it has attended public or private school for at least 12 weeks during the year preceding its application for work.

INDICATIONS FOR THE MASTOID OPERATION.¹

BY

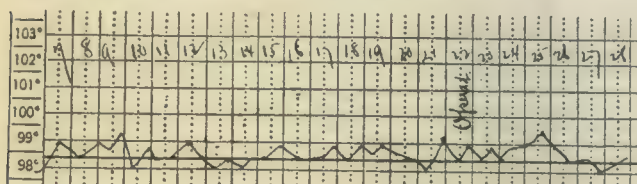
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It is commonly remarked that medical science has made tremendous strides during the past decade, and in no other branch of the profession is this saying more applicable than in otology. It is not so many years ago that it was common practice to perform the so-called "Wilde's incision," which consisted in simply cutting through the skin and superficial structures over the inflamed mastoid, and then applying poultices and hot dressings in the endeavor to force nature to perforate the bone spontaneously if she could. The wonder in these cases was, not that the bone became perforated, for the pus is under considerable pressure during the height of the inflammation, but that it burst externally, instead of upward into the brain, or inward into the lateral sinus, in both of which directions the bone is usually thinner than is the cortex.

Undoubtedly there were many cases in which the part the ear played in the disease was completely overlooked, and so well recognized is this liability of the ear to create a general disturbance that in many suspected cases of meningitis or typhoid a careful aural examination is considered essential. I recall reading in a journal some half-dozen years ago the report of a case in a patient who died of a septic pneumonia, which at the autopsy



CASE 1.—Duration of disease: pain and discharge three weeks, quiet for two months, then more pain. At operation 2 oz. of pus evacuated; mastoid pneumatic and full of granulations. (Streptococci.)

proved to have been secondary to an abscess of the middle-ear, the existence of which had not been suspected.

We are all of us somewhat familiar with the affliction which is called a "common earache," but how many of us realize the narrow line separating the simple case that recovers of itself from the one that goes on to infection of the mastoid, or perhaps of the general system. This inflammation of the middle-ear is too frequently neglected, and oftentimes is not called to the attention of the family physician until some of the neighboring structures have become involved.

We have no authentic figures to show the relative number of adults having suppurative ear disease, but we must assume that it is a large one when we consider that Barth found in 600 infants, ill with various affections, 80% with a lesion of the middle-ear, and that Ponfick has published tables showing that in 100 consecutive autopsies performed on infants he found only nine with normal ears.

Having thus briefly spoken of the frequency of infection of the ear, let us consider the bearing of this infection on the mastoid.

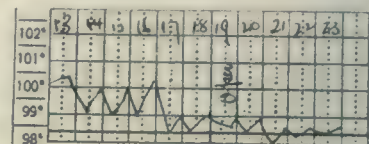
The pus has ready access to the mastoid, for when the patient is in a reclining position, it can easily gravitate into the cells through the antrum, unless this opening be blocked by the edema of the mucous membrane which follows infection. Thus it will be seen that once bacteria invade the middle-ear everything is favorable for their transmission to the mastoid cells, where the resulting inflammatory disturbances depend somewhat

upon the particular bacillus, and somewhat upon the anatomic structure of the parts.

Mastoid abscesses invariably come from an infected middle-ear, even although that ear has given no external evidence of suppuration. It is true that in the past there have been a few cases of primary mastoiditis reported, but in the light of later knowledge most authorities are agreed as to the truth of the foregoing statement.

The ordinary symptoms of mastoid complication in a typical case differ but little from those in the formation of any abscess. We naturally expect pain, with tenderness on pressure, and a certain amount of febrile disturbance. There

are some subjects, particularly tuberculous patients, who suffer but little actual discomfort during the progress of the disease; but ordinarily the pain is so severe that sleep is out of the question. Tender-

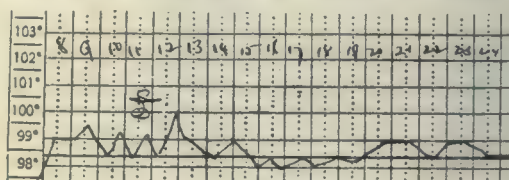


CASE 2.—Pain two weeks, with discharge and mastoid tenderness for four days. At the operation pus, granulations, and a small carious cell were found at the tip of the mastoid. (No growth.)

ness on pressure over the bone is an important symptom when present, as it not only testifies to the presence of the inflammation, but gives us some idea as to its extent. The area of tenderness is usually sharply marked over the antrum at the beginning, gradually spreading downward toward the tip. The general soreness of the insertion of the sternomastoid muscle must not be confused with this latter symptom.

There is generally no swelling over the mastoid process until a later stage in the disease, and this is usually preceded by appreciable swelling of the canal wall, which becomes evident on examining with the speculum. This swelling in the canal appears on the upper or posterior wall, and sometimes on both, and may be of such extent as practically to occlude the canal, rendering the diagnosis between furuncle and mastoiditis a difficult matter. Persistent tenderness of the mastoid with the appearance of this swelling of the canal wall is always the signal for prompt intervention, as it signifies that the inflammatory process is gaining headway, and further delay will be dangerous.

The mere fact of absence of tenderness of the mastoid on pressure signifies nothing, for the cortex is extremely thick in many cases, and an acute inflammation must have existed for some time to become apparent to the



CASE 3.—Pain and mastoid tenderness eight days. Operation, mastoid pneumatic and full of pus.

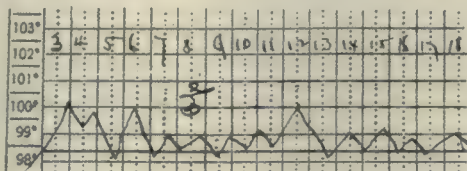
touch through so much bone. This is especially true in cases of chronic suppuration, when extensive sclerosis of the mastoid is likely to have taken place.

There may be a considerable elevation of temperature during the more acute stage of the inflammation, but this usually subsides as soon as a free discharge from the drum cavity has occurred. The absence of heightened temperature does not indicate that the mastoid is free from inflammation, for we repeatedly see cases with practically no fever, in which the mastoid is full of pus. To demonstrate this fact I have copied a few charts of cases which came to operation, in which pus was found in quantities, and yet in which there was little if any fever. The first case is perhaps the best example, from the fact that it is more subacute than the others.

¹ Read before the Middlesex East District Society, October 23, 1901.

The fact that there may be a purulent invasion of the mastoid without an accompanying increase in temperature is most important, and must be kept constantly in mind when we have such a case under observation, for otherwise perforation may take place into the brain or sinus before we suspect the presence of serious difficulty.

It may not be out of place to mention here a case that actually occurred about two years ago. The patient had had the ordinary mastoid inflammation following an acute suppuration of the middle-ear, but which had entirely disappeared, so far as the tenderness was con-



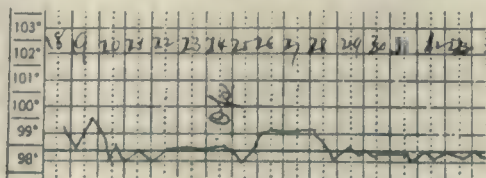
CASE 4.—Pain for one week. Mastoid neither swollen or tender. At operation pus, granulations, and debris were found. (Streptococci.)

cerned, under the use of the Leiter coil. After having been free from trouble for about six weeks he suddenly had a chill, followed in a few hours by another, and although operated on promptly, so general had been the septic absorption from the infected bone that he soon died. In this case, although the patient had had no temperature or tenderness of the mastoid for over a month, yet the bone was found full of pus. Had he been operated on at the time of the original trouble, no doubt recovery would have been prompt and certain.

You may well ask, then, how is it that we are to recognize the existence of inflammation of the mastoid if in many cases there is no tenderness and no fever?

It is only by careful local inspection of the middle-ear that we are enabled to follow the progress of the disease. The use of the aural speculum and the reflecting mirror is as necessary in determining the nature of any lesion of the ear as any of the instruments of precision now in our possession.

The first thing to ascertain when examining a suspected case of mastoid trouble is as to the presence or absence of pus in the middle-ear. A free incision should be made in the drum in all cases when the drainage is insufficient, and in case there is any tenderness of the mastoid, cold applications may be made with advantage. Many cases of threatened mastoiditis are



CASE 5.—Duration of disease three weeks, with slight tenderness of the mastoid. Considerable pus, granulations, and debris were found at the operation. (Streptococci.)

aborted by using this treatment promptly. The ear should be frequently cleansed to allow the escape of all the pus, and the use of a hot douche every two hours will do this and also aid in allaying the inflammation. A diminution or absolute cessation of the discharge from the ear does not necessarily mean that the patient is becoming better. There is a natural tendency on the part of the drum to close over, and this must be carefully prevented, for if the drainage is not perfect, the pus is more apt to escape into the mastoid. Often the size of the perforation may be judged by having the patient perform valsalvan inflation, the resulting whistle of air passing through the drum telling whether there is a sufficient opening or not. Frequently the tendency

toward healing is so great that much new tissue is formed around the edges of the perforation, causing what is termed a "nipple," an elevated spot with pus exuding from a perforation in the center. This often has the appearance of a small polyp, and it is of the greatest importance to keep the perforation open. We may often be guided as to what is taking place in the middle-ear by keeping a record of the hearing tests. If with diminished discharge from the ear, the hearing for the whispered voice steadily increases we may be quite sure that the swelling around the transmitting mechanism of the ear is becoming less. If in spite of all our endeavors, the tenderness of the mastoid increases, or swelling of the canal wall appears, it is better to operate at once.

If tenderness of the mastoid process persists for a period longer than two weeks, with a continuous discharge from the middle-ear, it is usually the safest plan to operate, for, as has recently been pointed out by Dench, the operation, carried out by competent hands, is never dangerous, while the disease frequently is. In addition to this we must bear in mind the fact that the operative course is much more expeditious in establishing ultimate health, for in an uncomplicated case the patient ought to be back at his work inside of two weeks, whereas, by temporizing, he may have the disease a much longer time, and it may become necessary to operate in the end.

The most serious cases, however, are apt to be those in which there has been a chronic, or a latent discharge from the ear, with apparent recovery.

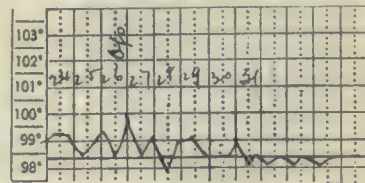
A case of this sort may go on for years, slowly eroding the bone, giving rise to no pain or inconvenience other than some occasional discharge or odor, until finally there will be a penetration of the bacteria into the vital organs of the head. This is usually announced by considerable febrile reaction, chills, and occasionally by vertigo and nausea. There can be no question as to the necessity for operation in these cases, and they scarcely come within the scope of this paper.

The endeavor in presenting this paper has been to place before you the common means of diagnosing mastoiditis. The main features that we have discussed might be well summarized as follow:

1. Mastoiditis is always subsequent to purulent inflammation of the middle-ear.
2. Tenderness of the bone is an important symptom when present, but the mastoid may be full of pus, with absolutely no tenderness.
3. Bulging of the canal wall is a most important symptom.
4. The absence of temperature is no guide whatever.
5. Improvement in the hearing is usually indicative of subsiding inflammation in the middle-ear.
6. The operation is safe; delay may be dangerous.

Fumigation of Indians.—An appeal has been made to the Governor of Iowa to send troops to the Tama Indian reservation to bring the Sac and Fox Indians to submission to the regulations of the State Board of Health. They locked their blankets and other effects in a building and carefully guarded them against fumigation.

Smallpox in Nebraska.—The Marine-Hospital Service report there is no immediate cause for alarm. The management of the emergency hospital at Omaha, where 51 patients are being treated, is commended. Universal compulsory vaccination and the erection of isolation hospitals is advised to prevent the spread of disease.



CASE 6.—No history obtainable. Pus, granulations, and debris found at operation.

THE EPIDURAL METHOD AND ITS INDICATIONS.¹

BY

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The epidural space is the potential space between the dura and the periosteum lining the vertebral canal. It extends from the sacrococcygeal ligament to the foramen magnum, at which point the dura and periosteum unite. Laterally, the epidural space is closed at the level of the intervertebral foramina by the strong adhesions existing between the dura and the ligamentous sheaths described by Charpy. In the sacral region the space is no longer potential, but is represented by a well defined cavity, called the sacral canal, limited above by the lower termination of the dural sac (at the level of the third sacral vertebra), and below by the sacrococcygeal ligament.



Fig. 1.—Contents of the sacral canal.

The sacral canal contains anteriorly the nerves of the cauda equina and their dural sheaths, posteriorly numerous veins and adipose tissue. If, therefore, we inject under pressure a colored fluid into the epidural space at the level of the sacral canal, it will ascend to the foramen magnum, where it will stop abruptly; the injection will remain exclusively intravertebral, and will not enter the subarachnoid spaces or come in contact with the nerve substance. However, if the injection be made at the lowest



Fig. 2.—The cross indicates the sacrococcygeal space or site of puncture.

point of the sacral canal, the fluid will stain the pelvic cellular tissue and the ischio-rectal fossas. Cathelin, in a series of dissections, explained the foregoing fact, by proving the absence of dural adhesions at the intervertebral foramina in the lower third of the sacral canal. Puncture of the sacral canal is exceedingly easy and devoid of danger. The patient being placed either in the lateral prone or "scorching" position, the entire region is disinfected as for any elementary operation. The small Tuffier needle for subarachnoid injection may be used, but a smaller, more flexible, steel needle is to be preferred. The following landmarks should be carefully determined: The last two posterointernal sacral cornua are easily felt under the skin at a point situated 1 or 2 cm. above the intergluteal fold; at this level there is a triangular space closed by the sacrococcygeal ligaments, limited laterally by the sacral cornua and above by the median sacral cornua. In many individuals, the space can be located by simple inspection; a triangular flat surface is seen just below the convex bulging ridge

sacral cornua. The distance between the triangular sacrococcygeal space and the point of the coccyx is from $6\frac{1}{2}$ to 7 cm. With a little practice the finger will locate rapidly and accurately the site of puncture. Beginners are apt to make the puncture too low. The middle of the triangular space is the best site for puncture. The needle should be introduced obliquely and in the median line in order to avoid injuring the coccygeal nerves or ganglions, and then pushed to a depth of 3 to 5 cm. Cathelin, for the already mentioned anatomic reasons, advises puncture near the upper angle of the sacrococcygeal triangle, and the introduction of the needle as high as the third sacral vertebra (5 cm.). The operator can not fail to detect the special sensation produced by the passage of the needle through the sacrococcygeal ligament or the firm wedge-like position of the needle after it has entered the sacral canal. The puncture is seldom painful. In rare cases, local analgesia may be of service. Several factors may complicate the puncture of the epidural space:



Fig. 3.—The needle is in the sacral canal.

1. An abundance of adipose tissue. In two obese patients I failed to locate the space by the ordinary methods. In these difficult cases, Brocard suggests that the puncture be made at a point in the median line, between 6 and 7 cm. distant from the point of the coccyx.

2. Marked mobility of the skin in the sacral region may prove misleading.

3. The necessary degree of obliquity of the puncture is rapidly ascertained after a few trials. If the puncture is made perpendicular to the skin, the needle will immediately encounter bony resistance and cause the patient pain. If the needle is introduced parallel to the skin, the injection will be subcutaneous.

Shortly after an epidural injection a certain number of patients complained of a dull ache in the back, comparable to a bruise, lasting sometimes one or two days. Symptoms (shock, etc.) recalling those noted after subarachnoid injections are never present.*

Among the analgesic substances used by the epidural route are cocain, antipyrin, chloroform, tropococain, and physiologic salt solution. It is important that the drug be well diluted; an injection should comprise from 6 to 10 cc., and be made slowly. Cathelin injected 1,000 cc. of salt solution into the epidural space of dogs of average size, and obtained only temporary clonic convulsions of the hind limbs. Brocard saw no ill effects from 40 cc. of salt solution in man. Pressure symptoms are consequently not to be feared.

The mode of action of cocain is still a mooted question. Laborde ascribes the analgesia to vasoconstriction, causing local anemia. Hallion, on the contrary, favors the hypothesis of direct contact of the drug with the nerve substance, and contends that if Laborde's theory were sound, anemia of the nerve elements should produce a condition analogous to that due to cocain. Experiments disprove the latter fact very positively; suppression of circulation in nerves does not entail loss of function (Vulpian), while anemia is more frequently an exciting factor (painful anemias, sclerodermas). Cathelin adopts Corning's explanation that cocain acts by osmosis

* Little as yet is known of the absorption of drugs injected into the epidural space. I have recently begun some experiments in this direction. In one case, in a man with intermittent fever, I injected 8 cc. of a dilution of methylene blue. Patient urinated five hours later; the urine was intensely blue; five hours later, the color was slightly less pronounced. The following morning the urine was much lighter in color. Normal color returned on the fourth day.

¹ Abstracted from a paper presented to the California Academy of Medicine, August 27, 1901.

through the abundant intraspinal venous plexus. His arguments are: 1. The entrance of colored fluids into the veins and diploe after being injected under pressure into the epidural space. 2. The occurrence of general anesthesia in dogs after an epidural injection of a large amount of cocain or chloral. The latter experiment is not, in my opinion, at all conclusive. It is exceedingly difficult to measure the degree and extent of analgesia in dogs. For example, I found that with the injections of antipyrin or quinin superficial examination showed general anesthesia, but in all cases the anal and buccal mucous membranes reacted normally to irritation. Furthermore, it must be remembered that epidural injections of very cold salt solution produce analgesia equal in extent and duration to that caused by cocain. Sicard believes that cocain acts directly upon the nerve roots and ganglions and is, in part, absorbed locally by the veins surrounding these nerves.

Indications for the Use of the Epidural Route.—Shortly after numerous observers had pointed out the multiple dangers following subarachnoid injections of cocain, various experimenters sought a new and safer route for the administration of analgesic substances. Cathelin, the distinguished assistant of Guyon, first described and used the epidural route. Sicard was the first to demonstrate its value in medical therapeutics. Up to the present time this method has been used principally to check pain, as in sciatica, lumbago, herpes zoster, fulgurant pains, intercostal neuralgia, gastric and vesical crises, etc.

The most favorable results were obtained in cases of sciatica. Here the relief is generally immediate and complete. Immediately after the puncture, while the patient is adjusting his clothing, he finds relief and

decided comfort (Brocard). Widal describes the situation as "a true resurrection." The duration of the analgesia varies with each injection, and especially with the nature of the sciatica; in the cases free from neuritis, a series of three injections made at intervals of three days, generally proved successful; in sciatica due to neuritis or myelitis, epidural injections gave only temporary relief. Pressure symptoms due to abdominal tumors or pelvic growths were seldom relieved for an appreciable time.

The analgesic condition is apparently, to a degree, independent of the nature of the substance injected; very cold physiologic salt solution (*sérum glacé*) acts more rapidly than cocain.

Widal reports excellent results from epidural injections of cocain in pains due to gastric ulcer, and suggests their use in hepatic and nephritic colics. In tabes, Sicard obtained marked sedation with cocain, the duration

of the analgesia averaging two days. Brocard reports pronounced relief in intercostal herpes zoster by injections of very cold physiologic salt solution repeated every third day. Bergouignan speaks very favorably of the epidural method in tabetic pains. Epidural injections of cocain have been successfully used as a substitute for morphin when the indications called for large and frequent doses of the latter alkaloid. In the domain of surgery, the epidural route has not given sufficient analgesia for operative work. Chipault alone has been able to perform operations on the lower limbs by this method. I have tried it without success in circumcision. Cathelin reports pronounced and prolonged relief in operable cancer of the rectum, painful accouchements, cystitis, tuberculous and dry arthritis. In four cases of incontinence of urine due to various causes, Albarran and Cathelin obtained almost complete cessation of the incontinence after two or three epidural injections of cocain. The quantity of cocain used by this route is generally from 2 to 4 cgrm. in a solution of 1 to 200. Maclaure recently made a series of epidural injections of iodoform emulsion in Pott's disease; but his results have not yet been published. Huchard had used this route to administer various cardiac stimulants. Cathelin believes that the epidural method may be utilized for the majority of soluble medicaments; he strongly urges injections of cyanid or benzoate of mercury in malignant or cerebrospinal syphilis.

Compared with the subarachnoid route, the epidural method possesses many advantages from the medical point of view; it is less difficult, absolutely harmless, can be repeated *ad libitum*, and is free from the numerous alarming complications attending the use of the subarachnoid route. Furthermore, the epidural method is spoken of favorably by several of the eminent physiologists who condemn, in the strongest terms, Corning's method. (Richet, Laborde.)

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ACUTE LYMPHATIC PSEUDOLEUKEMIA: WITH REPORT OF A CASE AND AUTOPSY.¹

BY

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Under the name of Hodgkin's disease, lymphatic pseudoleukemia has been recognized and described since 1832. Nothing definite is known of its etiology, however, and there is no uniformity of opinion amongst the most eminent men who have written on the subject concerning its pathology. While Ehrlich and Lazarus hold that the process is a lymphosarcoma, Sternberg, after the histologic examination of fifteen cases in 1898, expressed the opinion that "pseudoleukemia is a tuberculosis of the blood-forming apparatus," and Musser in his recent article, "Notes on the Fever of Hodgkin's Disease," published in AMERICAN MEDICINE, January 4, 1902, after going over the history of eighteen cases in detail, in his conclusions says, "Hodgkin's disease is in all probability a lymphatic tuberculosis," and "I agree with the conclusions of Sternberg."

Under such conditions it is more than a matter of passing interest to record such cases of pseudoleukemia

¹ Read before the New York State Medical Society, January, 1902.

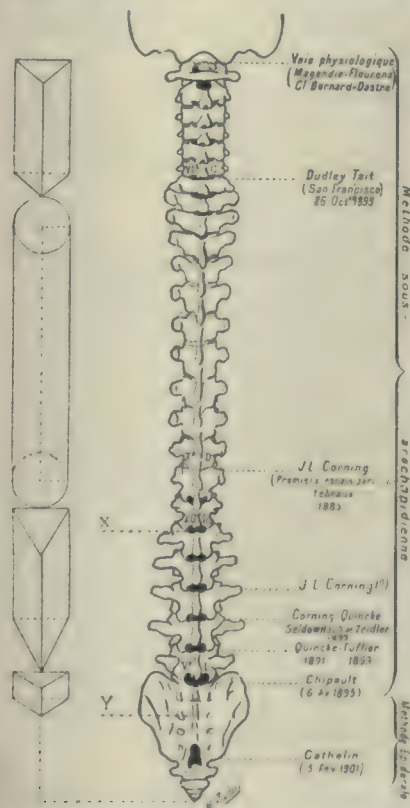


Fig. 4.—I am indebted to Dr. F. Cathelin for the above plate taken from his forthcoming original work on the epidural method.

as have been observed, with some accuracy; and particularly those in which the disease has terminated fatally and in which a competent postmortem examination has been made.

Accordingly I desire to present the full history of the following case:

On July 27, 1901, Mr. R. A. C. presented himself at my office for consultation. He was a fine appearing young man, aged 23, single, and a bank clerk in Detroit, Mich. He was now home for a vacation. His complaint was of eczema and a cough.

His family history was interesting. His father was living but had always been a victim of gravel and stone in the bladder, and was now in the last stages of chronic endocarditis, from which he died later, on August 25. He and his family had had eczema and there were several cases of cancer and of apoplexy amongst his immediate relatives.

The patient's mother is living and well and on her side there is the history of several cases of heart disease. He has one brother living and well except from the effects of phlebitis following typhoid fever, and two sisters who are living and in good health generally. There was no history of tuberculosis on either side but catarrhal diseases were comparatively common in his immediate family and amongst his ancestors. Personally he had had no serious illness since childhood, and had gone through the diseases of childhood without any mishap. As an infant he had had eczema, and had suffered recurrent attacks all his life, particularly during the summer months. This summer his eczema had been particularly bad. He never had any venereal diseases. A cough developed the latter part of June and he has had a cough or "tightness in the chest" ever since. The patient's habits were good. He smoked, but not excessively. He was ambitious and worked hard, and worked late many nights either in his own department or helping some other employes in the bank. His dietetic habits were peculiar only in that he very seldom ate vegetables. He had as an intimate friend a young man who was thought to be tuberculous.

Examination.—He was 6 feet tall and weighed 135 pounds stripped. His complexion was rough from acne vulgaris. His tongue was pale, large and indented. His mucous membranes were pale. His chest, well formed, was fuller above the clavicles than normal, this fullness being simple puffiness on the left side, but on the right there were greatly enlarged lymphatic glands above and deep behind the clavicle, with a puffy condition of the tissues above. These glands were firm, and varied in size up to that of a walnut. The superficial veins over the left side of the chest were very greatly dilated, and transversely along a line passing through the ensiform appendix, the superficial veins on both sides were dilated and arborescent. The skin presented an eczematous eruption most marked on the hands and shins but present in small irregularly distributed patches over the trunk, front and back, thighs and scrotum. These patches were small, dry, scaly, and itched intensely, as did the entire body.

Besides the enlarged glands above and behind the clavicles, it was demonstrated that the lymph nodes in the neck, the axillas and the inguinal and femoral regions were enlarged, and more markedly so on the right side in every instance, but in no region so much enlarged as those above the clavicles.

On palpation it was shown that the excursion of the right chest was less than that of the left, and that it lagged markedly. Vocal fremitus was more marked over the right upper lobe. The percussion note over the right lung was duller, particularly above, and voice and breath sounds were exaggerated, and the expiratory murmur was prolonged. The condition upon the left side varied only in degree, the evidences of interference being less marked, though there was not a normal condition present. The respiration was more difficult in the recumbent position, and I convinced myself that both on auscultation and percussion, the right lung was clearer in the sitting position. The difference became more marked as the disease advanced. There were no rales except some subcrepitant rales on deep inspiration. The cough was loose, deep and hoarse, and resulted in almost on expectionation. The sputum slight as it was, was saved and examined, but no tubercle bacilli were found.

The heart was apparently enlarged. The apex beat was in the mammillary line. The systole was strong and regular, and the pulse 84. There were no murmurs, and the second sound

was exaggerated particularly over the pulmonary valve. The uvula was elongated and was clipped. The pharynx, nasopharynx and nasal mucous membrane presented a mild catarrhal process. There was no enlargement of the tonsils. The temperature was 99° F. The urine was 1,022 acid +, no albumin, no sugar, and under the microscope presented some uric acid crystals and slight epithelial debris, after the use of the centrifuge. The blood gave evidence of only a simple anemia. The diagnosis was eczema and lymphatic pseudoleukemia, with pressure on the primary bronchi particularly of the right side.

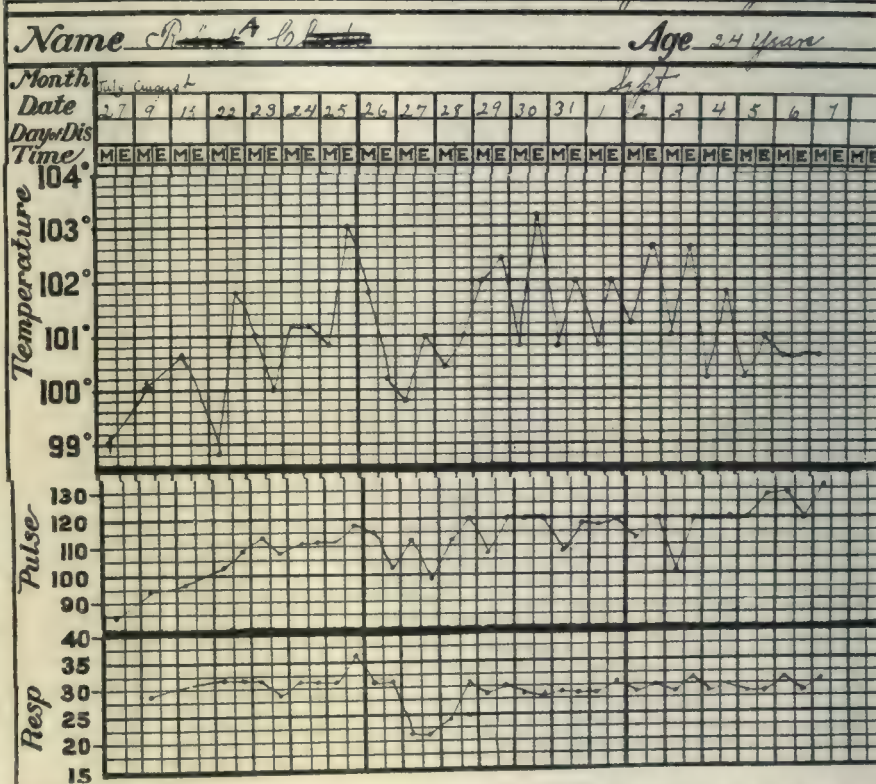
His diet was carefully prescribed. He was asked to take no violent exercise and no baths except for necessary cleanliness, but to use inunctions of simple oils instead. He was prescribed inunctions of 45 grains of unguent Credé daily, and internally 10 grains of sodium salicylate every four hours, and strychnin sulfate 1/30 gr. three times a day.

On August 2 he reported that while the itching of the skin was just as bad the skin lesions were much better. There was hardly a single eczematous patch to be found on his body and the thickened patches on hands and shins had almost disappeared. At this time the glandular enlargement in the neck was somewhat greater. Increasing doses of arsenic were prescribed.

After another week, on August 9, he presented the following condition: The itching was still intense. The eczematous patches had disappeared, but now over arms, legs, thighs and trunk isolated pustules with scabs were present. He said the itching had been so intense that he had scratched off the tops with their drops of pus. Above, the sternum presented a greatly enlarged lymph node and those above the clavicles had increased in size. The cough was more troublesome, and on examination the breath and voice sounds were hyperresonant over the left lung, and much less distinct over the right in the standing position. The tongue was coated and the appetite diminished. The temperature was 100° F. and pulse 94, with respirations of 28. Arsenic and ungt. Credé were discontinued and iodids with alkalies were prescribed.

He was next seen August 15. My notes on that day say: Skin very much better, lungs clearer, glandular swelling about neck greatly increased. He now coughs but seldom, but when he does he coughs very hard and it seems to cause an increase in the size of the neck. He raises very little. There is considerable tenderness over the puffy swelling above the indurated glands, so that he holds his head tipped to the right side and he has left off his collar. There is no change in the consistency of the glands. Temperature 100.6° F. Pulse 96.

Admitted to Hospital, Aug. 22, '01



Because of the advance of his father's illness, and of his imminent death, it was thought best to remove the patient from his home. Accordingly on August 27 he took a private room in St. Joseph's Hospital, and thereafter was under the daily observation of his physician.

On the day of admission his morning temperature was 98.8°, pulse 102, respirations 32. The evening record gave temperature 101.8°, pulse 108, respirations 32. I was able to demonstrate that there was a most marked difference in the physical signs on the right side of the chest, between the sitting and the recumbent positions. In the recumbent position breathing was difficult, there was little excursion of the right chest, and the breath and voice sounds were faint, if heard at all clearly. In the sitting position, breathing was easier, excursion of the right chest was greater, though less than that of the left, and the vesicular murmur was comparatively distinct, and the voice sounds approximated the normal. It was predicated upon these findings that there was a pressure on the right bronchus from enlarged lymph nodes which in the recumbent position practically excluded the entrance of air. It was also demonstrated that there was marked interference with the venous circulation, as indicated by the greatly distended superficial veins on the right side, and across the entire chest at the level of the xiphoid appendix, and also by the puffy swelling about the neck, which could only be accounted for by the overdistention of the cervical veins; this too was attributed to pressure upon the intrathoracic veins.

The progress of the case was from bad to worse. The enlargement of the glands about the front of the neck and within the thorax advanced, though the lymph nodes in other regions remained practically of the same size as when first observed. The intolerable itching of the skin and the various cutaneous lesions persisted to the end. The resulting sleeplessness and distress were pitiable, and only mitigated by codein and hypnotics.

The temperature remained constantly above the normal. It was irregular. The usual daily range was between 101° and 102.5°, though it marked 103.2° on one or two occasions and occasionally dropped below 101°, but never below 100°. The respiration was labored and unsatisfactory, and practically impossible except in the sitting position. There was a venous hue to his complexion. Though the respirations seldom rose above 32, this rate did not tell the story of his respiratory distress. The pulse was almost constantly maintained at 120. On account of the interest attached to the febrile process in Hodgkin's disease, the chart of the temperature, pulse, and respiration is here exhibited.

Repeated examinations of sputum and urine were made. The kidneys performed their functions accurately to the last. The sputum increased in amount as the evidence of interference with the pulmonary circulation increased but in no examinations were tubercle bacilli or other pathogenic forms discovered. In this unhappy plight he lived a few weeks and died miserably from suffocation, September 7, 1901.

The autopsy was made by Dr. Steensland, pathologist to the College of Medicine, and his report follows:

Autopsy.—Body of a well-developed, rather poorly-nourished man of more than average stature. Rigor mortis distinct. Livor mortis of dependent parts marked. Pupils dilated. No edema.

Peritoneal cavity: Peritoneum is smooth and glistening. Appendix is normal. Mesenteric lymph nodes are not enlarged. Lesser peritoneal cavity and pancreas are normal. Gastric lymph nodes about cardiac orifice are considerably enlarged.

Pleural cavities each contain a large amount of clear, straw-colored fluid. Pleural surfaces are smooth and glistening. Slight fibrous adhesions at both apices.

Pericardial cavity contains about 100 cc. of clear, straw-colored fluid. Pericardial surfaces smooth and glistening.

Lymph nodes: There is a general enlargement of the lymph nodes of the neck and thorax. This is especially marked around the great vessels at base of heart. Here the mediastinal and bronchial lymph nodes are matted together in a mass that almost girdles the great vessels, trachea and esophagus, the girdle being deficient only posterior to the esophagus. The cervical nodes, including two between the two lateral lobes of the thyroid, are considerably enlarged. The mass of lymph nodes including the organs of the neck weighs 1,380 gm. Greatest circumference at upper limit of pericardium is 41 cm. Antero-posterior diameter is 14 cm., lateral diameter is 12 cm.

Heart: Weight, 260 gm. The valves and cavities are normal. **Lungs:** Pink and downy. On section same color is presented. Bronchial lymph nodes are much enlarged and hard.

Spleen: Weight, 90 gm. Pale, soft. On section pale. **Pancreas** is normal.

Liver: Weight, 1,800 gm. Smooth, brownish red, normal consistency. On section same color presented. Lobules distinct. Gallbladder contains small amount of normal-appearing bile. **Mucosa** pale.

Kidneys: Weight, 200 gm. Capsule strips readily. Smooth. Cortex, 5 to 6 mm. thick. Markings distinct. **Adrenals** normal.

Bladder: Mucosa pale.

Genital organs: Tubules of testicles readily teased out. Epididymus, vasa deferentia and prostate normal.

Aorta: Intima presents a few yellowish patches, the largest about 4 mm. in diameter.

Organs of neck: Mucosa of esophagus is pale. Tongue and larynx are apparently normal. Mucosa of trachea is reddish. Each lobe of thyroid is 5 cm. long.

Anatomic Diagnosis.—Lymphatic pseudoleukemia. The lymph nodes involved, as disclosed in the course of this examination, were mediastinal, cervical, bronchial, gastric. There was hydrothorax, chronic adhesive pleuritis, and fatty degeneration of intima of the aorta.

Microscopic Examination.—Section of bloodclot from heart shows no apparent increase of lymphocytes, thus excluding lymphatic leukemia. The thyroid is normal. Mediastinal lymph nodes show proliferation of lymphoid and connective tissue elements.

Repeated examinations of the sputum were made during life, and in the examination of the fluids and tissues after death particular care was exercised to discover tuberculosis, if present. In no examination of sputum, fluid or tissue, was any evidence of a tuberculous lesion discovered. On the other hand, the microscopic examination of the lymph nodes showed the characteristics peculiar to lymphosarcoma.

GASTROTOMY FOR REMOVAL OF FOREIGN BODIES.

BY

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CASE.—C. B. M., a female, aged 30. She was admitted to the Michigan Asylum on February 7, 1900, suffering from profound melancholia.

Family history is of some interest as regards the cause of her mental ailment. Her father, mother, and one cousin died of tuberculosis; her paternal greatgrandmother died of general paralysis, and one brother was insane for a number of years. The patient was regarded as a healthy, normal child mentally, and her physical health was excellent. At the age of 20 she had a severe attack of typhoid fever, during which she was very delirious, but upon recovery was apparently as well as formerly.

The mental alienation made its appearance about five weeks before her admission to the asylum. The immediate causes were supposed to be her worn out physical condition, combined with emotional strain, the result of a too frequent attendance at revival meetings. These, no doubt, and an unstable mind due to hereditary tendencies may have been factors. Upon admission, she had many delusions, mostly of a depressive nature, e. g., that she had committed a great sin, that she was eternally lost, etc. Previous to admission she made several attempts to commit suicide. Physically she was feeble and emaciated, due largely to agitation and the frequent refusal of food. The internal organs of the body were apparently normal. Blood examination showed red corpuscles to the number of 2,500,000 per cubic millimeter; hemoglobin, 85%. There was a slight increase of acidity found in examining the stomach contents. Urine was normal, and gynecologic examination negative.

There was no change in her condition until three weeks after admission, when she began to improve, but did not become entirely free from delusions. This comfortable period lasted two months when she again grew agitated, made several attempts to commit suicide, and refused food until it became necessary to feed her through a nasal tube. A month later, on May 29, she told the nurse that she had swallowed a brass curtain fixture, but as she was in no particular distress, her statement was doubted. The following morning she complained of pain in her chest and neck, but upon examining her throat nothing abnormal could be seen. A bristle probang was then introduced in the esophagus six inches and withdrawn. This brought the fixture into the throat from which it was expelled by the patient's own efforts. This experience did not lessen her desire to die, and notwithstanding she was watched closely, she succeeded on July 18, in obtaining and swallowing two hatpins, each 5½ inches in length. Several hours afterwards she told the nurse what she had done, and was immediately put to bed and hypodermic injections of morphin and a large amount of bread were given her in the hope of lessening the chances of perforation. On examination she did not seem very tender over the stomach, but complained of periodic attacks of severe pain. A small sore was noticed at this time on her arm, and on close examination the heads of two common pins could be felt. Patient stated that she had run these pins into her arm the day before.

On July 19 she was in great distress and required a large dose of morphin, but she improved toward evening and on the following morning was much more comfortable. On July 21 she obtained decided relief after passing two pieces of iron, each about an inch in length and a quarter of an inch in diameter, three nails, one screw, two tacks, two common pins, and three small pieces of glass. On July 23, on making an examination of the abdomen, a sharp point beneath the skin and subcutaneous tissue could be distinctly felt in the epigastrium. Dr. Rush McNair, of Kalamazoo, was called in con-

sultation and concurred in the advisability of operating at once. Assisted by Drs. H. B. Osborne and Rush McNair and members of the asylum staff, I operated on the morning of July 24. An incision four inches in length was made in the median line, extending from two inches below the ensiform cartilage downward over the point of the protruding pin, which was found to have perforated the stomach wall and tissues underlying the skin. After the pin was sufficiently exposed it was seized and brought up, its head remaining within the stomach, thus bringing the stomach wall close against the abdominal wall. The abdominal cavity was entered, the stomach was drawn into the wound and anchor lines of silk placed in its wall. The protruding portion was then surrounded by antiseptic gauze to prevent stomach secretions from entering the abdominal cavity, and an incision long enough to admit two fingers was made in the stomach along the anterior surface about three inches from the pyloric end. Through this opening the hat pins were readily drawn, and upon further examination a number of small articles could be felt lying near the cardiac end of the stomach. These were withdrawn with much difficulty and proved to be three hairpins, one hairpin straightened, one six-penny finishing nail, one fourpenny cut nail, and one each of six, eight and ten-penny wire nails, two pieces of small wire three inches in length, one buttonhook minus the handle, one screw with a head $\frac{1}{2}$ inch in diameter and one brass-headed tack. After closing the incision in the stomach wall by means of the Lembert suture the intestines were examined, and in the upper portion of the ileum could be felt a large number of foreign bodies. A small incision was made and one darning needle, one tenpenny cut nail, one shingle nail, one eightpenny finishing nail and one eightpenny wire nail were removed. This incision was closed by means of a purse-string suture. Further examination showed that a number of small foreign bodies were present further down in the intestines, but owing to the feeble condition of the patient's heart it was thought better to close the abdominal cavity, trusting that all foreign material still remaining would be passed in the stools. Before closing the wound the abdominal cavity was filled with warm sterilized salt solution, the operation being completed in 2½ hours. At 5.30 p. m. her temperature was 102°, pulse 84. To stimulate, and relieve thirst, a saline injection was given by rectum.

She was comfortable most of the night following the operation, but did not have much sound sleep. Early in the morning of July 25 she complained of severe pain in the abdomen, and she was given $\frac{1}{2}$ gr. of morphin by hypodermic injection, and to allay thirst was allowed two small pieces of ice in the mouth. At 6 p. m. her temperature was 100.6°, pulse 89. Later in the evening she complained of pain in her back. On July 26 she was very much depressed, begged the nurse to kill her and complained of severe pain in her back. Late in the day she vomited a large amount of dark-colored material. Her nourishment consisted of egg albumen by rectal injection. On July 27, morning temperature 101.4°, evening 101°. During the day she had several bowel movements of a dark color and very offensive odor. In addition to the egg albumen she was given peptonized milk and egg by rectal injection. On July 30 she was allowed, at frequent intervals, a few teaspoonfuls of egg albumen and peptonized milk by mouth. Morning temperature 100°, evening 101°. She complained of some pain in the abdomen and left hip. On August 2 (nine days after the operation) the dressings were changed and the wound, with the exception of a small stitch abscess, was found in good condition. Morning temperature 99.4°, evening 99°. She suffered considerable pain in her left thigh, and later in the day the pain became so severe that it was necessary to give morphin. On August 3 her abdomen was slightly distended and tender in the left iliac region. The pain in the left hip was more severe, and there was tenderness along the anterior crural nerve. It would seem that this nerve at its origin was either pressed upon by foreign matter in the intestines, or some article such as a pin or needle had passed through the intestinal wall and caused a neuritis. August 5, her morning temperature was 100.4°, evening 103.4°. Pain in the abdomen and left thigh was very severe. Her bowels continued loose, and she passed during the day the handle of a buttonhook (which was in two pieces), two carpet tacks, three pins, one screw, four nails and one piece of strong wire two inches in length. August 6, her morning temperature was 100.4°, evening 102.2°. She was very quiet and comfortable until late in the day when the pain in her thigh again became severe. Nourishment now consisted of custards, eggs, and peptonized milk, by the mouth, as well as peptonized milk and eggs by rectal injection. From this date until August 16, her temperature varied from 99° to 104°. The pain continued to be severe at times in the thigh and lower part of the abdomen. Mentally the patient was very much improved, and only occasionally spoke of her old delusions. On August 22, 29 days after the operation, her temperature reached normal for the first time. August 23 her temperature again rose to 103° and the pain in the left thigh was very severe. During the following week she passed, on two different occasions, several needles and pins. Each movement was preceded by a rise of temperature and considerable pain. During September her temperature was normal, but the pain in the left thigh, combined with the stiffness of the muscles, made movement of the extremity difficult. However, she continued to improve slowly, and about the middle of October could move about with the assistance of crutches, but could not bear her weight on the

left leg. The pain gradually grew less, and at the time of her discharge from the asylum she walked with only a slight limp and without suffering distress. She had gradually grown fleshy, was entirely free from all delusions, and was discharged cured on November 28. Just how much the operation had to do with her mental improvement it is difficult to say. The careful nursing which she received, attention to diet and elimination, and the enforced rest in bed no doubt contributed much to it. Some of the material removed from her stomach and intestines had evidently been there for some time previous to the operation and its removal relieved much irritation that had a bad influence upon the patient's mind.

On consulting the literature on this subject, I find that the first authentic case of gastrotomy for the removal of foreign bodies was done in 1602 by Florian Matthias, of Prague. The operation was successful.

Since the above, Dr. W. S. Halsted, of Johns Hopkins, in his article published in "Contributions to the Science of Medicine," named several operations, and states that "there have been 67 operations for the removal of foreign bodies from the stomach. Out of this number 11 died, or 17.7%." In the majority of cases, he states that "only one foreign body has been present, but in six cases many articles were removed from the stomach." Three of these patients died, two from shock within three hours, and one within 48 hours. The total weight of the articles removed from one patient whose case was fatal was 11 lbs. 9 ozs. Of the three that lived, Mayo Robson's furnished the greatest number of foreign bodies, viz: 42 cast iron garden nails, 93 brass and tin tacks, 12 large nails (some brass headed), 3 collar studs, 1 safety pin and 1 sewing needle. During the 22 days following the operation, there passed per rectum embodied in hard fecal matter, 30 garden nails, a piece of a needle, 1 stud, 8 tacks and 1 pen. This patient was only 10 years old, and was said to be an intelligent girl who apparently could not control her morbid appetite. After her recovery from the operation she continued to swallow articles which she could not digest.

The second case occurred in a woman. During a temporary attack of insanity she swallowed articles which Frecker subsequently removed: One key, 2 teaspoons, 1 fork, 2 pieces of wire, 2 hairpins, 12 pieces of glass, 1 window latch, 1 steel pen, 9 sewing needles, 1 piece of graphite, 1 shoebutton, and 1 crochet needle.

Meisenbach's is the third successful case. Among the things extracted were 25 staples for barbed wire, 15 screws, 2 horseshoe nails, 36 wire nails, 16 32-caliber cartridges, 538-caliber cartridges, 2 jackknife blades (broken), 2 inches brass washstand chain and 2 small staples; a total, in fact, of 119 pieces. After the operation 8 cartridges were passed. There was also one ounce of broken glass (electric light globe), making a total of 127 pieces. Total weight, one pound.

Dr. Halsted reports a case in which he extracted 74 grams of broken glass and 208 articles, consisting of 28 pieces of chain, 99 nails, and 81 screws, knives, tacks, pins, etc.

Dr. William M. Allen, in the *Journal of the American Medical Association*, February 1, 1896, reports an operation for the removal of a ball of hair, the diameter of which was 9½ inches. His patient was a girl aged 16, and it is said that she had been in the habit of eating hair from her third year up to the age of 14.

In many of the gastrotomies reported, the stomach has been adherent to the abdominal wall and the operations were comparatively safe ones. This was especially true in preantiseptic times, as it tended to lessen the liability to general peritonitis. The majority of deaths occurred in those cases in which no plastic inflammation had taken place. In this case, although no plastic material had been formed about the perforation in the stomach wall, peritonitis did not result, owing no doubt to the smallness of the puncture made by the hat pin. That the period of convalescence was long, was probably due to the constant irritation of the intestines and nerves by foreign bodies that could not be removed at the time of the operation.

PALMAR AND PLANTAR SYPHILIDS.

BY

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of Hot Springs, Arkansas.

In giving the following statistics, it is not my object to show the frequency by comparison of the different syphilitic eruptions, but to show their percentage of occurrence, time of appearance and the influence of occupation as a factor in their production. While it is possible to arrive at some conclusion from 200 patients, it will take the study of many more under their various environments to formulate positive deductions. With the exception of those patients that remain with a physician from the time of an initial sore until a cure is pronounced, it is a difficult matter to estimate the percentage of different lesions as they first occur. Among the cases comprising these statistics, the papulosquamous eruption far exceeded all others combined; this was undoubtedly due to the fact of the chronicity of these lesions and the chronicity of the cases that come here for treatment.

As most of the patients had undergone some treatment before coming under my observation, it necessarily made a difference in the time of appearance, character and severity of the lesions, yet as a whole the following deductions were made under as favorable circumstances as may be met anywhere.

Out of 200 successive cases (eliminating all patients who had forgotten their history practically in toto) as they presented themselves, it was found that 35 or 17.5% suffered from either palmar or plantar lesions, or both, some time during their disease. By carefully questioning and cross-questioning patients presenting no syphilitic manifestations at the time of the examination, it could be ascertained positively whether they ever had any affection of the palmar or plantar surfaces, but the character of the lesion could not be discovered.

Among the 35 patients, 20, or 57½% had both palms and soles affected; 12, or 34½%, palms only; 2, or 5½%, plantar surfaces only; 1, or 2½%, one palm (right) only. Two patients complained of intense itching of the palmar lesions, but not of the plantar surfaces, while one patient showed marked ulcerations of the palmar surfaces, though the plantar retained their papulosquamous character. The time of appearance varied: 9, or 25½%, occurred before the third month; 11, or 31½%, before the sixth month; 3, or 8½%, before the ninth month; 5, or 14½%, before the twelfth month; 1, or 2½%, before the eighteenth month; 4, or 11½%, before the second year; none during the second year; 1, or 2½%, during the third year; none during the fourth year; 1, or 2½%, during the fifth year. The shortest period was five weeks after the man became cognizant of having a genital sore, which was discovered after a protracted alcoholic indulgence. In this case the erythematous eruption covered the entire body, face, and the backs and palms of the hands, and plantar surfaces; in fact, there seemed to be no portion of the surface of the body that was not affected. The initial sore was still present and markedly indurated. The longest period was five years, and occurred in a man who failed to adhere to his prescribed treatment. Both palmar and plantar surfaces were diseased, the former more severely. This eruption had lost all its symmetry and characteristic syphilitic appearance, and formed irregular serpiginous lesions, reddish-brown in color, and surrounded by a dry, scaly border. The lesions extended through the interdigital spaces and over the sides of the hands so as to make the edges visible from the dorsal surface.

Occupation influenced the percentage to some extent as it was found that the horny hand of the laborer was freer in proportion to the hand unaccustomed to hard manual work. Sixteen, or 45½% of the cases occurred in merchants, attorneys, clerks and traveling men; 7, or

20% were laborers; 2, or 5½%, housekeepers; 2, or 5½%, courtesans; 2, or 5½%, soldiers; 2, or 5½%, sailors; 1, or 2½%, a candy-maker; 1, or 2½%, a ball-player; 1, or 2½%, a painter; 1, or 2½%, a barber. This shows that nearly 60% of the lesions occurred upon the delicate, moist and soft-skinned hand, and with this exception occupation seemed to influence their frequency of occurrence but little. (In explanation, I might say that the original 200 cases were divided about equally between the so-called laboring and nonlaboring classes.) As the seat of the pathologic changes is to be found in the cutis and adnexa, it is not surprising that the hard and dry hand should be more immune than the soft and moist one. The secondary eruption, as a rule, is more elaborate upon that portion of the body which is protected by the clothes, which keeps the skin pliable and soft, and stimulates the peripheral circulation; yet it is a strange fact that of the two surfaces—the palmar and the plantar—that the latter is less susceptible, although to all appearances offering more favorable conditions. The solution of this I base more upon the cutaneous blood-supply than upon exposure or contact with irritating substances; the derma of the palms being better supplied than that of the plantar surfaces.

Before closing, I will mention several points of interest in connection with a few of the cases. In reference to the sailors who both contracted the disease in the tropics, and whose hands and feet were equally exposed, the latter because of the convenience of going barefooted, it was found that in one case the plantar surfaces alone were affected, while in the other both palmar surfaces only. The ulcerated lesions before mentioned occurred on one of the soldiers, and his history is very interesting, for clinically it shows an undoubted reinfection of syphilis. Chancre redux can be eliminated in this case because the first sore was on the lips, while the second was genital; a balanitis or herpes which often becomes indurated in syphilitic subjects, and a gumma seem improbable because of the secondary eruption which followed the second lesion. The history of his first attack, as given by his mother, is as follows: about or shortly after her confinement her husband contracted syphilis and inoculated her. She had a genital sore and developed the secondaries in about the usual time. Being innocent and unsuspecting she did not consult a physician until her nipples became so sore (probably moist papular syphilids or syphilitic condylomas), that she could not nurse her infant. The diagnosis of lues in her case was substantiated by the results of the treatment. The child was placed on bottle-feeding, but too late, for in a short while the initial lesion appeared on the lower lip, and in due time the secondaries showed on the belly, breast and shoulders. The child was carefully treated and kept under a physician's care for the next six years, after which time the boy was in good health. At the age of 18 he enlisted for the Philippine service, and while there contracted a genital sore, but not wishing to consult his regimental surgeon, he used some local application. The sore at no time was very painful and gradually decreased, but before it had entirely gone—a period of about six weeks—the secondary eruption began making itself manifest. The diagnosis of syphilis was made, and he was placed upon the proper treatment to which he did not adhere because of his return to the States. The patient came here about six months after the beginning of his second trouble. He was very cachectic and had numerous sores of the deep variety of syphilitic ecthyma scattered over his body, head and extremities; the response to a vigorous course of mercury in conjunction with full doses of the iodid of iron left no room for doubt. It is to be regretted that a section of the genital sore was not obtained for pathologic examination.

Another coincident history which may properly be mentioned here is in reference to a merchant and his wife. In the man's case the plantar lesions were hardly

perceptible, while the papulosquamous palmar were very tenacious; in the wife's case all lesions readily subsided, except the palmar lesions, which could not be ameliorated under ordinary treatment. In case of the candymaker the right palm only was affected with a flat papular syphilid, while the body, arms, and legs were covered with an eruption of the same character, only a little larger.

Before forming conclusions, I must admit that the percentage of the above mentioned lesions may be larger here than in other places, due to the fact that such conspicuous and telltale symptoms cause patients to seek more vigorous treatment than they can take at home; so to reach an unbiased decision it will take the average of many cases in different localities.

The above 200 cases teach that palmar and plantar lesions are found in a larger percentage of cases than ordinary observation would expect one to believe. That in cases in which they do occur, nearly 60% have both surfaces diseased; that the palms follow next with about 35%, while the affliction of the plantar surfaces alone was only one in 100; that nearly 50% more of soft and tender hands were affected as compared to others, and that irritation and friction does not play an important part in the production of palmar lesions.

SPONTANEOUS RUPTURE OF THE HEART.¹

BY

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of Waterbury, Vt.

Surgeon, Central Vermont R. R.,

It may seem supererogatory to direct attention to a subject of very little practical importance to practitioners of medicine, since in a large majority of cases the victim of a rupture of the heart is in rigor mortis when we arrive at the bedside. If not he soon will be, our ministrations to the contrary notwithstanding.

Neither to us as students of medicine can it be considered a novelty, for several scores of cases have been recorded. But to us as practitioners of medicine it is a novelty, for I think I may safely say that probably not one practitioner in a hundred has ever seen a case verified by an autopsy, or one in which he has reason to suspect that it was the cause of death.

It has been my lot to lose three patients in this way; possibly more, but only three that I have positive knowledge of. Two of the three could hardly have been called my patients however, for I never examined or prescribed for them.

The immortal Harvey was the first to describe this lesion of the heart. Morgagni, the founder of pathologic anatomy, wrote at length concerning it and gave expression to the opinion that it could only occur when the muscular tissue of the heart was diseased. It is singular that he himself came to his end by this fatal accident.

Time will not permit of my entering into a consideration of the pathology of the condition that is the remote or proximate cause of this rupture. I will simply give a brief review of the reported cases and the three that have come under my observation.

Richard Townshend in a *Cyclopedia of Practical Medicine*, published in 1846, gave statistics of 25 cases—21 males and 4 females: average age 75 years. In only 6 of these were there any indications of disease of the heart before death. In all of them death was sudden.

Of the proximate cause, in 4 it was straining to vomit; 2, straining at stool; 1, mental emotions; 1, leaping from a window; the remainder, spontaneous.

Of the remote causes assigned, softening and fattiness were found in 13; ulceration, 3; thinning of the part, 6. Location of the rupture: Anterior wall of the left ven-

tricle, 19; right ventricle, 3; right auricle, 2; septum, 1.

We find reports of 102 cases published in Ziemssen's *Cyclopedia*, 1872. In 77 of these the rupture occurred in the left ventricle; 15 in the right ventricle; 6 in the right auricle; 4 in the left auricle.

Of the 100 cases compiled by Quain and reported in his *Dictionary of Medicine*, 1882, the heart had undergone fatty degeneration in 77; in 6 cases the walls were described as simply softened; in 1 there was rupture of an aneurysm; in 1 bursting of an abscess; in 12 the heart is said to have been either healthy in texture, or not to have been examined. But in most of the latter cases mention is made of the previous existence of endocarditis or of changes in the coronary arteries, fully justifying the impression that there was disease of the texture of the heart. Of the 100 patients 63 were over 60 years; 2 between 10 and 20; 1 between 20 and 30; 3 between 30 and 40; 6 between 40 and 50; 13 between 50 and 60; 33 between 60 and 70; 24 between 70 and 80; 6 over 80. Of these, 54 were males, 44 females, and of 2 the sex was not mentioned.

Quain says, "The exciting cause of rupture of the heart is usually some mental excitement or physical exertion, but the accident may occur when the subject is at rest, or pursuing the ordinary avocations of life."

In 76 of the cases compiled by Quain, the rupture was in the left ventricle, and in 43 it was in the anterior wall. The right ventricle was ruptured in 13 cases, 9 of these occurring in the anterior wall. The right auricle was ruptured in 7 cases, and the left in 2. In 71, death was sudden, occurring within one or two minutes. One patient lived 8 days, one 6 days, one 3 days, 5 lived over 48 hours, 3 lived 24 hours, and 19 less than 12 hours.

It will be noticed that in a major part of these cases the rupture was in the left ventricle, and in a large proportion in the anterior wall and near the apex. Next in frequency the rupture occurs in the right ventricle, next in the right auricle, and least frequently in the left auricle.

Disease of the coronary arteries is probably the most important factor in procuring the pathologic condition necessary to produce rupture of the heart.

Of my first case I can say very little, not having clinical notes, and those of the autopsy are very meager. It was during my service as interne in King's County Hospital, N. Y., in 1872.

The patient, R. B., aged 65, was born in Ireland. He was convalescent from facial erysipelas and about to be discharged when I took charge of the ward. During the night he arose from his bed and walked about the ward for a while, then sat down on a stool and rested his head upon the bed, where he was found a while after by the night watch, dead. Autopsy five hours after death showed the pericardium filled with partially coagulated blood; weight of heart 15 ounces, evidently fatty, coronary arteries atheromatous. A complete rupture, nearly an inch in length, was observed in the lower anterior portion of the left ventricle.

I presented the heart to Dr. Alonzo Clarke, of New York, then the nestor of American physicians, and was assured by him that it was but the third specimen of rupture of the heart he had ever seen.

The second case occurred in Mr. H. H., of this town, a retired jeweler, aged 68; habits always good, and he had generally been in good health. He had never been informed by a medical man that he had any cardiac trouble, nor had he suspected such a thing. His pulse was usually about 60 and regular.

About September 12, 1896, during a very warm spell, he became overheated while running a lawn-mower. This was followed by an attack of diarrhea which lasted a few days. He thought his pulse was rather quicker after that. September 22 he became somewhat excited while talking on the street about a matter that interested him very much, and on his way home he was taken with pain in the region of the heart: no dyspnea, pulse very quick. His wife said he was "rattled" in his conversation when he came in. I was called in September 24, a. m. I found the patient in bed, with no symptoms except a pulse of 125 and pain in the region of the heart. No dyspnea. Auscultation revealed nothing but a feeble, rapid action of the heart. September 25, 10 a. m., pain was less, pulse un-

¹ Read before the Waterbury Medical and Surgical Club.

changed. September 26, heart very irregular, pulse feeble, hardly able to count it. Evening, pulse very much improved, regular and steady, 92 per minute. I said I would not call again until the evening of September 28. During September 27 and 28 he was around the house some of the time. He had beef-steak and potatoes for dinner. September 28, he was at the table waiting for supper, when he suddenly straightened back in a tonic spasm lasting but a moment, and lost consciousness. I saw him about ten minutes later, and at my suggestion Dr. Henry James was called in consultation. Surface very cold; profuse perspiration; somewhat rambling in his talk; no pulse at the wrist; heart sounds very feeble; no valvular murmur, never has been; nausea. In a couple of hours his mind became clear and heart sounds a little stronger. September 29, a. m., did not rest much; nausea; no pulse at the wrist; no particular change from last evening; some loss of motion and sensation in left arm and hand. When left arm or hand is touched, he says it produces a pricking sensation like that produced by contact with a faradic battery. This came on the night before. Six p. m., general condition about same as last evening; surface a little warmer, less perspiration, nausea marked. Has taken but little food. Pulse can be counted at the wrist, 82. Same sensation in left arm and hand when touched. About an hour later he died suddenly.

Autopsy, 36 hours after death: Brain and all other organs practically normal. Pericardium contains about 1½ pints of partially coagulated blood. Weight of heart 15½ ounces. A rupture one inch in length found in anterior wall of left ventricle near apex. Condition of heart and coronary arteries practically the same as in first case.

The third case occurred in M. M. K., aged 69, a merchant of good habits. He never used liquor of any kind, and had generally very good health. His family physician assures me that he does not remember of ever having prescribed for him until a week before his death, when he consulted him for a supposed pain in the stomach. A somewhat rapid pulse was noted at the time. For about a week he was somewhat indisposed, but was at his place of business every day and able to look after it. He had been a regular attendant at church but on Sunday concluded to remain at home while all of the other members of the family attended church. On their return he was found dead on the bathroom floor. In this case the autopsy revealed practically the same condition as in both the other cases; the rupture was about the same as regards size and location, and the same condition of heart muscles and coronary arteries obtained.

The interesting points in these cases are, the similarity of age, size and location of the ruptures, weight and condition of hearts and arteries. The second case was particularly interesting from the evidence of the length of time that intervened between the inception and culmination of the rupture, probably about 17 days, certainly 7 days.

Hospital for Infectious Diseases.—A bill has been passed in the Maryland House of Delegates which provides that before a hospital for infectious diseases may be built in Baltimore an ordinance shall be passed locating it and describing the diseases to be treated. An amendment was reported with the bill empowering temporary detention of suspected persons by the health officials.

Chico physicians have entered a protest against the municipal license of \$5 quarterly, which they are obliged to pay to the City Marshal. They claim that their certificates entitle them to practise in any part of California without tax. An attorney has been employed to look up the law on the subject, and if it is found that imposing such a license is unlawful, payment will be refused and collection will be contested in the courts.

An Opening for Internes in the State Hospitals.—Students about to graduate, or young physicians who wish to enlarge their experience, are now offered an opportunity to enter the New York state hospitals as internes or clinical assistants. These positions provide lodging and board. Appointments are made for a year. About 28 positions will be opened in the 14 state hospitals, situated in the following places in New York state: Utica, Ward's Island, N. Y. City (two hospitals), Buffalo, Gowanda (homeopathic), Rochester, Binghamton, Ogdensburg, Kings Park, L. I.; Poughkeepsie, Flatbush, Brooklyn, Willard, Central Islip, L. I.; Middletown (homeopathic). Although these are hospitals for the insane, yet they are so large that opportunities for experience in general medicine and observation of surgical procedure are abundant. Each hospital is well equipped with clinicopathologic laboratory and apparatus, operating rooms, trained nurses, hydrotherapeutic and electric devices and good medical libraries. No examinations will be necessary, but application must be made in person with good references, directly to the medical superintendent of any of the above-named hospitals, or to Dr. Frederick Peterson, president of the Commission in Lunacy, 4 West Fiftieth street, New York City.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

April 5, 1902. [Vol. XXXVIII, No. 14.]

1. Some Points in the Management of the Neurasthenic. JAMES H. McBRIDE.
2. Medical Education and the State. WALTER A. WELLS.
3. Further Report of a Previously Recorded Case of Blastomycosis of the Skin: Systemic Infection with Blastomyces; Death; Autopsy. JAMES W. WALKER and FRANK G. MONTGOMERY.
4. A Service View of Hernia, Its Prevalence Among Our Troops in the Orient. E. F. ROBINSON.
5. Hypnotics, Their Use and Abuse. ARTHUR W. ROGERS.

1.—Management of the Neurasthenic.—Not all should be secluded; some may be treated at home. Rising at nine with two hours' quiet in the middle of the day is sometimes sufficient rest. Complete rest should be prescribed in great debility with anemia and emaciation. The corpulent and florid are sometimes anemic. Having prescribed rest one must see that it is not too prolonged as the invalid habit may be aggravated. The nurse should be able to understand that, however much shamming there is, the patient is really a sick person. Frequent feeding is not applicable to all cases. Milk does well with some, most do better on some solid food. The time when exercise should begin is difficult to decide. The flabby unused muscle fibers cause various uncomfortable sensations magnified by a hyperesthetic consciousness. The feeling of tire, really pathologic, adds to the mental suffering. Many have "anesthesia of the sense of tire" to such a degree that they have no guide as to sufficient exercise. Serious fatigue should be avoided. Neurasthenics, like others, get confidence by doing things. They should not climb hills until far in convalescence, should not saunter, but walk briskly, and should walk on the ground, not on pavements or verandas. A cold sponge bath, avoiding shock, is bracing. Talking of symptoms must be forbidden and an interest in outdoor exercise should be awakened. To prevent relapses the physician must become really a maker of character. [H.M.]

2.—Medical Education and the State.—The public can be protected from incompetent practitioners only by raising the standard of education and by legal barriers to the practice of such. Our best schools are behind those of Europe in the time required for graduation and in the character of the course of study. Owing to government support foreign laboratories are magnificently equipped and hospital facilities greater. The instructors are not self-constituted as here but selected for scientific attainments. Our system results in undue multiplication of colleges. These colleges are the least endowed of all institutions of learning, but who could be expected to contribute to private business concerns. Sectional differences in state practice laws have worked much injustice, discriminating against the practitioner in favor of the recent graduate. Absolute similarity in conducting state examinations is a practical impossibility. Reform must begin in the schools and the state must supply deficiencies. Congress can as consistently contribute to medical as to agricultural education. Congress could appropriate a sum leaving control to the states, stipulating only as to the maintenance of a uniform standard, and that the graduates of the institutions receiving the money be allowed to practise anywhere in the United States without further examination. Among institutions there would be a survival of the fittest and thus the state school would operate to bring about uniformity in all schools. [H.M.]

3.—Blastomycosis of the Skin with Systemic Infection.—This case is of special interest because it is the only one yet reported in which an undoubted cutaneous blastomycosis has been followed by systemic infection with blastomyces. The history and pathologic findings are detailed. At autopsy there were no tumor-like formations in the lung, not even an epithelial proliferation similar to the one found in the skin, but changes of an inflammatory character comparable to those of tuberculosis. Although systemic infection was present prior to curettage of the skin lesions, it is probable that operation hastened death. The value of potassium iodid has been demonstrated. Failing in medical treatment, the curet should be eschewed, and the actual cautery or free incision with deep dis-

section and repairs by skin grafts or plastic operation selected. [H.M.]

4.—A Service View of Hernia.—With the exception of gunshot wounds, hernia is the commonest surgical condition in the Philippines. This can be attributed to great and sudden loss of flesh, general relaxation or loss of muscular tone, the great and sudden strain to which the soldier is subjected in an active campaign, but above all to the army belt. This has been discarded in almost every army but our own, especially as much ammunition is lost from it. Of the author's 53 cases, 45 were inguinal, 2 femoral, and 6 ventral. Bassini's operation was performed in 43 cases, Halsted's in 2, one of which developed a painful testicle. The mattress suture of kangaroo was abandoned for the continuous suture, as less knots were left for absorption, the tension was less and more evenly divided, with less danger of splitting Poupart's ligament and tearing out of sutures, and less time was consumed, which is important in the tropics. Shock is more common there, and chloroform is badly borne. Recurrence is rare, particularly in the vigorous men in the service. Ventral hernia, however, is not so amenable to treatment. From the standpoint of efficiency to the service, it is doubtful whether operation is justifiable. Radical operation should be performed in every case of femoral or inguinal hernia. [H.M.]

6.—Cesarean Section.—Operation was necessary in the case reported on account of unyielding scar-tissue in the cervix. The continuous suture should not be used as involution loosens it. The buried suture allows the upper half of the wound to be thoroughly cleansed of blood, thus giving an ideal surface. Silkwormgut is preferred to silk, as the latter occasionally acts as a siphon drain. To prevent fluids from entering the abdominal cavity, a central opening $1\frac{1}{2}$ to 3 inches in diameter is made through a square yard of rubber dam, and it is slipped over the uterus. [H.M.]

Boston Medical and Surgical Journal.

April 3, 1902. [Vol. CXLVI, No. 14.]

1. Angina Cruris (Intermittent Claudication) and Allied Conditions, Including Painful Cramps, with Remarks on the Importance of Examining the Pedal Arteries. G. L. WALTON and W. E. PAUL.
2. Physiologic Heart Murmurs Produced by the Electric Light Bath. THOMAS HOWELL.
3. A Congenital Malformation. SEABURY W. ALLEN.

1.—Angina Cruris.—This name is suggested for this comparatively frequent disease because it draws attention to the essential symptom, intense paroxysmal pain of brief duration generally affecting the calf, recurring at irregular intervals, oftenest when in the erect position, but sometimes when the patient is in bed, often accompanied by local asphyxia and cyanosis, and usually in a limb in which pulsation is wanting in the dorsalis pedis or posterior tibial, or both. The cause is probably restricted circulation, due to various conditions. A review of cases reported suggests that there is no sharp line of demarcation between simple cramps with occasional occurrence and moderate pain, severe and frequent cramps of constant seat, and classic angina cruris. In angina cruris a neuropathic tendency has been regarded as essential. The histopathology is not definitely established. Thickening of the arterial coats from various causes has been deemed the essential factor. Jackson's observations tend to show increased blood-pressure. Cases without definite signs of circulatory disturbance may be types not sufficiently advanced at the points available for palpation. In flatfoot the cramps may be due to abnormal mechanic conditions. The association with pulseless pedal arteries is too frequent to be a coincidence. Violent exercise and extremes of temperature should be avoided. Flatfoot should be treated. When the disease is well developed the patient should be kept in bed for a certain period. Strophanthus, nitroglycerin, potassium iodid, bandaging, galvanic footbaths and vegetable diet are suggested in treatment. [H.M.]

2.—Heart Murmurs from Electric Light Baths.—In an examination of 52 persons murmurs were heard in the heart or arteries in nearly every case, as a rule evanescent, but sometimes persisting for 20 or 30 minutes. The experiments demonstrate how unimportant a mere murmur is in making a diagnosis of heart disease. Howell describes the arrangement of

the incandescent lamps in the cabinet, running the temperature to 160°. The body temperature after 10 or 12 minutes may be 100° to 102°, the pulse 107. No clothes are worn. The light as it enters the body is transformed by the resistance into heat. A majority of those treated were healthy young people. In cases of organic heart-disease murmurs became more pronounced, but there were no untoward results. Functional murmurs previously present were intensified. Bruits were heard in the aortic, pulmonic and other valve areas, over the subclavians or carotids or more distant arteries. The effects were like those from amyl nitrite—rapid heart action and relaxed arteries. The author cites the production of murmurs by excitement and muscular exercise, and his observations lead to the belief that anything which will cause rapid and forcible heart action, especially when arterial tension is reduced, will produce these murmurs. [H.M.]

3.—A Congenital Malformation.—In this case, a boy of 14, a third leg was attached at the side and back of the pelvis. This was under perfect control, and normal except for an appendage at the lower part of the femur consisting of a well-formed metatarsal bone and three phalanges. In front the genitalia were normal. Between the middle and third legs was a well-developed penis with nonpatulous urethra, testicles and a cleft scrotum, which leaked urine continuously, and was probably a fistula leading to a second bladder. The leg could doubtless have been amputated at the hipjoint without difficulty. [H.M.]

Medical Record.

April 5, 1902. [Vol. 61, No. 14.]

1. Pathologic Therapeutic, and Clinical Notes on a Few Cases of Malarial Infection. J. HERBERT FORD.
2. The Influence of Suprarenals in Pneumonia. ETHAN ALLEN GRAY.
3. Plastic Operation for Restoration of the Sphincter Ani, with Report of a Case. CHARLES H. CHETWOOD.
4. Unnecessary Antiseptic Treatment in Midwifery. VALENTINE BROWNE.
5. What Can We Diagnose in Acute Appendicitis? CHARLES A. ELSBERG.

1.—Notes on Malarial Infection.—Local manifestations unattended by general symptoms usually take the form of trigeminal neuralgia, cephalalgia, or pseudorheumatic pains in various muscles. In the neuralgic cases Ford observed no tendency to periodicity which may be accounted for by the estivoautumnal character of the parasite. When heat exhaustion complicates malarial infection, quinin seems to do harm; reliance must be placed on cinchonidia, eucalyptus, arsenic, and change of climate. The pseudorheumatic type occurs most frequently when malaria has complicated chronic intestinal disease, and is probably due to impaired metabolism. The frequent postoperative rise of temperature in Manila, while probably in some cases malarial, is generally due to the instability of the nervous centers so common in the tropics. The writer reports cases simulating appendicitis, cases of pneumonia, of persistent diarrhea, and dysentery, a type simulating yellow fever, and cases of acute malarial nephritis recovering under the administration of quinin. Calomel is a valuable adjuvant in nephritis. He reports also five cases of mixed typhoid and malarial infection. Frequent mistakes in diagnosis are made from lack of blood examinations. In one series of 7,000 cases with various ailments, the average of malarial infections fell from 54% or 55% to 10% upon the arrival of a competent pathologist, and immediately rose when he left. [H.M.]

2.—Suprarenals in Pneumonia.—Gray having observed the rapid work of suprarenals in pulmonary hemorrhage, treated cases of senile pneumonia with this remedy. The heart reacted quickly and steadied itself with reduced pulsation, bloody sputum was checked within a few hours, and the coexisting albuminuria disappeared after the second day. Peripheral increase of blood pressure was not permanent. He reports six cases of various types of pneumonia treated by the drug. [H.M.]

3.—Restoration of the Sphincter Ani.—Chetwood reports having operated upon a man who had, years before, been gored by an ox, and who had undergone several operations for restoration of the functionless sphincter. The patient being placed in the knee-chest position, a large semicircular

incision, with its convexity in the direction of the coccyx and extending just beyond it, was made from a point about one inch in front of the anterior limit of the anus and on a line, externally, with the tuberosity of the ischium on one side to a similar point on the opposite side. The flap thus made was turned down. The fatty tissue was dissected away, so as to expose the lower end of the rectum and the edges of the glutei muscles. A ribbon-shaped piece of muscular tissue, about $\frac{1}{2}$ inch in breadth and $\frac{1}{16}$ inch in thickness, was now dissected on each side from the glutei muscles, leaving an attachment above. These two muscular ribbons were transposed, so that the fibers would decussate from one side to the other; in other words, the right-hand muscle was crossed over to the left, the left to the right, underneath the ligamentous connection between the anus and coccyx. These two muscular strips were made to encircle the gut and to meet anteriorly, and were fastened by chromicized catgut. There existed a very small remnant of sphincter muscle on each side of the rectum, and to that the new muscle strips were attached by additional sutures. The finger in the rectum now recognized the constriction formed by this purse-string arrangement, and the flap dissected away was sutured back again in place. The operation proved to be a success, as the patient was able to retain the feces satisfactorily, unless the accumulation was liquid, when some leakage occurred; but later, the new-made sphincter exercised sufficient control on the bowel to retain its contents under all conditions. [A.B.C.]

4.—Unnecessary Antiseptic Treatment in Midwifery.—

Browne had been so almost invariably successful in his midwifery practice that he did not adopt the antiseptic method until several years after their introduction. He reports three cases in which he used antiseptic procedures seemingly to the disadvantage of the patients, from which he concludes that antiseptic treatment as recommended in midwifery by many of the modern textbooks is not only unnecessary but is not wholly free from danger to the patient. [W.K.]

5.—What Can We Diagnose in Acute Appendicitis?—

In reference to diagnosing the position of the inflamed appendix, Elsberg states that in 70 cases the position was correctly determined in 60 after the following method: The appendix is considered to lie between two points, one the apex of the cecum the other the diseased portion of the organ. The apex of the cecum corresponds in general to what is known as McBurney's point. In children this point, which is taken only as the anatomic base of the appendix, lies one to two cm. above where it would lie in the adult. The second point in the abdominal wall is the one at which the patient localizes the greatest subjective pain, and it is to be found in the following manner: Ask the patient to point with one finger to the spot where he has the most pain, without looking at his abdomen, and as quickly as possible. Make him repeat this procedure a number of times until you are certain that the correct point has been obtained. Then the general course of the appendix will lie between the base of the organ and this point. The appendix may be bent upon itself, and then run in some other direction; it may run beyond the second point, but a considerable portion of the organ will be found between these two points. Very early in the disease this method cannot be made use of, because the first pain complained of is generally around the umbilicus. [A.B.C.]

New York Medical Journal.

March 29, 1902. [Vol. LXXV, No. 13.]

1. The Obesity of Adolescence. HEINRICH STERN.
2. The Relation of Local Disease to Nervous Disorders, Especially Neurasthenia. FREDERICK COGGESHALL.
3. The Radical Cure of Hydrocele by Minute (Two-minim) Injections of Carbolic Acid. WILLIAM B. COLEY and PRESTON A. SATTERWHITE.
4. A Prostatectomy Forceps. RAMON GUITERAS.
5. Hippus. RICHARD COLE NEWTON.
6. Diabetes and the Eye. BUSBY ALLEN.

1.—The obesity of adolescence is discussed by Stern, who classifies those cases of obesity abiding after individual development among the "metabolic" and as "transitory" or "specific" those which subside with the approach of adult life. Metabolic obesity may exist during any or all periods of life, while transitory obesity of adolescence is a specific condition,

the occurrence of which is limited to the latter stage. The excess in absolute weight in transitory obesity amounts on the average to about 25% or 30%. The preventive treatment of the metabolic form, which must be preeminently a dietetic one, will be of no avail in checking the course of transitory obesity, as this is the result of certain developmental anomalies. Juvenile metabolic obesity in which treatment is indicated should be subjected to about the same dietetic regulations as if it were metabolic obesity in the adult. To combat metabolic obesity successfully in the adolescent and yet to prevent the consumption of body albumin, the value of the nutriment should amount to 30 calories to the day and kilogram of body weight. The dietetic treatment alone will suffice in most instances. In other cases an increased amount of exercise, gymnastics of the lungs, massage, hydrotherapeutic and other measures, must be resorted to in addition to the former. Medicines should be administered, if at all, only for the accompanying disorders, and never for the reduction of metabolic obesity during adolescence. In cases of transitory obesity dietetic restrictions often effect lasting injury to the youthful organism. The condition may be treated by preparations of thyroid. A tablet used by the author is this:

Arsenous acid	0.001 = $\frac{1}{100}$ grain
Adonidin	0.005 = $\frac{1}{20}$ grain
Thyroid gland, dry powder	0.12 = 2 grains

M. ft. C. T., No. I.

[C.A.O.]

2.—The relation of local disease to nervous disorders,

especially neurasthenia, is discussed by Coggeshall and a few of his own cases are quoted. His plan of treatment, stated briefly, shows his opinion of the relation of local irritation to neurasthenia. His treatment is: First, to search carefully for the evidence of hereditary tendency to neurasthenia or of the appearance of the disease in childhood. This gives a rough indication of the gravity of the tendency and of the likelihood of benefit from removing local causes of extra fatigue. Second, to search especially in the eye and in the pelvic organs, but also in the nose and teeth, and of course with great care in the habits and occupation of the patient, for sources of removable strain. Third, to remove these local irritations as completely (but in gynecologic cases as conservatively) as possible, never waiting until the patient is better before removing what he thinks is the reason why she is not better. Fourth, never to rest satisfied with removing the local irritation but to begin at once building up the nervous system and the mental condition as far as possible. [C.A.O.]

3.—Radical Cure of Hydrocele.—The prevailing methods in the treatment of hydrocele are discussed and several cases reported in which two minims of carbolic acid was injected instead of from 30 to 90 as recommended by Levis. The cases treated varied from the recent hydrocele in a boy of 14 to that of over 40 years' duration in a man of 62, and the results were almost uniformly good. The results in the cases treated by the ordinary commercial carbolic acid did not compare with those from the use of Schering's carbolic-acid crystals to which just enough glycerin was added to liquefy the crystals. It is important to compress and manipulate the folds of the tunica vaginalis in such a way as to empty the sac as completely as possible, and after the injection the scrotum should be thoroughly manipulated to allow the acid to come in contact with the entire serous surface. The authors believe this small amount to be absolutely free from all risk. [C.A.O.]

4.—A prostatectomy forceps resembling an ordinary tongue forceps is described by Guiteras. It is easy to introduce and allows the use of any desired degree of pressure upon the lobe, and it does not tear the gland or wound the finger, as does the volsella forceps, or mash or lacerate the prostate as do some other varieties. The following is his procedure in cutting through the floor of the urethra: (1) Perineal urethrotomy; (2) dilation of the prostatic urethra by means of the Kollman dilator, then with the forefinger and sometimes with the thumb; after inserting the forefinger of the left hand into the rectum and placing it at the apex of the prostate, the operator passes a thin pair of sharp-pointed, curved scissors into the perineal incision until the points have come in contact with the prostatic urethra. He then either cuts through the floor or

passes the points of the scissors through the mucosa and capsule at this point, and spreads open the blades so as to tear the tissues. It is now easy to insert the forefinger of one hand, usually the left, into this space, and having made a few sweeps of the forefinger around the apex of the gland, the forceps can be pushed up alongside the finger, and can grasp the lobe. Gentle traction is then exerted by the hand holding the forceps, while the forefinger of the other hand proceeds to sweep around between the gland and its capsule until the former has been loosened and removed. A similar enucleation is then performed on the other lobe, and if any middle lobe is present, it can be grasped by the other forceps and removed. In this way the prostatic urethra is injured less extensively than if it is split down vertically through the middle of its floor by a knife inserted into it. It is important to remove the lateral lobes separately, even if the whole prostate can be removed *en masse*, for otherwise the entire prostatic urethra would come away with it. [C.A.O.]

5.—Hippus.—This peculiar undulatory reaction of the pupils occurred in a negro of 49 who fell and struck his head. He was unconscious for half an hour and later had convulsions. When the eyes were held open the pupils dilated sometimes equally, sometimes not. It was not easy to determine whether the undulatory action of the irises was rhythmic and constant, irrespective of the stimulus of light or not, but the author concluded that it was due to the approach of the light—or at least was very greatly augmented by it. As the case went on, and a state bordering upon coma supervened upon the active delirium, the rhythmic expansions and contractions of the irises seemed to become more constant, and perhaps independent of external stimulus. It was also noted that the pupils acted more nearly equally, and that the excursions were less extensive. The autopsy, 13 days after the accident showed that death was due to the pressure of an apoplectic clot upon the brain. The condition of the viscera was indicative of a long-standing and partially healed tuberculosis and perhaps syphilis. [C.A.O.]

6.—Diabetes and the Eye.—Allen says that one of the earlier symptoms of diabetes involving the eye is a loss of power of the ocular muscles and those innervated by the third nerve are oftenest affected. These paralyses are generally partial and sometimes disappear only to return after a time. They bear no constant relation to the severity of the disease. Paresis of the accommodation usually occurs early, and is partial. If occurring in a person under 35, and progressing rapidly, it should lead to the suspicion of glycosuria. There is no marked difference in the appearance of a diabetic cataract and an ordinary senile cataract. A cataract occurring in very young persons, ripening within a few weeks and appearing simultaneously in both eyes, would be almost certainly diagnosed as diabetic; while in those of middle age the progress is slower and the diagnosis can hardly be made without examination of the urine. The retinitis of Bright's disease resembles very closely the retinitis of diabetics and the two are often associated. In diabetic retinitis the papillas are not usually affected, but there is an optic retinitis due to glycosuria. The operation for cataract in diabetics should be done at a time when there is a lull in the disease. A simple ulcer of the cornea in diabetes, as in nephritis, may lead to a speedy loss of the eye. [C.A.O.]

Medical News.

April 5, 1902. [Vol. 80, No. 14.]

1. Treatment of Acute Puerperal Sepsis from a Surgical Standpoint. HIRAM N. VINEBERG.
2. Leukocytosis as a Point of Prognosis in Appendicitis. HENRY M. JOY and FREDERICK T. WRIGHT.
3. The Pneumatic Proctoscope. JAMES P. TUTTLE.
4. The Antirabic Vaccinations at the New York Pasteur Institute During 1900 and 1901. GEORGE GIBIER RAMBAUD.

1.—Treatment of Acute Puerperal Sepsis from a Surgical Standpoint.—Vineberg lays special stress upon the following points: 1. Every case of puerperal sepsis is wound fever or wound infection, and should be treated on the same general surgical principles which apply to wound infection elsewhere. 2. Each case of puerperal sepsis, no matter how slight, should be observed carefully from the outset, for it may

develop into an infection menacing life. 3. When a case of uterine sepsis progresses unfavorably after curetting, irrigation and proper general treatment, as evidenced by the pulse, the temperature and the condition of the the uterus, we are justified in opening the abdomen and removing the uterus, unless, after opening the abdomen, we find some condition in the uterus itself, such as a single intramural abscess or a localized gangrene, which would admit of removal without ablation of the whole organ. 4. When a uterine infection extends to a tube or ovary, setting up a violent grade of salpingitis or ovarian abscess, the abdomen should be opened without delay and the affected tube or ovary removed. 5. When a uterine infection sets up a septic peritonitis, the abdomen should be opened and the uterus ablated, the peritoneal cavity flushed with saline solution, and free drainage employed through the vaginal opening. 6. To operate for these conditions when the patient is evidently moribund is unjustifiable, and can serve only to bring discredit upon the profession and upon the operation. [W.K.]

2.—Leukocytosis as a Point of Prognosis in Appendicitis.—Joy and Wright, after an exhaustive and painstaking article on this subject, summarize as follows: The leukocyte count is a valuable aid to prognosis in appendicitis. This is distinct from its diagnostic value. A high stationary, or an increasing count indicates a morbid condition of increasing severity which demands operation, no matter what the clinical symptoms may be. A low stationary or decreasing count indicates that the severity of the case is abating and that operation may be safely postponed. Cases in which a falling count is accompanied by unmistakable signs of a generally bad condition form the rare exception to this second principle, and in them there is no chance of error. No arbitrary set of prognostic values to be assigned to various degrees of leukocytosis can be constructed. The important point is to follow any scheme in which one learns to have confidence, provided the essential principle be preserved. The count indicates when operation should be performed for the best interests of the patient. Circumstances often render it desirable to postpone operation in appendicitis. Study of the blood-count enables it to be determined whether this may be done with safety and often renders such postponement permissible. [A.B.C.]

3.—The Pneumatic Proctoscope.—Tuttle describes a pneumatic proctoscope, several illustrations of which accompany the article. Its advantages are stated to be as follows: It does not require any uncomfortable position of the patient for its employment. The lamp is outside of the main tube and thus does not obstruct the view in any manner. The descent of feces into the tube does not obstruct the light nor require its removal. The plug can be taken out and the tube cleansed by the introduction of small cotton wads held in long dressing forceps, without any material delay in the examination. The plug containing the eye-piece is easily and quickly adjusted through the ground joint. [A.B.C.]

4.—Antirabic Vaccinations.—Of 241 cases treated the biting animal in 88 was proved rabid by experimental inoculation, in 60 by veterinary examination. In 93 cases the animal had disappeared or had been killed after suspicion of hydrophobia. From experiment it appears that the nervous centers of persons who die of rabies within 15 days following the end of treatment have been affected by the virus before treatment could have exerted its full effects. Diagnosis in dogs is made by examination of some of the cerebrospinal ganglia after the method of Van Gehuchten, supplemented by experimental inoculation. Clinical symptoms in the dog are change in disposition; unusual manifestations of attachment; disappearance from home for several days; change in bark or its absence; lack of appetite; difficulty in chewing and swallowing solid food; excitement and hallucinations; eating its bedding, carpets, etc.; inability to eat, the food dropping out; unsteady gait showing beginning of paralysis of hind legs; paralysis of lower jaw, and general paralysis. The treatment differs from that used in Paris only in beginning in severe cases with cord of the twelfth day and in the use of second day cord in every case. Evidence should not be destroyed by killing the dog; it should be confined for one week. When it dies

the head and neck should be sent to the nearest laboratory or the brain and medulla preserved in 95% alcohol or glycerin. Treatment must be given early. Cauterization should be practised but not relied upon. [H.M.]

Philadelphia Medical Journal.

April 5, 1902. [Vol. ix, No. 14.]

1. The Relation of the Tubercle Bacillus to Pseudoleukemia (Sternberg's Disease). JOSEPH SALLER. (To be concluded.)
2. Bacterial Purification of Sewage. B. H. BUXTON.
3. Light and Radiance in the Treatment of Disease. The Treatment of Carcinoma with the X-ray. GEORGE G. HOPKINS.
4. A Case of Bubonic Plague—Recovery. THOMAS W. JACKSON.
5. A Case of Thrombosis of the Left Internal Jugular, Subclavian, Axillary, Basilic, and Median Basilic Veins of Unexplained Origin. CHARLES J. ALDRICH.

1.—See *American Medicine*, Vol. II, No. 14, p. 522.

2.—**Bacterial Purification of Sewage.**—Buxton calls attention to the necessity of bacterial purification of sewage previous to its final discharge into the water courses. The various biologic filtration processes now in vogue are detailed. [F.C.H.]

3.—**Treatment of Carcinomatous Growths by Röntgen Rays.**—Hopkins' experiments with x-ray in carcinomas and other malignant and benign growths during the past 3½ years confirm his opinion that the larger proportion of these growths can be absolutely controlled by the use of this fluorescence. His success with the coil has not been satisfactory, so he has discarded it entirely for the static machine. With proper care and judgment the x-ray is a certain and safe cure for a very large class of malignant diseases; but in unrestrained hands, it has already been productive of harm to some of the patients. Inoperable cases of uterine cancer have been treated with a considerable degree of success. In the hemorrhagic form of carcinoma of the cervix uteri and vaginal walls, he uses the Finsen light as well as the x-ray. He considers that recurrent carcinoma after amputation of the breast to be one of the most satisfactory fields for work in this line. [F.C.H.]

4.—**Bubonic Plague.**—Jackson reports a case of bubonic plague with recovery. In the absence of a microscopic examination he made a diagnosis of sporadic plague for the following reasons: The onset and progress of the case suggested an acute infectious disease; the appearance of the femoral bubo without venereal or other nearby skin lesions, coincident with acute febrile symptoms, is most unusual in cases of malarial disease. (In a recent experience of over 2,000 cases of malarial disease he had not observed such a combination of symptoms.) The recent occurrence of five cases in the town where the patient lived, readily accounted for the origin of the case, and the buildings in which the original cases occurred still remained, as the medical officers were without authority to destroy them; and, the temperature curve might be variously interpreted, but was not inconsistent with plague. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Condition of the Spinal Cord in Pulmonary Tuberculosis.—The discoveries by Lichtheim and Minnich of spinal lesions in pernicious anemia have been the starting point of numerous observations upon the condition of the cord in other cachectic conditions and also in the acute infectious disease. Lubarsch has shown that the spinal cord is not rarely involved in visceral carcinoma, and Schultze and Nonne have discovered spinal lesions in leukemia; the latter, also in acute infectious diseases, especially ulcerative endocarditis. It is remarkable, however, that the most common, of all cachexias, that of tuberculosis, has been studied in but a slight degree with reference to the existence of spinal lesions. A priori, we should expect changes in the cord to occur, and there are a few confirmatory researches in the literature. One reason for the paucity of observations is probably that autopsies are not made with the same enthusiasm or with the same frequency in

tuberculosis as in other diseases. Pathologists and clinicians are so well satisfied with their knowledge of the melancholy picture presented by the tuberculous cadaver that much valuable material goes to waste. Recently Ransohoff (*Monats.f. Psychiatrie u. Neurologie*, February, 1902), examined the spinal cord in 11 cases of tuberculosis occurring in the Asylum for the Insane at Hördt. It is unnecessary to go into the details of his observations, which culminate in the following conclusions: 1. The white substance, especially in the long-fiber tracts, frequently shows lesions consisting primarily in changes demonstrable only by the Marchi method; later, in disintegration, granule cell-accumulation, and hyperplasia of the neuroglia. 2. It is especially the rapid cases, presenting the picture of mixed infection, that are liable to these changes. 3. The lesions are most marked in the posterior columns of the cervical region and in the pyramidal tracts of the lumbar cord. The extramedullary roots are not affected. 4. Hydropic swelling is a frequent change in the spinal cord in tuberculosis, but it has nothing to do with the degeneration above described.

A careful analysis of the nervous system of tuberculosis during life, when correlated with studies of the spinal cord after death are likely to lead to interesting revelations.

Problems and Aims in the Treatment of Chronic Gonorrhea, with Reference to the Question of Marriage.

—Engelman¹ describes the method which he uses to determine the presence and location of gonococci in cases of chronic gonorrhea, and is of the opinion that every purulent urethral catarrh—whether gonococci can be found or not—must be considered infectious. He thinks that before consent to marriage should be given the disease of the mucous membranes should be removed. The prognosis, from the standpoint of a later marital permit, and even of a relative cure, is good, if the patient is in good health and is satisfied not only to conduct himself hygienically for some time, but also to follow the treatment with patience and energy. The existence of a stricture or of a simple mucoid discharge should not be considered sufficient to withhold permission. The author's methods of treatment include a thorough course of injections and irrigations until the general catarrh is cured; and sounds and dilators for circumscribed localized foci of inflammation and infiltration, the latter always being followed by hot injections of silver nitrate solution. Prostatic complications he treats with massage, to be followed by irrigation. If, after some weeks of observation, no symptoms appear to disprove the cure, the certificate may be safely granted. [E.L.]

A Bacillus Pathogenic for Rats.—Of interest in connection with the campaign against rats as carriers of plague infection is the discovery by B. Issatschenko² of a bacillus peculiarly pathogenic for rats, while harmless to horses, cattle, sheep, swine, dogs, cats and poultry. Of 443 infected rats 431 died. Bouillon cultures were successfully employed in various districts of Russia for exterminating the rodents.

Benzin Poisoning as a Disease of Occupation.—Doren-dorf³ reports the case-histories of two men that had been exposed for some time to vapor of benzin in an india-rubber factory, and that presented at first disturbances of the digestive tract and then different nervous symptoms—irregular pains, paresthesias, psychic depression, hesitating speech, diminished muscular power in the right arm, tenderness of many nerves, increased kneejerks, fibrillary tremors of the tongue, eyelids and hands, and nystagmus, and no muscular atrophy nor disturbances of the special senses. The blood showed normal hemoglobin and spectroscopic pictures, but in addition a few erythrocytes poor in hemoglobin, and pigment granules, ochre or brown-red or brown-black in color in the plasma and some leukocytes. Experimental investigations on the lower animals revealed similar alterations, and toxic alterations in the

¹ St. Petersburg med. Wochenschrift, No. 52, 1901.

² Centralbl. f. Bakteriologie, Parasitologie u. Infektionskrankheiten, Bd. 31, Heft I, 1902.

³ Zeitschrift für klinische Medizin, XLIII, 42, 1901.

ganglion cells—from which it is presumed that the symptoms manifested were due to benzin poisoning. [A.O.J.K.]

The Diagnostic Value of the Widal Serum Reaction in Typhoid Fever.—Tobieson¹ regards the Widal serum reaction as of great diagnostic value, though in some cases not distinctive. A dilution less than 1 to 50 is not trustworthy. [A.O.J.K.]

Symptomatic Value of the Umbilicomammillary Distance.—J. Sabrazes² points out that the distances which separate the umbilicus from each of the nipples are in healthy persons equal, but present considerable variation as the result of disease; thus in splenomegaly and in pericarditis with effusion the left umbilicomammillary distance is the longest. On the other hand, one distance is shorter in old chronic pleuritis with retraction of the thoracic wall. [C.S.D.]

Ulceration of the Stomach and Duodenum.—Box³ inclines to the belief that microbial infection of the lymph follicles of the wall of the stomach is the cause of gastric ulceration. He advises that the following points should be considered in the investigation of supposed gastric ulcer: (1) The patient's statement as to the occurrence of hematemesis should be received with due reserve, and corroborative particulars inquired for; (2) in doubtful cases it is necessary to see the vomited matter one's self if this is possible, and better still, to observe or to have observed the actual act of vomiting; (3) in all cases the thorough examination of the urine should be a routine procedure, and it should include the search for casts as well as for albumin. A single examination is often not enough; (4) the eyes should always be examined, particularly with a view to the presence of the normal light reflex, and the occurrence of changes in the fundus. Optic atrophy may put us on the track of locomotor ataxia; the presence of optic neuritis may reveal an unsuspected cerebral tumor, and the presence of neuroretinitis may indicate renal disease; (5) an examination of the stomach contents for free HCl should always be made when practicable. And if the first examination be negative a second should be undertaken before being positive as to its absence. Hyperacidity is a valuable although not absolutely constant sign of gastric ulceration; (6) every patient in whom gastric ulceration is diagnosed should be looked upon as seriously ill. The disease is commonly treated much too lightly, considering its liability to such serious and fatal complications. Prolonged rest in bed and proper dieting for some time are essential in all cases. [A.O.J.K.]

The Heart of the Child.—Lees⁴ quotes Sturges to the effect that "the child's heart holds as many secrets as the man's and is even more deceiving." From the point of view that any disease that damages the child's heart not only hinders its future work but also impedes its development and the development of the whole organism, the integrity of the child's heart is even more important than that of the man's. In investigating a child's heart the same methods as are employed in the case of an adult are available. Emphasis is laid upon the importance of percussion, and especial interest attaches to the remarks with reference to outlining the right auricle, the dulness of which is said to be always detectable. With reference to auscultation, attention is called to the importance of properly interpreting congenital murmurs. The conditions that bring about hypertrophy and dilation of the right side and of the left side of the heart are detailed and different suggestive points in treatment are pointed out. It is believed that salicylic acid is definitely antagonistic to the rheumatic process, and that is almost as necessary to the rheumatic child as is mercury to the syphilitic child. Sodium bicarbonate also is useful, and may be given with the salicylic acid in double the dose of the latter. It is believed that dilation of the left ventricle subsides more rapidly under this treatment than when salicylic acid is given alone. Leeches and an ice-bag locally are said to be of the greatest possible service to the rheumatic heart. Digitalis is of little service—its opportunity being later when the inflammation has subsided and the mechanic effects of the cardiac lesions manifest themselves. Strychnin is of value in the enfeeblement of toxemia, and iron in anemic debility; but in diphtheria

main reliance is placed upon the subcutaneous injection of atropin when danger threatens. [A.O.J.K.]

The Toxic Action of Sodium Sulfit when Used as a Meat Preservative.—Kiouka¹ finds from a series of experiments on dogs that sodium sulfit, one of the many salts in use as a meat preservative, when fed to the animals for 60 days or more in the proportion of 1 to 2 gms. to every Kg. of meat (the proportion ordinarily in use in the preservation of meat), invariably results in phenomena symptomatic of hemic poisoning, as shown by the severe intravital vascular changes, hemorrhages, inflammatory and degenerative processes in the lungs, kidneys, intestinal tract, heart, liver, etc. Partly from analogy and partly from the reports of other investigators, Kiouka concludes that the salt is also toxic in its action in the case of human beings—a theory which is disputed by Lebbin, the chemist, and Liebreich, the pharmacologist. [H.H.C.]

The Methods of Conducting Hemolytic Experiments.—Petrie,² pointing out that hemolytic tests present a wide margin of possible fallacy in the conclusions arrived at from positive results, advocates the following steps in performing the tests: (1) Use absolutely fresh, unclothed blood; (2) prepare in test-tubes of equal size known percentages of the hemolysin in isotonic oxalate solution; (3) add to each of the tubes exactly the same amount of blood and mix well; (4) incubate tubes for the same length of time at 37° C.; (5) centrifugalize till all the corpuscles settle in the bottom of the tube, forming a sharp line of demarcation between the blood and the supernatant liquid; (6) in every experiment have control tubes containing isotonic salt solution alone; (7) in doubtful cases examine microscopically. [A.O.J.K.]

The Processes and Hygiene of Felt Hat Making.—Porter³ describes the processes of felt hat making and points out that possibilities of injury arises in connection with the following: The various processes connected with the dressing of the skins with mercury nitrate (carotting); the dust evolved during the "blowing" process; the "forming" process; the hot steam laden atmosphere in which the plunkers work; the effect of planking and blocking on the hands; the process of spirit proofing and the subsequent drying of the proofed hats; and the fine dust evolved during the process of finishing. [A.O.J.K.]

The Metamorphic Cycles of Echinococcus.—Deré⁴ described before the Société de Biologie of Paris his recent discovery that the apparent retrogressive and pathologic cystic transformation which takes place in the scolex stage of echinococcus in reality constitutes a progressive evolution, the new cysts under favorable circumstances becoming fertile, by which means the developmental cycle is maintained in a single host. [C.S.D.]

Arsenic in the Hair of Beri-beri Patients.—Ross⁵ reports that the hair of 6 of 20 patients suffering from beri-beri showed the presence of arsenic, and that most of positive cases were recent, whereas most of the negative cases were older. He believes that the Penang beri-beri is arsenical, especially as the people work in tin factories and are brought closely in contact with arsenic. [A.O.J.K.]

Are the Angiomas of the Skin Occurring Relatively Early in Life and in Comparatively Large Numbers of any Value in the Diagnosis of Carcinoma?—Reizenstein⁶ has examined the statement of Leser that angiomas are of diagnostic value in carcinoma, and comes to the conclusion that they have absolutely no such value. They are a sign of degeneration, occurring generally in advanced life, but sometimes at an earlier period, and without the necessary coexistence of any serious disease. [D.R.]

A Native Remedy for Blackwater Fever.—O'Sullivan-Beare⁷ holds that blackwater fever is not a complication of ordinary malaria, but an entirely distinct disease which at present is endemic in certain districts only; that it attacks persons exposed to its influence whose vital powers of resistance have become weakened from the effects of chill, insolation, bad or

¹ Zeitschrift für klinische Medizin, xliii, 147, 1901.

² Gaz. hebdom. des Sciences méd. de Bordeaux, October 6, 1901.

³ British Medical Journal, February 8, 1902.

⁴ Lancet, February 1, 1902.

¹ Deutsche medizinische Wochenschrift, February 6, 1902.

² Lancet, February 15, 1902.

³ British Medical Journal, February 15, 1902.

⁴ La Semaine Médicale, February 5, 1902.

⁵ British Medical Journal, February 8, 1902.

⁶ Münchener medizinische Wochenschrift, March 11, 1902.

⁷ Lancet, February 1, 1902.

insufficient diet, over-fatigue, or possibly from the abuse of quinin, and that it finds its most favorable nidus for development in the system of those persons who have become debilitated by repeated attacks of malaria. He directs attention to the value as a therapeutic agent of a remedy used by the natives of East Africa, and described by Holmes as *Cassia beargana*. It is used by the natives in the form of a decoction, and by O'Sullivan-Beare in the form of a fluid extract, in doses of one fluid dram well diluted with water every two hours. The good results attained by O'Sullivan-Beare and others in East Africa warrant its more extended use. [A.O.J.K.]

Action of Precipitins on Urinary Albumins.—Linossier and Lemoine¹ have followed up the experiments of Tschistovitch and Bordet, who demonstrated that the serum of an animal which has been inoculated with the serum of another animal acquired the power of precipitating *in vitro* the serum of this other animal. By applying this reaction to the differentiation of urinary albumins they have demonstrated the power of the active serum to precipitate all urines rich in albumin; but, that the intensity of the reaction is not always proportional to the quantity of albumin shown by analysis, since a urine containing only traces of albumin sometimes gives a reaction much more appreciable than does nitric acid; while at other times it gives no reaction though nitric acid is very satisfactory. [C.S.D.]

Airborne Typhoid Fever.—Quill² states that he has shown that all water avenues through which typhoid fever could have been conveyed to the military camp at Diyatalawa, Ceylon, were efficiently guarded, and therefore that a water-borne origin of the epidemic must be abandoned; and that the infection was airborne, resulting from emanations from specifically infected latrines, infected dust, or bacilli-laden flies. [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

The Results of Pylorotomy for Carcinoma of the Stomach.—Carcinoma is practically the only lesion for which pylorotomy has been done. On several occasions the operation has been performed on account of supposed cancer, which has proved on examination to be simply thickening due to a chronic ulcer or to hypertrophy of the pylorus which can be mistaken for a carcinoma. Morrison³ reports a case of this kind, and Fenwick found at a necropsy that a case of tumor in the left hypochondrium which had existed for a number of months with hematemesis was due to a simple ulcer in the cardiac region, which had given rise to tumor the size of an orange. Hochenegg⁴ also reported similar cases. The first operations performed by Pean in 1879 and Rydygier in 1880 resulted fatally, and the mortality in the earlier days was so great that for some time the operation lost favor with most surgeons. But it has been generally recognized that theoretically at least pylorotomy is the ideal operation and a number of bold experienced surgeons have steadfastly continued to perform the operation in spite of the high mortality with results which have been constantly growing better. At the meeting of the German Surgical Congress in 1898 a number of representative surgeons reported better results, and it was clear that opinion was becoming more favorable to the radical operation. The permanent results of the operation are of greatest interest, and while the mortality still continues quite high there has been an increasing number of patients who have been permanently cured by pylorotomy. In his Cartwright lectures Keen⁵ had collected from literature five patients living for two years and over after operation, one for three, four, five and six years after operation, and three patients living for over seven years after operation. Two very important papers bearing on this subject have

appeared from the clinics of Switzerland in the form of inaugural dissertations which we believe appearing in this form have not attracted much notice. Broquet¹ gives results of 52 pylorotomies for carcinoma of the stomach by Kocher in Berne, and Kolbe² discusses the entire subject of carcinoma of the stomach and its surgical treatment at considerable length, giving the results of 39 pylorotomies by Roux of Lausanne. Roux and Kocher working in comparatively small cities in Switzerland are no doubt doing as much and as good work in gastrointestinal surgery as any living surgeons, and the results of their work deserve wider notice than they are likely to attract from publication in inaugural dissertations which have very limited circulation.

Broquet states that in all of Kocher's cases a careful pathologic examination was made to determine the nature of the growths removed. Most of these examinations were made by Professor Langhans. In estimating the value of permanent results this is, of course, a matter of a great deal of importance. These 52 cases have been operated upon during a period of 17 years from 1881 up to 1898. He divides the 17 years into three periods, and finds that the results have steadily improved. In the first period of five years most of the operations were performed according to Billroth's method. In the later cases Kocher's method has been employed in most cases. This improvement in results has been due not only to improvement in operative technique, but to the fact that physicians have recognized the importance of prompt intervention and have sent their cases at an earlier date, and also that considerable advance has been made in methods of diagnosis. In the first period, from 1881 to 1886, Kocher operated upon 8 cases, with 5 deaths and 3 recoveries. All of the patients were operated upon by Billroth's method. In the latest period, from 1891 to 1898, 25 patients were operated upon by Kocher's method, with 22 recoveries; 6 were operated upon by Billroth's method, with 3 recoveries, and 3 had resection combined with gastrojejunostomy, with 1 recovery. In all 32 patients have been operated upon by Kocher's method, with 27 recoveries; 15 by Billroth's method, with 6 recoveries, and 5 by resection with gastrojejunostomy, with 1 recovery. This gives a percentage of operative recoveries of 84.4 for Kocher's method, 40% for Billroth's method, and 20% for the method of resection with gastrojejunostomy. In not all of the cases could the fatal result be attributed to the method of operation, for in 2 cases by Kocher's method partial resection of the pancreas was combined with the operation, and in several cases there were extensive adhesions which added greatly to the difficulties of the operation. Murphy's button was used in 7 cases, but Kocher did not find its use satisfactory, and has discarded it entirely for the suture method. As regards the results, all of the patients who recovered from the operation were at least temporarily benefited. Most of them were able to eat any kind of food, and gained rapidly in weight. A considerable proportion of them died from recurrences, but in many cases they enjoyed a period of 2 or 3 years of perfect health. An examination of the stomach contents was made in 35 of the cases before operation, and in 6 cases free hydrochloric acid was found. This seems to indicate that the presence of free hydrochloric acid cannot always be depended upon to indicate the absence of carcinoma. In all, Kocher has 7 patients living 2 years or more after pylorotomy; 4 are living more than 3 years after the operation; one 5 years and one 10 years after the operation; 1 patient died of recurrence 3 years, and 2, 2 years after operation. Of these 7 cases, 6 were operated upon by Kocher's method. These patients are considered permanently cured.

While Kolbe enters more into details with regard to

¹ La Semaine Médicale, February 5, 1902.

² British Medical Journal, February 15, 1902.

³ Lancet, 1898, Vol. I, p. 561.

⁴ Centralblatt für Chirurgie, 1898, p. 349.

⁵ Philadelphia Medical Journal, May 7, 1898.

¹ Contribution à l'étude du cancer de l'estomac, Delemont, 1900.

² Le cancer de l'estomac et son traitement chirurgical, Lausanne, 1901.

the condition of patients and the various methods of treatment than does Broquet, he does not give as much definite information about the permanent results in Roux's cases. He states that the general condition of the patients improved rapidly after operation. Of 39 cases of pylorotomy 26, or 67%, have recovered from the operation. These he compares with Kocher's entire mortality of 36.6%, Czerny's mortality of 37.7%, in statistics from 1881 to 1897, and Carle and Fantino, 21.43%. With right he calls attention to the fact that while the immediate results of certain operators may be less favorable than those of others, their permanent results may be better because their operations are more radical. As an example of this, he cites Mikulicz's statistics of 44% mortality from 1896 to 1898, during which time he performed very extensive operations, excising wide of the growth and removing the glands, which might possibly be involved, with great care, as against 32% in previous years when he practised less extensive operation. Of Roux's 39 cases, 13, or 33½%, died as the immediate result of the operation; 26 have recovered, and 9 are still living at an average like the time of 3 years and 8 months after operation. One of these patients is living in perfect health 9 years and 4 months after operation. The patients rapidly improved in general health after operation. There was increase of weight, complete cessation of pain, of vomiting, and other disagreeable symptoms. In all of the cases there was considerable gain of life, some of the patients who died of recurrences living for 2 or 3 years in perfect health. Roux prefers resection of the stomach combined with gastroenterostomy, using his Y method of enteroanastomosis to prevent occurrence of the vicious circle. His results as regards immediate mortality and permanent cures compare favorably with those of Kocher, and seem to show that the results of operation depend more upon the skill of the operator than upon the method of operation.

These results from only two eminent surgeons who have persistently performed pylorotomy in the face of a high mortality show almost as many permanent recoveries as Keen collected from all sources in 1898. They show that carcinoma of the stomach is curable by surgical intervention and that operation is certainly as justifiable as for carcinoma of the uterus or carcinoma of the tongue. There is still room for much improvement in methods of early diagnosis, and it lays with the clinician and the physiologic chemist to devise methods of early diagnosis which shall make early operation possible. Then the results of operative intervention are certain to become far more favorable. At present most patients are past the favorable time for operation when they come under the care of a surgeon. In all cases of doubt exploratory operation should certainly be advised. The risks and resulting discomfort of such exploration are extremely slight, and in case carcinoma is found the gain in time is of the greatest possible importance.

Removal of a Sarcoma of the Tail of the Pancreas.—

Malcom¹ reports the case of a female child of 4 who had a tumor in the upper left side of the abdomen which had increased gradually. The child's grandfather had died of carcinoma. Otherwise the family history was good. Her urine was practically normal. As the growth increased the patient became extremely emaciated and anemic; under tonic treatment her general condition improved. At the time of operation the tumor filled the left loin pushing the lower ribs upward and forward and bulging outward and extending across the abdomen as far as the outer edge of the right rectus muscle; downward to below the level of the anterior superior spine. It was smooth and elastic, and could be grasped between the hand on the front of the abdomen and the hand in the loin. There was a slight amount of motility. The glands in both axillas were enlarged. Under chloroform anesthesia an incision was made in the left semilunar line exposing the growth. The splenic

flexure and adjacent portion of the colon were fixed in front of it, but there was no difficulty in separating the tumor from its attachments. On dividing some firm adhesions to the lower end of the spleen there was considerable hemorrhage. The tumor was drawn out of the abdomen, and was found to be attached to the pancreas. It could be separated from it only by dividing the pancreatic tissue. Hemorrhage was readily controlled by ligature. The abdomen was flushed with sterile salt solution, after bleeding points had been tied, and was immediately closed. The patient died from the shock of the operation. At the necropsy it was found that the tumor involved the tail of the pancreas and a large part of the pancreas was removed with it. Pathologic examination showed that the growth was a fibrosarcoma and there was a secondary growth involving the portal vein. Had it not been for this secondary growth successful operation might have been possible. Malcom mentions a case of successful removal of a cystic tumor from the tail of pancreas which he reported in 1898. [M.B.T.]

Abdominal Contusion: Rupture of the Intestine.—

Gage¹ reports four cases of this kind. A man had been kicked by a horse in the abdomen, causing very little shock, but later there was nausea, vomiting and severe abdominal pain. The following day symptoms of general peritonitis developed and an operation was performed. The intestines were adherent and there was pus in the abdominal cavity. No perforation was found. The patient died 48 hours later, and at the necropsy two perforations in the lower part of the ileum were discovered. In the remaining three cases the patients were struck in the abdomen by pieces of wood thrown from a circular saw. The first of these patients had been injured 24 hours previously. The abdomen was tender, not distended but very rigid. An operation was undertaken, and on opening the abdomen turbid fluid containing feces escaped. An opening involving one-third of the circumference of the ileum was found just to the left of the umbilicus. It was sutured with a double row of Lembert stitches, the abdomen was flushed and closed. The patient lived 30 hours. In another case the patient rode to the hospital but walked from his carriage into the accident room. He complained of severe abdominal pain, which increased that evening; there was localized tenderness and rigidity at the region of the injury. Twenty-four hours later the abdomen was opened and fecal matter was found to have soiled the intestines. An opening 2½ cm. was found in the lower part of the ileum opposite the mesenteric border. On account of the patient's bad condition the opening was hastily closed with a pursestring suture, the bowel was brought up to the site of incision and gauze was packed about it. Four days after the operation a fecal fistula developed which was subsequently closed, and the patient has now entirely recovered. In another case the patient was seen about 24 hours after the injury. The abdomen was tender and rigid, respiration shallow and painful. Immediate operation was performed. Gas and bile-stained fluid escaped on opening the abdomen. A rupture 2½ cm. long was found in the ileum. This was sutured, the abdomen was flushed and closed. Death resulted 50 hours later. In considering these cases, Gage calls special attention to the nature of the injuries causing them. In all cases a small surface was struck with great velocity. Another important feature is the fact that early severe shock may be absent, as it was in all of these cases. Abdominal pain is the first and most persistent of the early symptoms. When accompanied by rigidity, whether local or general, it is of great importance. Practically the only chance for recovery lies in early operation. In all doubtful cases exploratory celiotomy should be performed and the contents of the peritoneal cavity examined. If uninjured no harm has been done. In cases in which there is severe primary shock the patient should be given intravenous or subcutaneous injections of saline solution, and the operation should be undertaken as soon as the reaction is established. An incision sufficiently long to permit of thorough inspection of the abdomen is necessary. If there is hemorrhage from injury of the mesenteric vessels, it should be arrested. Ruptures of the intestine should be closed with a double layer of mattress or Lembert sutures. If there are multiple openings in close proximity, resection

¹ Lancet, March 1, 1902.

¹ Annals of Surgery, March, 1902.

may be necessary, and if there is fear of leakage, gauze should be packed about the intestine and the abdomen only partially closed. Gage believes that prompt recognition of such injuries and early exploratory operations will give much more brilliant results during the next 15 years. [M.B.T.]

Foreign Bodies in the Knee-Joint.—Cotterill¹ believes that internal derangement of the knee-joint is most frequently caused by an accident which partly flexes and suddenly twists the femur on the tibia. Such an accident may happen when a person steps out of a moving conveyance, on rising suddenly from a kneeling position or in course of football or other violent exercise. In 15 cases upon which he has operated he has not known the condition to result from a direct blow causing separation of a chip of articular cartilage, although some writers have noted this as a frequent cause. The internal semilunar cartilage of the knee-joint is much more frequently the cause of the trouble than the external cartilage. It was the source of trouble in 14 cases out of 15 of his cases. Separation of the anterior attachment of the cartilage to the tibia is of common occurrence. In six of this series of cases there was a distinct transverse tear through the edge of the meniscus. The essential point in diagnosis is the inability to fully extend the knee. Frequently the joint is locked and flexion or extension is impossible. When the confidence of the patient can be obtained the knee can nearly always be flexed by a surgeon fully and painlessly but any attempt at full extension is accompanied by severe pain. This is a diagnostic point of some value in enabling one to make a diagnosis between injury to the cartilage and a sprain. To replace the cartilage most surgeons favor flexing the leg, then rotating away from the side of the injury, while bringing the leg into full extension. Operation is indicated in patients below middle age who lead an active life and have no rheumatic or tuberculous tendency. An extensive curved incision is advised under strict antiseptic precautions. [M.B.T.]

Movable Kidney.—Scott Biddell² gives a synopsis of 10 cases of movable kidney, 9 of which were operated upon, all making a good recovery. He prefers the operation devised by Senn, i. e., a lumbar incision, delivery of the kidney freed from its fatty capsule, scarifying the organ, placing a piece of gauze under each pole and laying the same over a central gauze pad. The gauze is removed later when granulations have formed and firm adhesions soon fix the kidney. Frank's method of palpating the movable kidney is advocated. [A.B.C.]

Gonococcus Peritonitis.—Dowd³ reports the case of a girl of 7 who was admitted to the hospital with a purulent vaginal discharge which had been noticed a week previously. For a few days she had been complaining of pain in the lower right abdomen. Gonococci were demonstrated in a smear from the vaginal discharge. Three days after admission a median incision was made. The intestines were found inflamed, there were slight deposits of fibrin, and there was a small quantity of free serum in the peritoneal cavity. There was about half a dram of pus at the outer extremity of the right fallopian tube. The right tube and ovary were removed, the peritoneal cavity irrigated with several quarts of normal saline solution and the incision was closed. An uninterrupted recovery followed. Smears from pus in the abscess and from the exudate showed numerous diplococci which decolorized by Gram's method. [M.B.T.]

Tachilo.—Durante⁴ states that from the results of experiments instituted at his clinic to establish the bactericidal power, toxicity and therapeutic uses of tachilo (argentum fluorid), he predicts for it a prominent place among surgical antiseptics. An aqueous solution of 1:150,000 kills the most resistant pyogenic germs, such as *Staphylococcus pyogenes aureus*, in one minute, while a 1:200,000 solution will kill the same in 10 minutes, *Staphylococcus pyogenes albus*, as also *Bacterium coli*, in from three to five minutes, and the typhoid bacillus in one minute. Experiments with anthrax spores gave varied results, these having different resistance power; but spores resisting the action of steam for 15 minutes

were killed by a tachilo solution of 1:1,000 in from 20 to 30 minutes. One advantage of tachilo is that, unlike mercuric chlorid, its antiseptic action is not weakened by contact with albuminoid bodies. Another, and perhaps the principal advantage, is its nontoxicity. One cg. of each 100 grams of the animal's weight injected into rabbits and guineapigs produced no evil effects whatever. It was also used at the clinic in various surgical affections to disinfect cavities or suppurating sinuses, or by endoarticular injections in tubercular synovitis, and also in proctitis, in solutions of 1:1,000 and sometimes of even 1:100, and in endometritis and cystitis in solutions of 1:10,000 to 1:5,000. In no case was any inconvenience experienced, and the suppurative process was arrested in relatively short time; while applied to indolent ulcers these were stimulated and cicatrization was hastened. In some cases of tuberculous disease with formation of fistulous sinuses, gradual healing and complete obliteration took place; in others, associated with suppuration, the discharge lost its purulent character, and marked improvement was observed. Of seven rabbits inoculated subcutaneously with virulent anthrax virus, and either immediately or within 1, 3, 6, 12, 24 and 30 hours injected hypodermically with a solution of 10 cg. per 1,000 grams per weight, only those injected after 24 and 30 hours had anthrax bacilli in the blood, and none showed any symptom beyond a local transitory edema. Three control rabbits that had been similarly inoculated with anthrax, died in from 48 to 60 hours. Intravenous injections in divided doses ($\frac{1}{2}$ cg.) produced no unpleasant effects, and could be repeated so that 10 cg. per 1,000 of the animal's weight were given in the course of three to four days; but larger doses ($\frac{1}{2}$ cg. at a time) caused the animal's death with embolic phenomena. [J.C.S.]

Chronic Nonmalignant Gastric Ulcer.—Barker¹ relates the histories of 9 cases of nonmalignant gastric ulcer. One patient died from a fatal hematemesia; 2 were recovering under medical treatment; gastroenterostomy (there being no perforation) was performed upon 4 of the patients, with recovery in each case. Operation was performed upon 2 patients after perforation had occurred; 1 recovered. The author is inclined to the belief that surgical treatment should be instituted without waiting for perforation in more cases than now obtains. [A.B.C.]

Epilepsy: Removal of a Fibrous Tumor from the Dura: Recovery.²—A young girl of 17 who had had no history of traumatism, who had a well-developed skull and had been in perfect mental condition, was suddenly taken with violent epileptic attacks and vertigo. Inhalations of amyl nitrate would bring on violent attacks at any time and for this reason the diagnosis of epilepsy from cerebral compression was made. The classic symptoms of cerebral tumor were not present, but a slight premonitory tremor of the left sternomastoid muscle had been observed at the beginning of the crises. Hence operation was performed on the right side. Hemispaniotomy was considered the only satisfactory procedure and by this means the entire right hemisphere was exposed. In the anterior part of the Rolandic region on the frontal surface of the dura was found a small pedunculated fibrous tumor. This was removed with the scissors. The skull was then closed and an uneventful recovery followed. The patient has had no attacks since the operation five months previous to the time of report. [M.B.T.]

Methods of Incising, Searching and Suturing the Kidney.—Howard A. Kelly³ says M. Broedel's researches have developed the important fact that the vascularization of most kidneys is provided by two arterial systems, which are completely separated by the renal pelvis. There is a major system carrying three-fourths of the arterial blood, providing for the anterior, and a part of the posterior half of the kidney; and a minor system carrying one-fourth of the arterial blood, providing for the remaining posterior portion. The nearer the surgeon makes his incision in the line which divides these completely separated systems, the less blood is lost. If the kidney is examined attentively, it will always be found divided into irregular areas (the bases of the pyramids) the size of

¹ Lancet, February 22, 1902.

² British Medical Journal, February 1, 1902.

³ Annals of Surgery, February, 1902.

⁴ Il Policlinico, February 1, 1902.

¹ British Medical Journal, February 8, 1902.

² Revue de Chirurgie, November 10, 1901, Vol. 21, No. 11.

³ British Medical Journal, February 1, 1902.

the end of the thumb; these areas are bounded by lighter-colored lines, which are often slightly depressed. These white lines representing the columns of Bertini, come together in a longitudinal white line on the anterior surface. In order, therefore, to make the incision correctly, one must cut parallel to the white line and parallel to the posterior surface of the kidney, leaving about three-fifths of the kidney anterior and about two-fifths posterior to the incision. Three sets of sutures may be used to advantage, one of fine catgut placed between the calices, including the fat and fibrous surfaces without involving the mucous surfaces, thus approximating the pelvis. A second most valuable series consist of mattress sutures, introduced with a straight needle, and passing through the entire substance of the kidney. These give a perfect and sufficient control over bleeding. Finally, for perfect accuracy, the capsule may be closed by a continuous catgut suture. [A.B.C.]

Appendicitis and its Treatment.—James Taylor¹ says from a pathologic standpoint we have a number of different forms of appendicitis, but clinically we need consider but three forms, viz.: Simple acute, fulminating and chronic appendicitis. A definition of each of these forms, with its characteristic symptoms, is given. Concerning the immediate surgical treatment of fulminating appendicitis, whether it appear *de novo*, or is superimposed upon an ordinary acute attack or upon an exacerbation of a chronic attack, we are all agreed. In reference to immediate operation in acute attacks or in exacerbation of chronic appendicitis, the author is still of opinion that if the operation were performed after the first 48 hours the mortality would be greater than it is by waiting for an interval, though his views have somewhat modified in recent years in favor of early operation. [A.B.C.]

The Influence of Fractures on Circulation and Temperature.—Fibich² reports a series of very careful experimental studies on dogs to determine the effect of fractures on the circulation and temperature. He found a constant elevation of temperature after simple fractures. In many cases it was accompanied by a rapid pulse for a short time. There was also an increase of blood-pressure. A less constant symptom was a slight fall of temperature a short time before the rise of temperature. These changes occurred so rapidly after the injury that they could not be attributed to resorption or infection. Coming so soon after the injuries they can only be attributed to nervous influences. [M.B.T.]

Irrational Surgery of the Cancerous Mamma.—If by heroic measures we could eradicate carcinomatous deposits it would be permissible, but the lymph glands are infected within 12 weeks, often within six. A scirrhus commencing at the sternal margin of the mamma infects the thymus and mediastinal glands very early, some times before there is any axillary deposit. Increase in bulk impedes the lymph flow which moves in unusual directions or regurgitates into the marrow of the adjoining humerus. Within the second year gnawing pain is felt here with neuralgic darts in the scapular region. Internal infection also develops, and in the third or fourth year lumbar pains from deposits in the vertebrae. It is therefore impossible for Halstead's³ operation, or any expansion of it, to effect a radical cure in long-standing cases. Operation, except to prevent ulceration, does harm. If we can treat from the beginning with full doses of opium we can generally prevent ulceration without operating at all. It is an error to remove supraclavicular glands under almost any circumstances, as the inaccessible mediastinal glands are also affected. Snow describes the technic of "ideal" operation, including wide removal of subcutaneous tissue around the mammary parenchyma and complete evacuation of the axilla, and condemns excision of the pectoral muscles. Recurrences after this operation in less than two years generally mean bad work. Patients should be kept under continual supervision, and the majority should take small doses of opium. [H.M.]

Carcinoma and the Röntgen Rays.—G. B. Ferguson⁴ reports a case of recurrent carcinoma occurring on the sternum of a woman. It was the size of a hen's egg, and three surgeons

had deemed operation inadvisable. The Röntgen rays were tried as a last resort. The exposure was for 20 minutes for as many days. The patient left for a month, and when she returned the tumors had disappeared. He believes there is a great future for this method of treating carcinoma. [A.B.C.]

Disinfection of the Hands.—In a discussion of this subject before the "Berliner medicinische Gesellschaft," February 12, 1902, Schäffer¹ reported that the use of hot water and soft soap for 5 minutes followed by concentrated alcohol for 3 to 5 minutes gave the best results out of many methods tested. Blumberg and Krönig preferred sublamin or mercuricethyldimin. [C.S.D.]

GYNECOLOGY AND OBSTETRICS

WILMER FRANK C. HAMMOND KUSNER

Early Diagnosis in Pregnancy.—Van Swieten said that the physician's reputation was never more imperilled than in deciding as to the existence of pregnancy. "Frauds everywhere; often everywhere snares prepared for the unwary." Therefore it becomes essential that the obstetric student should faithfully study and clearly understand the presumptive signs of early pregnancy. In many cases diagnosis is difficult, but woe betide the poor physician if he fails, for an error will render him ridiculous, since time will surely make the diagnosis for him. The laity cannot always understand the difficulty of such early diagnosis, and often insist upon a positive conclusion. Again, if complicated pregnancy is suspected, the differential diagnosis is frequently very important. VanderVeer has collected 68 instances of operation for supposed pathologic growths when pregnancy was present. Every one is familiar with the chief symptoms and signs obtainable early in gestation. The cessation of menstruation, the nausea and vomiting, the enlargement and changes in the breasts, the softening of the cervix, the increased size of the uterus, and the compressibility of the lower uterine segment, are all evidences of varying importance as to the existence of pregnancy. As the pregnancy advances signs increase and diagnosis is less difficult. Any addition to these well-known indications is welcome. Schaeffer,² of Heidelberg, adopts the view that at the commencement of pregnancy there are changes in the vasomotor processes throughout the entire body. These changes are manifested in the colchicum color assumed by the vulva and in a less well-known striped marking in the neighborhood of the urethra or on the outer side of the tuberculum vaginae, the striping generally being transverse or oblique. As a further evidence he cites the fact that the resisting power of the blood rises with the beginning of pregnancy and continues to increase as pregnancy advances. If at the beginning of pregnancy, the portio vaginalis is punctured with a sharp instrument, there ensues a bleeding usually strong and difficult to control, rarely deep blue, mostly bright red. About one cmm. of this blood is taken and mixed by shaking with an isotonic fluid. To this is added pure water, then a salt solution; the investigator notes the effects upon the blood-cells and finds that these effects differ from the effect upon the blood-cells of the non-pregnant woman, and also vary as pregnancy advances. More recently Schenk³ has tested on 61 patients the value of the following three signs of commencing pregnancy: (1) The increase in the size of the uterus in the sagittal diameter; (2) Hegar's sign of the compressibility of the lower uterine segment; (3) the asymmetrical shape of the uterus. One side of the uterus seems larger than the other and the phenomenon is accompanied by a deep groove outlining the enlarged projection, which is always softer than the other side. Schenk found that the increase in the sagittal diameter is a constant and most valuable sign in the very earliest

¹ British Medical Journal, February 8, 1902.

² Wiener klin. Wochenschrift, January 23, 1902.

³ West London Medical Journal, October, 1901.

⁴ British Medical Journal, February 1, 1902.

¹ Münchener medicinische Wochenschrift, February 18, 1902.

² Centralblatt für Gynäkologie, 1901, No. 50.

³ Prager med. Wochenschrift, January, 1902.

stage of pregnancy while the other two are of minor importance. At the third month Hegar's sign can be noted in almost every case and the asymmetrical shape of the uterus was observed in about 75%. Dickinson considers that Hegar's is the most important of all the bimanual signs of early pregnancy. In regard to the purplish hue of the vagina produced by the venous congestion, Chadwick has shown that 80% of pregnant women develop the color by the end of the third month, while a faint venous color may show itself by the end of the first month. Jewett claims that the more or less marked lividity of the vaginal portion of the cervix may be observed almost the first month after conception. When the softening of the cervix is considered one is always reminded of the offhand rule which the gifted Goodell used to give his classes: "When the cervix is soft as one's lips, the woman is probably pregnant; when it is hard as the tip of one's nose, the womb is most likely empty." A safe rule to follow is, in case of doubt, wait. It is better to delay a decision in all doubtful cases rather than to run the risk of a happy guess or to trust an average of probabilities.

Complete Uterine Prolapse.—The condition is best described as a reducible hernia through the pelvic floor, the sac, which is the inverted vagina, containing uterus, tubes, ovaries, a large portion of the small intestines, the bladder and the rectum. Disappointing operative results are due to not recognizing that the hernial sac has other contents than uterus, tubes and ovaries, and that repair of the perineum, removal of a portion of the vaginal wall or even of the uterus would not correct the greatest difficulty, the malposition of the small intestines. Operation should obliterate the sac. Wiggin¹ opens the abdomen, pulls the uterus and with it the vagina upward with bullet forceps, then passes a needle with kangaroo tendon through the uterus about the point of attachment to the round ligament, carrying it up and down the broad ligament in the form of a purse-string suture, the needle emerging about the point of entrance, so that when the suture ends are drawn the broad ligament is folded up and drawn together, and excessive length is done away with, and the uterus has a new point of attachment near the pelvic brim. The same process is repeated on the other side. Four or five weeks later the perineum is repaired. At that time the redundant vaginal walls have practically disappeared. He has performed these operations a number of times on aged women. [H.M.]

Sarcomatous Degeneration of Myoma Uteri.—H. de Unge² reports this case occurring in an unmarried woman of 34, who before admission to the hospital had been repeatedly tapped for ascites. The case being diagnosed as probably one of tuberculous peritonitis, laparotomy was done. Instead of any tuberculous condition a pedunculated tumor was found springing from the top of the corpus uteri. The tumor was somewhat larger than a fist, of a rather soft consistence and in several places very vascular. On microscopic examination it was found to be sarcomatous. A subserous myoma the size of a walnut was also extirpated from the side of the uterus, but did not show sarcomatous degeneration. Considering the form and situation of the tumor, corresponding entirely to a myoma, it might be correctly assumed that the case was one of sarcomatous degeneration of a common subserous myoma. The patient now more than a year after the operation is still well.

Cesarean Section.—The cause of death in this operation is often from septicemia, infection occurring from the vagina and cervix, not through the abdominal wound. The former should be carefully swabbed with antiseptics. Results after strict antisepsis permit obstetricians to recommend the operation with great confidence. Kerr³ believes we are hardly ever justified in destroying a living child in cases of deformed pelvis. Sterilization of the woman should not be the routine practice. It is not necessary to postpone operation until labor begins. It is more convenient to fix the time for operation beforehand, and it is of importance that the lower segment has not developed,

and the actively contractile portion has not retracted, consequently one can open into the uterus through the latter part more easily, and with a lower incision. [H.M.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Suprarenal Extract in Addison's Disease.—The therapeutic utilization of normal body-secretions, so-called organotherapy, is one of the brightest achievements of experimental medicine and marks an important advance in the treatment of disease. After the brilliant results obtained with thyroid extract, extravagant hopes were, as always, entertained of the possibilities of the new discovery extracts of every gland in the body; were prepared by enterprising manufacturers, and their employment recommended in a great variety of conditions. Many of these preparations, notably those advised for gynecologic practice, have failed to realize the expectations of their advocates; all of them stand in need of having their indications accurately defined. Thyroid thymus and suprarenal extracts, however, have come to stay. The action of the former, as it happens, can be determined with almost scientific precision, through our knowledge of two distinct clinical conditions, the one characterized by enlargement of the gland, and probably by increased function, the other by enlargement or diminution associated with diminution of function. Experimental as well as clinical results clearly show that it is in the latter condition, myxedema or cretinism that thyroid extract is useful, while in exophthalmic goiter, in which the function of the gland is increased, its use is often followed by harm instead of good. Whether thyroid extract is of use as a general alternative to control metabolic activity, whether, as has been suggested, it is capable of stimulating oxidation and thus checking the excessive deposition of fat, are questions that still await further investigation. Since the pathology of Addison's disease, in the majority of cases, consists in tuberculosis of the suprarenal capsules, and the symptoms are due to an inadequate supply of the adrenal secretion, just as myxedema is caused by loss of function of the thyroid gland, it was to be expected a priori that the disease could be favorably influenced by supplying the economy with the necessary suprarenal secretion. Unfortunately the results have not been as brilliant as in the case of thyroid extract. Distinct improvement, and in some cases, apparent cure have, however, been reported. These differences quite possibly depend on the extent of the lesion at the time treatment is begun; and the prognosis of Addison's disease, like that of tuberculosis in other tissues, may in the future be found to depend largely on early recognition of the disease, followed by prompt application of the appropriate treatment. That the administration of suprarenal extract is in fact followed, with the promptness of cause and effect, by disappearance of the symptoms of Addison's disease, is strikingly well shown in a case recently reported by H. A. Moody in Merck's Archives, Vol. iv, No. 3, 1902. The case in several respects is exceptionally important. In the first place, its duration, at least 13 years, with an apparently favorable outcome, must tend to raise the average life-expectation of the disease. Two prominent symptoms were pain between the shoulders and gastralgia; in fact, the patient was treated for the latter condition for several years before the true nature of her malady was recognized. The patient had been ill at least three years before treatment with suprarenal extract was begun, but after a month's time she "reached a condition of good health such as she had not experienced for many years." She continued to take the extract, one 8 grain capsule three times a day, for three years, and during that time

¹ The Medical Press and Circular, November 20, 1901.

² Hygiea, February, 1902.

³ Scottish Medical and Surgical Journal, November, 1901.

continued in good health. For reasons of economy the use of the extract then had to be given up, and at the end of nine months she had relapsed into her old condition. At this time, when the extract was again ordered, it produced a severe attack of gastralgia with symptoms pointing to intense vasoconstriction. These attacks of gastralgia were repeated several times, until finally the tolerable dose of the new preparation, 3 grains a day, was determined. That an excessive dose of the extract should produce vasomotor excitement is comprehensible, but why the same effect apparently should have been produced by a deficiency of suprarenal secretion, since gastralgia was a prominent symptom of the disease before, is not so clear. The writer does not suggest any explanation for this discrepancy, although he suggests that other paroxysms accompanied by vasoconstrictor phenomena, such as the gastric crises of locomotor ataxia, may be due to stimulation of ganglionic centers communicated from adjoining disturbances. It is evident also that the dosage cannot be determined arbitrarily and that the different preparations vary greatly in strength. The blood picture in the case, in spite of marked clinical symptoms of anemia, was surprisingly good; the red bloodcells numbered 4,000,000 in a cubic millimeter, and the percentage of hemoglobin was 70%; the leukocytes were not counted.

[The abstract, "General Rules for the Preparation of Predigested Foods of all Kinds," in this Department April 3, was from Torald Sollmann's Pharmacology.]

Different Varieties of Asthma and their Treatment.—

To produce the symptom complex of asthma, there are necessary a respiratory center of diminished resistance power; asthmogenic points at one or more places in the body and irritants to produce impulses at these points which will act upon the already weakened center. W. Bruegelman¹ differentiates between three groups of asthma—traumatic, reflex, and toxic. Regarding the traumatic, he differentiates between the somatic and the psychic, the former arising as the result of concussion, heat, cold, etc., on cerebrum and medulla, the latter being due to a cerebral defect in which the slightest hallucination may be the exciting cause. The reflex type may be of well defined origin, as the nasal, pharyngeal, dyspeptic, cardiac, bronchial, uterine, sexual, dental and hyperhydrosic, in which the asthmogenic point can be definitely placed and probably removed, or of complicated and unknown origin, as the hysterical and neurasthenic type. Two or more of these may coexist, making the prognosis even worse than it usually is. Whenever possible the asthmogenic factors should be abolished, by removal of the cause, withholding of irritating substances, moral suasion, etc. Among nonmedicinal measures he suggests change of climate, pneumotherapy, hydrotherapy, roborant diet, suggestion, hypnotism, etc.; among medicinal agents the antispasmodics, especially morphin, chloral and dionin. The cause of toxic asthma lies in an accumulation of poisons, which depresses the respiratory center to such an extent as to withdraw it gradually from the will of the patient. He forgets, as it were, to breathe in and out; especially during sleep is this noted. In time, as the poisons become stronger and the will weaker, breathing becomes more and more irregular. Diseases and conditions, in the course of which the symptom complex of asthma may arise, are heart and kidney diseases, plethora, obesity, any long-continued muscular effort as noted during walking, dancing, immoderate work, etc.; slight impediment to breathing is always noted in some part of the respiratory tract. The diagnosis is comparatively easy on account of the history of the case, and the treatment is that of the underlying disease. [E.L.]

"In amenorrhea due to anemia, climates and health resorts, as already indicated, often are useful in treating the anemia. In middle-aged women with a tendency to obesity and rheumatic or gouty pains, sulfated alkaline or alkaline waters and moor baths, such as those of Franzensbad, may be beneficial, followed by residence in dry inland climates at moderate or high elevation."—F. Parkes Weber.

¹ Berliner Klinik, December, 1901

Thyroid Treatment in Cases of Infantile Myxedema.—Bézy and Stoianoff (*La Presse Médicale*, August 10, 1901—from *Treatment*, Vol. v, No. 8, 1901), emphasize the importance of differentiating this comparatively hopeful condition from idiocy, imbecility, or dwarfism, as many cases which might be materially improved otherwise remain in a hopeless condition. Myxedema often follows one of the specific fevers (such as measles) which appear to have a special tendency to involve the thyroid gland. The dose for a child of seven is from $\frac{1}{2}$ gram to 1½ grams, the treatment being interrupted temporarily on the appearance of intestinal disturbance. Bézy and Stoianoff conclude that every case of idiocy or imbecility, with bodily defect, should be submitted to thyroid treatment, in the hope of at least bringing about an improvement. [R.M.G.]

Influence of Climate on Tuberculosis.—Auffret (*La Médecine Moderne*, August 7, 1901), draws the following conclusions from a study of the influence of climate on tuberculosis which his more recent statistics absolutely confirm: (1) The mortality of pulmonary tuberculosis is in inverse ratio to the average temperature of the month which precedes death. (2) Variations in temperature influence the course of tuberculosis, but only tend to hasten death. (3) The most trying period is from December to April, March being the most trying month. These months show the injurious effects of winter. [L.F.A.]

Electric Treatment of Alopecia.—This disease may be ameliorated to quite a considerable degree by a current of static electricity applied for about five minutes daily. A felt cap is placed on the head, and a brass ball electrode is passed over the cap, thus stimulating the scalp. Of course, if the hair follicles have been destroyed, there can be no hope of producing a new growth of hair. In applying this method, care should be taken that the positive electrode is applied to the head, the negative being held in the hand. Perhaps a better method is that of stable kathodal galvanization of the scalp. A large sponge electrode moistened with salt water is connected with the negative pole, and a current, gradually increased to a strength of 6 milliampères, is applied until the scalp turns reddish. If a suitable external stimulant application be used additionally, improvement in the growth of hair will soon be visible. To produce a more rapid amelioration it is best to employ this treatment daily.—[A. H. Ohmann-Dumesnil in Cohen's "System."]

Treatment of Pterygion by Massage.—I. Sassaparel¹ of the Russia military service has obtained very satisfactory results in the treatment of pterygion by the use of an ointment composed of:

5% solution of sublimate	0.06 gm.
Cocain hydrochlorate	0.12 gm.
Vaselin	12 gm.

A small amount of the ointment is introduced into the conjunctival culdesac and on the eyelashes. This is then followed by massage of the eyeball for two or three minutes. The treatment is repeated daily. [C.S.D.]

"Artabotrys Odoratissimus, R. Br.—(*A. hamatus*, Bl.; *Uvaria Sinensis* and *Unona uncinata*, Blanco.) Nom Vulg.—*Ilag-ilag de China*, Sp.-Fil.; *Alag-ilag Sonson*, Tag. Use.—A decoction of the leaves of this species is used to treat cholera in some of the islands of the Malay group; in the island of Java they use for the same purpose a decoction of the leaves of the species *A. suaveolens*, Bl., which is commonly called *Susog Damulog* in the Pampanga dialect. The active principles of these plants are so powerful that one must beware of giving a large dose, as hemorrhages, nervous phenomena and abortion may follow. **Botanic Description.**—A tree 15-18° high, with leaves alternate, lanceolate, glabrous, and petioles very short. Flowers very sweet, axillary, solitary. Petals 6, fleshy, concave at the base. Stamens indefinite, closely packed, overlapping. Peduncle curved like a crook. **Habitat.**—Cultivated in gardens."—De Tavera, "Medicinal Plants of the Philippines."

Condurango in the Treatment of Diseases of the Stomach.—M. P. Otradinsky² recommends the use of fluid extract of *Marsdenia condurango* in doses of 15-25 drops three times daily, one-half hour before meals, in cases of ulcers of the

¹ La Semaine Médicale, January 1, 1902.

² La Semaine Médicale, February 12, 1902.

stomach in which ordinary therapeutic remedies (alkalies, narcotics, silver nitrate, etc.) have failed; also in gastralgias in which bismuth, bromid of potash, opiates, etc., have given no relief. [C.S.D.]

Butter is very digestible, since the globules of fat which form it are in a state of fine subdivision. This, of course, does not hold true of butter which has been melted, and which is no more digestible than other melted fats.

The least digestible of fats is the fatty tissue in which the cells are intact, such as bacon, etc. However, a healthy individual is able to digest perfectly, moderate amounts of any fat. The differences become important only when very large quantities must be taken, or when the digestion is deranged.—Sollmann's "Pharmacology."

ORTHOPEDIC SURGERY

H. AUGUSTUS WILSON

Fashion has much to do with foot wear, as evidenced by the recent introduction into this country of sandals. Some two years ago the sandal invaded London, and young girls and children were frequently to be seen on the streets and in the parks with this nondeforming shoe, and now shoe stores in this city are exploiting the advantages to be derived from its use. In the privacy of many homes the sandal has not only taken the place of the bedroom slipper, but is afforded extensive use in the drawingroom. Can it be possible that we will see the general adoption of some form of ancient foot wear as a revulsion from the deformity-producing shoe in use in the civilized world? Is it not probable that the repeated efforts of the medical profession to secure the use of appropriate foot wear is having effect? Much time and ingenuity has been devoted to correcting deformities produced by shoes ("Proper Foot-wear and the Treatment of Weakened and Flat Feet by Mechanical Devices for Maintaining the Adducted Position," John A. Sampson. *American Medicine*, January 18, 1902, p. 104.), while efforts have also been made to avoid their occurrence, which is apparently now bearing fruit. ("The Human Foot," T. S. Ellis, London, 1889. "The Management of Weak Feet," by Henry Ling Taylor, *Journal Physical Therapeutics*, October 31, 1901. See abstract *American Medicine*, January 25, 1902, p. 167. "Misapplied Mechanics in the Treatment of Weak Ankles of Children," by H. Augustus Wilson, *Annals of Surgery*, March, 1902). The ancient custom of foot-binding in China is passing into history, the pointed-toed shoe and high, tight upper in this country are giving place to low, broad shoes, and now comes the sandal for house use. The vagaries of fashion do not encourage the hope of long continuance of any one form, but the many advantages claimed for reform shoes, orthopedic shoes, naturpedic shoes, natural form shoes, show an inclination toward efficient and noncrippling shoes.

Experimental Studies in Tendoplasty.—Hoffa¹ reports the results of his experimental studies in tendoplasty, laying special stress on the histologic processes following operative procedure. His experiments were made on dogs and cats, and the operations varied from simple shortening or lengthening of different tendons, to a combination of both, often further combined with a transplantation of tendinous insertions according to the periosteal method of Lange, a method which Hoffa especially recommends as often productive of the very best results. During the first few weeks after operation cicatricial proliferation takes place, in the formation of which the tendinous elements, as well as the internal and external peritenon (tendon sheath) and the peritendinous connective tissue take part. As a rule the tendinous proliferation is marked, numerous bundles of newly-formed tendon penetrating into the scar-tissue and forming a closely knit mesh-work with the fibrous tissue of the

latter. At first the cicatricial tissue is largely of the connective tissue type, but later becomes more tendinous in character. For months the old tendinous tissue may be differentiated from the new, not only from the difference in the number of cellular elements present, but also from their staining qualities (hematoxylin-eosin). Tendinous tissue cut off from functional activity by looping or otherwise, soon undergoes regressive processes characterized by disappearance of the nuclei, separation, and swelling of the fibers, local leukocytosis, and the formation of connective tissue and finally tendinous tissue. In general, during the later stages of scar-formation the cellular and vascular elements gradually diminish, while the connective substances increase in quantity, although months elapse before the process of emigration and immigration, regeneration and degeneration finally cease. [H.H.C.]

Tendon Transplantation in the Treatment of Paralytic Deformities.—Arthur W. Elting¹ says the credit for this procedure has been accorded to Nicoladoni but in reality it belongs to Duplay, who in 1876 employed the method in a case of loss of function of the arm. Nicoladoni in 1881 first transplanted tendons to correct the deformity of talipes calcaneus resulting from paralysis. In 1886 Haeker reported a favorable result in a case similar to Nicoladoni's. In 1889 Lipburger thus corrected a varus deformity. In 1892 Brobnik reported seven cases that resulted successfully. Phocas in 1893 attached one of the perineal tendons to the tendo Achillis. Winkelmann in 1894 sutured the gastrocnemius to the peronius longus and then to the brevis. Parrish, of New York, in 1892 first practised tendon transplantation in America. He was followed by Milliken, of New York, and afterward by a large number of operators in America and elsewhere, a full record of which will be found in this paper. Elting believes that spinal infantile paralysis is by far the most common variety of paralysis amenable to treatment by tendon transplantation. He believes it to be a mistake to operate so long as there is any evidence of spontaneous improvement, which usually ceases from one to two years after the acute attack. Four cases are reported in detail and the conclusions drawn are that this procedure should be strongly advocated as the most satisfactory method of treatment yet suggested for the management of any deformities due to muscular paralysis. A complete bibliography is appended.

Tendon Transposition.—In 20% of orthopedic patients, deformity or disability arises from diseases of the nervous system. The lower extremity is oftener involved than the upper, and its comparative coarseness of function makes it more amenable to treatment. Paralysis is generally limited to muscles functionally related. Tendon transposition cannot add to the sum total of muscular power, but may establish a more even muscular balance. McKenzie² reports five cases. It is unimportant whether the distal segment of the paralyzed muscle is grafted in the uncut tendon of one that is active, or the proximal segment of an active muscle is transferred to the tendon of the paralyzed one. Mechanic means wisely employed may do much to supplement the defective lower extremity. Arthrodesis of a flail joint is often better than mechanic aid. Amputation because of paralytic disability should seldom or never be performed.

Volkmann's Contracture.—Dudgeon³ defines this as a contraction of the fingers and sometimes of the wrist which comes on rapidly with loss of power which is not absolute in the muscles of the forearm after severe injury. Usually the region of the elbow joint is affected, and the deformity occurs most commonly in young children. It is caused by changes in the flexor muscles without injury to the peripheral nerves, and in many cases bandaging and the pressure of splints is the source of the trouble. He briefly reports 15 cases of this kind. Anderson, who has also written on this subject, summarizes the etiology as a result of prolonged fixation of forearm fractures by any form of apparatus that intercepts free circulation of blood through the muscles and nerves of the part. The symptoms come on rapidly, in half a day or less in severe cases. The most striking feature is the deformity with paralysis and contracture of the limb at onset. There is rarely

¹ Albany Medical Annals, April, 1902.

² The Canadian Journal of Medicine and Surgery, October, 1901.

³ Lancet, January 11, 1902.

¹ Münchener medizinische Wochenschrift, December 17, 1901.

any pain. At first the fingers are simply flexed; then the characteristic position develops with the wrist extended, the metacarpophalangeal joints are also extended, the interphalangeal joints of the fingers and terminal joint of the thumb are strongly flexed so that the tips of the fingers touch the lower part of the palm, and no reasonable force is capable of straightening them. As soon as the wrist is flexed to a right angle, the interphalangeal joints can be extended. In bad cases the wrist becomes strongly flexed, and is incapable of extension. The hand is pronated, and the forearm is generally semiflexed. The flexor muscles seem hard, firm and wasted. Sensation may be normal, or there may be partial or complete anesthesia. In well-marked cases there is as much shortening of the bones as is met in acute anterior poliomyelitis. Most observers are of the opinion that the pathology of this condition is paralysis and contracture dependent on diminution of arterial blood to the muscles. The diagnosis is usually easy, but there is sometimes difficulty in finding out whether it is purely an ischemic myositis, or whether the disease is associated with injury of the peripheral nerves. Volkmann gives an absolutely bad prognosis for the condition. Anderson takes an opposite stand, and Dudgeon's results agree with Anderson's prognosis. Two methods of treatment are possible, medical treatment consisting of massage to the forearm, twice daily for 10 minutes or more, with passive movements of the fingers. The galvanic current is not of much value. The treatment must be continued for about two years in order to obtain results. Various methods of surgical treatment have been suggested. Davies-Colley cut the flexor tendons of the forearm. This cures the deformity, but there can be no hope of flexion of the fingers afterward. Johnson advises excision of a short section of the bones of the forearm, and his results were satisfactory. Tendon lengthening by splitting the tendons longitudinally and then dividing so that the ends overlap has been successfully practised by several surgeons. Dudgeon believes that the surgical methods of treatment cannot show better results than he has obtained by the massage treatment. [M.B.T.]

Cases of Rupture of the Spinal Ligaments.—Charles F. Painter and Robert B. Osgood¹ report four cases of injury to the spine in which there was kyphosis, without tubercular or other disease, in which there were pressure symptoms, the cord relieved, and entire functional recovery. Reference is made to the experiments of Wagner and Stolper upon the cadaver, believing that such experimental studies have little practical value, because the action of living muscles is ignored. The character of the injury, with a single exception, was either from above downward or from below upward upon a flexed spine. The one exception appeared to be due to muscular action only. The bibliographic table contains 51 references. The conclusions drawn from the analysis of the cases upon the pathologic basis where this was possible and from the clinical and anatomic point of view in others was as follows: Spinal ligaments, during life, may be ruptured without fracture or dislocation. Nerve pressure symptoms may occur from a simple flexion of the vertebral column. Recovery in these cases require prolonged rest in a position which favors the repair of ligaments, and that the effect of treatment speaks more for the ligamentous rupture than for luxation or fracture. The force which commonly produces the injuries (when stated) was one which, a priori, would be most likely to produce ligamentous rupture.

Ambulatory Treatment of a Ruptured Tendo-achillis.—J. Lynn Thomas² gives his personal experience with a ruptured tendo-achillis, which was caused by hopping on tip-toe during physical drill on board R. M. S. Tantallon Castle. The foot was suddenly rendered useless, the heel dropped on the deck, accompanied by a loud sound followed by a dull, aching pain. Examination revealed a deep gap such as is seen after tenotomy. Although his colleague advised suturing, this was declined and instead was treated by massage and cold wet bandages. He voluntarily rotated the whole of the lower limb outward, and in this position he hobbled about deck until he arrived at Capetown. He there obtained an aluminum spatula,

moulded to fit the anterior bend of the ankle, which was passed into a thick rubber tube, and was laced in the front part of his shoe. This resulted in a very excellent union of the ruptured tendon, and permitted the usual amount of walking without the slightest inconvenience. At the end of 2½ months after the accident, all restraint was removed.

The Treatment of Contractions and Ankyloses of the Kneejoint.—With regard to the choice of operative procedure in various degrees of contraction and ankylosis of the kneejoint, Vulpius³ believes that in simple uncomplicated contraction of mild degree, recent date and without articular deformity, flexor tenotomy followed by redressment is preferable. In simple contraction of mild degree, but of long standing, tenotomy and supracondylar osteotomy is indicated. In simple contraction with marked scar formation, muscular infiltration, etc., both redressment at one sitting and osteotomy are dangerous. If the angle of flexion is small, tenotomy with subsequent gradual redressment (with a portable apparatus) is the better method. If, however, the angle is large (135° or less), resection is indicated. Should ankylosis be present, resection preceded by flexor tenotomy is always the best method of procedure. [H.H.C.]

A New Method of Breaking Down Adhesions.—George R. Ord² explains the disadvantages of the methods ordinarily employed. Where an anesthetic is not used the muscular resistance of the patient is generally sufficient to prevent efficient passive motion. The object sought by Ord is to so place the patient in such disadvantageous positions as to enable the surgeon to manipulate the joint with the greatest ease. The pain is said to be momentary, a large amount of motion is immediately obtained by means of less force than usual, the patient's resistance is reduced to a minimum, and the period of passive motions greatly shortened.

The Bloodless Treatment of Congenital Dislocation of the Hipjoint.—Dreetmann³ agrees with Lorenz that the best method of reducing congenital dislocation of the hipjoint is by a flexion of 90°, followed by abduction of 90°, although he claims that the same result may be obtained by an abduction of 90° followed by an external rotation of 90°. In either process the reposition should be accomplished manually, without the aid of any special apparatus. When in proper position the head of the femur is kept in place by a plaster-of-paris cast. The full abduction of 90° is either retained or slightly lessened, especially in cases of bilateral luxation, but should never be lessened to the extent of possible relaxation. In cases of bilateral dislocation, Dreetmann recommends a specially constructed "Laufkorb," or walking rack, with a lower diameter equal to the length of both femurs + the width of the pelvis + the length of both feet. The rack is either made in two halves, which may be screwed together around the child, or so constructed as to pass over the child's shoulders. Furthermore, it should have an arrangement by which the arm rests may be raised as the abduction of both extremities is gradually lessened. Dreetmann states that the children soon learn to move about quite freely in such a rack, their propelling movements consisting of slight external rotations of the thighs, which aid materially in properly shaping the acetabular cavities. [H.H.C.]

The Treatment of Congenital Displacement of the Hip.—Noble Smith⁴ states the disadvantages of the formidable bloody operation, of scooping out the imperfect acetabulum, which he claims as unsatisfactory even if it be justifiable. The resulting relapses, ankyloses and deaths show that the procedure is not warranted. He then, by means of skiagraphs, ordinary photographs and records, demonstrates the superior advantages of the use of the long Liston splint. Where contracted muscles exist they must be divided or stretched before reduction can be completed. In a few months the joint becomes fixed in an improved position, the tendency to rise is lessened. Six to eight months are necessary to get firmness to warrant a moderate pressure upward, but walking upon the affected leg is not permitted for about two years. The results are claimed

¹ Boston Medical and Surgical Journal, January 2, 1902.

² British Medical Journal, January 18, 1902.

³ Münchener medicinische Wochenschrift, December 3, 1901.

⁴ Lancet, January 11, 1902.

⁵ Münchener medicinische Wochenschrift, December 24, 1901.

⁶ The Medical Press, January 15, 1902.

to be excellent usefulness of the leg: patients walk with little difficulty. The disfiguring waddling gait and lordosis are much reduced or quite absent.

What is the Prognosis in Tuberculous Spondylitis.—B. B. Mosher¹ says that very few handle those afflicted with spondylitis with the careful technic demanded by their condition. This applies not only to the laity, but to the trained nurse as well, for they fail to recognize the delicate handling required in these cases. Mosher thinks that he has been materially aided when treating these cases by assuming for the time being that the spine had been recently fractured, and thereby the more forcibly impressing the importance of careful manipulation, in necessary care of the patient. The unfortunate delays in early diagnosis affect the prognosis more seriously than inefficient forms of treatment. Mosher concludes with an analysis of 53 cases, with seven deaths—two from phthisis pulmonalis, one from emphysema, one from exhaustion, one from sepsis, one from cerebral embolism.

Pus Foci in Bone.—J. Sherman Wight¹ reports four cases with radiographs, one each occurring in the elbow, lower end of the humerus, tibia, both bones of the forearm. The resulting conditions after operation were full normal use in one case, excision and ankylosis in two cases, and one with partial ankylosis.

The Treatment of Abscesses in Tuberculous Bone Lesions.—Clarence L. Starr² reviews the customary methods of treatment under the following heads: To leave the abscess alone—the so-called expectant treatment. Aspiration. Aspiration with injection of antiseptics. Incision with drainage. Excision. The first two are quickly disposed of because only the fluid contents can thereby be removed. The most dangerous doctrine is to incise and drain, because of the long, persistent sinuses that result and the liability of favoring mixed infection. The methods of complete excision advocated by Watson Cheyne is "theoretically all that could be desired, but practically its application is limited to certain locations," and where this method is not applicable, free incision or multiple incision, if necessary, should be made. Thorough scraping of the walls and closure of the wounds is urged.

Tuberculous Joint Disease.—H. Augustus Wilson. (See abstract *American Medicine*, April 5, 1902, p. 565.)

Treatment of Psoas Abscess by Incision.—R. W. Lovett. (See abstract *American Medicine*, February 1, 1902, p. 204.)

Bone-filling with Amalgam.—J. Henry Barbat³ reports a case of a man who, for 14 years had suffered intense pain in the lower end of the tibia and upon whom a great variety of forms of treatment had been unsuccessfully applied. Barbat suggested and employed a copper amalgam, which he pressed against the sides of the large cavity until the whole surface was covered, leaving a hole which was filled with dental cement, the top being covered with more amalgam. The cement was used simply to lessen the weight of the mass. The skin was sutured over the filling and the usual dressings applied. The result was entire cessation of pain. The patient was able to walk without assistance. A very small persistent sinus which caused annoyance was operated upon one year later, and as an osteomyelitis was present in the upper part of the former cavity, the amalgam filling was all removed. Skin grafts were applied to the granulating surface, which facilitated cicatrization into the bone cavity. Five months after the last operation the wound was entirely covered and the patient cured.

Excision of Bone for Deformity.—Newbolt. (See abstract *American Medicine*, February 22, 1902, p. 322.)

Osteitis Deformans.—J. C. Wilson. (See abstract *American Medicine*, February 15, 1902, p. 320.)

On Lateral Curvature of the Spine.—Sir William M. Banks⁴ emphasizes the importance of recognizing the fact that lateral curvature of the spine is of nontubercular or inflammatory origin. Vicious positions cause alterations in the positions and shape of the bones of the spine, and that muscular weakness is the predominating factor. Removal of the exciting

cause and improving the nutrition and tone of the muscles of the back are the indications, and yet indiscriminate gymnastic exercises are not recommended. "Whilst gymnastic exercises have their value, they will not atone for a bad and slouching habit whilst sitting or standing." The occasion for mechanic support is extremely rare and should be discouraged as inhibiting free muscular and joint use.

Spinal Braces in Lateral Curvature.—A. B. Judson. (See abstract *American Medicine*, March 1, 1902, p. 356.)

Physical Culture in Childhood.—Taylor. (See abstract *American Medicine*, February 1, 1902, p. 206.)

The Relation of Structure and Function as Illustrated by the Forms of the Lower Epiphyseal Suture of the Femur.—Arthur Thomson¹ bases an instructive study of the subject upon the analysis of 40 specimens, including a long list of quadrupeds. The reason for selecting the lower epiphysis of the femur is because it ossifies from a single center. In different groups of animals the femora are subjected to different strains according to the habitual postures and use of the limb. The conclusion reached after an exhaustive study is that function determines the form of the epiphyseal suture, because function is exercised during the period when the structure is developing.

The Intercuneiform Bone of the Foot. A New Bone.—Thomas Dwight² reports two instances with which he has met an occasional bone in the human foot which has never been previously observed. It is wedged-shaped, the thin edge being the deepest part. There is no articulation with the scaffold. Its relations are not easily determined, but Dwight considers it possible that it was once joined to the middle cuneiform by cartilage. This new bone occupies a fossa between the proximal ends of the internal and middle cuneiform bones, where they rest against the scaphoid. Dwight knows of nothing in comparative anatomy to give it special significance, and believes that it is a result of a second center of ossification of the middle cuneiform.

Seventeen Cases Operated on for So-called Internal Derangement of the Kneejoint.—Arthur E. J. Barker³ says that the semilunar cartilage was in all of the cases split in the direction of its fibers. In none was the cartilage torn across at any point between the two ends. He describes the peripheral rent, central splitting, partial anterior rent. The cause of the general slackness of the joint capsule which was present in all of the cases was not apparent. The patients were men in the prime of active life. The line of incision that is preferable is from the inner border of the ligamentum Patella about one-half inch above the articular border of the tibia and carried with a curve downward and outward to the anterior edge of the internal lateral ligament. It is urged that the fingers should not be allowed to touch any part of the wound. All manipulations should be performed with carefully sterilized metal instruments and sterile gauze. Antiseptics must be avoided. An ice bag over the dressings for the first week is agreeable to the patient, and probably keeps down effusion.

Notes of 15 Cases of Operation for Internal Derangement of the Kneejoint.—J. M. Cotterill⁴ believes the accident happens with partly flexed knee, associated with a sudden external twist of the tibia on the femur. This may happen when a person steps out of a moving carriage at too great an angle to the line of its movement, or when attempting a vigorous kick at a football, missing the ball. The essential feature in diagnosis is the inability to fully extend the leg. The patient often says the joint is locked, and not infrequently cannot either flex or extend the leg fully. The indications for operation are: Patients below middle life, who wish to lead active lives, who are in good health, without rheumatic or tubercular tendencies, and where the cartilages are giving frequent trouble. The lateral curved incision is preferred. If the cartilage is largely separated much thickened, it should be completely excised. If anterior separation and curled into joint, the loose part should be cut off. Under no circumstances is it advisable to suture the cartilage. Drainage is unnecessary and dangerous.

¹ Brooklyn Med. Jour., January, 1902.

² Canadian Pract. and Review, December, 1901.

³ Occidental Med. Times, January, 1902.

⁴ The Polyclinic, London, January, 1902.

¹ Jour. Anat. and Phys., January, 1902.

² Journal Medical Research, January, 1902.

³ Lancet, January 4, 1902.

⁴ Lancet, February 22, 1902.

No fingers or strong lotions should be put into the joint. In two weeks splints should be removed and passive motions encouraged. In three weeks the patient should walk with a stick. It is not safe to allow football or violent exercise for four or five months.

Congenital Absence of the Tibia.—Launois and Küss¹ have collected the bibliography of 39 cases of congenital absence of the tibia, to which they add a fortieth. This condition is twice as frequent in males as in females, and has its equivalent in the upper extremity in the congenital absence of one of the two bones of the forearm, as seen in the malformation known as (*main bote*) clubhand. [C.S.D.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended April 5, 1902:

SMALLPOX—UNITED STATES.			
		Cases	Deaths
California:	Los Angeles.....	Mar. 15-22.....	4
	San Francisco.....	Mar. 16-23.....	4
	Denver.....	Mar. 15-22.....	9
	Jacksonville.....	Mar. 22-29.....	3
	Belleville.....	Mar. 22-29.....	1
	Chicago.....	Mar. 22-29.....	14
	Joliet.....	Mar. 15-22.....	1
	Evansville.....	Mar. 22-29.....	3
	Indianapolis.....	Mar. 14-21.....	21
	Wichita.....	Mar. 22-29.....	1
Indiana:	Covington.....	Mar. 23-30.....	13
	Portland.....	Mar. 21-29.....	3
	Boston.....	Mar. 22-29.....	15
	Cambridge.....	Mar. 22-29.....	3
	Lawrence.....	Mar. 22-29.....	1
	Medford.....	Mar. 22-29.....	1
	Newburyport.....	Mar. 15-22.....	2
	Taunton.....	Mar. 22-29.....	1
	Detroit.....	Mar. 22-29.....	15
	Grand Rapids.....	Mar. 21-29.....	1
Michigan:	Ludington.....	Mar. 22-29.....	9
	Minneapolis.....	Mar. 15-22.....	31
	Butte.....	Mar. 23-30.....	2
	Omaha.....	Mar. 22-29.....	29
	Camden.....	Mar. 22-29.....	2
	Hudson County.....	Mar. 23-30.....	38
	Jersey City.....	Mar. 23-30.....	25
	Newark.....	Mar. 22-29.....	11
	Passaic.....	Mar. 1-15.....	2
	New York.....	Mar. 22-29.....	69
New York:	Yonkers.....	Mar. 21-28.....	2
	Chillicothe.....	Mar. 22-29.....	2
	Cincinnati.....	Mar. 21-28.....	18
	Cleveland.....	Mar. 22-29.....	1
	Dayton.....	Mar. 22-29.....	1
	Toledo.....	Mar. 22-29.....	1
	Lancaster.....	Mar. 1-29.....	3
	Philadelphia.....	Mar. 22-29.....	38
	Pittsburg.....	Mar. 22-29.....	5
	Providence.....	Mar. 22-29.....	2
Rhode Island:	Warwick.....	Mar. 24-April 1.....	10
	Sioux Falls.....	Mar. 22-29.....	1
	Memphis.....	Mar. 22-29.....	5
	Salt Lake City.....	Mar. 15-22.....	1
	Tacoma.....	Mar. 16-23.....	4
	Green Bay.....	Mar. 23-30.....	8
	Manitowoc.....	Mar. 1-31.....	20
	Milwaukee.....	Mar. 22-29.....	3
SMALLPOX—FOREIGN.			
Austria:	Prague.....	Mar. 8-15.....	8
	Antwerp.....	Mar. 8-15.....	13
	Liege.....	Mar. 8-15.....	Present
	Rio de Janeiro.....	Feb. 9-16.....	6
	Halifax.....	Mar. 23-30.....	1
	Hamilton.....	Mar. 1-31.....	1
	Quebec.....	Mar. 23-29.....	11
	Cartagena.....	Mar. 10-16.....	1
	Paris.....	Mar. 8-15.....	7
	Rhems.....	Jan. 5-12.....	12
Great Britain:	Cardiff.....	Jan. 25-Mar. 8.....	2
	Dundee.....	Mar. 8-22.....	2
	Glasgow.....	Mar. 15-22.....	53
	Liverpool.....	Mar. 8-22.....	23
	London.....	Mar. 8-15.....	450
	Plymouth.....	Mar. 15-22.....	1
	Sheffield.....	Mar. 1-15.....	6
	Southampton.....	Mar. 8-15.....	1
	Bombay.....	Feb. 24-Mar. 4.....	7
	Calcutta.....	Feb. 22-Mar. 1.....	7
India:	Karachi.....	Feb. 23-Mar. 2.....	8
	Madras.....	Feb. 15-28.....	4
	Naples.....	Mar. 1-15.....	16
	Mexico.....	Mar. 9-16.....	3
	Moscow.....	Feb. 27-Mar. 6.....	18
	Odessa.....	Mar. 8-15.....	1
	St. Petersburg.....	Mar. 1-15.....	15
	Singapore.....	Feb. 1-15.....	1
	Straits Settlements:		

¹ Revue d'orthopédie, September and November, 1901.

YELLOW FEVER.

Brazil: Rio de Janeiro.....Feb. 9-16..... 17

CHOLERA.

China: Canton.....Mar. 29.....Almost Dis-appeared
Sheshing.....Mar. 29.....Sporadic
Tung Mun.....Mar. 29.....Sporadic
India: Bombay.....Feb. 24-Mar. 4..... 3
Calcutta.....Feb. 22-Mar. 1..... 158
Straits Settlements: Singapore.....Feb. 1-15..... 7

PLAGUE.

China: Tsang Shing.....Mar. 29..... 20
India: Bombay.....Feb. 24-Mar. 4..... 854
Calcutta.....Feb. 22-Mar. 1..... 347
Karachi.....Feb. 23-Mar. 2..... 84 62

Changes in the Medical Corps of the U. S. Navy for the week ended April 5, 1902:

WARD, B. R., passed assistant surgeon, detached from the Boston Navy Yard, and ordered to the Lancaster—March 27.
BACHMANN, Dr. R. A., appointed assistant surgeon from March 20, 1902—March 27.
ARMSTRONG, E. V., passed assistant surgeon, granted sick leave for six months—March 28.
O'LEARY, C., pharmacist, retired from active service, April 25, 1902, having reached the age of 62 years—March 28.
CARPENTER, D. N., passed assistant surgeon, ordered to Newport, R. I., for temporary duty at the Naval Hospital—April 2.
GRIFFIN, W. E., assistant surgeon, detached from Naval Hospital, Newport, R. I., and ordered to accompany a detachment of marines to the Philippines—April 2.
CURL, H. C., assistant surgeon, ordered to the Naval Hospital, Mare Island, Cal.—April 2.
STONE, M. V., assistant surgeon, detached from Naval Hospital, Mare Island, Cal., and ordered to the Constellation—April 2.
BACHMANN, R. A., assistant surgeon, ordered to the Naval Academy—April 2.

Changes in the Medical Corps of the U. S. Army for the week ended April 5, 1902:

WOODRUFF, Major CHARLES E., surgeon, will proceed to San Fernando, Pampanga, and report to the commanding general, second separate brigade, for duty as chief surgeon of that brigade.
The following named contract surgeons will proceed from the places designated to San Francisco, Cal., and report for transportation to the Philippine Islands, where they will report for assignment to duty: William E. Hall, St. Louis, Mo.; Arthur C. Stokes, Omaha, Neb.
SMITH, CHARLES F., contract surgeon, now at Whitehall, Mich., is relieved from further duty in the division of the Philippines, and will proceed to Fort Sheridan for duty.
WHITMORE, First Lieutenant EUGENE R., assistant surgeon, is relieved from duty at Fort Sheridan, to take effect upon the arrival at the post of Contract Surgeon Charles F. Smith, and will then proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.
Majors William C. Gorgas and Jefferson R. Kean, surgeons, when their services shall no longer be needed in the department of Cuba will repair to Washington, D. C., and report to the surgeon general of the Army for further instructions.
The following named officers are detailed to represent the medical department of the Army at the eleventh annual meeting of the Association of Military Surgeons of the United States, to be held at Washington, D. C., from June 5 to 7, 1902: Majors Henry P. Birmingham, surgeon; Jefferson R. Kean, surgeon. The officers named will proceed in time to reach Washington, D. C., on or before June 5, 1902, and upon adjournment of the association will return to their proper stations.
The following named officers are detailed to represent the medical department of the Army at the fifty-third annual meeting of the American Medical Association, to be held at Saratoga, N. Y., from June 10 to 13, 1902: Colonel William H. Forwood, assistant surgeon general; Major William C. Gorgas, surgeon. The officers named will proceed to Saratoga at such time as will enable them to reach that place on or before June 10, 1902, and upon the adjournment of the association will return to their proper stations.
MCHENRY, Captain GEORGE A., assistant surgeon is relieved from further duty at Hamilton Barracks, Mantanzas, Cuba, and will proceed to Cabana Barracks, Havana, Cuba, relieving First Lieutenant W. N. Bispham, assistant surgeon.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended April 3, 1902:

STONER, G. W., granted leave of absence for one day, March 29, 1902, under paragraph 179 of the Regulations.
CARTER, H. R., surgeon, granted leave of absence for six days from April 1, 1902, under paragraph 179 of the Regulations.
BROOKS, S. D., surgeon, granted leave of absence for one day March 31, 1902—March 29, 1902.

Promotions.

CARLTON, CHARLES G., junior pharmacist, to be senior pharmacist from January 13, 1902.
DAVIS, H. E., junior pharmacist, to be senior pharmacist from February 10, 1902.
TROXLER, R. F., junior pharmacist, to be senior pharmacist from March 13, 1902.
BECK, J. E., junior pharmacist, to be senior pharmacist from March 15, 1902.

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A modification of quarantine regulations as to yellow fever ships is the natural consequence of the discovery that although yellow fever may possibly be conveyed by other means than the mosquito, this is at present the only known method. The present quarantine regulations are based on the theory that the disease is conveyed by the infected bedding, clothing, etc., of patients. The experiments of Dr. Reed and his coworkers have disproved this, and hence there is now the need of changing the quarantine regulations to conform to the new facts. Accordingly Surgeon-General Wyman has ordered a modification of the rules whereby there shall be no holding of ships entering the port that have been more than five days from the port of departure, providing there are no mosquitos aboard. Nonimmunes on board a yellow fever vessel less than five days out should be held for observation until the period of five days has elapsed. In this way great inconvenience to travelers and expensive restrictions on commerce are abolished. If in the future other methods of conveying the infection shall be discovered, modifying regulations may be made in accordance.

The Profits of a Medical Journal.—The *Münchener medicinische Wochenschrift* is, it is said, owned and published by eleven physicians. Last year profits amounting to 4,400 marks were divided among professional aid societies. This year the amount was 9,300 marks, 5,000 of which was given to the Pettenkofer Memorial Building Fund, and the balance to various societies for the relief of widows and orphans of physicians. Of those who are strangely indifferent to the imperative duty of the profession to own and control its professional journals, we would ask if they see no significance in this fact. Is it good policy or good morals for American physicians to support several hundred medical journals which, because of their number and nonprofessional control, are powerless for good, or powerful only for evil, instead of lifting the few needed to positions of honor and beneficence? There is all the difference in the world between a medical journal published in the interest of the profession and one published in the personal interests of the publisher or editor. It lies wholly in the choice of American physicians whether the policy and the profits of their journals shall be under the control of professional or of selfish motives. The

splendid work that might be done by a few professionally owned journals for the reform of hundreds of abuses, and the furtherance of medical progress should lead every one to subscribe for and contribute to those journals that by reason of their professional ownership and management cannot be used for commercial or personal purposes.

War on cancer seems to have been determined on by the entire civilized world. In our own country the details of the work are well known. In England the Royal College of Physicians and the Royal College of Surgeons have united in sanctioning a plan for the systematic investigation of the disease by means of a special laboratory costing \$500,000, under the charge of leading medical scientists. In Germany, despite some half a dozen "discoveries" of the specific germ, the government is about to establish two institutions in Berlin for the treatment of the disease, and it is reported that \$375,000 has been contributed by private individuals as an annual appropriation for investigations to be carried out under Professor Ehrlich, of Frankfort-on-the-Main. What an honor it will be to the country that first solves the mystery!

Retirement of the Surgeon-General of the Army.

—In order that Surgeon-General Sternberg may be retired with the rank of Major General, corresponding to Rear Admiral, the rank with which the Surgeon-General of the Navy was recently retired, it is necessary that Senate Bill 1,679 should be enacted prior to June 8, 1902, or that special legislation be taken. Dr. Sternberg's request to the Secretary of War that such action be taken by Congress will receive the endorsement of all American physicians and of all scientists acquainted with the value of the services which Dr. Sternberg has rendered the country during his 41 years of service in the Army. It is obviously wrong that any distinction should be made as to the rank of retirement of Surgeon Generals in the Army and Navy, and it is particularly unfortunate that it is necessary to call for special action in the case of one who has contributed so largely to the advancement of medical science. Dr. Sternberg was one of the pioneer investigators into the relationship of bacteria to infectious diseases and has maintained his leadership and position as an authority, while gaining distinction in other directions and conducting the ardu-

ous duties of his office in the most satisfactory manner. There should be no delay on the part of Congress in giving expression to the appreciation in which Dr. Sternberg is held for his eminent services.

The Effects of Regents' Examinations Upon Nervous Children.—The system of semiyearly examinations conducted by the New York State Board of Regents in all the public schools of the state is being vigorously arraigned as the result of the contention of Dr. Dewitt G. Wilcox, in a paper read before the New York State Homeopathic Medical Society on February 11, to the effect that the health of many children is seriously injured and in some cases permanently impaired by the nervous strain to which they are subjected by these examinations, and that the infections to which school children are most liable find peculiarly favorable conditions for development in the lowered vitality and lesser degree of immunity common to the children about examination time. Dr. Wilcox calls for testimony on the part of medical men as to their experience in this matter, and we venture to say that he will not lack support in his contention. Examinations instituted and conducted by teachers with whom the pupils are intimately acquainted are often found to be too great a strain for those members of the class whose nervous equipoise is easily disturbed. The nervous disturbance is, however, far greater when the examination is prepared by and submitted to an impersonal body in which the child sees no sympathy for its individual peculiarities or capabilities, but to which must conform the bright and dull alike, the vigorous romps and the delicate, over-sensitive ones, without distinction or adaptation of the strain to their individual needs. The system is wrong; the teacher, if competent, is the best judge as to how and when examinations should be held. In Philadelphia and many other cities it has been found advantageous to abandon the examination system almost altogether, and to promote pupils upon their term standing as ascertained by the daily tests and the insight of the teacher. Public education does not necessarily imply that all children shall be made to meet the same intellectual strain. The ability to perform a given series of ingeniously devised mental "stunts" may or may not mark an awakened sense of the good, the true, and the beautiful, such as makes for good citizenship. The aim of an education must ever be the development of the fullest and soundest mental, moral, and physical life of which the particular individual is capable; this requires in most cases special individual consideration and culture, which is impossible under the inflexible machine system.

Materialism is Unscientific.—Despite the demonstration often made of the unscience of materialism, there occasionally appear articles in medical journals whose authors seem to delight in springing this grinning old Jack-in-the-box at medical men. We have recently noticed two, from which the following sentences are gathered:

"The scientific worker of today must consider life as the expression of certain chemical changes that occur in the organ-

ism. Never can he consider chemical change as the expression of the specific life residing in the cell."

"The phenomena of reproduction has been deprived of its vitalistic nature."

"Nature does not kill and does not cure. If there were consciousness in her she would feel indifferent about what she is, viz., mere evolution. She has no predilections, and no reasoning, she is simply cause and effect."

This sort of nonsense was nauseatingly plenteous fifty and a hundred years ago, but it is growing much more rare nowadays when men are learning that science cannot be used as a club in the hands of atheism, and when astute minds are aware that before one is capable of pronouncing dogmatically upon all matters of psychology and metaphysics, it is expedient to study these departments of knowledge at least a half-hour or so. So long as spontaneous generation has not been proved, so long should the materialists keep their Jack-in-the-box well locked. It may be that materialism and atheism will finally be demonstrated as true, but so long as men have a trace of the true scientific spirit in their makeup they will not denominate as "science" any absolutely unproved dogmatic assertion, whether theistic or atheistic. The disbelief in the bugaboo of "vitalism" is as silly scientifically as was any belief of the most reactionary oriental or medieval navel-worshiper. The scientist allows gathered facts to lead to any belief dictated by induction; he does not pounce down upon the facts with a cocksure, "never can he consider, etc." There is not a particle of proof in the world to any well-constructed, scientific mind, that "life is the expression of certain chemie changes," that "nature has no predilections and no reasonings." Such statements may be left to ranters of the Ingersoll type, but should not be uttered by medical men. How supremely foolish they are, great scientists well know. Here are a few selections in disproof:

"Mechanical arrangements play but little part in the work of organs; the results of their activity can in no way be explained on simple mechanical principles."—[Michael Foster, *Encyclopedia Britannica*.]

"The chemical operations performed by the living cell cannot be imitated in the laboratory, or explained by any known chemical laws."—[Halliburton, *Handbook of Chemical Physiology and Pathology*.]

"We are now nearly everywhere compelled to assume a specific, yet absolutely unknown activity of the living cell. We know very little about the secretion, absorption, and motility of the stomach. The study of the organ has been undertaken with too many physical propositions, whereas here, as in the digestive tract, biologic laws are more important."—[Ewald, *Diseases of the Stomach*.]

"There is more in life than the processes it controls."—[Gowers.]

"The deeper, wider, more profoundly we seek to penetrate, into life-processes, by just so much do we perceive that what we once thought to understand by physical and chemie laws is of a much more recondite nature, and especially that it mocks every mechanic explanation."—[Bunge, *Lehrbuch der physiologischen und pathologischen Chemie*.]

"The influence of animal or vegetable life on matter is infinitely beyond the range of any scientific inquiry hitherto entered upon. Its power of directing the motions of moving particles is infinitely different from any possible result of the fortuitous concourse of atoms."—[Lord Kelvin.]

"The fundamental conceptions of biology are, and from the nature of the phenomena dealt with, must be entirely different

from those of physics and chemistry. To any physiologist who candidly reviews the progress of the last 50 years, it must be perfectly evident that so far from having advanced toward a physico-chemic explanation of life, we are in appearance very much farther from one than we were 50 years ago. Attempts to analyze life into a mere series of physical and chemical processes are based on a mistaken theory."—[John Haldane, *Lecturer on Physiology, Oxford.*]

"The living cell, and not the amount of oxygen in the blood, regulates the consumption."—[Pflüger.]

"To our reasoning and even to our imagination, there is a great gulf fixed between the physical stimulus and its psychical consequence; they seem incommensurable quantities; the transition from light to sensation of light is certain but unthinkable."—[G. N. Stewart.]

"Psychic life is not the product of the bodily organism, but the bodily organism is rather a psychic creation."—Professor Wundt.]

"Cells are no more the producers of vital phenomena than the shells scattered in orderly lines along the sea beach are instruments by which the gravitation force of the moon acts upon the ocean. Like these, the cells mark only where the vital tides have been, and how they have acted."—[Huxley.]

"Life is a power superadded to matter; organization arises from, and depends on life, and is the condition of vital action; but life can never arise out of, or depend on, organization."—[John Hunter.]

The Loeb-Matthews theory of nerve action has aroused so much attention that despite the general inutility of the public discussion of such subjects it deserves more criticism than would usually be advisable. Crucial experiments, indeed, rather than "great argument about it and about," are eminently desirable, and the silly inference drawn by the foolish that we have at last "a scientific explanation of life," makes necessary the emphasis that this theory of nerve-action and that offered of certain experiments as to parthenogenesis, are still pure theories. They have nothing whatever to do with "the creation of life" or the solution of its ultimate problems. The crucial experiments are still wanting. The hypothesis may be true, but the author must furnish the proofs. Neither the "secret of life" nor the secret of nerve-action has so far been "discovered."

The theory in question is in harmony with some facts, and particularly with some of those discovered by Professor Loeb. But every theory worthy of the name is necessarily in harmony with some facts, else it could not be seriously put forward. Dr. Matthews' hypothesis must be greatly elaborated and followed into detail, and its ability to account for all the known facts severely scrutinized before it can take its place as a good working hypothesis for the discovery of new truth. In particular it must be demonstrated that it is not in evident contradiction to any well established result. For example, it must explain not only cathodic increase of excitability and the cathodic increase of the velocity of propagation of the nerve-impulse, but cathodic block or diminution of conductivity; not only the increased excitability for stimuli of a certain duration of a nerve cooled to a certain temperature, but the marked diminution of conductivity and of the velocity of propagation of the impulse in the cooled nerve. One might ask why cooling the nerve below a certain temperature should increase the tendency to gelation for long or "blunt"

electric stimuli, and diminish it for short or "sharp" electric stimuli. Other phenomena which the theory must give a satisfactory explanation of, are the inability of the excitation to spread beyond the neighborhood of the anode after the opening of a strong voltaic current; the effect of uniform pressure in diminishing the conductivity of nerve; the existence under certain conditions of oscillations in the excitatory process, as in the retina; the specific action of such drugs as atropin and curare in paralyzing particular kinds of nerve-endings; the action of nonelectrolytes, *e. g.*, toxalbumins, on nervous structures; the absence of excitation during the passage of a constant current of moderate strength.

Then it would be desirable to have demonstration that such a change of aggregate condition as the formation of "a reversible gel" can take place with such extreme rapidity that thousands of excitations may be set up in a nerve in a single second, and that the change can be propagated with such a velocity as the nerve-impulse has. Some explanation would also be needed of the fact that the negative variation (in muscle, at least) is mainly over before the mechanic change begins. It might be asked also whether the gelation of the colloid contents of the nerve-fiber might not be accompanied by some alteration in the optic or mechanic properties of the fiber. Harless could detect no change in the rigidity of nerve during excitation, nor has any change in the refractive index of the axis-cylinder been made out.

When Dr. Matthews, adopting as one of the props of his hypothesis the theory of the action of anesthetics put forward by Overton and Meyer, suggests that such substances as ether affect the excitability and conductivity of nerve in virtue of their fat-dissolving powers, it is permissible to inquire whether he has sufficient evidence that the axis-cylinder, the essential conducting element, is particularly rich in fatty substance. The medullary sheath certainly contains a large amount of material soluble in ether. But no theory of the nerve-impulse will do which does not apply to nonmedullated fibers. These are only a few of the points which this or any other nerve hypothesis must deal with. Others might easily be added. No theory yet put forward has adequately taken account of them all. If Dr. Matthews' theory can be shown to do so it will undoubtedly be adopted by all physiologists as the best at present known.

As regards the general question of the influence of the charges of the ions on physiologic action, Professor Loeb is unquestionably right in directing attention to the fact that the charges do play a certain part. It is perfectly certain, however, that potassium has not the same action as sodium, although its ions have the same positive electric charge; and the reason, no doubt, is that a potassium ion is "something" plus an electric charge and a sodium ion "something else" plus a similar electric charge. Prof. Loeb, of course, does not imagine that "something" can be identical with "something else," but some of his less judicious followers, particularly those who write out of the fulness of their ignorance in the lay press, are in danger of forgetting that a perennial difference exists. Nobody who believes that potassium and sodium are distinct elements can expect their action to be precisely the same merely

because their ions are equally charged with electricity of the same sign. The difference in their action must be due to what we may call their specific quality. The resemblance in their action *may* be due to the fact that the electric charges are the same. But we do not know that the family likeness in the members of a natural clinical group is a mere matter of valency any more than we think that valency is merely a matter of electric charge.

An additional phenomenon requiring explanation on this and other hypotheses is the conduction of the nerve impulse in general when it passes from one neurone to another, only in the direction from dendrites to cell-body, and not in the direction from cell-body to dendrites. For instance, stimulation of the central end of a posterior spinal root (in the frog) causes a negative variation (the electric charge characteristic of the passage of a nerve impulse) in the corresponding anterior root; but when the central end of the anterior root is stimulated, there is no negative variation in the corresponding posterior root.

"The Bed-day."—What the "foot pound" is to dynamics, what the "volt" is to electricity, such is the "bed-day" to the hospital. It is the unit of work. The same necessity which evolved a currency, to facilitate barter, now become trade, which produced the meter and made it a standard of measurement, has given us the "bed-day" by which to gauge the work done by our hospitals. The history of the standards of value shows a gradual evolution from loose systems to exact ones. Mr. Bird's yardstick, made by act of Parliament the standard in 1758, reduced a variable standard to a definite one, but even royal decrees could not prevent the loss of this precious measure, and who can say whether thirty-six inches of today are the exact counterpart of the standard yard of the eighteenth century. The many problems affecting the welfare of the sick and injured have produced the hospital, the clearing-house of disease and health, and the many problems of hospital economy have in time produced a literature stupendous in bulk, even if not always creditable as to matter. It is here that we find the "bed-day" and come to realize its importance. In the evolution of hospital treatment the dispensary comes first, the ward is the later development. In the former the "visit" is the natural standard, both simple and accurate, by which to measure the work done. It is not difficult to chalk up the walking patient each time he or she passes over the door sill. Only in the process of discrimination between new and return visits is error likely to arise. On the other hand, the ward work is measured by a standard now in universal use, but which in this country at least, had perhaps best be called a constant variable. And the reason for this variableness is because the line between the in-patient and out-patient is so loosely drawn here that the whim of a clerk or the mere decree of a trustee may decide what constitutes the one or the other class. The number of in-patients treated may be enormously swollen by a loose construction of the term, while a strict adherence to the opposite extreme, although not increasing the dispensary totals to any appreciable

amount, may greatly reduce the percentage of patients treated in the wards. Some hospitals consider as in-patients all those for which an admission blank is prepared, others require a minimum stay of five hours or a little more, while some do not take credit for in-patients unless the stay has been over night, and others again count nothing less than a full twenty-four hours. In each case, however, the minimum stay is called one "bed-day," with consequently differing results when the totals are reached. Indeed, when the first mentioned plan is practised, the figures may work out a *reductio ad absurdum*, showing a larger number of "bed-days" than of beds actually occupied. Just as there is necessity for uniformity in the system of accounting employed by our hospitals, so the standards employed should be fixed, and padded returns made all but impossible. Then, and not till then, can an impartial and absolute comparison between the work accomplished by our various hospitals be reached. The standards of today are only approximate enough to give a general view and one that is sometimes very misleading. In England, however, a full twenty-four hours constitutes a "bed-day" and that period of time is there universally accepted as its meaning. In this country the Surgeon-General has adopted that meaning of the term, and during the late Spanish war the hospitals which had treated United States soldiers were paid for their services on that basis. This is the logical and natural meaning of the term. The proper authorities should see to it that this standard is universally followed.

The Need of Legislation in Regard to Embalming Fluids.—A question long in the minds of thoughtful men who have given attention to the subject of medical jurisprudence has been brought into sudden and, it is to be hoped, useful prominence by the Haines trial, some of the many important aspects of which were referred to in these columns last week. Judge Garrison, who was a physician before he studied law, addressed to the counsel in the case a query which showed that the significance of the subject under consideration was fully realized by him. "Is there no law of New Jersey," he is reported to have said, "which forbids the use of poisons by undertakers?" It is evident, upon the slightest reflection, that the practice of injecting into dead bodies solutions containing substances that if accidentally or criminally administered during life, might be the cause of death, is capable of obstructing or of perverting the course of justice. It may aid the guilty to escape punishment; or it may, as seems to have been the fact in the case referred to, give rise to unjust suspicion and thus imperil the reputation, the liberty, even the life of the innocent. In the Haines trial, according to the testimony of the prosecution's witnesses, the stomach of the dead child and the intestine, so far as examined, were normal. It was in evidence that during life some difficulty had been experienced in finding a suitable food, and to oppose the possibility of death from gastrointestinal disease the prosecution emphasized these negative findings. It so happened in this case that the absence of gastric or intestinal lesion as testified to by the prosecution was of great importance to the defense,

enabling it successfully to combat the theory of arsenic poisoning. But suppose that in a given instance death had in fact resulted from a disease attended with inflammation of the alimentary canal, and that by the use of contaminated instruments, or by a mistake of the undertaker, an arsenic fluid had been injected—the undertaker honestly testifying to the use of a nonarsenic fluid—an innocent person might easily be convicted of poisoning. In the Haines case the undertaker's son testified that the bottle he put into his father's grip contained a solution admitted by both sides to depend for its preservative quality upon formaldehyd, and to be free from arsenic; but the father, who did the embalming, testified that there were two bottles in his grip, and that he did not know what the second bottle contained. It might have been an arsenic fluid. Moreover, he had been using arsenic fluids both before and after he injected this body. He usually had two bottles with him—one of an arsenic solution and one of the formaldehyd preparation, and he used one or the other according to the state of the body. He used the same syringe and trocar for both fluids, and never washed the instruments; he did not even take care to empty them; he used no precautions against getting the fluids mixed. The chances for error thus were very large. It is probable that other undertakers follow the same course, which from any ordinary viewpoint is not objectionable. But from the point of view of medical jurisprudence, the danger of innocently manufacturing false evidence in this way is very great. Moreover, to take the other possibility into consideration, the guilty may procure the injection of known arsenic fluids into the bodies of those poisoned, and thus at once impair the validity of the evidence of crime. From every viewpoint, therefore, it is important that prohibitive legislation should be enacted. Embalmers should be required to take out special licenses and to submit their embalming fluids to official inspection, and only such fluids as are free from poisonous substances should be permitted to be used.

Microscopic Studies in Medicolegal Cases.—In connection with the subject referred to in the preceding paragraph, the importance of microscopic studies of pathologically altered tissues becomes apparent. In a given case showing gastrointestinal lesion macroscopically, arsenic being present, and an arsenic embalming fluid having been used, such examination might be the only means of determining whether or not the lesion was due to arsenic. In a case of this character representatives of the defense should be given equal opportunity with those of the prosecution for careful study of the specimens.

Standardization of Institutional Accounts.—The financial management of a charitable institution rests upon the same general principles as that of a business corporation. The highest success cannot be attained in violation of these laws, whether by a bank or a poorhouse. One of these laws, recognized and observed by men endeavoring to make a success of their business enterprises, is that of prompt and intelligent accounting. The railway president eagerly scans the accounts of his

road, recognizing in them a guide without which he must fail in managing, to the satisfaction of his stockholders, the property committed to his care. His accounts are to him what the history and temperature charts are to the physician—indispensable to the best results. The value of good accounts as applied to railroad corporations is further shown by the fact that the accounts of practically all railroads in the United States have been standardized and made uniform in all their principal features. This has been brought about by a heavy expenditure of money and effort, and as a result of a pressing necessity, rather than a sentimental fancy. By means of this uniformity it is now relatively easy for anyone interested to make intelligent comparisons of the assets, liabilities, earnings, cost of operation, and fixed charges of the different railroad properties of the entire country.

In comparison with this what a condition of chaos greets the inquirer when he turns his attention to the charitable institutions of the land! Many of them keep no accounts worthy of the name, have no accurate knowledge of their financial condition, can scarcely tell the sum total of cash received and paid during a year, and have only the most vague idea as to how much belongs to principal and how much to income, and this regardless of the fact that much of it is given to the institution in trust with the expressed stipulation that the income only may be used for the purpose or purposes designated!

In the way of improving the existing conditions the first step to be taken is for every institution appealing to the public for support to provide for itself a system of accounts sufficient to its needs, by which its management may accurately know the financial condition of the institution, its income, and its cost of operation, analyzed sufficiently to enable them to know the amount of each of the principal items of expenditure. To do this will doubtless mean a moderate outlay, but it will just as surely result, if the management is alert, in many economies, as well as the better service always secured when the head of each department knows that the central body in control is in a position to know and recognize the officer or employe who is faithfully working for the best interests of the institution, and to discipline the negligent and incompetent.

The manufacturer or merchant must look well to his costs if he is to meet competition successfully, and a charitable institution can have no stronger appeal with which to go before the public than a clear, concise record of good work, well done, at a minimum of expenditure. This is in accordance with sound business principles, and in the long run is sure to promote both the welfare of the institution and the community from which it draws its support. When something near the attention is paid to this subject that its importance demands the time will then have come to take a step still further in advance and provide a uniformity of accounting in public and charitable institutions. But first must come individual action.

The National Association for the Study of Epilepsy, etc., has issued the report (221 pages) of its first

annual meeting held in Washington May 14-15, 1901, and every one interested in the subject should secure a copy of the handsome volume. We can imagine no contribution more likely to lessen the acute sufferings of from 70,000 to 140,000 people (the estimated number of epileptics in the United States) than would be the gift by some philanthropic capitalist of the funds necessary to supply every member of the legislatures of the states of America with this volume, and with Mr. Letchworth's previous one on "The Care and Treatment of Epileptics." This is especially true of the present report as the society has no membership fees, the aim being to meet the expenses of the Association by selling the Transactions.* There seems to be a perfect unanimity of all students of the subject that there is no class of citizens more deserving the care of the state than epileptics, and none so certainly benefited by the colony plan of treatment. Even in the few states that have institutions only the merest beginning has been made. In Ohio, where the first colony was established, there are at least 3,500 epileptics outside of the institutions, and in Illinois 6,000. Hence the great need of convincing the legislators of this fact, for it is upon them that depends the enactment of the required laws. The volume before us bears pathetic testimony to the dearth of interest in the reports read of the conditions existing in the different states and in other countries. In the United States the only attempt at study of the scientific problems by modern laboratory methods is by this National Association. It should have the active support of the profession.

Registry Books for Physicians at Theaters.—

A physician's life at best is hard and exacting, and the pleasures of society, so freely at the disposal of other men, are not for him. When the theater and the opera season is at its height, it is also his busiest time, and not often can he absent himself from his office for the entire evening, unless he is within call by telephone or messenger. To be summoned from the theater or other public place is embarrassing to every sensitive physician. There are of course a few conceited and designing men in the profession who court such notoriety, but the very fear of it no doubt keeps many a physician away when he would otherwise go. For the benefit of those more modest doctors the following plan is suggested: At every theater, academy of music, and other public place—perhaps at churches—books should be kept where any one who is likely to be summoned may register his name and the number of his seat. Should a call come, an usher is quietly sent to the proper place and informs the physician. We have been told that such registry books are kept in the theaters at Washington. It is advisable to make the books uniform, and to have them on little stands where they may be readily consulted when the occasion demands.

Pressure Narcosis.—From the fact that ancient anatomists referred to the carotid artery as *arteria soporifera*, and that the Russians still call it *sonnâia arteria*, the artery of sleep, it appears that it has long been

known that, by compression of the carotids, a state of anesthesia may be produced. It is not surprising therefore to find that among the natives of Java, Madura, and Bauka, a procedure for obtaining narcosis is in extensive use under the name *turik urattidor*, or compression of the soporific vessels. The anesthetizer sits in front of the patient and grasps the patient's neck with the fingers, the thumbs placed back of, and a little below the angle of the lower jaw, compresses the internal carotid artery against the spinal column. Complete loss of sensibility and of consciousness is produced, with occasional more or less pronounced clonic convulsions, but without vomiting, or incontinence of urine or of feces. L. Steiner¹ points out the absolute harmlessness of the operation and the rapidity with which sleep may be obtained and consciousness regained, and urges that it be given a place in surgery. "Javanese narcosis" is susceptible of being applied to the treatment of cephalalgia, vertigo, and insomnia, as well as in minor surgery.

A physiologic peculiarity of the yellow races is said to have been discovered by a German physician of Tokio, Dr. Baelz, who has been repeatedly decorated by the Mikado. If the suggestion made as to the atavistic origin of the peculiarity is true one would scarcely expect to find the scientist so honored by the Japanese. Others before Dr. Baelz had noticed the blue spots which Japanese babies have on the lower part of their spine and elsewhere, and which usually disappear before the age of six, but no one before him, so far as is known, had interpreted and set forth this phenomenon as a peculiarity of the yellow race in contradistinction to the white race. In Korean and Chinese children, in Malays and Eskimos, these blue spots have also been found. They are not visible on European children, but the pigment cells have been found microscopically. In Euro-Japanese children, if the offspring resembles the fair-haired, blue-eyed parent, it has no spots at all; if the influence of the Japanese and the foreign parent is about equal, the spots are there, though more or less indistinct. But if the Japanese characteristics prevail generally, the spots are almost as well marked as in a Japanese baby. While apes have the same blue spots, and certain monkeys blue callosities on the buttocks, Japanese children have sometimes one-half of their bodies covered with them.

The Lawyer's Fee and that of the Physician.—

A number of prominent lawyers of Philadelphia have recently testified that \$100,000 charged by one of their number as a fee in a will contest was by no means excessive or unjust, but was moderate and in such cases is well earned. This happens at a time when the nation offers half a dozen or more of America's greatest surgeons one-fourth of this amount as their total combined compensation for their professional services to its President. One is amazed at the attitude of the world toward medical men. Is not the life of a man worth as much to him and to his fellows as his property? Is not the cost in money and labor of the education and experience required by the physician as great as that of the lawyer? Must not the

* Issued at \$1.00 per volume in paper, or in linen with gilt top at \$1.50, postage free. Address the Secretary, Dr. W. P. Spratling, Craig Colony, Sonyea, New York.

¹ Arch. f. Schiffs. u. Tropen Hygiene, V. 12.

intellect and skill be as perfect? Is not the responsibility as great? And the labor and physical strain as long and as exacting? Moreover, it should be added, that it is not of the surgeon that the question is asked, whose work is often over in an hour or a few days, but especially of the family physician, upon whose brain and heart the life of the patient may rest for months or years. Only a united and organized profession will be able to right this injustice and teach the world the value of the noblest of human services.

The Insane Quack.—In our correspondence columns occurs a suggestion which seems to us worthy of most serious consideration. Are not many of our leading quacks insane? If, as we believe, they really are of unsound mind, they are not responsible, and should be treated accordingly. Liberty of speech in a democracy cannot of course be interfered with, but when this liberty proceeds to corporate action, and ignorance and quackery seek legal authority to take charge of the illnesses and lives of the people, then indeed should all those entrusted with the public welfare be urged to act most conservatively. Quotations from the writings of such insane quacks systematically arranged and explained would often make it clear to legislators and members of the legal profession that the authors are either scoundrels or they are insane, and that in either case their claim to legal protection for their depredations should be sharply denied.

Making Vaccination Fashionable.—A newspaper correspondent notes the fact that even in medical matters the best method of making progress is to convince people that the desirable thing is popular. To make a good act fashionable it is only necessary to make others think it is fashionable. He says that in London, despite the steady increase of smallpox and all that the profession could do to make people vaccinate, there was an invincible apathy upon the part of the public. Suddenly some member of the stock exchange introduced the practice of wearing a red ribbon about the vaccinated arm as a warning to others not to jostle. At once the custom spread and "a thousand ribboned arms may be met in five minutes anywhere in the city."

A Victory Over the Substitution Evil.—Every pharmaceutical preparation should stand or fall in the estimation of the medical profession on its own merits, and the defeat of those who attempt to foist something on the public by closely imitating the package of a successful preparation is a substantial benefit to the profession as well as to the successful litigant. It is highly proper that chemists who go to great expense in the manufacture and introduction of a valuable medicinal compound should be protected against substitution. The fact as to whether a given preparation does or does not possess the virtues which the prescriber has been led to believe can only be ascertained by experiment, and to the physician it is essential that his patient should receive the exact article prescribed. There is therefore ground for public congratulation when the substitution evil receives a reverse as has recently happened in the decree of the Superior Court of Massachusetts in favor of the M. J.

Breitenbach Company, American agents for Gude's Pepto-Mangan, against certain parties who had made use of a package and wrapper closely imitating that with which those who had used the Gude preparation had become familiar.

The Quick Aging of Whisky.—There are 3,745 distilleries in the United States, annually producing 124,530,599 gallons of alcoholic spirits. The total cost of aging the 142,119,231 gallons of whisky annually carried in bond in the United States, including loss by evaporation, interest, storage, insurance, etc., is estimated at about \$14,000,000 a year. A Chicago inventor, it is said, has devised a method whereby the aging may be done as the whisky comes from the still, and thus the loss mentioned entirely saved. We suggest that the state legislatures of the United States at once, upon the proved truth of the discovery, levy an additional tax upon whisky-selling, equal to the amount saved, the proceeds to go to the support of the state hospitals, prisons and reformatory institutions.

EDITORIAL ECHOES

"Health Policies" and Tuberculosis.—The *Colorado Medical Journal* warns that those insurance companies insuring against certain diseases make an exception of pulmonary tuberculosis, although many agents in soliciting try to "gloss this over," and the policyholder may not notice that this disease is not included in the list in the policy against which the company insures.

Quackery and the Plutocrat.—The German Society for Protection of Physicians, which has lately taken up quackery among the aristocrats and plutocrats, is in error in assuming this to be the product of nineteenth century degeneracy. The quack, as Carlyle remarks anent Cagliostro, comes in for his share in all ages. Every financial revolution places the mystic tendencies of primitive man in the foreground, since the moneyed Philistine is peculiarly predisposed to the occult notions of primitive man.—[*The Medical News*.]

The Medical Men of Another Age.—It was very easy in those days to escape punishment. Many doctors are mentioned who became the instruments of private vengeance. Glicon poisoned the wound of Pansa, Nero sent doctors to his rich aunt Domitia to hasten her end; and Agrippina also sent for a doctor, fearing that the poison administered to Claudius by the notorious female poisoner Lucusta should not prove fatal. Medical men were often sent to open the veins of prisoners, and we find them as accomplices in the assassination of Drusus and Marcus Aurelius. It is satisfactory to find that there were notable examples of men who stood out nobly from amongst so much corruption and crime. Among these may be mentioned the two physicians in attendance upon the Emperor Severus, who according to the testimony of Herodian, had been in attendance upon the Emperor during his Scottish campaigns. On the return of the Emperor to York, his physicians received instructions from the Emperor's son Caracalla that they should use means to hasten the death of the Emperor. Their refusal, while commendable in the highest degree, proved the cause of their own ruin, for one of the first acts of the reign of terror and bloodshed of Caracalla was to order the execution of his father's faithful physicians.—[Dr. Henry Barnes, "On Roman Medicine and Roman Medical Practitioners," in *Cumberland and Westmoreland Antiquarian and Archeological Society's Transactions*, Vol. xvi.]

AMERICAN NEWS AND NOTES.

GENERAL.

Cholera in Manila.—The total of cholera cases reported in Manila, up to April 13, was 245 cases, with 192 deaths. In the provinces there have been 418 cases and 318 deaths.

The Section on State Medicine, American Medical Association, will embrace as its principal features at the Saratoga meeting: A Symposium on Tuberculosis, with especial reference to the prevention and restriction of this disease. A Symposium on Vaccination and Smallpox—the production of Vaccine, limitations of the glycerinated lymph, characteristics of the present smallpox epidemic, differential diagnosis, etc. A Symposium on Pneumonia, Influenza and Scarlet Fever in their relations to the public health—(a) Contagiousness of pneumonia, increasing prevalence and fatality of the disease, duties of the profession and of the health officers in connection therewith; (b) influenza as a factor of mortality during the last decade; (c) etiology and prophylaxis of scarlet fever, identification of the causal microorganism and steps toward an antitoxic serum.

American Congress of Tuberculosis will hold its third annual session at the Hotel Majestic in New York City, May 14, 15 and 16, in joint session with the Medicolegal Society. Beside the papers of a miscellaneous nature which are to be read, four symposiums have been arranged on the following subjects: 1. Preventive legislation, embracing the social, municipal, and state aspects of tuberculosis. 2. Tuberculosis in its pathologic and bacteriologic aspects. 3. The medical and surgical aspects of tuberculosis. 4. The veterinary aspects of tuberculosis. Each symposium will occupy one session of the congress. The Earl of Minto, Governor-General of the Dominion of Canada, has accepted the position of honorary vice-president of the American Congress of Tuberculosis, and states that that government will be represented by delegates. There is a proposition to have a museum in connection with the sessions, as the great feature of the London Congress last June was its fine museum. All curators of colleges and museums, or of medical schools or societies, and all members of the profession in the United States, the Canadas, or in South or Central American countries who are willing to lend or contribute specimens, drawings or contributions to such a collection for the use of the congress, will please at once communicate directly with Dr. H. Edwin Lewis, chairman Committee on Museum, at Burlington, Vt., specifying contributions, so that the same may be catalogued and the catalogue presented in advance of the session. The enrolling fee, including the right to receive the Bulletin of the Congress of 1902, will be \$3.

The Vital Statistics of Manila.—According to a report of the Board of Health of Manila, the population is given as follows:

	Population.
Filipinos	218,900
Chinese	60,680
Foreigners	7,852
Americans	6,462
U. S. Army	3,260
Total	297,154
The annual deathrate per 1,000 for the month was:	
Filipinos	38.91
Chinese	4.85
Foreigners	13.50
Americans	5.43
U. S. Army	18.07
Average	30.33
The annual birthrate per 1,000 for the month was:	
Filipinos	18.78
Chinese	0.38
Foreigners	19.51
Americans	7.29
Average	14.59

As usual the greatest mortality was due to infantile convulsions, there being 248 deaths from this cause alone. Deaths resulting from other prominent causes were as follows: Diarrhea and dysentery, 99; tuberculosis of the lungs, 44; non-puerperal eclampsia, 37; acute and chronic bronchitis, 47; beriberi, 32; simple meningitis, 21; intermittent fever, 20; affections of the larynx (probably tuberculous), 10; senile debility, 16. It will be noted that among a population of 300,000, not a case of smallpox, scarlet fever or diphtheria was reported during the month. The inhabitants of the city are protected against the former, and the two latter are scarcely known here. Few deaths occur from cancer or diseases of the liver among the natives. The high deathrate of the natives and the very low one of the Chinese and Americans is noteworthy. This in part is accounted for by the "damp and humid habitations" of the lower classes. A sewer system, purer water, better houses,

raising and widening the streets, obliteration of the moat, establishing parks, etc., are the means advised for improving the health conditions of the city.

EASTERN STATES.

Butler Hospital for the Insane, at Providence, R. I., in order to remove the stigma which attaches to patients admitted to an institution for the care and treatment of the insane, has obliterated that word from its title, and henceforth will be known only as Butler Hospital. Many patients are completely restored to health after a brief period of treatment in such asylums.

Public Health and Politics.—The Connecticut State Board of Health in its late annual report lays stress upon the good results shown in greater efficiency, fidelity, and system which have come from the separation of the state health officers from politics by a new system of appointment, effected a few years ago, and the extension of terms of office. The Board prints for the first time the report of Dean Smith, of the Yale Medical School, on the typhoid epidemic in New Haven last spring showing 405 cases and 105 deaths and tracing distinctly the origin of the epidemic to contamination of the water-supply from cases in a farm house.

Manufacture and Sale of Vaccine Virus and Antitoxin.—In a hearing recently given by the public health committee of the Massachusetts Senate to the opponents of the measure vesting the State Board of Health with authority to manufacture and sell vaccine virus and antitoxin, it was held that it would be unwise from a sanitary point of view as well as for commercial reasons, for the state to produce any class of goods in competition with legitimate manufacturers. No action was taken in the matter, but the hearing will be held open until Dr. S. H. Durgin, the petitioner for a proposed amendment, shall present his side of the case, after which the opponents will offer further argument in rebuttal.

Food Adulteration.—The Connecticut State Experiment Station in its last report shows extensive adulteration of foods sold in the markets. Out of 375 samples of milk obtained in 28 towns of the state 8% were adulterated. Out of 1,236 samples of food products analyzed, 441 were found adulterated, 29 of them with preservatives only. Eighteen out of 35 samples of suspected butter contained oleomargarin, and 25 out of 231 samples of molasses contained glucose syrup. One-tenth of the samples of coffee were found adulterated; 18 out of 38 samples of jelly; 19 out of 29 samples of cordials; 41 out of 62 samples of vanilla extract; 51 out of 66 samples of lemon extract; and extensive adulteration of many kinds of spices, chiefly by ground coconut-shells.

NEW YORK.

Improper Use of Milk Bottles.—The introduction of an ordinance in New York will occur shortly, making it a misdemeanor for any person to use for any other purpose the bottles or cans used in dispensing milk.

Age of Medical Students.—A bill has been passed by the New York Legislature and signed by Governor Odell, providing that medical students admitted to preliminary State examination must be at least 19 years old.

Senator Trainor's bill incorporating the Inebriates' Home of New York City has been signed by Governor Odell. This institution will receive no public appropriations, and is authorized to receive and treat alcoholic and narcotic inebriates.

Suit Against a County.—The Pasteur Institute of New York has sued Erie County for the recovery of \$4,600 due for the treatment of the hydrophobia patients of that county. The county officials hold that the bill should be paid by the state.

Gift for Hospital.—It is reported that Mr. J. Pierpont Morgan has given \$60,000 for a Deaconess Home and Hospital in connection with St. George's Church, New York. A convalescent hospital with a solarium will occupy the upper portion of the building.

New Hospital for the Bronx.—The bill authorizing the erection of a new hospital in the borough of Bronx has been signed by Governor Odell. It directs the Sinking Fund Commission of the city to issue bonds for \$200,000 to be used in acquiring the site and for \$300,000 for erecting and equipping the building.

St. Lawrence State Hospital.—The old board of managers for this hospital for the insane at Ogdensburg, N. Y., held a final meeting March 27, when announcement was made that the five members of the board whom Governor Odell had appointed on the board of visitation of the hospital would decline to serve. They adopted a memorandum to the effect that the board had served honorably and energetically and that it would not be on the part of wisdom to continue to hold office under the new law, which deprived them of all power in the management of the institution.

Commission on Prophylaxis.—A bill introduced in the New York Assembly, provides for the appointment of a "Commission on Prophylaxis," consisting of five members, to inquire into the history, nature, and pathology of vaccination and of smallpox from Sydenham down to the present time; also as to the value of vaccination as a preventive of smallpox. A similar investigation will be made of antitoxin and all other serums which are considered prophylactic against disease, and of the question of danger arising from bubonic plague or other severe epidemics, obtaining a foothold in the United States. If, in the judgment of the commission, such a calamity threatens, it will advise the state as to the adoption of measures to avert it, and a scrutiny of the existing law concerning these matters will be made to see if any alteration is required.

Summer Mortality Among Children.—The New York Health Department will ask for an addition to the yearly appropriation of \$10,000 to help defray the expenses which will be incurred in an effort to reduce the mortality among the children of the congested tenement districts during the summer months. Already there has been 150 physicians appointed for the summer squad, which last year numbered but 42. Arrangements have been made for the men to enter upon their duties June 15, a month earlier than previous years. Mothers will be given instruction regarding the care of their children. The physicians will work in conjunction with John P. Faure, who attends to the fresh-air excursions of the St. John's Guild, and efforts will also be made to cooperate with Nathan Straus, who has sterilized milk stands established throughout the city during the heated term.

Cancer Research.—In the recent report of the cancer laboratory, University of Buffalo, Dr. Roswell Park says the results of the past year tend to confirm the growing belief in the infectiousness of the disease, and also that it is on the increase. The year's study has embraced the problems involved in connection with parasites as a cause of cancer, and their culture on artificial media. Efforts have been made to acclimatize yeasts, fungi protozoa, etc., to development in living animals and to the formation of tumors, and also to cultivate parasites from cancerous material on artificial media, and to facilitate their growth and development in animals. Investigations along physiologic and chemic lines have been carried out and many experiments made, especially those of a microchemic nature, with the idea of verifying the pathologic work. The examination, comparing and indexing the work and results of others in various parts of the world, has occupied much time.

PHILADELPHIA, PENNSYLVANIA, ETC.

The University of Pennsylvania has received recently gifts amounting to \$20,000. Of this \$15,000 was donated toward the new medical laboratories. The remaining \$5,000 is for the proposed engineering building.

Thirty-first German Chirurgical Association.—Dr. W. W. Keen, of Philadelphia, has been elected an honorary member of the Thirty-first Congress of the German Chirurgical Association.

Joseph J. Kinyoun, late Surgeon of the Marine-Hospital Service and Director of the Hygienic Laboratory at Washington, has assumed the directorship of the biologic laboratories of the H. K. Mulford Company, at Glenolden, Pa.

Rush Hospital Extension.—The trustees of the Rush Hospital for tuberculous patients have secured for use as a country branch a farm of 47 acres in Chester county, two miles from Malvern, which has an elevation of 635 feet. Only incipient cases will be received, and if the treatment, consisting of good air, good hygiene and good food proves successful, cottages will be built on the grounds similar to those at the Saranac Sanatorium in the Adirondacks.

Trunk Sewer.—Work has been commenced in Elizabeth, N. J., on the new trunk sewer which is to drain Elizabeth, Newark, Milburn, South Orange, West Orange, Summit, and Vailsburg. The total length of the sewer will be 22 miles. Tanks will be provided in its various branches to collect all sewage during the time when the flow exceeds the normal, this surplus being emptied from the tanks when the flow falls below normal. Controlling the flow in this way is said to be equivalent to increasing the size of the sewer 50%.

SOUTHERN STATES.

Compulsory Vaccination.—Smallpox having invaded the Norfolk jail, the 286 prisoners, who are nearly all colored, will be taken to a vacant lot under police guard and vaccinated while the jail is being disinfected. Vaccination will also be enforced in the city in order to stamp out smallpox, which is reported to have broken out among the negroes.

The Georgia Pasteur Institute.—The Board of Governors met recently in Atlanta and heard the semi-annual reports of the officers. The physician's report showed 39 cases treated, 27 from Georgia, 7 from Louisiana, 3 from Alabama, and 1 each from Tennessee and South Carolina, and no deaths. All patients gained flesh and improved under treatment.

The bill for promotion of anatomic science in the District of Columbia, which was introduced recently in the Senate and sent up for the President's signature, was returned by him to the Senate with the request that it be withdrawn and amended so that the Navy as well as the Army—the beneficiary under the present bill—shall partake of the advantages to be gained by securing subjects for purposes of anatomic research under this bill.

Antispitting Ordinance.—The Baltimore Health Department announced that the ordinance whereby a fine of \$1 and costs is imposed on all persons convicted of expectorating in street cars, will hereafter be enforced rigidly. It has been found that the notices posted in the cars have failed to abate the nuisance and therefore all conductors are ordered to prosecute offenders. Detectives have also been appointed to ride on the cars and cause the arrest of persons violating the law.

Physicians in Legislature.—The need of more physicians to represent the profession and to enlighten the ignorance of the average legislator respecting medical matters, is felt to such an extent in Virginia that physicians of the state are asked to offer themselves as candidates for the next legislature. It is claimed that the small number of physicians at present in the legislature cannot cope with intriguers or legislators who are utterly ignorant of the medical wants which should be satisfied to protect the public health.

WESTERN STATES.

The Visiting Nurses' Organization, of Chicago, now numbers 14 members. During the past year they made 37,756 visits on a total of 5,915 patients. The visiting nurse attends those who are unable to afford more continuous medical treatment and who cannot for various reasons be sent to a hospital.

Secrets of the Sick Room.—According to a ruling of the Court of Appeals of Kansas City, Mo., a physician may be a competent witness in suits for damage in which it is desired to prove that the injury is the direct outcome of the accident and that the treatment applied was correct.

Rush Medical College will introduce coeducation in all branches of the four years' course with the opening of the summer term. This will enable women who have heretofore only been allowed to take the first two years in medicine to complete the course. There are now about 40 women students prepared to enter the third year work. A new building will be erected to accommodate the additional students.

Osteopaths, magnetic healers and Eddyites are not violating the law of 1901 in practising in Washington State without passing the prescribed examination in medicine and surgery and obtaining the license required of physicians of recognized schools. This is the statement of the law made in an opinion prepared by Assistant Attorney-General Ross, who holds that under the law only those are required to pass examination and obtain license who actually advertise themselves as physicians, using the title M.D., or publicly assume to practise medicine or surgery.

The prosecution of undertakers who violate the city ordinances respecting the burial of those dead from contagious diseases, is being rigorously enforced by the Chicago Health Department. The law requires that such bodies must be buried within 36 hours after death and that the funeral must be strictly private. No flowers are allowed, children are absolutely forbidden to be present and the house must be thoroughly fumigated so soon as the body is removed. Investigation shows that the undertakers called to account erred through ignorance of what constituted contagion; they were therefore dismissed, but with a threat that if found offending again their licenses would be revoked and they would be punished to the full extent of the law.

Scarlet Fever in Chicago is reported as more prevalent and more fatal than at any time during the past 17 years. Since the first of the year the mortality from this cause alone reached nearly 2.3% of all the deaths recorded and for the week ended April 5, there were 162 cases reported. Thus far sanitation and preventive medicine have failed to check the spread of the disease, but this failure is in part attributed to the carelessness of relatives and undertakers respecting the dangers of infection. The department has also been forced to rely upon an inadequate staff of disinfectors and placarders to restrict the spread of the disease, but to these is now being added the important services of some 6,000 public school teachers, who are teaching their scholars such habits of cleanliness as cannot fail to assist materially in the spread of contagion.

CANADA.

McGill University has appointed J. Stuart Horner, the English scientist, as its honorary representative in England, and has advised the British public that entrance examinations will be held in London, beginning June 6, for admission to the six-year course in applied science and medicine, which the corporation of the University has established recently.

FOREIGN NEWS AND NOTES

GENERAL.

Sanitation in Japan.—In Yokohama the Police Department of the province of Ken has charge of the sanitation and by strict scrutiny of the daily reports which are exacted, relating to the condition of the precincts and the number of the sick or dead and immediate investigation of anything in them that appears suspicious, a perfect control of the native population is maintained and a sufficient control of the foreign population to guard against any serious infringement of the laws regulating public health matters.

The Fourth International Congress of Gynecology and Obstetrics will convene in Rome under the patronage of the King of Italy from September 15 to 21, 1902. Papers will be presented on the following subjects: (1) Medical Indications for Interrupting Pregnancy; (2) Hysterectomy for Puerperal Infection; (3) Genital Tuberculosis; (4) Surgical Treatment of Cancer of the Uterus. The time assigned to each paper is not to exceed 15 minutes. Those who intend to read papers are asked to send the titles and if possible short summaries to the general secretary before the end of May. Membership subscription, including the right to receive printed transactions of the congress, is 25 lire, about \$5.

Leprosy Research.—Further details of Mr. Jonathan Hutchinson's investigations of leprosy in South Africa are reported. He finds the disease all over the country, but common in no locality and affecting chiefly the colored races, but existing among the Dutch farmers, among whom it was probably a new disease 150 years ago, when first recognized near Cape Town. Since that time it has spread gradually over the whole British territory, including the Transvaal and the Orange Free State. It appeared first in Natal 60 years ago and in Zululand is almost unknown. The disease spreads in Hottentot and Kaffir kraals, where it is generally introduced by some laborer who has brought the disease with him from Cape Town, but does not spread in leper asylums or in civilized communities where care and cleanliness prevail. He considers that it is communicated by eating food contaminated by a leper's hands, and that the primary cause of the disease is the ingestion of badly-cured salt fish. He holds that the fish canning establishments should be looked after at once.

GREAT BRITAIN.

The Royal Infirmary at Aberdeen is the recipient of a gift of \$150,000 from Lord Mount-Stephen, who previously cleared the institution from a debt of \$125,000.

Air-Borne Smallpox Germs.—Dr. J. C. Thresh, Medical Officer of Health for Essex, after a thorough investigation, holds that the maximum limit to which smallpox germs may be carried by air and yet be capable of infecting those susceptible to their influence is not more than three miles.

Suits Against Physicians.—A London judge states that the knowledge nurses obtain of medicine induces them to bring suits against physicians. The following are cited as examples: Recently suit for damages was brought against Dr. Law by a nurse, who claimed that he had administered morphin to her for relief of spasmodic asthma, until she formed the habit and became a morphinomaniac. On trial it was proved that the doctor had only given pharmacopeial doses, and that the treatment was adopted after consultation with eminent physicians. A verdict was rendered in favor of the defendant with the statement that the case should never have entered court. The judge agreed with the verdict and censured those who had advised the plaintiff's counsel. In another case brought against Dr. Cullingworth by a nurse upon whom he had performed ovariectomy, as she claimed, without her consent to such a radical operation, the doctor was also acquitted. It was found that permission had been given to do whatever was considered necessary. This nurse afterward subjected the doctor to a long persecution by raising all sorts of legal points and trying to obtain a new trial. The injustice roused the profession, and a large sum of money was subscribed to defray all the legal expenses for fighting the case.

CONTINENTAL EUROPE.

v. Ziemssen's medical library, consisting of 25,000 works, is said to have been purchased by Gustav Fock, a bookseller of Leipzig.

Cremation of Plague and Cholera Victims.—Physicians from all parts of the German Empire have signed a petition, presented recently to the Reichstag, asking for the cremation of the bodies of those persons dying from plague or cholera.

Smallpox.—There was officially reported February 17 at Basileia, province of Benevento, Italy, 176 cases in a population of 4,000 inhabitants. There is a large emigration from this province to the United States, but careful sanitary measures are being rigidly enforced there.

Microorganisms of Cancer.—Professor v. Leyden read a paper before the Research Committee on Cancer in Berlin, March 21, claiming the discovery of a specific cancer microorganism and exhibiting microscopic preparations. His assertions were not left unchallenged in the discussion which followed.

For the benefit of district health officers the Prussian Government has appropriated 26,000 marks for free lecture courses in hygiene, forensic medicine and psychiatrics, held in Berlin. The hygiene course, emphasizing the prevention of epidemics, will be in charge of Professor Koch and his assistants, and that in psychiatrics will be given by Professors Jolly and Moeli. The traveling expenses and lodging of the hearers will be provided for.

Marey Institute.—An appropriation of 25,000 francs for the establishment in Paris of an institute for physiologic investigations by means of graphic tracings has been made by the French Chambre des Deputés. The chief aim will be to establish standards for the instruments used. At the Marey jubilee, held in Paris in January, Professor Marey, in answering the testimonials of love and affection tendered him in the celebration of 50 years of university work done for the world's utility, said that for 30 years he had labored with the single aim of securing an international understanding for the according and verifying of the registering instruments used in physiology.

Increase of cancer in Germany at an alarming rate is set forth in a recent paper by Dr. Wutzdorf, of the Imperial Board of Health. His statistics dealing with public and private hospitals are incomplete, as many of the cases are not brought to the hospitals, but it is shown that from the year 1879 to 1898, there was an increase of 266%. The number of cases of cancer in German hospitals in 1879 was 6,630 (2,732 male and 3,898 female), and in 1898 the number had increased to 24,166 (10,100 male and 14,166 female). In 1892, 2.6% of the deaths were attributed to cancer, and in 1898, 3.5% to that cause. Of 100,000 inhabitants, 59.6% died of carcinoma in 1892, and 70.6% in 1898—an increase of 18.5% in 6 years.

OBITUARIES.

John Ahl, the oldest physician of York, Pa., April 4, 1902, aged nearly 80. He was graduated at Washington University, of Baltimore, 1845. In 1849 he was elected coronor of York county, and served two terms; in 1878 he was again elected to the same office, and again served two terms. He at various times filled the office of jail physician, almshouse physician, and health officer of York.

William D. Middleton, an eminent surgeon of the West, professor of surgery and dean of the medical faculty of the State University of Iowa, and surgeon-in-chief of the Chicago, Rock Island and Pacific Railway, at his home in Davenport, Iowa, April 5.

Albert C. Corr, one of the best-known physicians of Central Illinois, formerly president of the State Board of Health, at Carlinville, April 2, aged 63.

David J. Underwood, a graduate of College of Physicians and Surgeons of Baltimore, and a leading physician of New Martinsville, W. Va., March 26.

Jonathan Faust, graduate of Jefferson Medical College, 1867, and well-known country practitioner at Zeiglersville, Pa., April 14, 1902, aged 60.

Frederic Augustus Putnam, a practitioner for 60 years in New York City, at Sutton, Mass., March 27, aged 89.

John F. Ely, one of the founders of the Dubuque Medical Society of Iowa, in California, March 14, aged 81.

Jacob Young, the oldest physician of Wetzel county, W. Va., at New Martinsville, March 22, aged 82.

Richard H. Sommerville, of West Virginia, at San Antonio, Texas, aged 40.

Thomas N. Bryan, a prominent physician of Indianapolis, April 3.

Bowen Combs Howell, of La Porte, Ind., March 29, aged 82.

James Watt Taylor, of Pittsburg, Pa., March 18, aged 72.

Rollin E. Cutts, of Minneapolis, Minn., March 19, aged 35.

Frank L. Portzer, of Greensburg, Pa., March 27, aged 35.

George V. Pickering, of Gilford, N. H., April 9, aged 84.

Paul Carlyle, of Mount Gilead, Ohio, March 21, aged 26.

Sven S. Reimstad, of Madelia, Minn., March 29, aged 30.

G. A. M. Cooke, of Washington, La., April 10, aged 47.

Jerome F. Hertzmann, of Omaha, March 28, aged 48.

William L. Williams, at Afton, Va., April 11, aged 89.

E. E. Furber, of Springfield, Vt., March 22, aged 34.

C. H. Hathorn, of Holbrook, Arizona, February 25.

S. Townsend Bowne, of Leadville, Col., March 26.

Otis Whiting, of Herrick, Ill., April 13, aged 32.

Gilbert P. Mills, of Missoula, Mont., March 26.

Alfred J. Sporry, of Portland, Ore., March 16.

Robert P. Davis, of Portland, Ind., March 23.

S. A. Keen, of Withers, Fla., March 31.

C. D. Hill, of Bethel Me.

SOCIETY REPORTS

TRI-STATE MEDICAL SOCIETY (IOWA, ILLINOIS AND MISSOURI).

TENTH ANNUAL MEETING, HELD IN CHICAGO, APRIL 3 AND 4, 1902.

[Continued from page 588.]

Cholecystectomy Versus Removal of the Mucous Membrane of the Gallbladder.—Dr. Emil Ries, of Chicago, said as an emergency operation the former was satisfactory, but not ideal. An operation which he considered in comparison with cholecystectomy was Mayo's operation of removal of the entire mucous membrane of the gallbladder without removing the entire gallbladder. While this operation seems very reasonable, and has been performed by Mayo and others with success, the essayist said that, according to some recent observations made by him in the surgical pathology of the gallbladder, this operation was objectionable. He related the case of a woman of 45 upon whom he operated three months ago, doing a cholecystectomy. The glands of the mucous membrane of the gallbladder were tortuous and hypertrophied. They did not show normal epithelium throughout. Most of the cells of the glands were of a high cylindrical type with nuclei about the center of the cells. There were areas of round-cell infiltration throughout the mucous membrane. The most important observation was this: Elongated glands passed right through the muscular coat clear down into the connective tissue in numerous places. He had examined 150 sections from various parts of the gallbladder, and he had found this condition in numerous places. The thought struck him that if anybody attempted to remove the mucous membrane of the gallbladder alone he would doubtless fail. He has never been able to learn whether Mayo had ever had the mucous membrane of the gallbladder which he had peeled off examined microscopically or not. He thought it was impossible to remove the mucous membrane of the gallbladder alone. His recent pathologic research work had convinced him that the operation of peeling out the mucous membrane of the gallbladder was a step in the wrong direction, and that it was liable to be followed by more trouble. He therefore advised strongly in favor of cholecystectomy rather than peeling off of the mucous membrane of the gallbladder.

Plastic Surgery in Ophthalmology.—Flavell B. Tiffany, Kansas City, Mo., spoke of the use of large skin grafts to restore destroyed lids by lupus, burns, cancer, etc., taken from remote parts without a pedicle. These grafts embrace the entire skin, and they are transplanted directly without being passed through any medium and put upon a granular surface, where they grow without sloughing. In distichiasis and trichiasis with previous operation, when there is no integument to spare, von Milligan's operation is recommended. In ordinary cases of entropion he uses the electrocautery, incising the integument near the margin of the lid from one canthus to the other two or three millimeters distant from the margin of the lid; then, from cicatrization the margin of the lid is turned away, correcting the entropion. For ectropion he makes a similar operation, cutting with the electrocautery the conjunctiva from near the punctum of the outer canthus at a distance of two or three millimeters from the margin of the lid.

Differential Diagnosis of Smallpox.—J. C. Sullivan, of Cairo, Ill., impressed the point that whenever a patient complains of severe and persistent backache, followed by fever and a pustular eruption, affecting the palms of the hands and the soles of the feet, protruding from beneath the outer skin, we have a case of smallpox to deal with, no matter how insignificant or mild it may appear, and a case of confluent or even hemorrhagic smallpox may be contracted from it. Hence the necessity of immediate vaccination of all parties exposed, and of strict quarantine or isolation in each case. There were but two diseases that produced this phenomena—namely, syphilis and smallpox.

Treatment of Malignant Tumors by the X-Ray.—William Allen Pusey, of Chicago.—Except a few epitheliomas, the whole list represented cases which had baffled as skillful men as the country possesses, or had been passed upon as hopeless by masters of the profession. A more unpromising group of cases could hardly be imagined. The cases were presented for what they were worth, that each one would give them whatever weight he considered they were entitled to. The x-rays have a destructive effect upon tissues of low vitality, and that this effect can be utilized under suitable conditions to cause the destruction of such tissues without destroying the involved healthy tissue. His sections show that the x-rays cause a degeneration of some sort of carcinomatous tissue and a disappearance of it, presumably by absorption. This disappearance of carcinomatous tissue is followed by the formation of firm, healthy scar tissue. A simple process presumably occurs in the disappearance of diseased tissue in tuberculosis, sarcoma and pseudoleukemia. The advantages of the x-ray method are that it is painless, it destroys diseased tissue, but leaves the healthy tissue in its place. It leaves small scars, and it can be used in cases where the surrounding healthy tissue cannot be sacrificed. It is available for cases in which ordinary methods involve extensive operation and serious subsequent disfigure-

ment, as, for example, about the eye and nose. It is available in cases in which ordinary methods are impossible, because of the amount of destruction of tissue which complete removal would require. It is applicable to many inoperable cases. It often relieves pain. The use of x-rays should, in his opinion, be limited to those cases which for any reason it is inadvisable or impossible to treat by ordinary methods. He does not advise the use of x-rays as a substitute for operations in operable malignant growths. As regards cutaneous carcinomas, he believes no strong objection is to be found to the use of x-rays as a primary method of treatment, and some advantages are to be urged for it. All other malignant neoplasms should have the advantage of operation where it is practicable. With the present evidence of the effect of x-rays upon malignant neoplasms, he believes he is justified in maintaining the following propositions: First, in all cases of malignant disease which have been operated upon there is reason to urge the subsequent use of x-rays as a prophylactic measure. Second, in all inoperable cases of malignant disease, the use of x-rays should be tried. Third, in all such cases there is a probability of relieving pain and a possibility of inhibiting the progress of the disease.

Conglomerated Cystic Kidney.—J. F. Herriek, Ottumwa, Iowa.—The patient was a clergyman, 45 years of age; Irish nativity; of good habits. Always well, except for a fall from a street car in April, 1899. Taken, January 20, 1901, with an attack of unconsciousness. Was up and about in three days. Urine, eight pints in 24 hours; specific gravity, 1.005; small amount of albumin; few hyalin casts; no pus. Diagnosis, contracted kidney. April 1, 1901, a nodular tumor was found in region of each kidney. Under treatment and milk diet, urine, four pints; specific gravity, 1.010; some albumin; few hyalin casts. Diagnosis changed to conglomerated cysts of kidneys. August 12, 1901, was taken with diarrhea. August 19, he became stupid. August 21, comatose, and died on August 22. Large nodular tumor in region of either kidney. Autopsy revealed mass of cysts, weighing about four pounds, in place of normal kidney. Cysts ranged in size from millet seed to crow's egg. Suprarenal glands enlarged. No normal kidney substance could be seen. No other abnormalities were discovered.

Ligation of Common Iliac or of External and Internal Iliacs Preliminary to Amputation of Lower Extremity at Hip-joint.—Dr. Augustus C. Bernays, of St. Louis, Mo., said that in many cases Senn's and Wyeth's methods left much to be desired, if it seemed necessary to save the patient from even a small loss of blood. He reported an operation and presented photographs of a case of myxosarcoma of the thigh, reaching above Poupart's ligament, in which the ligation of the common iliac enabled him to perform an absolutely bloodless operation. The ligation was done through a small abdominal incision made exactly over the brim of the pelvis on the affected side. Dr. Bernays claimed that the aseptic ligation of the iliacs could in no way add to, but would not likely lower, the percentage of mortality in those cases in which the ablation of the lower extremity was indicated. He strongly recommended the method in suitable cases. His patient recovered in a few weeks.

Hemorrhage After Tonsillotomy.—H. A. Leipziger, of Burlington, Iowa.—Tonsillotomy is one of the so-called minor operations which becomes a very formidable one in case of hemorrhage. Even if there is no fatality, the apparent danger, continuance of bleeding, and frequently the inability of the surgeon to arrest the same, create a degree of anxiety for doctor and patient, and a liability to censure and reproach for the doctor alone which should stimulate all surgeons to cease regarding the operation as minor. The patient should be informed of the dangers, and examined before operation at least as carefully as before a life insurance examination, which never involves more than a limited amount of money. The operation should never be done in the doctor's office, but by preference in a well-appointed hospital. Bleeding will follow a tonsillotomy as well as a knife. The commonly advised styptics and methods of arresting the bleeding do so when the bleeding is insignificant; when it is severe they all fail. Even tying the common carotid has failed. There seems to be underlying the parenchymatous oozing some nervous or vasomotor influence, which is excluded by syncope or unconsciousness. The latter is obtained by hypodermics of morphin, which were used in this case with sufficient effect to make him believe it arrested the bleeding when all other means had failed.

Psychology as Applied to Modern Medicine.—G. H. Eiskamp, of Washington, Iowa, referred to the delusions under which a large number of people were laboring, evidenced by the sudden rise and rapid spread of the religious vagaries and scientific absurdities taught by Mrs. Eddy, Dowie, Schlatter, Schweinfurth, and others. He thought the deathblow to all such scientific, philosophic and religious vagaries was struck when the truth was shown concealed behind the fallacy. It was at this point that medicine had failed in the performance of her duty. While Christian Science had swung to one extreme, medicine had swung to the other. If the followers of Mrs. Eddy had laid sole emphasis on the psychical, ignoring the physical, the physician, on the other hand, was tempted to confine himself to the physical, leaving out of account the mental. Had physicians studied the psychic side of life as they ought to have done, applying psychologic principles to the treatment of

disease, there could be no reasonable doubt that much could have been done to counteract those delusions which were today spreading with such alarming rapidity. Why should the physician leave this interesting and important field to the untrained quack that he might make of it a matter of merchandise? That many of human ailments were of mental origin and could be healed by purely psychologic means, there could be no question. Into many others the psychic entered as a very important element. This being so, in order to successfully treat the human body, one must know something of the human mind, its laws, and methods of working. Without this knowledge, accurate diagnosis of disease, in some instances, was impossible. When carefully diagnosed, it might turn out that the patient needed the good offices of a clergyman, a psychologist, or neurologist. At all events, the physician must be able to make the diagnosis, whoever effects the cure.

Acute Delirium.—Frank P. Norbury, of Jacksonville, Ill., said that acute delirium is an etiologic problem; one upon which the leading authorities do not agree. It may not be regarded as an entity, but a combination of pathologic conditions, chief of which is an encephalitis more or less intense, and almost invariably fatal. The tendency is of late to regard the disease as an infection, but as yet no pathogenic bacteria family group have been isolated. The Russian school, following the lead of the Italians, have made reports, conclusive in their deductions, endorsing the infection theory. From a clinical study of three cases, one of which came to autopsy, Dr. Norbury endorses the infection theory, and says the disease is comparable in its clinical history to other of the severe infections. The question of differential diagnosis is aided by laboratory methods.

Diagnosis of Cancer of the Breast.—Alfred Roulet, St. Louis, Mo., read a paper with this title. He said there is no doubt that in its early stages every cancer of the breast is a strictly localized condition, and that its successful treatment depends entirely upon early diagnosis and immediate radical extirpation of the malignant focus. In advanced cases the diagnosis is easily made, but in the early stages it is often exceedingly difficult to distinguish cancer from abscess, syphilis, tuberculosis, sarcoma, cysts and the benign tumors. Text-book distinctions do not hold in practice. The diagnosis can only be made after most thorough physical examination and a searching investigation of the case history. While the microscope is a valuable aid in diagnosis, it occupies a place of secondary importance.

Multiple Neuritis.—Daniel R. Brower, of Chicago, said that the diagnosis of multiple neuritis in its classic form was very simple, but at the bedside there were but few classic cases, so that errors in diagnosis were not infrequent, and as the prognosis of multiple neuritis was usually favorable under proper treatment, and the prognosis of the disease with which it was usually confounded was very bad, a correct diagnosis was of great importance. The disease was the result of some kind of poison, and while the action of this agent might be limited to the peripheral portion of the neurons, yet there were cases in which the cell body as well was impaired, and this also created confusion in diagnosis. The principal poisons producing a multiple peripheral neuritis were alcohol, lead, arsenic, and the toxins of the various microorganisms, especially those that produce diphtheria, influenza, typhoid fever, gonorrhea, syphilis, leprosy, and beriberi. In the typical cases of multiple neuritis there was symmetric localization of motor, sensory, and vasomotor symptoms. In the earlier stages the symptoms were the result of irritation of the nerve; while the later symptoms were those of destruction. In the beginning there were muscular cramps and spasms, shooting pains, and paresthesia. Later on, paralysis and anesthesia. The diagnosis of alcoholic neuritis was based upon the evidences of chronic alcoholic poisoning found in the digestive circulatory and nervous systems. The onset was usually insidious, weeks or months being necessary for its full development. The earlier symptoms were numbness, tingling, muscular cramps, tremors, and vasomotor disturbances, such as cold or clammy hands or feet, or a hot and burning sensation in the same extremities. In a few cases there was marked psychic disturbance.

Arsenic neuritis resembled very much alcoholic neuritis. The differentiation from alcoholic neuritis was made in the few cases he had seen by the absence of any evidence of alcoholism, by the edema of the eyelids, pigmentation, epigastric pain and nausea. These cases were the result of the continued use of large doses of Fowler's solution, and the tremors were more marked than in alcoholic neuritis. The kneejerks and typical reflexes were present. Some cases were the result of the combined action of alcohol and arsenic, as evidenced by the remarkable epidemic that occurred in Manchester, England, in 1900, from beer. The source of arsenic was traced to sugar used in brewing. Recent investigation by Ross would seem to indicate that arsenic may be the principal etiologic factor, although hitherto it has been regarded as microbic.

The treatment of the several forms of neuritis had in common rest the relief of pain and insomnia; also the use, in the early stages, of the constant galvanic current of low amperage, applied daily to the nerve trunks involved, and attention to elimination by skin, bowels and kidneys. The alcoholic patients required the bromids, with codoin in such doses as necessary to secure a reasonable degree of comfort, and the use of nerve tonics, of which strychnia was the most serviceable

In alcoholic neuritis it was very essential to withdraw at once and entirely alcoholic stimulants. In the treatment of beriberi, it was the opinion of physicians, who had had much experience with the disease, that the patient must be moved from the locality where the disease was contracted, must have absolute rest in bed, mild laxatives, diuretics, tonics, and anodynes. When cardiac failure seemed imminent, strychnia and nitroglycerin had given the best results. After the acute stage of the several forms of multiple neuritis had passed, the patients required vigorous restorative treatment.

The diet throughout must be carefully regulated to suit the digestive condition of the patient. As soon as the acute pain had disappeared, the use of the galvanic current of a proper amperage, interrupted, so as to produce muscular contraction, was indicated. The séances should be short; not more than three or four contractions of each group of muscles by a current of the least possible amperage should be made daily. Gentle massage should be commenced at the same time the electrical exercise of the muscles began, and the severity of this treatment should be increased as muscular soreness subsided. This exercise of the atrophied muscles would ordinarily result in their slow redevelopment, and after a time they would respond to the faradic current, and then it should be substituted. Much benefit may be had by the hypodermic use of strychnia, a daily injection, beginning with $\frac{1}{60}$ and gradually increasing it to a full physiologic dose. If the case did not yield, hypodermic injections of the chlorid of gold and sodium, gr. $\frac{1}{2}$, might be added to the daily treatment. As soon as possible the patient should be encouraged to make voluntary muscular movements frequently. Many cases of multiple neuritis in the beginning of treatment were discouraging, and the physician was apt to consider them hopeless too soon. Some of the most satisfactory results he had obtained were in cases of long standing neuritis, which had been abandoned by physicians as incurable.

Intemperance and Life Insurance.—C. F. Wahrer, of Fort Madison, Iowa, contributed a paper with this title. He said that insurance companies have made careful estimates of the factors entering into the product of life insurance. They exclude the intemperate, the vicious, the debauched, persons suffering from chronic diseases liable to terminate fatally, those engaged in hazardous occupations, and the extreme of age. Drinkers easily fall victims to such diseases as nephritis, heart disease, pneumonia, typhoid fever, and cirrhosis of the liver, and since intemperance is most frequently found among the lewd and vicious, they are particularly liable to gonorrhea and syphilis. Once attacked, their chances for recovery are greatly lessened by the life they have led. Men following hazardous occupations are liable to injuries, and if intemperate they stand operations poorly, and their chances for recovery are relatively small. Since intemperance plays such an important role in life insurance, it is well to note the fact that the children of drinkers are poorer risks than those whose ancestors led pure and temperate lives. There are two kinds of risks: The standard, embracing those who pass a satisfactory examination and receive an unmodified policy at usual rates; and the substandard, who, on account of an unsatisfactory examination, are given a modified policy. The author suggests the establishment of a new class, the superstandard class, in which, beside possessing the good qualifications of a standard risk, the applicant must be a *teetotaler*. He thinks it just that these should not pay for the shortcomings of others, and that there is a sufficient number of them to justify the creation of a separate class to whom policies should be issued at reduced rates.

Medical Education.—The president's address was delivered by Dr. John C. Murphy, of St. Louis, Mo. The vital factors in medical education are the teacher, the student and the college. A man who aspires to teach others should himself have a thorough understanding of what he attempts to teach, and should be chosen on account of his special knowledge of some particular subject, and not on account of his ability to buy stock in the college. The medical teacher should have a proper preliminary training. No man can hope to turn out a finished product unless he himself is finished. The professor of medicine is not preparing his pupil to become a mere artisan; he is fitting him for the noblest work of mankind; to alleviate human suffering, to be the mediator between life and death. He is God's architect, who gives him the solid ground of man's intellect, to erect thereon a monument that will endure for all time, for good or evil. The student watches carefully every movement of the master, his personal attributes as well as his professional attainments, and he tries to follow in his footsteps, which simply serves to illustrate the great influence the teacher has in moulding the character of the future doctor, perhaps his successor, as the student of today may be the teacher of tomorrow. Great responsibility rests upon the medical educator.

[To be concluded.]

Congress of Naturalists and Medical Men.—The German Association of Naturalists and Medical Men will hold its seventy-fourth congress this year in Carlsbad and will meet in two principal sections—a medical one with 17 subdivisions and a scientific one with 11 subdivisions. In the medical section the official subject of discussion will be physiologic albuminuria and in the scientific section it will be the circulation of nitrogen.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE EVOLUTION OF A QUACK.

BY

WILLIS P. KING, M.D.,

of Kansas City, Mo.

There can be little doubt in the minds of one who has closely observed the evolutionary development of our American quacks that some of them have long been sufferers from delusions of grandeur and ambition, and, in fact, insane. For instance, more than 25 years ago I knew of the eccentricities of one man, who at that time was constantly seen in the streets of his native town with shirt collar open, shoes untied, often bare-headed, and swinging his arms and haranguing a street crowd, he was always denouncing the medical profession, how little physicians knew, extolling his own superiority over them, etc. Since then the man could not talk about anything without talking about himself. He early believed that he was destined to become a great man, and to do something great in the world.

He first became a spiritualist and traveled and advertised to treat disease by aid of the spirits. Upon one of his tramps a patient consulted him for hemorrhoids. No examination was made, but the patient was told to lie on a lounge and the "doctor" would wave his hands over the man, and then walked about the room with face upturned, eyes shut and lips moving—invoking the spirits, no doubt.

Spiritualism failed, and then the peripatetic took up "animal magnetism." He discovered that he was "full of magnetism," which he could impart to others, and thus cure disease. This plan also soon failed. Then he evolved the theory that "wherever there is a pain there is — — —," and in treating diseased conditions upon this theory he began to use some old and well-known remedies. But he met with difficulties here! There were pains, without his supposed cause; this upset his theory, but his genius rose to the occasion. To his old pathology he added a "philosophy" of disease in muscles, arteries, veins, nerves and in all the rest of the body. This, in the language of the country justice, "seemed to kiver the case," and it did. Since then his sect has flourished.

Now, the secret of his success is this: In every community there are patients who have been sick and have recovered, but who do not know it. They have been in bed so long that they have in a measure lost the use of their limbs. The control of muscles by the will has been, to a certain extent, lost. Furthermore, they have perhaps suffered severely from pain in some part of the body; and although the pathologic condition has passed the mind refuses to give up the idea of the pain. Now comes the quack doctor and by his methods he no doubt causes the system to unload a great deal of the products of retrograde metamorphosis through the emunctories; and by his superior will he compels the patient to give up the idea of the pain, and by assisting a little, he demonstrates the fact that the patient can walk. In a short time the patient discovers a fact which has existed, may be, for years, namely, that he or she is well. One case of this kind in a county is enough. The quack is called to see all the old chronic cases of hysteria and of semi-melancholia, and if he cures one in a hundred the fact of the cures will be exploited and the failures are never heard of.

The secret of the success of his so-called "school" is due to the fact that it offers inducements to ignorant persons to become "doctors" without having to study the branches which underlie an intelligent understanding of medicine, and which branches they could not study and learn, and which the quack and his aids could not teach.

I understand that some of these quacks often have as many as — — — students at a time, a large percentage of them being women, and most of them—both men and women—being woefully ignorant.

They talk to their patients in a strange jargon about "stimulating the nerve currents," and also "moving the stagnated blood, which has been clogged up, and sending fresh blood to the diseased organ!" Their explanations are very clear to people who do not know any better; and I presume there is no

question that in many cases where the patient is in need of such "treatment" as they get and of a strong will power to encourage and command, they have done some good. It should be a lesson to the profession not to neglect these methods of treatment; and, above all, instead of speaking of such cases as hopeless and refusing or failing to try to give further aid, they should investigate more closely, and when they find that there are no pathologic conditions or structural changes of vital organs calculated to take life, they should not deny that there is anything the matter. It were perhaps better to put such patients on their feet, throw up our hats and cry hip! hip! hurrah! and say, "Now the pain is gone, now she can walk, now she is well." Often this is about all that is needed.

REPORT OF CASE OF GENERAL EMPHYSEMA, COMPLICATING WHOOPINGCOUGH AND CATARRHAL BRONCHITIS.

BY

H. C. FINCH, M.D.,

of Broadalbin, N. Y.

D. B. R., a girl aged about 2½ years, was taken ill with whoopingcough and I was called to see her October 27, 1901. She had been ill about two weeks. The history of the case indicated that it was about the ordinary type, until just previous to my visit, when she was taken with more violent coughing, high fever, rapid respiration and dyspnea, rapid pulse, blueness of lips, and cold extremities. When I called respiration was 60, pulse 160, temperature 103.4°. I could distinguish no areas of dullness, but there were fine subcrepitan rales on both sides of chest and some sibilant rales both in front and back. Child was having severe paroxysms of coughing, with congested face and a distinct whoop. Mild chlorid was given in small doses to move the bowels, 2½ gr. phenacetin to reduce the fever, belladonna and a cough mixture of camph. tr. opii, ipecac. spts. ammon. arom. and syr. tolu. I also gave one antizyma tablet every hour. Rest was ordered and a cotton jacket was applied.

On October 28, symptoms improved, bowels had moved, temperature is 102°, pulse 120, respiration 40. The child coughs less but still has a distinct whoop.

October 29, temperature is 100°, pulse 100, respiration 35. Patient expectorates considerable mucus from the mouth during each attack of coughing. General symptoms are improved. Lungs are clearing.

November 1, temperature 100°, pulse 100, respiration 60. Child not so well, is very cyanotic and restless. Coughs hard and is bathed in profuse perspiration. Lungs are apparently clearing, but breathing is more difficult and cyanosis is increasing.

November 2, temperature 99.4°, pulse 110, respiration 60. She is still cyanotic, but not so restless, lying very quiet until a few moments before coughing. Cough is very severe and prolonged. She is taking nourishment, and the bowels and kidneys act well. I noticed for the first time a marked swelling of the neck, extending from right ear and lower jaw to the clavicle. Upon examination it proved to be air under the skin and in the connective tissue. I diagnosed interlobular emphysema, due to the rupture of an air vesicle of the right lung. In evening the symptoms were about the same, with emphysema increasing.

November 3, temperature 100°, pulse 120, respiration 65. Symptoms about the same. Emphysema still increasing; it has extended to the eyes, which are partly closed; also to the chest, arms, neck and head.

November 4, temperature 100°, pulse 125, respiration 50. Emphysema increasing. Eyes almost closed. She is not restless and still takes nourishment well.

November 5, Dr. Beach, of Gloversville, was called in consultation. Temperature 100°, pulse 140, respiration 75. The eyes are quite closed and a distinct crepitus is noticed over all the body except the legs. My diagnosis was confirmed by Dr. Beach and we decided to make two incisions well down into the connective tissue just above the right and left breast. Considerable air escaped, but there was no appreciable decrease in the emphysema. Continued treatment for whoopingcough and bronchitis.

November 6, temperature 99°, pulse 150, respiration 80. Emphysema is increasing and the skin is distended and shiny. Patient is more restless, breathing is labored, and abdominal cyanosis increasing. Coughs without raising. She has some delirium, but appears to recognize everything going on about her. Her symptoms are growing worse. I was sent for at 1 a. m. November 7, and found child much worse and she died about 9 a. m.

Autopsy was held November 8. An incision was made from the upper part of sternum to pubes and crucial incision made at lower border of ribs, cartilages divided and sternum turned back in the ordinary way. In making these incisions it was noticed that there was a layer of

connective tissue filled with air about one inch in thickness. The child was well nourished. On opening the chest no abdominal amount of fluid was found, and no air had escaped into the pleura or peritoneal cavity. The upper lobe, three-quarters of the middle, and one-half of the lower lobe of the right lung; also two-thirds of the upper and one-half of the lower lobe on the left side did not collapse, but remained distended from the air in the interlobular connective tissue of the lungs. All the connective tissue around the vessels and tubes in the mediastinum was distended with air. Between the upper and middle lobes anteriorly of the right lung was a sac about the size of a walnut filled with air, which was, no doubt, the primary seat of the trouble where the air vesicle had ruptured, pushing and distending the pleura from the subjacent pulmonary tissues. From this could be seen little channels through the interlobular connective tissues in all directions filled with air, the largest of which ran to the root of the lung, thence along the large blood-vessels and bronchi through all the connective tissue of the mediastinum, and upward to its exit under the skin just above the clavicle and sternum, extending down along the esophagus and aorta to their exit through the diaphragm.

The condition that I wish to call especial attention to, and which caused the death of the child, was the emphysema of portions of each and every lobe of both lungs. This was brought about by the air being forced, during each paroxysm of coughing, through the interlobular connective tissue of the upper lobe of the right lung to the root of the right lung, thence following the vessels and tubes into the other lobes, crossing through the mediastinum along the large tubes and vessels to the root of the left lung, and thence into the interlobular connective tissue of portions of both lobes on the right side, causing the small tubes and alveoli to collapse. Comparatively speaking, about two-thirds of the lung space was cut off by this external pressure upon the small tubes and alveoli.

FURTHER SUGGESTIONS TO ANESTHETIZERS.

BY

GEORGE DE TARNOWSKY, M.D.,

of Chicago, Ill.

The perusal of Dr. F. E. Simpson's excellent article, "Suggestions to Anesthetizers," which appeared in *American Medicine* March 1, 1902, prompts me to add a few practical hints which may not be amiss, and which are the result of observations in nearly 500 cases of anesthesia while interne in the Charity and Mercy Hospitals of Chicago. I refer especially to ether narcosis.

In hospital work the anesthetizer should give his undivided attention to the patient. If this rule were adhered to more strictly, the surgeon would be spared the annoyance of having to stop the operation until vomiting has ceased and profound narcosis is restored. He should learn to depend entirely on himself at all times, and be able to render such assistance as may be needed during an operation without losing sight of the patient's condition. It should be remembered that in private practice the anesthetizer may be called upon to not only administer ether, but to massage the uterus and hold the patient's legs while the obstetrician is sewing up a lacerated perineum. The conditions confronting a ex-interne who has lately started in private practice, are vastly different from those he had grown accustomed to while administering anesthetics in a hospital, where he had a nurse at his elbow ready with mouth-gag, sponges or hypodermic.

It is in private practice that the young doctor's ingenuity and sangfroid will be tested to their utmost, and his hospital trainings should prepare him to meet conditions as he finds them.

If possible, start the anesthetic slowly. In clinical hospitals anesthetizers are often not permitted to follow this excellent rule. The busy surgeon has finished his preliminary remarks, his hands are scrubbed and the operating-room is ready for the next case: "Why don't they bring in the patient; push the anesthetic; we can't wait all day." These or more forcible remarks are carried to the poor interne, who is perhaps struggling with a plethoric short-necked, iron-jawed individual; he gets desperate, reckless and literally "soaks" the latter in ether, hurrying him to the operating table, cyanotic, full of mucus and unrelaxed. Had he been allowed five minutes longer, in nine cases out of ten the patient would have reached the surgical stage of anesthesia and given no further anxiety.

Whenever possible, reassure the patient, first keep the cone six inches from his face, lessening the distance by gradual degrees in order to avoid or lessen the primary sense of suffocation which all experience. While doing this, an excellent plan is to count out loud, at the rate of 20 a minute, from 1 to 100, requesting the patient to repeat each number aloud. The advantages of this method are fourfold: (1) It soothes the patient to hear a human voice; (2) it diverts the mind from the anesthetic; (3) it deepens inspirations, and (4) inability on the patient's part to continue counting may be used as a signal to push the anesthetic and obtain prompt relaxation. As soon as the higher centers are affected, the cone should be saturated and the towel wrapped around it; complete narcosis should then obtain in from one to two minutes.

Many anesthetizers will undoubtedly take exception to Dr. Simpson's statement that "the mouth-gag, tongue forceps and suture through the tongue may well be relegated to the history of barbarism." On the contrary, these should always form part of the anesthetizer's armamentarium, and to them should be added a pair of artery forceps and plenty of gauze sponges to swab the throat. That these instruments are often used unnecessarily is undoubtedly true, but they nevertheless have a distinct, well-defined sphere of usefulness. In the obese, the plethoric, alcoholic, and in those suffering from inflammations of the upper air-passages, the mouth-gag, tongue forceps and swab all have to be used, sometimes throughout the operation, but oftentimes only during the early stages. In operations on the face and neck, the gag and forceps are excellent aids to the anesthetizer who is crowded for room and fearful of infecting the field of operation. With the Trendelenberg position, holding the lower jaw well forward and turning the patient's head to one side, in order that any accumulation of mucus may flow out of the mouth, should, in nearly all cases, be sufficient. In order not to injure the tongue, it can be drawn out by means of the tongue forceps and then held in place by the anesthetizer's fingers, a gauze sponge being wrapped around the tip to prevent slipping. The tongue forceps can then be dispensed with.

The custom of covering the eyes with a strip of gauze or a towel is an excellent one, as it reduces the danger of ether conjunctivitis to a minimum. An excellent plan is to fold an ordinary towel lengthwise to a width six inches. One-fourth of of the towel covers both eyes, the right end extending two inches beyond the right eye, the remaining three-fourths being used to surround the cone. The right end of the towel can be lifted and the right pupil examined without disturbing the cone.

One should endeavor to shorten the stage of excitement as much as possible, as the greatest danger is to be apprehended at the end of this stage and before surgical narcosis is reached. Alcoholics should be given a hypodermic of atropin 0.001, and morphin 0.012, 15 minutes before starting the anesthetic; nervous patients should be calmed by reassuring words, and their minds diverted by counting out loud, as already suggested.

SUMMARY.

1. Always reassure the patient before beginning an operation.
2. Avoid or lessen the sense of suffocation by starting with a small amount of the anesthetic, holding the cone six inches from the patient's face, and decreasing the distance by gradual degrees.
3. Count out loud from one to a hundred, requesting patient to repeat the numerals after you.
4. Push the anesthetic so soon as the higher centers show incoordination.
5. Always keep the lower jaw well forward, and only use the mouth-gag and tongue forceps when necessary.
6. During complete narcosis, watch (a) respirations, (b) pulse and facial artery, (c) pupils.
7. Consider (a) lateral rolling of eyeballs, (b) deep sighing respiration, (c) deglutition movements, (d) the hiccough which precedes the act of vomiting, as signals to push the anesthetic. The precursory hiccough is always a positive sign of returning reflexes; by immediately pouring an ounce of ether on the cone and precluding air, it is always possible to prevent actual vomiting.

ORIGINAL ARTICLES

DRY POINTS VERSUS GLYCERINATED VIRUS, FROM A BACTERIOLOGIC STANDPOINT.¹

BY

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Is glycerinated virus superior to the dry point—that is to say, granting equal immunizing power from the two forms of virus, is the one freer from impurities than the other?

The answer to this question resolves itself almost entirely into a bacteriologic study of the number and kinds of microorganisms that contaminate vaccine virus and a comparison of those found upon the dry points with those found in the glycerinated pulp. Clinical results cannot be depended upon to settle this question because infected “takes” may result from other causes than a contamination of the virus.

Vaccinia is a specific disease the cause of which has not been determined. We are, therefore, working somewhat in the dark. We are compelled to vaccinate our patients with a virus containing microorganisms other than those causing vaccinia. The importance of using a virus as pure as possible need not be emphasized here, for we do not want to inoculate our patients with any other infection than the one which protects the individual against smallpox. It is on account of this danger that human virus has been discarded in so many countries, despite the fact that human virus is superior to all other forms so far as the reliability and the duration of its immunizing power are concerned.

The production of bovine virus by propagating it from heifer to heifer is credited to Negri, of Naples, about 1842. It took some years for the advantage of this virus to be appreciated, although practically no other kind is now used in the large communities of Europe and in our own country. The great advantage of bovine virus, in addition to the ease with which it may be procured, is that it absolutely eliminates the possibility of the transmission of syphilis and other infections to which the human family are liable.

Now, although bovine virus is free from the danger of conveying the infectious diseases peculiar to man, it is liable to other equally undesirable contaminations. For instance, in addition to the microorganisms that are specific for vaccinia, it contains the pus cocci and the bacteria that live normally upon and in the skin of the animal, and these microorganisms always contaminate bovine virus. It must be evident to anyone who watches the propagation of bovine virus that even the greatest care will not insure its freedom from “foreign” infections, particularly those of the dejecta and the stable. In order to eliminate this danger Dr. Monckton Copeman, in 1891, devised the method of mixing the pulp with sterile glycerin of first quality. The advantages which Copeman claimed for the glycerin was that it not only prevented the growth and multiplication of the bacteria always found in bovine virus, but gradually destroyed those which were present.

Glycerin can hardly be dignified with a place among the antiseptics, although that is the object of adding it to vaccine virus. Bacteria are killed slowly by glycerin, just as they are killed by drying, for the glycerin is supposed to cause death by a process of slow dehydration. So feeble is it, that it requires 11 days to kill streptococci, and 20 days to kill diphtheria bacilli. Germs with thicker envelopes resist it indefinitely. It has no action upon endogenous spores at all; in fact, it is a preservative of such infections as tetanus, malignant edema, and the like. As common and readily destroyed an organ-

ism as *Staphylococcus albus* may live seven months in glycerinated vaccine virus. It is well known that in diluted form glycerin is a very favorable culture medium.

The effect of mixing glycerin with the virus is to destroy gradually both the bacteria and the vaccine, but fortunately the ordinary pus cocci and nonsporulating bacteria generally succumb before the viability of the vaccine organism is destroyed, and therefore there is an interval when the glycerinated virus will still cause a typical “take,” but will contain comparatively few foreign microorganisms. It is evident that if the glycerinated virus is used before this interval, it has no advantage over the dry point, and if used after this interval it is inert. Therefore, from a theoretic standpoint, glycerinated virus should be freer from impurities if used just at the right time. Manufacturers state that they usually glycerinize the virus from four to six weeks before putting it on the market.

The dry points, on the contrary, are sold as soon as made, and, if kept in a cool place protected from the light, probably remain viable a longer time, upon the average, than the glycerinated virus under similar conditions. It is well known that pus cocci and the other bacteria which frequently contaminate vaccine virus die quickly when dry. On the contrary, these same bacteria live a comparatively long time in dry vaccine virus, probably on account of the protection of the albuminous matter in which they are imbedded.

With these facts in view, we conducted bacteriologic studies of vaccines in order to determine whether the glycerinated virus as sold to the physician is freer from impurities than the dry points. Samples were purchased in the open market, care being taken to buy unbroken original packages from reliable pharmacists who keep the product under proper conditions of light and temperature. The samples were always examined before the time limit, as stated by the manufacturer, expired.

Without going into the details at this time, of the technic employed, I will only state that the virus was suspended in a measured quantity of sterile bouillon and agitated so that all the clumps were broken up and as nearly as possible a uniform suspension obtained. The dry points were first softened in the bouillon about an hour and then rubbed clean, always using the usual bacteriologic precautions to prevent any contamination from the outside. The glycerinated virus was mixed with the measured quantity of the bouillon and the capillary tube washed out by drawing the liquid in and out of the tube a number of times. The mixing was done in test glasses of appropriate size and the mixture thoroughly agitated.

This suspension was now planted in agar and plated on petri dishes. No less than three plates were made of each point or capillary tube; one or two drops of the suspension being planted in the first plate, five or ten drops in the second, and the total quantity remaining into the third plate. In this way, the figures give an accurate count of all the colonies that grew from each vaccine examined.

The plates were grown in the incubator at 37° C., and the counts made upon the third day. The counts must not be taken to represent the absolute number of organisms present in vaccine virus, for the virus consists of an inflammatory product very variable in its physical characteristics. Upon dry points it coagulates into a hard film soluble with difficulty; and mixed with glycerin, it always contains little masses, flakes and particles agglutinated together that hold enmeshed the microorganisms. It is practically impossible to ultimately break up these masses. Therefore the suspensions are not uniform and the counts we make are only an approximation. Microorganisms have a well known tendency to group or cling together, so that every colony upon an agar plate does not represent one microbe. The figures, as given below, are misleading only in that they give an underestimate of the number of organisms con-

¹ Read before the New York Academy of Medicine, February 20, 1902.

taminating vaccine virus, and therefore some of the results, as bad as they are, do not fully represent the actual conditions.

Of the 92 samples counted from eight manufacturers, 41 were dry points and 51 were glycerinated. The results are summarized as follows:

TABLE A.—SHOWING THE NUMBER OF BACTERIA PER POINT AND PER TUBE, ARRANGED NUMERICALLY.

Dry Points.	Glycerinated Virus.
13	30
18	84
20	96
27	97
110	111
182	116
219	127
220	138
297	160
450	160
456	170
476	192
516	245
575	246
648	257
847	352
906	369
1,530	747
2,088	768
2,160	1,121
2,376	1,332
2,750	1,414
3,225	1,456
3,475	1,540
3,600	1,592
4,923	1,600
6,240	1,680
6,528	1,700
7,200	1,750
8,024	1,842
9,050	1,912
9,289	2,069
9,688	2,070
9,884	2,100
10,629	2,106
11,200	2,200
12,800	2,263
13,030	2,400
14,826	2,440
15,760	2,578
20,828	2,928
	3,819
	6,249
	6,876
	7,249
	8,000
	10,372
	10,400
	11,232
	17,000
	18,404
Average number of bacteria per dry point, 4,807.	
Average number of bacteria per glycerinated tube, 2,865.	

The following tables give the results of our counts, classified according to the manufacturer. No other special arrangement has been attempted, which will account somewhat for the apparent lack of uniformity in the results. We were surprised to find such a large number of colonies, especially from the glycerinated virus, and therefore repeated our work very carefully. The counts were made by Dr. Grubbs, Dr. Parker and Dr. Francis, sometimes separately and sometimes conjointly, which acted as a check upon their accuracy.

TABLE B.—MANUFACTURER NO. 1.

Dry Points.	Glycerinated Virus.
9,289	1,332
20,828	6,876
14,826	192
	1,456
	6,249
	7,274
Orange, yellow and white staphylococci were isolated from these points, not pathogenic for mice, rats and guinea pigs.	
A bacillus belonging to the hemorrhagic septicemia group—very pathogenic for mice and guinea pigs.	
* —	
6,240	
9,884	
10,629	
9,050	
4,923	
Yellow and white staphylococci were isolated from these tubes. They produced no effect upon mice, rats and guinea pigs.	

* These short lines separate samples bearing a different number as given by the manufacturer.

This virus evidently has more bacteria than a good virus should contain. The ordinary cocci of suppuration were found in both the dry points and the glycerinated virus, and, although these organisms, when inoculated into laboratory animals, gave no results, that is little indication that under favorable circumstances they might not be pathogenic for man. While the glycerin has reduced the average number of bacteria found in this virus, compared to the dry points, it still has pathogenic bacteria that it should not contain; and so far as the numbers are concerned, the samples examined, with one exception (192), are far above the number allowed a good virus. No wonder we get sore arms.

TABLE C.—MANUFACTURER NO. 2.

Dry Points.	Glycerinated Virus.
	2,100
	2,200
The ordinary pus cocci (white, yellow and orange) were isolated from this virus, but inoculated into animals gave negative result.	

Nine weeks later other samples of this virus out of the same box were counted, and gave only 30 bacteria per tube. This would seem to indicate that the virus was "green" when placed upon the market, and that if the manufacturer had kept it a few weeks longer it would have been freer from contamination.

TABLE D.—MANUFACTURER NO. 3.

Dry Points.	Glycerinated Virus.
2,088	2,263
847	
906	1,750
	2,440
2,750	2,070
6,528	
13,030	352
	1,121
	138
	246
	111

A great many moulds were found in this virus common to the air and to hay, indicating stable contamination.

TABLE E.—MANUFACTURER NO. 4.

Dry Points.	Glycerinated Virus.
1,530	11,232
2,376	10,372
	18,404
2,160	
12,800	1,414
8,024	2,928
9,688	1,540
	1,842

Here we have a manufacturer who puts up both kinds of virus, but his glycerinated product contains more bacteria than his dry points. Evidently something is wrong.

TABLE F.—MANUFACTURER NO. 5.

Dry Points.	Glycerinated Virus.
182	2,069
110	84
220	17,000
575	768
7,200	1,680
15,760	1,700
11,200	10,400
Points from the same lot examined three months afterward gave the following figures:	
648	257
297	97
458	160
219	86
Another sample with a special trade name gave:	
18	127
13	245
20	170
27	
Capillary tubes from the same lot examined three months later gave the following figures:	
other samples:	

The only comment it seems necessary to make on the product of this manufacturer, is as to its unevenness. While the average is fair, we found two capillary tubes of glycerinized virus to contain an enormous number of bacteria. It would seem that these tubes were placed upon the market before they were sufficiently glycerinized.

TABLE G.—MANUFACTURER No. 6.

Dry Points.	Glycerinated Virus.
	2,106
	747
	369
	—
	2,578
	1,912
	1,592
	3,819

TABLE H.—MANUFACTURER No. 7.

Dry Points.	Glycerinated Virus.
	160
	116
	1,600
	8,000
	2,400

TABLE I.—MANUFACTURER No. 8.

Dry Points.	Glycerinated Virus.
516	
470	
450	
—	
3,325	
3,600	
3,475	

The capillary tubes containing glycerinized virus vary considerably in capacity; some hold 10 and 15 times as much as others. This fact partly explains the discordance in some of the figures, but is not sufficient to justify the marked discrepancy which we have found existing between tubes from the same package and bearing the same laboratory number as given by the manufacturer.

These studies were not made so much to determine the bacteriologic possibilities of glycerin, as to determine the purity of this form of vaccine matter as sold to the physician upon the open market, compared to the dry point. For this reason samples were purchased from time to time without announcing our intention. These samples were sometimes examined at once and sometimes kept until the time limit as stated by the manufacturer had nearly expired, which partly explains the apparent irregularity of some of the figures.

The number of bacteria have little significance if they are all of a harmless variety; we, therefore, conducted a series of investigations to determine the kinds of microorganisms found in vaccine. As already mentioned in the above tables, various micrococci of sup-puration have been isolated from both the dry points and the glycerinized virus. We have also found several short rods, very virulent for laboratory animals, belonging to the hemorrhagic septicemia group, in the dry points.

We have examined a great number of tubes and points for tetanus, but have been unable to discover this organism. These studies are still in progress, and will be made the subject of a subsequent communication.

We believe the impurities found in the glycerinized virus upon the market are largely due to an over-confidence in the germicidal value of glycerin; operators become careless of contamination, trusting to the gly-

cerin to purify their product. We know glycerin is too feeble in its properties to purify vaccine matter which has initial contamination such as our work indicates.

Before concluding, I desire to acknowledge the work of my colleagues in the laboratory—Dr. Grubbs, Dr. Francis and Dr. Parker, of the Marine-Hospital Service, who made all the counts and otherwise assisted materially in the preparation of this paper.

SUMMARY.

Of 41 dry points examined we found an average of 4,807 bacteria per point.

Of 51 glycerinized tubes and capsules we found an average of 2,865 bacteria per vaccine. This is in excess of what a good glycerinized virus should contain.

This difference in numbers does not justify the confidence placed in the glycerinized virus over the dry points as found upon the market, judging from the limited number of counts made.

So far as the kinds of organisms are concerned, we found pus cocci in both the dry points and the glycerinized virus.

We think we have demonstrated that some of the glycerinized virus on the market is "green"—that is, not kept a sufficient length of time before it is sold.

From our studies we have concluded that we ought not to discredit glycerinized virus, for we consider the superiority of the virus amply demonstrated, but to condemn the practice of manufacturers who place an un-ripe product on the market.

Much of the vaccine sold must have a high initial contamination to contain an average of 2,865 bacteria per tube, and it is evident too great a reliance is placed upon the glycerin.

OCULAR AFFECTIONS ASSOCIATED WITH GLYCO-SURIA, WITH ESPECIAL REFERENCE TO CENTRAL AMBLYOPIA.*

BY

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Ocular affections associated with glycosuria have been recognized for many years and numerous records of cases are found in ophthalmic literature, even in pre-ophthalmoscopic days. Although in some of the cases reported the ocular lesion was purely incidental to the general debility, yet there is ample evidence to establish a direct causal relation between disturbance of carbohydrate metabolism and ocular disease. Nearly every part of the visual apparatus may be affected.

According to Kleen, two-thirds of all diabetic patients suffer from some disturbance of vision, and occasionally the ocular symptoms are the first noticed, although generally they appear after the disease is well established. Bouchardot says that there is some visual disturbance in 20% of diabetic cases, commonly with no ophthalmoscopic signs. Hirschberg¹⁸ believes that the ocular changes are frequently overlooked, and that in very chronic cases, retinal lesions are always present. Lagrange²⁰ observed in the Ophthalmic Clinic of Bordeaux among 20,000 cases, 53 with diabetic affection. In 100 diabetic cases examined by W. O. Moore²⁰ there were 21 instances of ocular affection, distributed as follows:

Amblyopia without ophthalmoscopic change.....	4
Cataract.....	4
Retinitis (glycosuric).....	5
Hemorrhage and floating bodies in the vitreous.....	4
Paralysis of accommodation.....	3
Iritis.....	1
	21

* Read at a meeting of the Philadelphia County Medical Society April 9, 1902.

The means by which glycosuric disorders may affect the eye are as follows:

1. Abstraction of water from the ocular tissues, due to the increased density of the blood, as, for instance, in diabetic cataract.

2. The presence of sugar or its derivatives in the intraocular humors.

3. Lessened resistance of the ocular tissues, the result of general nutritional derangement.

4. The presence of a toxic substance in the blood, causing irritation, inflammation, and degeneration.

5. Through the cachexia incident to the disease, the bloodvessel walls are so affected as to allow transudation of the corpuscular elements into the retinal tissues. Again, the smaller vessels, particularly the capillaries, are very susceptible to the influences of toxic substance in the blood, and undergo certain degenerative changes that favor hemorrhage. In the retina this causes localized degeneration on account of the absence of arterial anastomosis. Hemorrhage into the sheath of the optic nerve may be a cause of the optic atrophy observed in diabetes.

The prognostic significance of ocular complications in glycosuric affections, while not definitely established, is certainly of much less importance than in albuminuria. Clinically, diabetes may be considered a metabolic disturbance of greatly varying degree and permanency. It may be functional or organic, and, according to its severity, there is corresponding variance in the resultant symptoms. Distinct types have a very dissimilar pathology. Glycosuria may occur in gouty and obese patients and these cases may pass on to true diabetes mellitus. Excessive mental and nervous strain, emotional excitement, and dietary indiscretions are common factors in its production. Some cases seem to be the result of trophic nervous disorders. Disease of the pancreas may exist with or without glycosuria. Many of the infectious diseases and some disorders of the liver, such as acute yellow atrophy and portal thrombosis, may be associated with glycosuria. Lesion of the floor of the fourth ventricle is a well-known cause. There is a type known as renal diabetes. Phloridzin poisoning produces a glycosuria apparently dependent on disease of the kidneys. Subcutaneous injections of solutions of adrenal extract may produce hyperglycemia and glycosuria; and these conditions may follow ether-inhalations, the ingestion of amyl nitrite, hydrocyanic acid, sulfuric acid, strychnin, nitro-benzol, phosphorous, glycerin, mercury and alcohol, and the excessive use of tobacco.

Mild forms may never progress to the severe types, and, in fact, in arthritic, gouty or obese patients, with excessive appetites, Lauder Brunton⁵ and others believe that the glycosuria is a safety valve, so to speak, to discharge the excess of carbohydrates ingested. Certainly, such patients may have glycosuria of a large amount for a protracted period, with perhaps ocular complications, without danger to life, if even ordinary dietetic precautions are observed. Naunyn says that admittedly light forms of diabetes always remain benign, while fatal cases are easily recognized from the first.

In some of the marked cases of ocular involvement, both the ocular and general symptoms may improve or disappear, or the ocular condition may remain stationary and the patient recover general health. The most important point in prognosis is the condition of the retinal bloodvessels, as this is an index of the general vascular health.

Disturbances of Accommodation and Refraction.—The only ocular symptoms may be transient dimness of vision, failure of accommodation, or sudden and marked changes of refraction. Von Graefe¹⁷ was among the first to note these minor disturbances, and he was followed later by Nagel, Förster,¹⁴ Seegen⁴¹ and many others. Premature presbyopia should always excite suspicion of general disease, particularly diabetes.

The Pupil.—There may be unilateral or bilateral

mydriasis, with deficient light-reaction. In 140 cases of diabetes, Seegen⁴¹ found pupillary anomalies in three, one of which was due to a tumor of the medulla.

The extraocular muscles may suffer from paresis or paralysis, particularly the external rectus, whose governing nerve, the abducens, has a very deep origin in the floor of the fourth ventricle. These muscular anomalies may improve, disappear or remain, according to the progress of the general disease. They are more likely to be permanent when they develop late in the disease. The cause is likely a peripheral neuritis or hemorrhage, or nuclear lesion.

Sudden and marked change of refraction is an occasional phenomenon of diabetes. In rarer cases there is a development of hyperopia, which subsequently varies with the glycosuric symptoms. According to Landolt,²¹ this is due to a change in the refractive index of the vitreous. Horner has suggested that the presence of sugar might result in the dehydration of the vitreous body, with consequent decrease in the size of the eyeball. Again, the sudden appearance of the hyperopia may be the result of paresis of accommodation in a subject under middle age, allowing a hitherto latent hyperopia to become manifest.

A more common change is the development of myopia or increase of a preexistent myopia, even without cataractous changes. This may subsequently diminish or increase according to the glycosuric state. In 1897, Risley³⁵ reported two notable instances of this nature, in one of which death has since occurred. Appenzeller has also recorded a case. The onset of myopia in patients past middle age without marked lenticular changes should be a cause for suspecting diabetes.

At the last meeting of the Dutch Ophthalmic Society, in Leyden (1901), Van der Brugh called attention to the fact that increase of the refractive index of the nucleus of the lens increases the total refraction of the eyeball, while increased index of refraction of the cortex decreases the total refraction. Schapringher has mentioned that decrease of the refractive index of the vitreous increases the refraction of the eyeball. An equal percentage of sugar in aqueous and vitreous would tend to produce hyperopia rather than myopia. In diabetic myopia there must be an increase of the curvature of the surfaces of the lens or a larger quantity of sugar in the aqueous than in the lens or vitreous. It is stated, however, that the ocular humors seldom contain more than 0.5% of sugar, while, according to Deutschmann, the fresh crystalline lens of a human cadaver will remain clear in 2 to 3% solutions of sugar. Koster has suggested that irritation of the ciliary nerves and spastic contraction of the ciliary muscle may explain the myopia in some cases. Dujardin¹⁰ has noted a striking instance of this kind in a woman of 69, with pronounced diabetes. The vision suddenly changed until a pair of + S. 4.00 lenses could be discarded for reading, while distance vision fell correspondingly. As the pupils resisted strong solutions of atropin, it is likely that spasm of the ciliary muscle was the causative factor rather than a physicochemic change in the crystalline lens.

Cataract in diabetes has been commonly attributed to the abstraction of water from the lens due to the altered composition of the intraocular fluids. If a fresh transparent lens is laid in a solution of salt or sugar, it becomes cloudy; but if put immediately in fresh water, it becomes clear again. According to Fuchs, if the bloodvessels of a frog are injected with a solution of sugar or salt of sufficient density the crystalline lenses will become opaque; but if the frog is placed immediately in fresh water the lenses will clear. However, recent analyses of the aqueous in diabetic patients have shown that the proportion of sugar contained in it is too small to produce the opacity in the experiments cited. Hence it is likely that we must attribute the lenticular changes in diabetes to some more complicated disturbance of the nutrition of the lens than the simple abstraction

tion of water. Fuchs adds, however, that the form of cataract that sometimes appears in the last stages of cholera, probably depends on the latter cause.

Cataract is the most generally known ocular symptom of diabetes; in the statistics of von Graefe,¹⁷ Lagrange,²⁰ and Galezowski,¹⁶ it occurs in 25% of all chronic cases. More recent observations, which include the milder cases, with glycosuria the principal symptom, the percentage is reduced to nine in Williamson's⁴⁴ observations, and five in those of Seegen.⁴¹ Diabetic cataract may occur at any age. In youth there is rapid, bilateral development of soft cataract. In old patients the course is slower and less characteristic; in fact the lenticular opacity may be but a relative symptom of the accompanying general debility and senile degeneration. The premature development of cataract should always excite suspicion of diabetes.

Sometimes there is only a haziness of the vitreous and lens without gross fundus changes; and this may be nonprogressive or decrease as the case improves. W. O. Moore²⁹ reports a case in which floating bodies in the vitreous and peripheral opacities in the lens in a diabetic woman of 50, partially cleared with the diminution of glycosuria. Distance vision was 20/40 in each eye, but reading was only accomplished with great difficulty. The opacities became denser as the glycosuria increased, until the lens was quite cloudy. On the disappearance of the severe diabetic symptoms, the lens gradually cleared, although the vitreous opacities remained. The fundus appeared normal. The patient died three years later, without showing further changes in the intraocular media. De Schweinitz⁴¹ relates an instance of a similar nature in a myopic woman of 50, with 10% of sugar in the urine. Corrected vision at first examination was 6/7½ and 6/9. By the suitable changing of lenses, and rigid dietary precautions, the cataractous process was kept stationary for nearly two years. Later, after discontinuance of strict dietary restrictions while undergoing treatment in an institution for the "absorptive treatment" of cataract, there was rapid increase of opacity, and subsequently extraction in Europe of two complete cataracts. Fuchs mentions the partial disappearance of lenticular opacities in diabetes after the prompt and successful administration of the Carlsbad water cure. Nettleship³¹ goes further and says that diabetic cataract may disappear entirely, and he reports a case in which the lens completely cleared on the subsidence of severe diabetic symptoms. Seegen, Tannahill and Koenig report somewhat similar cases.

Keratitis and Iritis.—Keratitis is an uncommon complication. Leber, Schirmer,³⁹ Wiesinger,⁴³ Himly, Galezowski,¹⁶ Bellouard and others report cases, generally purulent in nature, with serious sequels such as leukoma adherens and phthisis bulbi. Schirmer advises testing for glycosuria in every case of intractable iritis. Iritis is a much dreaded complication of ocular operations in diabetes.

Retinitis.—As early as 1856, E. Jaeger reported a case of diabetic retinitis and published a drawing showing the ophthalmoscopic appearances. In 1858, Desmarres⁶ described two cases. In 1869, Noyes³³ gave a careful history of a case, positively excluding albuminuria. In 1879, Leber²⁵ had collected 19 cases, and incorporated them in his classic article in the *Graefe-Saemisch Handbuch*. It is ordinarily supposed that retinitis is a rather common complication of diabetes. Lagrange²⁰ observed in 52 diabetic eye-cases 17 instances of retinitis, 11 being in pure diabetes. Leber is of the opinion that retinitis is a much less frequent complication than cataract and disease of the optic nerve. Galezowski¹⁶ has observed but 27 cases of retinal changes (19%) in 144 diabetic eye-cases, while there were 46 cataracts (31%). One of the most recent writers, Williamson,⁴⁴ states that the frequency of retinitis is overestimated, and that "as a matter of fact true diabetic retinitis is rare."

Retinal changes are most often seen in patients past

45, as the vascular condition is more susceptible to degeneration after middle life; although Culbertson has reported a case in a child of 6. However, in this instance the diabetes was secondary to malaria, which must have already produced pronounced corpuscular and vascular changes.

Very often in diabetes there is coexistent albuminuria and the retinitis assumes a mixed type; or a typical albuminuric retinitis only may be present. Hirschberg¹⁸ reported 24 cases of diabetic retinitis, 15 of which were uncomplicated with albuminuria; while of the 7 cases of retinitis observed by Williamson in 100 diabetics only 2 were free from albuminuria. Schweigger is of the opinion that no distinct type of retinitis is associated with diabetes; but according to Hirschberg and many others, a common form is central punctate retinitis, a characteristic inflammation in the macular region with small bright spots and usually with small hemorrhages. Among other forms are the purely hemorrhagic, having serious prognostic significance, and cases resembling retinitis pigmentosa.

In pure diabetic retinitis there is no papillitis, although the cases are generally followed by optic atrophy, due to nutritional disturbances or hemorrhage in the nerve-sheath. According to Galezowski¹⁶ glycosuric retinitis is frequently unilateral, a rare occurrence in syphilitic and albuminuric retinitis. Often the points of difference are not well marked, and only an examination of the urine will decide the diagnosis. The principal differences between diabetic and albuminuric retinitis have been tabulated by Dodd,⁹ as follows:

DIABETIC RETINITIS.

1. Groups of bright glancing spots in the retina, irregular in outline, usually in the central part, but frequently affecting the whole of the fundus.
2. If the spots are large there still exist small dots and lines, and they never run together.
3. The arteries and veins are not much changed in appearance.
4. The optic nerve is either not affected or atrophic.
5. The retina is not diffusely affected.

ALBUMINURIC RETINITIS.

1. At first a group of bright bluish-white spots in the center of the retina, often forming a stellate patch about the macula.
2. The spots may run together and involve all of the central part of the retina.
3. The arteries are narrowed, the veins large and irregular.
4. The optic nerve is swollen and its outline indistinct.
5. The retina is infiltrated.

Central Amblyopia.—It has been assumed that the toxins in the blood incident to the metabolic disturbance of glycosuria may cause primary optic neuritis as well as inflammation of other nerve tissue, for instance, sciatica. However, clinical observation shows that although there may be optic atrophy, primary, or the result of denutrition or hemorrhage into the nerve-sheath, there is rarely, if ever, true optic neuritis in diabetes uncomplicated with albuminuria. In some of the earlier cases of diabetic amblyopia without ophthalmoscopic evidences, attributed to primary optic-nerve disease, the cause was likely a coincident cerebral lesion. This was an explanation given by von Graefe, and it is particularly applicable to the few recorded instances of hemianopia in diabetics.

As early as 1861, Lecorché²⁷ made a thorough review of the subject of diabetic amblyopia without gross fundus-changes, and implied that at autopsy the probable cause would be found in degeneration of the optic nerve, occurring independent of cerebral disease. This has been fully confirmed by subsequent observers. Leber found in 50 diabetic eye-cases, evidences of optic nerve disturbance in 28%. Schmidt-Rimpler³⁸ found 34 patients with optic nerve disease among 140 diabetics with ocular disorders.

There are many instances of minor amblyopia with glycosuria, reported. There may be only an unaccountable dimness of vision, especially in reading, uncorrected by lenses, with perhaps flickering sensations and photophobia. If these cases are seen before an actual ocular lesion has occurred, and the proper treatment is insti-

tuted, the visual disturbance may disappear entirely. In such patients improvement is noted after prolonged rest and they are made worse by exercise, fatigue, and intense illumination. Sudden and violent movements or any causes of accelerated cardiac action or increased vascular tension will increase the scotoma.

I have seen a case in which unaccountable sudden failure in the vision of the right eye to 6/20, with a very relative central scotoma, particularly for red and green, in an overworked and neurasthenic professional man of 29, first led to a urinalysis. Marked glycosuria was discovered, and rigid, hygienic, dietetic, and medicinal treatment was instituted, with the prompt disappearance of glycosuria and recovery of full acuity of vision (6/5) within six weeks. The patient was a myope of four diopters. There has been no recurrence of glycosuria or visual disturbance for over one year, although the patient has long since resumed the ordinary mixed diet, but has been more observant of personal hygiene, and has avoided mental and physical fatigue. There was no history of excessive use of tobacco or alcohol, and neither substance was interdicted in the very moderate amounts commonly used. The patient was carefully examined by three competent oculists, none of whom could detect pathologic fundus-change. The visual disturbance was quite variable, and seemed to increase on the slightest cardiac acceleration. On one occasion, when the patient had stayed so long in a steam box in a bathing establishment that he had "throbbing at the temples," the scotoma became temporarily absolute.

Such cases prove conclusively that there is at first no distinct organic change in the intraocular tissues. De Schweinitz⁴⁰ believes that there is only a vascular disturbance or transient edema causing pressure on the macular fibers. In support of this, he cites an instance reported by Silcock and Broadbent in which they observed the disappearance of a scotoma in diabetic amblyopia when, under the influence of nitroglycerin, a previously high arterial tension was lowered to normal. Even though a definite retinal lesion has occurred, it may cause only partial degeneration of the retinal nerve-cells and may be nonprogressive. In such case it is not unreasonable to assume that there may be recovery of the visual function. Recent experimental researches by Goldscheider and Flattau, seem to prove that degenerated ganglionic cells may regain their healthy structure. In this connection the following quotation from an editorial on the prognosis of nerve disease in *American Medicine*, February 22, 1902, has a direct application:

"If a lesion is nonprogressing, restoration of function will depend upon 'recovery of nervous tissue which is only partially damaged, or the taking up by adjacent or distant structures of the functions that are lost.' Bury quotes Dr. Mott as stating that nerve-cells or fibers in the brain or cord, when completely destroyed, can never be replaced by new cells or fibers. He also quotes Marinesco and Lugaro with regard to the pathologic significance of lesions in different parts of a nerve-cell, the former stating that lesions of the chromatic part are the first to appear where the harmful action does not act suddenly and with such energy as to paralyze function, and that these can be recovered from, provided other parts of the cells have not suffered serious damage."

There is a more marked and permanent form of amblyopia associated with glycosuria, in which, though the fields of vision may not be decreased, there is a central scotoma, particularly for red and green, and sometimes blue. In pronounced cases the scotoma may extend from the center outward to beyond the blind spot. On the other hand, it may be paracentral, very small and relative, and difficult to detect. It may cause instability of ocular fixation or perhaps slight nystagmus on concentration of vision.

The condition is analogous to the amblyopia due to the excessive use of tobacco or alcoholic beverages, or the ingestion of such poisonous substances as methyl alcohol. Galewski¹⁶ was one of the first to diagnose diabetic amblyopia by urine examination, and he remarked that while in ordinary amblyopia ex abusu both eyes were

usually affected; in that due to glycosuria one eye may escape. This point has lacked confirmation by the majority of observers, although in the case seen by me the right eye only was affected.

It is rather difficult to exclude the influence of tobacco and alcohol, as most patients use these substances to some degree, and in the debilitated state of diabetes there is particular susceptibility to toxic influences. There is, however, no doubt of the occurrence of cases of amblyopia purely the result of the toxemia incident to glycosuria. Nettleship,³¹ Samuel,³⁷ and Moore²⁹ report cases in women who used neither alcohol nor tobacco, and Eales¹¹ and Schmidt-Rimpler³⁸ mention cases in men who did not smoke. Most of the patients are past 40 years, although Bresgen,⁴ Schmidt-Rimpler and Edmunds and Lawford¹² have reported cases in men between 20 and 30. In my case the patient was under 30.

The amblyopia may appear suddenly, progress, remain stationary, or disappear, according to the progress of the causative condition. It must not be confounded with the sudden amblyopia in the course of diabetes, due to poisoning of cerebral centers of vision, as in uremia, which condition is likely to presage an attack of diabetic coma.

The loss of vision is by no means always permanent. As early as 1858, Desmarres⁶ records the case of a man of 25, with pronounced glycosuria, whose sight had failed so that he could neither read nor write. After seven months' treatment, his health improved and vision was so far recovered that he could read Jaeger No. 8 type. Leber reports the case of a man of 43, whose urine contained sugar but no albumin. The vision of the right eye was $\frac{1}{2}$. In the left eye, the inner half of the field was almost absent, with only the recognition of shadows at five feet in the outer central and temporal fields. With improvement of general health, there was much recovery of vision, although a central scotoma persisted. On examination four years later, vision was found the same. No ophthalmoscopic changes were visible. Galewski records an instance in a French army officer of 48, whose fields were greatly contracted and who could not recognize faces at nine feet. There was no visible fundus-disease. With improvement of general health there was a corresponding increase of visual acuity. Later, albuminuria developed. Seegen mentions a somewhat similar case.

On the other hand, Bresgen⁴ in 1881, reported a case of diabetic amblyopia in a man of 24, in which aggravation of the diabetic symptoms caused an increase of the color scotoma, and a diminution of vision from 20/200 to 2/200. Moore²⁹ records several similar observations, in one of which the vision remained stationary. The patient was a married woman of 49, who had suffered with diabetes for six months, passing 150 ounces of urine daily with marked glycosuria. There was a sudden failure of vision to 20/200, without ophthalmoscopic change of note, and no limitation of the visual fields, but central scotoma for red and green. The vision remained the same until death two years later. No autopsy was recorded.

There are on record undoubted cases of mixed amblyopia. Leber reports a case in a man of 50, who had central scotoma for colors, but no contraction of fields or ophthalmoscopic changes, with vision of 20/70. The case was treated as one of tobacco amblyopia and vision improved to 20/30 in each eye. However, two months later the vision of the right eye fell to 20/200. Glycosuria was discovered and antidiabetic treatment instituted, with recovery of vision once more.

There are numerous descriptions of autopsies and microscopic examinations of the optic nerves in these cases, notably by Nettleship,³¹ Edmunds,³² Sachs,³⁶ Samelson, Uhthoff, Vossius, de Schweinitz,⁴⁰ and Deutschmann.⁷ From the findings we are led to infer that there has been a retrobulbar neuritis with subsequent atrophy

of the "papillomacular fibers" (Henschen) of the optic nerve; appearing on cross-section as a wedge-shaped area of degeneration in the temporal half of the nerve. Longitudinal sections may not show changes anterior to the lamina cribrosa, but posterior, in the temporal half will be a well-marked track of degeneration, with atrophic nerve-fibers, increase of nuclei and connective tissue, and thickened trabeculae and bloodvessel walls. The vascular changes are most marked in front of the point of entrance of the central retinal artery (Nettleship). There are clinical reasons to believe that in these cases the disease of the optic nerve rarely, if ever, extends beyond the "papillomacular fibers."

With the advent of the modern stains for ganglion cells and improved pathologic technic, the initial lesion in some cases of toxic amblyopia has been located in the peripheral neurons in the retina. This was suspected as long ago as 1874 by Schoen, and later by Treitel and Baer. It has recently been demonstrated by Nuel,³⁴ Usher and Dean,⁴² Holden, Birch-Hirschfeld, Griffith and others that the ganglion-cells of the macular region may be first at fault; the neuritic changes being secondary to the retinal disease. These facts and the knowledge that diseased ganglionic cells may regain their normal structure furnish an explanation of the improvement of vision in some cases of profound toxic amblyopia, even when due to so virulent a poison as methyl alcohol. With more careful ophthalmoscopic examination, doubtless in many cases formerly described as without evidences of disease in the fundus oculi, there would likely be noticed slight vascular and connective-tissue changes in the nerve-head, undoubtedly pathologic; and perhaps later, pallor of the temporal half of the disc.

The prognosis of glycosuric amblyopia is dependent on the constitutional condition. If the visual disturbance occurs early in the disease in mild cases, it may lead to the discovery of glycosuria, and under proper treatment both the vision and general health may be restored. In cases of pronounced diabetes, the patients grow worse steadily in spite of the most vigorous treatment, and the failing vision remains stationary or proceeds to blindness. In all cases of diabetic amblyopia in which the central scotoma is absolute, the prognosis as to recovery of useful vision is very doubtful.

SUMMARY.

1. Diabetes mellitus or other disturbance of the carbohydrate metabolism may affect any portion of the visual apparatus.
2. The ocular changes may be produced by chemic or physical means, or indirectly through the associate general debility.
3. The ocular affections may vary in intensity from a slight failure of accommodation to a formidable hemorrhagic retinitis and total optic nerve atrophy. Minor visual disturbances are often made worse by fatigue or increased cardiac action, and may improve after prolonged rest or decrease of vascular tension.
4. The intraocular disturbances may be exclusively unilateral, and there is never seen ophthalmoscopically, inflammation of the optic nerve—important differences from the changes in albuminuria, syphilis and other blood-dyscrasias.
5. It is not uncommon to find albuminuria coexistent with glycosuria, and the retinal changes may present a mixed picture, or a typical albuminuric retinitis may be present in a patient with diabetes.
6. Central amblyopia may exist in glycosuria entirely independent of the toxic influence of alcohol and tobacco, or in patients addicted to the habitual use of these substances, this may be the prominent factor in causation. In these cases the initial lesion may be in the ganglion cells of the retina; the inflammation of the "papillomacular fibers" of the temporal half of the optic nerve being secondary to the retinal changes.
7. In chronic cases of glycosuria, with the exception of

cataract, the ocular symptoms are often present when the constitutional and urinary symptoms are not marked.

8. The ocular symptoms may be the first to lead the patient to seek medical advice. Therefore glycosuria should be suspected in the following conditions:

- (a) Premature presbyopia.
- (b) Unexplained mydriasis or cycloplegia.
- (c) Sudden change in the refraction; particularly, marked development or increase of myopia past middle age, without cataractous changes.
- (d) Intractable iritis.
- (e) Cataract in young or middle-aged persons. An examination of the urine is advisable even in cases of senile cataract, as the etiology has a bearing on the prognosis of operation.
- (f) Retinitis, particularly of the hemorrhagic variety.
- (g) Unexplained optic nerve atrophy.
- (h) Sudden and marked amblyopia, particularly central, without visible fundus changes.

9. The prognostic significance of the ocular disturbances is not definitely established, on account of the great difference in pathogenesis, severity, and ultimate issue of the numerous forms of glycosuria. Even in well-marked cases not only many formidable eye-lesions improve, but the patient's general health may be restored. Again the ocular symptoms may remain stationary and the general health improve, or a case of diabetes mellitus may proceed rapidly to a fatal termination without showing marked ocular disturbances. Hemorrhagic retinitis and amaurosis preliminary to coma are the most serious symptoms. The ophthalmoscopic observation of greatest value in prognosis is the state of the retinal vessels, as this may be taken as an index of the patient's general vascular condition.

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The seventieth birthday of Professor Franz König, of Vienna, the well known authority on tuberculous disease of the bones and joints, was celebrated on March 16.

SINUS THROMBOSIS DEPENDING ON MIDDLE EAR DISEASE, WITH REPORT OF A CASE FOLLOWING ACUTE SORE THROAT.¹

BY

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Sinus thrombosis is one of the serious conditions which follow caries of the temporal bone, the others being brain-abscess, extra or abducal abscess, pachymeningitis, leptomeningitis, and pyemia.

Frequency.—According to Randall, out of 5,000 ear cases of all kinds, there were 3% of deaths. Buerkner gathered 33,017 cases of diseases of the middle ear, with 104 deaths—also 3%. Bezold found that 4 patients died, out of 325 (about 1.2%) who had chronic suppuration. Chauvel, out of 1,137 middle ear suppurations, had 1 meningitis, 2 brain-abscesses, 2 sinus phlebitis, and 5 pyemia. Schwartze observed in the Prussian army 8,425 middle and internal ear inflammations, with 30 deaths, or .35%.

These statistics are taken from hospital records only, and therefore are not a true estimate. Since many patients are treated outside the hospitals, Baker adds to the hospital cases those of the polyclinic, and finds that out of 820 acute and chronic middle ear cases from 1877 to 1888, the mortality was 2.5%. Koerner found that of 115 cases of intracranial disease following the middle ear suppuration, examined postmortem, there were 50 cases of brain-abscess, and 25 of sinus thrombosis. Pitt, in 9,990 postmortem examinations, found 18 cases of brain-abscess, 22 of sinus thrombosis, and 45 of meningitis. When cases of extradural abscesses treated successfully are added, the above figures are much augmented. Pitt, also, in 9,000 postmortem examinations, found 56 cases of brain-abscess from all causes:

From disease of the ear and temporal bone.....	18 cases.
disease of other cranial bones.....	8 "
traumatism	9 "
pyemia.....	9 "
disease of the lungs	8 "
unknown causes.....	4 "
	56

Treitel, of Berlin, in 6,000 autopsies met 21 cases of brain-abscess, seven of which were due to otitic origin. Pitt found as a cause of sinus phlebitis and thrombosis:

From disease of the middle ear and temporal bone.....	22 cases.
other disease near the sinus, pyemia, etc.....	4 "
carbuncles.....	3 "
traumatism	7 "
marasmic diseases.....	8 "
	44

He also found that meningitis due to ear disease, as compared with other causes, is a rare affection.

Of all cases of suppurating ear disease and resultant intracranial complications, double the number of males are affected.

Koerner divides 246 deaths of intracranial lesions as follows:

Up to the age of 10 years.....	44 deaths
Between 11 and 20	73 "
" 21 and 30	70 "
" 31 and 40	30 "
Over 40	29 "
	246 "

You will observe, therefore, that the mortality is greatest between the ages of 11 and 30.

Cause of Infection.—I will not mention the different channels through which infection enters the cranial cavity, it will be sufficient to say that the pathologic microorganisms which cause disease in the middle ear are also capable of infecting the brain, meninges and sinuses.

The organisms found most frequently in the skull are streptococci and staphylococci. McEwen found one case containing pure cultures of *Bacillus pyogenes fetidus*, and another of *Diplococcus pneumoniae* of Fraenkel. Intracranial infections follow chronic suppurations more often than acute; but very seldom when the exudate is serous. Scarlet fever, diphtheria, smallpox, influenza, typhoid fever, tuberculous and diabetic acute middle ear suppuration often lead to serious complications. Those due to adenoids are seldom dangerous.

Infection takes place by contact of diseased bone with congenital openings in the temporal bone, called dehiscences. The canals in the bone along the vessels and nerves, sclerosed bone and a thickened drumhead may bar the outflow of pus and by pressure break through into the skull. Blows upon the head or chiseling a mastoid has been known to cause pus to enter the brain, start up an old latent abscess, or cause particles to break away from thrombi. Forcibly syringing the ear for removal of pus or hardened masses has caused intracranial infection.

Parts Affected.—Sinus thrombosis generally follows chronic suppuration. In most cases the brain is diseased to its contact with the dura mater; occasionally



Location of thrombus.

only part of the bone is affected; in rare instances the bone is not affected, but infection takes place by way of the canals, nerves and vessels. By far the largest number of cases have pus in the mastoid cells. Occasionally pus is found between the sinus and the skull—extradural abscess. The lateral sinus, which lies in a groove encroaching upon the mastoid cells, is affected most frequently. A thrombus forming at the seat of infection may extend against the bloodstream to the torcular herophili, or with the current down the jugular vein toward the subclavian; and also to the superior and inferior petrosal sinuses, cavernous sinus and condyloid and vertebral down to the posterior cervical triangle and thence by various routes to the subclavian vein. The more extensive the thrombus the more dangerous the case.

Symptoms.—Headache is a most prominent symptom and is referred to the side of the head in which the disease is located, or to the ear proper, or it may be general. Vomiting generally occurs early. In the most serious cases delirium exists. The symptoms are almost always more severe in children than in adults.

Optic neuritis is a common occurrence. Fluctuating temperature may range from 97° to 107° F. Grief-

¹ Read before Ontario County Medical Society, October 8, 1901.

singer has noticed painful edema on the posterior part of the mastoid process, due to thrombosis of the mastoid emissary vein. This symptom, however, is only present when this vein is inflamed, never in nonseptic thrombosis.

Gerhardt noticed a difference in the size of the external jugular vein, when the lateral sinus is thrombosed and closes the internal jugular vein. The blood flows more readily through the external vein into the internal jugular lower down and it thus appears less full than its fellow on the opposite side. This symptom, however, is more easily observed in children for various reasons, but may occasionally be noticed in the adult. When the thrombus extends below the opening of the external vein then it becomes distended and is more prominent than the one on the other side. When the thrombus extends for some distance into the internal vein a cord-like feeling along the anterior border of the sternocleidomastoid muscle is observed.

When the thrombus within the jugular foramen is accompanied by periphlebitis or extradural abscess, then compression of the nerves passing through this foramen is manifest; these are the pneumogastric, spinal accessory, and glossopharyngeal. Hoarseness, aphonia, and dyspnea, slowing the pulse as low as 42 beats a minute, and dysphagia, are noticeable. Chills and oscillating temperature are noticed in pyemia. The chills are irregular, and last from one-quarter hour to an hour;

Treatment should be by operation only. In 1880, Zaufal proposed operation for the first time, and advised tying the internal jugular to prevent metastasis. In 1886 Horsely did the same thing, but both patients died, probably because they had gone too long before operation. In 1889, Lane, and in 1890, Ballance, elaborated the operation which is now the recognized procedure. Up to 1896 there were 79 cases reported, of which 37 were fatal. In 12, death was due to pyemia with lung abscesses; in 5, pyemia without lung abscesses; in 11, leptomeningitis; in 3, leptomeningitis and pyemia.

It is usually preferable to isolate and tie the internal jugular vein to prevent particles of the thrombus from gaining access to the general circulation, especially to the lungs. Then lay bare the lateral sinus, open it and remove the thrombus. The patient is then treated according to wellknown surgical principles. Tying the jugular vein, however, does not entirely obviate the danger of infection. The infected thrombus may pass into the circular and cavernous sinus and thence to the opposite side or down the condyloid or vertebral veins to the posterior cervical plexus and thence to the subclavian veins. Early operation, however, may obviate this source of danger.

It has been my good fortune to meet with two cases. The report of one of very recent date, which belongs to the rather rare affection called osteophlebitic thrombosis, follows:

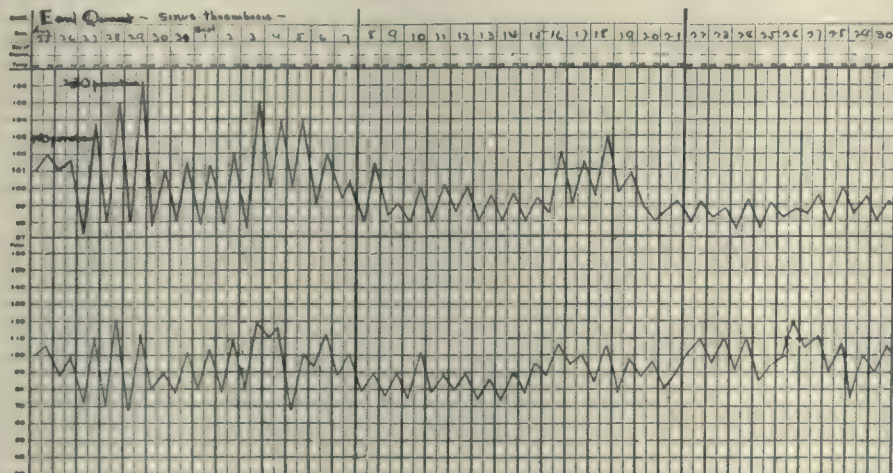
CASE.—Earl Quant, aged 18, was admitted to the Buffalo German Hospital, August 24, 1901, suffering apparently from some ear trouble.

Previous history.—He had a running ear when three years old, and measles at eight, accompanied by considerable earache. He has been subject to tonsillitis (follicular and suppurative) every winter, earache usually accompanying such attacks; he was somewhat deaf, considerably so in the left ear. August 15 he complained of sore throat, and on August 18 he had earache and noticed a bloody, watery discharge. He went to bed and remained there. His temperature continued to rise. On August 21 he had a chill at 10 a. m., with a temperature of 104.5°. He seemed inclined to turn the head toward the right, and there was rigidity of the sternocleidomastoid muscle, with very little pain over the mastoid; there was no swelling nor redness.

This is the history as given to me by Dr. George A. Sloan, of Buffalo, when he brought the patient from Hume, N. Y., August 24, and asked me to see him next day with a view to immediate operation.

Patient at this time had left lateral headache and a watery discharge from the ear. The temperature was 102° and pulse 100. There was some nausea and chills of rather short duration. As his history indicated suppuration of the middle ear as a child, and having no further discharge until recently, I suspected hidden mastoid disease with no outward manifestation. Accordingly chloroform was administered and the mastoid opened to the antrum. The bone was soft, but no pus was found. Within the antrum considerable granulation tissue was scraped out, the wound was washed out and packed with iodoform gauze. I then said that if the trouble was located in the mastoid the patient would be improved considerably the next day, but if the mischief was deeper he would certainly be worse. On August 26, instead of improvement the temperature fluctuated and the following symptoms were present: Very high temperature, pulse following pretty closely (from 70 to 120), chills alternating with hyperpyrexia and a distressed and anxious facial expression. There was copious perspiration, loss of appetite, constipation, general headache, very little vertigo, no vomiting; consciousness was retained throughout. There was also slight bronchial disturbance with considerable expectoration and tenderness in the upper posterior cervical triangle. In the right eye there was increased prominence of the retinal vessels, disk was normal. In the left eye there was a haziness about the disk not amounting to choked disk; retinal vessels were somewhat prominent.

August 27.—There was tenderness and a cordlike feeling along the course of the internal jugular vein on the left side, and swelling at the angle of the jaw. Temperature at 2 p.m.



temperature rises and falls once or twice a day, occasionally every other day. Sometimes chills are entirely absent. In pyemia the spleen is always large. The pulse does not vary with the temperature, but maintains a moderate rate, from 70 to 120 or 130, soft and threadlike. In septic thrombosis the lungs become affected by metastasis; in osteophlebitic thrombosis, however, the joints and muscles suffer mostly, osteophlebitis is rare. Hessler found out of 238 cases that metastasis took place in other parts than the lungs in only ten. In these 238 cases no such pyemic results were noticed. When the two petrosal sinuses are affected local symptoms are not noticed, but this condition may lead to pyemia or metastasis. When, however, the thrombus extends to the cavernous sinus, we generally notice edema in the course of the frontal veins to the eyelid. We also notice congestion of the retinal veins; retrobulbar edema, causing exophthalmus, due to thrombosis of the ophthalmic vein, which connects the cavernous sinus with the facial vein and drains the blood from the eyeball, eyelid, muscles and the frontal vein.

Prognosis.—Otitic sinus phlebitis may run its course in from one week to five months, eight to ten days being about the average, the cause of death being: pyemic metastasis; pyemic or septic general intoxication; complicating meningitis or brain-abscesses; sinus hemorrhage, or paralysis of pneumogastrics.

was 105°, pulse 120. Movement caused considerable pain along the tendons of the inner muscles of the thigh; there was also pain and some swelling in the right wrist, and a marked area of dullness over the spleen. A diagnosis was now made of sinus thrombosis, and it was decided to operate next day.

Drs. James A. Gibson and Jacob Meyer were present in consultation, and Drs. George A. Sloan and Thomas McKee assisted.

Temperature at this time was 106.4°, and pulse 118. The neck of the patient below the angle of the jaw was swollen and infiltrated. It was decided to sever the internal jugular vein to prevent any particles from getting into the lungs. The vein was isolated quite low down, found empty, showing obstruction above, and a piece measuring three-fourths of an inch was removed after having tied it. The wound was then closed, but did not heal kindly, owing to the septic condition of the tissue. The scalp was then opened three-fourths of an inch behind the center of the external auditory meatus and the bone chipped away until the sinus was laid bare. The sinus was then opened for half an inch and the thrombus exposed; it was released all around with a sharp spoon and slowly withdrawn; when about three-quarters had been removed, blood began to flow profusely. The plug was then withdrawn rapidly and iodoform gauze packed lightly into the wound which was dressed in the usual way. The entire operation required an hour and forty minutes. The patient rallied nicely and began to improve rapidly. During the administration of chloroform a slight convulsion occurred, which affected principally both arms, but did not last probably over half a minute. Pyemia was present and the patient became emaciated and continued to have somewhat high temperature for several weeks and also more pain in the hip, which later shifted to the knee, which for a time became immovable. The right wrist continued painful and somewhat swollen. The head symptoms entirely disappeared. The wound in the neck not healing at all, was treated locally with bovinin, which was also given internally.

Once after operation the temperature rose to 105°, and several times to 104°. Then it gradually dropped to normal. Patient was kept on a low diet throughout. He seldom complained except of the pain in his thigh, knee and wrist, and this gradually lessened.

August 26, urine was examined, single sample, and was found to be strongly alkaline, specific gravity 1.022; sediment heavy, white; indican increased; microscopic calcium oxalate and ammonium urate crystals.

August 31, single sample, alkaline, specific gravity 1.032; microscopic, triple, and amorphous phosphates.

September 10, whole amount passed 1,100 cc., alkaline. Total solids 35.88 grams. Indicans increased. Microscopic, triple phosphates, amorphous. Bacteria were found.

The patient left the hospital October 1, 1901, five weeks after he had entered. He was still unable to walk, but felt perfectly well, only weak. At this time he was getting a daily codliver oil bath, and had begun to take a goodly quantity of nourishing food.

This case I consider one of thrombosis following osteophlebitis, which in turn was caused by some infection from the throat setting up an inflammation in the middle ear. The bone, being in contact with the sinus, infected that and consequently caused a thrombus to form. There was no pus in the antrum, nor was pus discharged from the ear, nor was there any debris until after the first dressing four days after the second operation, then some odor was perceptible, which was readily removed with H₂O₂. Dressings were then changed every other day.

The thrombus which I present was healthy, or non-septic. The pyemic symptoms were no doubt due to absorption from the infiltration at the angle of the jaw, and the softened portion of the petrous temporal bone. At the time the patient left the hospital, the wound was quite healed and the ear perfectly dry.

Higher Education for Physicians.—The regret often expressed in the English medical journals by the older physicians that those graduating today are so rarely versed in the humanities and in their country's literature is echoed in a late number of the *Columbia Literary Monthly*, the chief undergraduate paper of Columbia University, which declares that the greater part of the students at the College of Physicians "are not only uncultured, but often even uncouth, thus being fundamentally unfit to become the highest type of their profession. A degree as the entrance requirement would go far to remedy this state. Unfortunately, many worthy men would thus be barred out, but the good resulting from such an injustice would far outweigh the injustice itself, and the benefit to the institution would be vast, although its number of students might be greatly diminished."

TONSILAR AND PERITONSILAR SUPPURATION.¹

BY

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of Detroit, Mich.

As the nomenclature of diseases ought to suggest something of their etiology and pathology, it is of interest to note that the ancient Greek writers designated the majority of throat diseases as paristhmitis, a term equivalent to the more modern amygdalitis; later writers employed the term cynanche, which more properly refers to an edematous type that is accompanied with dyspnea. Prior to the advent of bacteriology, the terms superficial angina and phlegmonous angina were selected as descriptive of superficial and deep sore throat, and these forms when attended by sloughing were described as diphtheric.

The etiologic factors were held to be chemic and mechanic irritations, as well as meteorologic influences, such as exposure to cold and wet, which, together with a *locus minoris resistentiae*, initiated in the mucous membrane an inflammation which sometimes became epidemic. With the growth of pathology and specialism, designations such as edema, phlegmon and erysipelas of the pharynx and larynx obtained. These terms were intended solely to differentiate the precise form of the inflammatory process. Sir Felix Semon, of London, states that phlegmons of the pharynx and larynx, laryngeal erysipelas, pharyngeal edema, and Ludwig's angina, are identical diseases so far as pathology is concerned, and consequently that they should be so classed—preferably as acute septic inflammations. All are due to the entrance of germs into the tissues through abrasions of the mucous membrane, and they merely represent different degrees of virulency. The inflammatory changes merge so gradually from the serous form to the purulent that it is impossible to draw a definite line of demarcation between the edematous and the suppurative, the purely local and those complicated by systemic affections. In support of his views, Semon cites certain autopsies, and also cases of acute septic inflammation of the neck and throat, some of which were followed by pericarditis, pleurisy, pneumonia, peritonitis and septicemia, and in all the coccus form of microorganism had found ingress through sections of the protecting surfaces of the mouth and the peripharyngeal region—usually the tonsils were at fault. He firmly believes that the tonsils form a natural portal for the entrance of germs which, by means of the lymph-channels or blood-vessels invade the economy.

The foregoing evidences, cited by Sir Semon, suggest an identity with that class of concealed infection which the older clinicians observed, and to which Dr. Leube, of Germany, gave the title *kryptogenetischer septikopyemia*, which infers that the disease generated within a crypt or fold of membrane. Dr. von Jurgenson explains this disease from the standpoint of bacteriology and pathology, and believes that streptococci and staphylococci are the exciting agents; the former is found within the cellular tissues, acting through the lymphatic channels and inducing septic inflammation, while the staphylococcus is found in the blood-stream, and consequently may be deposited at any vulnerable point. Frequently the primary location of the germ is in the throat, causing a simple faucitis which may initiate a systemic infection, though more often it is apt to be a phlegmonous angina that calls into existence profound conditions of septicemia.

Recent German literature contains interesting autopsy reports confirming Dr. von Jurgenson's views. These show that an infection often results from a chronic, latent, tonsilar abscess, by way of the lymphatics, and extending to the peritonsilar region, thence to the medi-

¹ Read before the American Rhinological, Otological and Laryngological Society, New York City, May 22, 1901.

with its capacity, predisposing the fossa to suppurative processes. The plica and supratonsilar fossa are nearly always demonstrable in the young and middle-aged; and coincident with atrophy of the glands the fossas become shallow and the plicas recede toward the posterior pillars and traverse the interfaucial spaces obliquely downward. The intent of nature in providing the plica appears to be somewhat obscure, yet the consensus of opinion is that its purpose is to afford a support to the tonsil, and to protect its buccal surface from injury. The peritonsilar abscesses that have come under my observation have all exhibited an extraordinary, if not abnormal, development of the plica. This membrane sometimes retains within its folds and in the cavities, decomposing substances, and thus often becomes a potent factor in the production of fetor of the breath.

Obstruction of the natural channels of drainage may be definitely held as one of the exciting causes of tonsilar and peritonsilar suppuration, though such predisposing factors as exposure to cold and wet, occupation, habits, age, etc., undoubtedly have a more or less remote influence. Another exciting cause is the presence of some of the ten varieties of cocci that obtain within the tonsils or mouth. The streptococcus and staphylococcus are normally present, but innocuous until such time as predisposing factors permit them to multiply and develop inflammatory processes. Some difference of opinion exists as to whether the germs enter the tonsils primarily through abrasion, or secondarily through the blood and lymph streams, and it is conceivable that both avenues may carry the infection. The lymphoid tissue of the tonsils and the contiguous regions, with their capillary circulation, constitute a *locus minoris resistentie*, or a "physiologic wound," as Gerhard aptly terms it. Articular rheumatism following tonsillitis is in all probability caused by the deposit of germs by the blood or lymph-channels in the serous membranes of the joints, and has been bacteriologically proved to be a suppurative process. It is true that malnutrition and the consequent deposit of crystalline material in the muscles and joints, usually termed uric acid rheumatism, is a predisposing factor in determining suppuration. About one-quarter of my patients with peritonsilar abscess had suffered from pain indefinitely described as, or termed, rheumatic. The obstruction to crypts of tonsils and orifices of the supratonsilar fossas are the chief causes of suppuration, in proof of which may be cited the fact that when the obstruction is thoroughly removed no recurrences take place, even in those patients who suffered from articular rheumatism.

Peritonsilar suppurations are attended at times by only a mild exudation and slight edema, which disappears rapidly through resolution and absorption, but in the majority of instances they become circumscribed and result in the formation of abscess. The duration of this septic process depends greatly upon its location and the degree of virulency of the pathogenic agent, but, at the same time, the resistance of the individual also plays an important role. A temporary encystment may induce an atypical course.

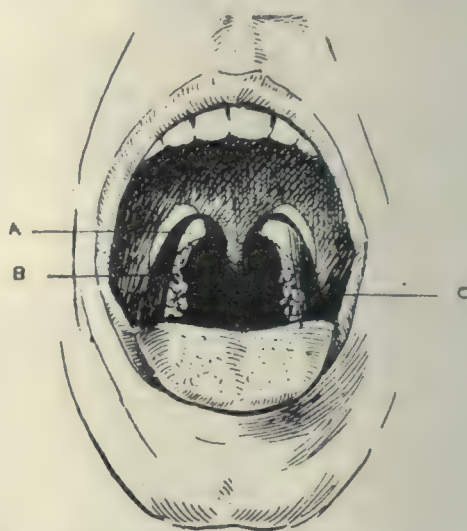
The obstructions to the channels of drainage in the tonsilar region may be so firm as to force the purulent secretion to burrow in the pharyngomaxillary space, and thus prolong the suppurative act. Moritz Schmid reports cases of one month's duration, in which both the tonsils and the pillars were successively invaded; I, also, observed an instance in which, after an acute tonsillitis, the left throat was involved, including the posterior pillars, and the pus ultimately made its way to the right throat, inducing so great congestion as to interfere with deglutition, the liquid food ingested being regurgitated into the nose. In this case, oft-repeated incisions failed to reveal pus sufficient to account for the condition, but after two months a rupture occurred spontaneously in the region of the soft

palate on the side first affected, and the patient recovered without further complication.

At a recent meeting of specialists in Paris, the subject of recurring peritonsilar abscess was discussed. Dr. Cartaz presented a case which occurred in a man aged 50. After an attack of acute tonsillitis, he developed recurring abscess twelve times during four months; through a fistula in the upper anterior pillar some drops of pus escaped every five days. Vertical incision led to the escape of considerable purulent fluid, but this even, aided by an irrigation with a 2% solution of zinc chlorid failed to cure, recurrence taking place in 15 days. Finally, a drainage tube was inserted between the anterior pillar and the tonsil, and removed on the third day, its place being taken by a catgut loop; also carbolic and chloral douches were administered three times daily; the abscess cavity then emptied and healed.

Dr. Chattelier recalled two similar cases which he believed to be due to glandular retention cyst.

Dr. Roault had a number of such cases, and held that the fistula must be carefully sought by pressing upon the



A. Supratonsilar fossa (white portion extending upward between the anterior and posterior arch). B. The tonsils. C. Plica triangularis.

anterior pillar from below upward, or *vice versa*, with a blunt probe, when a drop of fetid pus will usually be seen in the orifice of a fistulous tract. These cases were all chronic peritonsilar abscesses, five of which occurred in women of from 20 to 35 years of age, in whom the fistula opened in the thickness of the arch of the soft palate. This variety of chronic abscess of the palate, he believed, had never before been described.

Dr. St. Hilaire had seen many fistulas of the tonsils and of the peritonsilar tissue; he deemed the former easily cured by extirpation of the gland, while the latter he found exceedingly stubborn—some being so deep that it was impossible to open them completely by means of a bistoury.

Dr. Chappel, of New York, cited 10 cases in which hemorrhage was a sequel to peritonsilar abscess; the bleeding occurred some days after spontaneous evacuation. Eight of these cases had a fatal termination, while 2 patients were saved only by ligating the common carotid. One patient bled 5 days after an incision had been made that evacuated $\frac{1}{2}$ ounce of pus from an accumulation in the posterior pillar. An incision through the anterior pillar and washing and packing of the pharyngomaxillary space was usually followed by recovery, though not without rheumatic complications, which were evidences of metastatic invasion.

Recurring abscesses are mostly situated within the pharyngomaxillary space. The danger of gravity

abscesses and erosion of the vessels of the neck cannot be too greatly emphasized, since the pus may burrow along the walls of the latter and thus reach the mediastinal space. Dr. Cobb, of Boston, believes that the styloglossus and stylopharyngeal muscles form a diaphragm for the protection of the great vessels of the neck from infection, and to uphold his claim demonstrated this fact on the cadaver by injections of cacao butter; he showed at the same time that the space is made up of loose connective tissue and fat cells, into which he was able to force 4 drams of the butter. That this space is in close relation to both tonsil and fossa, and that it nearly always contains purulent fluid, is apparently evidenced by the extreme bulging of the region of the soft palate. This tumefaction is apt to prove most misleading as it merely differentiates the highest point of the abscess cavity and not the spot where is the greatest accumulation of pus; consequently the classic incision midway above the superior arch is in these cases ineffective.

In two patients to whom I was summoned late, I incised the abscess at its lowest point, which was near the wisdom tooth of the lower jaw.

When an incision is made, it should be by means of sterilized instruments, in order to prevent mixed infection, as frequently the abscess is due to the action of one species of germ alone. Dr. Leland's method of using the sterilized finger after incision, with a view of tearing the tonsillar tissue and thus reaching the pus sac, seems a painful (and withal, in hard tonsil, is an impossible) procedure, but it has the advantage of locating the direction of the abscess and is free from the danger of wounding the branch of the ascending pharyngeal artery in the anterior pillar of the fauces. Dr. Leland uses the index finger and cultivates upon it a long and sharp nail, which almost takes the place of a knife. Instruments of a blunt character, as employed by Drs. Pierce and Kyle, permit the opening of abscesses through the supratonsillar fossa without danger to the pharyngeal artery.

To avoid recurrence of peritonsillar abscess, it is essential that the abscess cavity be irrigated and drainage established from its most dependent part. It is my experience that while tonsillotomy may hinder recurrence, it is not always infallible. Radical excision of the upper part of the tonsils, removal of the plica triangularis, and breaking up of adhesions whenever the channels of drainage are obstructed, are the measures to be recommended. Sometimes curetment of the fossa, followed by an application of trichloroacetic acid, is sufficient. Obliteration of the crypts of the tonsils is best accomplished by extirpating the entire gland, although the punch forceps have proved of great utility in my hands in cases in which only a few crypts were diseased. I have employed the galvanocautery loop and cautery knife with good effect in some instances, and thus rendered the operations practically bloodless; the use of adrenalin also aided to free the field of operation from sanguineous effusion. Operations upon the plica are more painful than upon the tonsil, but the topical application of a 10% solution of eucain and infiltration of the tissue by Dr. Schleich's mixture, will mitigate the pain sufficiently for all practical purposes. When adhesions of the apex of the tonsil are deep in the floor of the fossa, and firm to the semilunar margin of the anterior pillar, two vertical incisions may be made, one between the anterior pillar and the tonsil, and the other between the tonsil and the posterior pillar, extending well up into the soft palate; the gland can then be seized and dragged to the median line, where a horizontal incision severs it, then the remaining lymphoid tissue may be removed by the scissors—an operation that leaves the supratonsillar orifice wide open.

The pathology of acute septic inflammation renders it unlikely that drugs can be of much value in the management of the maladies. Sometimes, if seen early, they may be aborted by a liberal dose of mercurous chlorid, followed by the administration of tincture of vera-

trum or tincture aconite (which may also be combined or given alternately) every half hour, in half minim doses, until a relaxing effect upon the arteries obtains and full diaphoresis is established. Local scarification and topical application of heat will assist in reducing the congestion and in dispersing the accumulated fluids, but after 12 hours' treatment, if there is no abatement of inflammation, medication should cease. The local application of heat and inhalation of vapors, together with rest in bed, are of extreme value. Gargling is too painful a process to recommend, but a local spray of 4% solution of cocain is grateful whenever the pain is intolerable. All else failing, on the third or fourth day an incision may be made under local anesthesia at the lowest point of tumefaction, which will co-operate with the advancing suppuration and favor an early termination of the abscess.

SUMMARY.

The obstruction of the orifice of the supratonsillar fossa and the orifices of the crypts of the tonsils predisposes to circumtonsillar suppuration directly, and any vulnerable part of the organism remotely.

Early incision should be done at the point of origin, which is usually within the supratonsillar fossa or within the crypts of the tonsils.

Chronic latent tonsillar abscesses may initiate an infection developing pneumonia, pleurisy, pyemia or septicemia.

The coccus variety of germs may be temporarily encapsuled within a wall of connective tissue.

Articular rheumatism, consecutive to tonsillitis, is a suppurative process produced by invasion of cocci through lymph or blood channels.

Uricacidemia does not cause suppuration, but may predispose to it.

A FATAL CASE OF ACUTE PRIMARY INFECTIOUS PHARYNGITIS WITH EXTREME LEUKOPENIA.

BY

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of San Francisco, Cal.

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CASE.—The patient, Mrs. T., aged 29, is the mother of three healthy children. Her family history is one of tuberculosis; her mother had tuberculosis of the kidneys, and three brothers and sisters died of tuberculosis of the lungs, and one of tubercular meningitis. The patient was the sixth of fourteen children. The mother had glycosuria, but no sugar was present in the urine the last year of her life.

Past History.—Patient was generally healthy as a young girl; she had chlorosis with gastric ulcer at the age of 14 years, and had poor health for the 18 months following. She also had an attack of pleurisy, but no other acute illness. She had a cough for a number of succeeding winters. Three months before the present trouble she weighed 153 pounds. In the next two months she lost 28 pounds. She was then operated upon for a lacerated cervix and perineum by Dr. MacMonagle. Her recovery was afebrile and uneventful, and she was removed to her home three weeks later, well established in convalescence. She was imprudent in the care of herself, and on the second day, having experienced no fatigue from the moving, she exerted herself considerably. The morning of the third day she arose and went down stairs barefooted, clad only in her night-dress. Within two hours this exposure was followed by a chilly sensation, succeeded by a rapid rise of the temperature to 103° with a pulse of 120. There were no other objective or subjective symptoms, and the urine was negative. A thorough examination of the site of operation was made by Dr. MacMonagle with negative result. The patient's bowels were regulated, diet restricted and she was ordered to be watched carefully. The following morning her temperature was still high. Dr. MacMonagle now asked me to see the patient, and to make a blood examination. She had a flushed face, moist skin, anxious expression, and was very nervous and restless. When questioned as to subjective symptoms she said her throat was a little sore. On examination, the pharynx and tonsils were found to be reddened, and the latter slightly swollen. There was no membrane. The bowels were constipated, and she had no appetite. She did not complain of pain on swallowing. The spleen, the cervical, supraclavicular, axillary, epitrochlear and inguinal glands were all slightly enlarged, but not painful. There was a very slight systolic murmur at the apex, which was in the mammary line.

The morning temperature was 101.6°; pulse 112, regular and strong; respirations 18. At noon the patient was nervous, oppressed and apprehensive, with a pulse of 118, and temperature of 103°. Blood examination: hemoglobin 65%, reds 3,240,000; whites 1,000; polymorphonuclears 1%; small lymphocytes 82.5%; large lymphocytes 16.5%; no eosinophiles. The leukocytes on the following day were 400 per cm., and on the fourth day, 320. The patient was given calomel in small doses. That evening her temperature was 105.4°, pulse 120, the throat dark red and the left tonsil slightly swollen; the left side seemed more involved than the right. There were still no subjective symptoms of serious import. The pulse was rapid but strong and of good volume, the urine began to show the effects of high temperature.

During the next few days ice was used locally in the mouth and on the throat, arsenic and protonuclein were administered by mouth, and 250 cc. of salt solution were thrown high up in the rectum every four hours; the patient continued to take sufficient quantities of liquid nourishment by mouth for the next three days. Swelling of the tonsils and edema of the neighboring parts increased slowly; late on the fifth day the pain became so great that some rectal feeding was given, and increased the next day, so that very little mouth feeding was tried. In the meantime, the left post-tonsillar region was explored with the finger, and no fluctuation was discovered. Dr. Arnold now saw the patient; the edema of the tonsils and uvula was so great and the right tonsillar region had in the meantime become so swollen and painful that it was decided to examine thoroughly for possible pus formation. Scarification was decided upon, because of the suggestion of fluctuation on palpation. This was done on the sixth day, but with negative result. Dr. Arnold reported a suggestion of pus and much hemorrhage. An agar tube was inoculated with the knife used for the incision, and cultures of *Staphylococcus pyogenes albus* and *aureus* grew promptly. A membrane formed over the wounded area and persisted until death. The amount of nourishment taken daily was from 1,200 to 1,600 cc. of milk, broth, raw egg, cocoa, coffee, egg lemonade and orange juice with egg albumen. During the fifth, sixth and seventh days all food or liquid given by mouth and rectum was measured, and an accurate record kept of all the urine voided. The amount of urine was normal, but it contained a small and increasing amount of albumin, hyalin and granular casts, fresh and old blood, and a great deal of granular detritus. The bowels moved well almost daily. For the first five days the slight difficulty in swallowing seemed entirely the result of pain. On the sixth day attempts at swallowing resulted in regurgitation of part of the food through the nose, and the process was so discomfiting that it was not often repeated. Menstruation commenced on the fourth day, and proceeded normally but was scanty. The temperature during the entire process ranged between 102.5° and 105.5° by rectum. The pulse was generally about 120. Blood counts, or coverslip examination, were made on each succeeding day, and showed a steadily decreasing leukocyte count until on the day of death, the seventh of the disease, so few were found that neither a fair estimate of the total number could be made nor were enough found on the six coverslips to make a differential count. The decrease in red cells was slight. On the day before death 260 leukocytes were counted per cubic mm., and the differential count showed no eosinophiles, 2% myelocytes, 21% polymorphonuclear leukocytes, 18% large lymphocytes, and 59% small lymphocytes. From the start the grave nature of the case clinically, even with the comparative mildness of the subjective symptoms, was fully appreciated, and when the leukocyte count continued to decrease despite all treatment, it was determined to try diphtheria antitoxin, 4,000 units of which were given in the hope of checking the effects of the unknown toxin at work in the case. Absolutely no effect was noticed further than a drop of 0.5° in the temperature. Cultures from the throat on blood serum some days before, showed no diphtheria bacilli. Death occurred very suddenly on the seventh day, from edema of the glottis of very acute onset. Suprarenal extract, alone and with chloreton, had been used for several days for the edema of the upper parts, and it was tried in full strength to relieve the edema of the larynx, but without any result. We were preparing for intubation when the patient suddenly expired. The heart had held out very well under only moderate stimulation. Oxygen was used during the last hours almost constantly.

Autopsy, two hours after death. No rigor mortis. Body fairly well nourished, no subcutaneous or submucous hemorrhages, no eruption. All glands were somewhat soft and slightly enlarged, especially those in the neck. Pleural cavities were free, except at the left apex, where there were a few old adhesions; very little fluid. Lungs were normal, with the exception of a light depressed scar under the pleural adhesion in the left apex. There was a normal amount of clear fluid in pericardial sac, and a few small, rough areas on the pericardium over the upper left ventricle. There was a small old vegetation on the mitral valve contracting the edge slightly. Spleen was enlarged to the size of the open hand; liver was apparently unaffected, except for congestion. General condition of all the abdominal organs was good. Kidneys were a little large, gorged with blood, capsules not adherent, no gross pathologic changes. Mesenteric and lumbar glands enlarged, some the size of lima beans. Adrenals normal. Uterus had no odor; the surgical wound was obliterated and not to be located,

except for the silver wires in situ. There was no discharge and no lymph. Within the uterus was a small granular clot. The larynx and pharynx were removed *en masse*. The epiglottis was greatly edematous, more than double its natural thickness, and its posterior wall was more than half covered with a decubitus, over which the necrotic tissue lay like a loose covering. The edema had completely closed the glottis. All the neighboring glands were greatly enlarged and the tissue of the pharynx greatly inflamed. No pus collection anywhere. Cultures were made with the following result: Heart's blood, liver, bone marrow (right femur), epiglottis, vocal cord and left kidney all showed pure culture of *Staphylococcus pyogenes albus*. Right kidney and uterine wall, *Bacillus coli communis*. Blood clot in uterus, *Bacillus coli communis* and *Staphylococcus albus*. Spleen had no growth.

Microscopic examination of the tissue was made by Dr. William Ophuls, Professor of Pathology at Cooper Medical College, and added but little. The organs showed an acute hyperemia, and the distended bloodvessels showed almost no nucleated cells. Even in the throat and about the areas where incisions had been made, and which were covered with a membrane, polymorphonuclear forms were very few.

Dr. Ophuls' report is as follows: Specimens received for examination: pharynx, larynx, upper part of trachea, pieces of liver, spleen, kidneys. The posterior wall of the pharynx shows a marked swelling. The surface is somewhat irregular, dull, greyish-white. This greyish-white area, which anteriorly on both sides extends a little into the sinus pyramidalis, is partly surrounded by a hyperemic zone. The epiglottis itself, and both false vocal cords show a marked swelling, which seems to be largely due to edema. The tip of the epiglottis is hyperemic, and shows a slight dulness on the surface; there is also a slight dulness along the ridge of the right aryepiglottic fold, which is considerably more swollen than the left one. The inner surface of the right vocal cord shows a large greyish-white area, which begins at the point where true and false vocal cords meet anteriorly, and extend upward and backward, involving the lower part of the right half of the epiglottis. The greyish-white area is quite irregular on the surface, and projects a little over the surface of the adjoining parts. The lower parts of the larynx and the trachea seem to be normal. The pieces from spleen, liver, and kidneys do not show any macroscopic lesions. The microscopic lesions at the points of greyish-white discoloration of the mucous membranes are the following: Proceeding from above downward, near the surface is found a thick layer of necrotic tissue. There are no deposits on the surface, nor are there any defects, with the exception of the destruction of the surface epithelium, of which, however, there are remnants in spots. In the necrotic tissue, the contours of the normal structure can be easily recognized, and the connective tissues are well preserved. Underneath the necrotic layer is a narrow zone of cellular infiltration. The cells are mostly of the epithelioid type; there are few lymphocytes and very few polymorphonuclear leukocytes. In this cellular layer and in the lower part of the necrotic tissue there is some nuclear debris. The tissue underneath shows an edema of the connective tissue, with enlargement of the connective tissue cells. In spots there are small accumulations of lymphocytes and polymorphonuclear leukocytes; here and there are small hemorrhages. The hyperemic bloodvessels contain few leukocytes. There is a little fibrin found in spots in the necrotic areas, as well as in the tissue underneath. The whole necrotic area is full of small cocci, which appear in the form of diplococci, streptococci, and irregular groups. In places the chains predominate over other forms. They stain well with Gram's method. Similar cocci are found in the cells in the cellular layer. In a few spots there are long, slender bacilli and nonbranching threads that stain well with Gram's method. They are mostly present near the surface, but in one place they are also in the cells of the cellular layer. The spleen shows swelling and desquamation of the endothelium of the venous capillaries. Kidneys and liver are normal. No bacteria were found in the sections of the spleen, liver, or kidneys.

The low leukocyte count in this case (below 500 per cm. for at least five days) gave an opportunity to determine whether any relation exists between the usual nucleic metabolism in a healthy body and that in this case, in which nuclear destruction must have been so great. It is clear that most of the uric acid in human urine comes from a transformation of free and combined purin compounds in food, while a small but constant amount comes from the breaking down of nuclein containing tissues. This is physiologically constant in the same individual under all conditions of diet, but varies slightly with tissue activity, while the exogenous uric acid varies with the quantity and character of the nuclein and free purin bases present in the food. The whole elimination is fairly constant in the same healthy individual, but varies greatly in different people for unknown causes; it varies also in disease, being much increased in certain febrile processes, and generally increased in

pernicious anemia, although diminished in ordinary anemia and chlorosis, and enormously increased in leukemia and in processes accompanied by enlargement of the spleen, and as an expression of increased nucleinic functions in cases accompanied by leukocytosis. To make the examination in the above case all of the urine was saved, and the amount and character of the nutrition was recorded. During the 24 hours taken for the determination, and for the 24 hours preceding, peptonized milk was the sole diet, and of this 1,180 cc. were given by mouth, while of normal salt solution 400 cc. were given in divided amounts by rectum. Dr. Alonzo Englebert Taylor, of the medical department of the University of California, made the examination, with the following result:

Total urine for 24 hours,	994 cubic cm.
Total content of uric acid, Salkowski-Ludwig method, 0.933	
Total purin bases precipitable by silver,	0.1334
Total purin bases,	1.0664 cc.

Acid bases ratio, 7 to 1. Both the uric acid and purin bases were distinctly increased, considering the diet, and it is reasonable to suppose that the excess was dependent on the destruction of the leukocytes.

Acute primary infectious pharyngitis and phlegmon of the pharynx was first fully and comprehensively described by Senator in 1888, and since then has received but a small share of the attention it deserves. He reported the following four cases:

CASE I.—A woman aged 36, reported having felt poorly for some days. Five days before the onset of the trouble, and while heated, she drank a glass of beer, and soon after felt a pain in the throat and experienced difficulty in swallowing. She had no chill, but in a few hours there was marked fever. The neck was swollen. The glands in the neck slightly swollen, the mucous membrane in the throat and tonsils very red, no membrane. With the exception of an enlarged spleen there was nothing abnormal in the internal organs. The left tonsil was especially swollen and red. Patient was continually restless and wandering in mind. Temperature varied from 38° to 38.8° C. Death took place suddenly and unexpectedly on the sixth day. At autopsy, the submucous tissue on left side of the pharynx showed purulent infiltration. Epiglottis and vocal cords edematous, and a good-sized ulcer involved the left cord. The lymph glands of the neck were large and red. Hemorrhagic injection of the gastric mucous membrane.

CASE II.—Male, aged 29. Twenty-four hours after a drinking bout he had pain in the stomach, with vomiting and fever, followed next day by pain in the throat on swallowing. The throat was intensely red, edematous, and swollen, particularly on the left side. There was pain in the throat on external pressure, and also in the stomach. The mouth could be opened only with difficulty, and fluid regurgitated when any attempt was made to swallow. With one finger in the throat and one outside, no distinct fluctuation could be discovered. Death occurred suddenly on the fourth day from edema of the glottis. No bacteriologic examination. No abscess found.

CASES III and IV.—These showed about the same picture in an old and in a young male, with sudden deaths on the sixth and tenth days.

Senator, in summarizing, calls attention to the malignant nature of the edema, the frequent occurrence of a decubitus on the epiglottis or cords, the seropurulent submucous infiltration in certain cases and its absence in others, the frequent accompanying hemorrhagic infiltration of the gastric or intestinal mucous membrane, or both, the constant and great splenic enlargement, and the absence of other focal lesions. Unfortunately, in Senator's cases, and most of those that followed, no bacteriologic examinations were made, and in none was there blood examinations. In each case the urine contained albumin and casts before death, and was greatly diminished in amount. The article concludes with a brief therapeutic suggestion, a bad prognosis, reference being made to the edema of the glottis and the heart paralysis, which he compares to that occurring in diphtheria, scarlet fever, and the like. The term primary is added to the descriptive name given the disease, to indicate the absence of any of the exanthems or kidney conditions to which edema of the glottis and some throat symptoms might be secondary. Since Senator's report, there have been a few other cases reported, but the disease has not seemed to attract the attention it deserves of clinicians.

HEMOSTASIS IN DISARTICULATION OF THE HIP-JOINT.

BY

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The method that I shall describe is a modification of Senn's. It consists of a preliminary disarticulation of the head of the femur, followed by the introduction of an artery-forceps into the wound, behind the femur, and clamping of the femoral vessels.

The steps in the operation are as follow: (1) Disarticulation of the femur; (2) freeing the upper part of the femur from its muscular and ligamentous attachments; (3) clamping the femoral vessels; (4) formation of the flaps and removal of the limb; (5) ligation of vessels and closing of the wound.

The femur is best dislocated by making a large longitudinal incision over the great trochanter. The incision begins about 3 inches above the upper border of the trochanter major and extends down to the bones. Some separating of the muscles from the great trochanter is now done, if necessary. Otherwise, the joint capsule is opened freely at its upper and posterior parts. The femur is then dislocated by forcible adduction. The next step in the operation is the separating of the muscular and ligamentous attachments of the femur. This is best done by the use of a sharp chisel or periosteotome. Occasionally it may be necessary to use the knife. In the use of either instrument, the separating and cutting should be done as closely to the femur as possible. After the femur has been freed for a sufficient distance to allow the finger to pass readily behind it into the wound, one hand is placed over the femoral vessels, as they cross under Poupart's ligament, while the first and second fingers of the other hand are introduced behind the femur into the acetabular cavity. The fingers are then pushed over the anterior and upper part of the rim of the acetabulum in the direction of the femoral vessels, as is indicated by the hand in Scarpa's triangle. The femoral vessels are easily reached in this manner. The artery lies close to the acetabulum just external to the iliopectineal eminence and origin of the pectineus muscle. To the artery's outer side lies the iliopsoas tendon, which is sometimes slightly overlapped by it. The fingers are introduced between the pectineus and iliopsoas muscles, and in this position the vessels are found not more than a half inch from the acetabular rim. After the vessels have been located in the manner just described, a large artery-forceps is inserted into the wound, following the fingers which direct it to the femoral vessels, and the artery clamped. It makes no difference if the veins and some other soft tissues are caught in the forceps' grasp. The flaps can now be cut rapidly, and as there is nothing to interfere with the flap formation, any size or shape flaps the case requires can be made. The branches of the obturator and sciatic arteries are necessarily small at their sites of division, and the hemorrhage from them can be readily controlled by a tampon or by forceps. As to the remainder of the operation, I place a large silk mattress-suture through the thickest part of the flaps, and place a gauze compress between the skin and each loop of the suture to prevent cutting or necrosis of the skin. The suture is left long and is tied in a knot that can be easily loosened. The advantages of the large mattress-suture are: (1) It holds the flaps together and thereby relieves the cutaneous sutures from pressure or tension; (2) if suppuration occurs at the line of incision the cutaneous sutures can be removed without fear of great separation of the flaps; (3) if deep infection of the wound occurs the mattress-suture can be loosened sufficiently to allow the flaps to retract enough

to freely irrigate the entire wound, and later the flaps can be approximated by retying the suture, and all this can be done without much discomfort to the patient; (4) if secondary ligation of vessels is required the cutaneous sutures can be removed and the mattress-suture loosened sufficiently to grasp and tie the bleeding vessels, and then the flaps can be fairly well approximated by again tying this long silk loop; this can also be done without the use of an anesthetic. The advantage of the large silk mattress-suture over buried catgut—to approximate the deep structures—is that if the flaps have to be separated on account of hemorrhage or deep infection they can again be approximated without either giving an anesthetic or causing great suffering; this being impossible if buried catgut has been used.

The advantages of the method of disarticulating the hip-joint described in the foregoing are: (a) It is more rapid than any other method I have tried; (b) any size or shape flaps desired can be cut, and no constrictor is present to obstruct the field of operation; and (c) only the simplest instruments are required.

The only possible objection to the method that I can see would be that the obstruction of the circulation in the femoral vessels does not render the field of operation sufficiently bloodless, but I do not think this objection holds. In the two cases in which I disarticulated at the hip-joint—with no other precaution against hemorrhage than obstruction of the circulation in the femoral vessels, the bleeding was practically nil. The branches of the obturator and sciatic arteries are small at the points at which they are divided, and in three out of the four hip-joint disarticulations that I have done, they did not require ligatures. Clamping for a short time or compression was sufficient to control their bleeding.

Following is a report of the four cases of hip-joint disarticulation which I have done:

CASE I.—Male, aged 18, had tuberculosis of the left hip-joint, which was followed by mixed infection with extensive destruction of the tissues about the joint. A rubber tube was placed around the external iliac artery, but slight hemorrhage took place from the branches of the internal iliac. The wound could not be closed because of insufficient tissue to form flaps. Extensive suppuration followed the operation. The wound was still discharging eight months later, but the patient's general condition was good.

CASE II.—Man, aged 36, who suffered a crushing injury of the right thigh and hip by a locomotive. Disarticulation was done at the hip-joint after Wyeth's method. Unusual difficulty was experienced in disarticulating the head of the femur, from the fact that the shaft of the femur was crushed nearly as high as the trochanter minor. The patient recovered from the shock, which was severe, after which his recovery was uneventful except for a slight infection of the wound.

CASE III.—Male, aged 42, was injured in a mine accident, and had both femurs broken. The left was broken just below the lesser trochanter, and the femur dislocated at the same time. The patient was operated upon four months after the injury. The surgeon who did the operation labored 24 hours, and did not succeed in reducing the dislocation. At this time the patient was in very poor condition, and it was thought advisable to close the wound. Infection took place, and a suppurative osteomyelitis resulted, which continued for 14 months, at which time the patient was referred to me. Examination showed extensive scar-formation with many discharging sinuses about the hip. The head of the femur could be felt anterior to the pubis, and of course there was no union of the fragments. Removal of the lower extremity was decided upon, and a vertical incision, 1½ inches long, was made over the beginning of the femoral artery. I then separated the fascia with the finger, and, when the femoral vessels could be plainly felt, grasped them with a large hemostatic forceps. The operation was completed with very little hemorrhage. Some pus formed in the wound, but otherwise recovery was uneventful.

The report of the foregoing cases has, intentionally, been very brief. Such details as rendering the limb bloodless before operating, and treating bloodvessels and nerves, have been purposely omitted. The disarticulation in the case following was done according to the method I have advised in this paper, and I shall report the operation more in detail.

CASE IV.—Male, aged 28, had sarcoma of the thigh. A rubber bandage was applied as high as the knee-joint, and a vertical incision was then made over the trochanter major,

beginning about three inches above its upper border and extending a distance of seven or eight inches. The knife was thrust down to the bones. I then introduced the knife into the upper and posterior parts of the joint capsule and cut the capsule a distance of 1½ inches. The femur was dislocated by forcible adduction, and no preliminary freeing of the bone was found necessary. I then with a sharp chisel freed the upper end of the femur from its muscular and ligamentous attachments, and in doing this worked as closely to the bone as possible. I then introduced two fingers into the wound—behind the femur, located the femoral vessels and applied an artery-forceps to them. I formed the flaps rapidly, anterior and posterior; ligated the arteries and veins with catgut; cut the nerves high, and closed the wound with one large silk mattress-suture and as many silk wormgut sutures as were required to approximate the cut surfaces. Hemorrhage was very light, the sciatic and obturator arteries did not require ligatures. The patient recovered from the shock, which was not severe—and now, 21 days after the operation, is doing well, with the wound healed by primary intention.

MAXILLARY ANTRAL SUPPURATION, WITH REPORT OF A CASE.

BY

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It has been only during the last few years that the accessory cavities of the nares have begun to attract the attention they deserve. Because of its size and relations the maxillary antrum is the most frequently affected of these various cavities.

Most cases of antral suppuration come under the observation of the specialist only after they have become chronic, and relief lies in surgical intervention, often of a radical nature. Careful search of the literature of the subject results in failure to find a report of a case treated in its incipency and cured in as short a space of time as the one following.

The recent exhaustive treatise on "The Nose and its Accessory Cavities," by Turner, of Edinburgh, makes no mention of the treatment of patients seen so early. The patient in this instance had no suspicion of the nature of his malady, but, supposing it to be neuralgia, came for treatment of the eye, which pained him so severely as to cause fears for its safety.

He gave a history of having stood on the forward deck of a ferryboat during a severe snowstorm, and on entering the station he observed that the side of his face was covered with melting snow. Twenty-four hours later he was taken with severe pain, which was diagnosed as neuralgia, and ordinary domestic remedies applied. No relief being afforded, and the eye becoming markedly involved, he consulted me regarding the pain, photophobia and chemosis. The affected side of the face was swollen to an unusual degree. Careful questioning pointed to the cause of the trouble and transillumination confirmed the diagnosis. No discharge could be seen in the middle meatus, nor did posture cause any to appear. The intranasal condition was that of moderate chronic hypertrophic rhinitis. A large pledget of absorbent cotton was saturated with a solution of adrenalin chlorid (1 to 1,000), and placed in the middle meatus over the opening leading to the antrum. After about two minutes this was removed and the patient directed to hold his head downward and to the opposite side. About 1½ drams of thick mucopurulent material at once escaped from the nostril. A second examination with the electric light in the mouth showed a partial restoration of the transparency of the tissues of that side of the face.

He was given a mild alkaline wash (sod. carb.) to be used three times daily in a nasal cup, and a solution of adrenalin chlorid (1 to 10,000) to be poured into the nostril with a medicine dropper every three hours, with directions to frequently assume proper posture to encourage drainage. Two further treatments at the office, and home treatment carried out for five days, brought about complete restoration, although the transparency of the face was not equal on the two sides for a period of one month.

Surgical Fees.—Dr. Albarran sought to recover lately, before the Seine Civil Tribunal, Paris, a fee of \$1,200 from a Nanterre grocer for a major operation upon his wife. The court adjudged the charge exorbitant and reduced it to \$500, with the statement that a medical man should make his fee proportionate to his patient's means.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

April 12, 1902. [Vol. XXXVIII, No. 15.]

1. Report of Cases Treated with Röntgen Rays. WM. ALLEN PUSEY.
2. A Brief Review of Finsen's Phototherapy. P. C. CLEMENSEN.
3. The Use and Abuse of Morphine After Abdominal Section. L. H. DUNNING.
4. Some Points in the Differential Diagnosis of Abdominal and Pelvic Tumors. RUFUS B. HALL.
5. Bacillus Coli Communis in Human Infections. AUGUST JEROME LARTIGAU.
6. Medical Aspects of Cholelithiasis. ROBERT B. PREBLE.

1.—See our report of Tri-State Medical Association.

2.—**Finsen's Phototherapy.**—Finsen has shown that the inflammation excited by the chemic rays of light differs from other inflammations in being followed by pigmentation of the skin lasting several months, in not appearing at once as after a burn, and in appearing only on parts exposed to light, while heat rays are capable of acting through clothing. Pigmented areas react faintly to subsequent exposure, explaining the growing darkness of the skin as we approach the equator. The chemic rays seem to cause more or less permanent dilation of the capillaries. Rays from the spectrum from red up hamper the development of microorganisms, the violet and ultraviolet being most active. Different bacteria are differently affected. Exclusion of the actinic rays is the essence of the red-light treatment in smallpox. It must be complete and commenced early. This prevents suppuration and pitting, and shortens the course of the disease. The blood forms the chief barrier to the permeability of the chemic rays. For this reason a compressing apparatus is used in the lupus clinic for producing local anemia. A malady to be successfully treated must be local, superficial and bacterial. The light must be strong, concentrated and cooled. The writer describes the apparatus for concentration and cooling sunlight and electric light, the method and length of exposure, and also an arc-lamp rich in ultraviolet rays. The treatment is painless, without danger, and cosmetic and curative results are excellent. The technic of the chemic light-baths closes the paper. [H.M.]

3.—**Morphine After Abdominal Section.**—Its routine use is condemned. For severe pain and restlessness it is superior to codeine. Serious after-effects may be largely overcome by drinking liberal quantities of water before operation and rectal injection of normal salt solution immediately after operation, the systematic use of the colon tube, and early action of the bowels. In persistent vomiting not due to sepsis or peritonitis, small doses of morphine hypodermically administered frequently afford relief. In secondary shock it is a potent remedy. [H.M.]

5.—**Bacillus Coli Communis in Human Infections.**—The organism is widely distributed and is carried under seemingly normal conditions from the intestines to healthy viscera through the portal circulation and possibly the mouth and pharynx, and may sometimes reach the systemic circulation. Agonal and postmortem invasion of the tissues is common, with or without lesion of the intestinal mucosa. Its virulence is influenced by changes in the physiologic activities of the intestine and growth in new host environments. Its role as a primary inciting factor in infection is infrequent. It claims chief attention as a secondary invader. It may induce inflammatory lesions, mainly suppurative, in the body tissues generally; the infection may originate in the intestine. Its role in acute lesions of appendix, peritoneum and urinary passages has been generally overestimated, it being usually accessory to other organisms. It is a factor of prime importance in the incitement of cholelithiasis. [H.M.]

6.—**Medical Aspects of Cholelithiasis.**—The burden of diagnosis and of deciding which cases shall be operated on rests on the medical man. Preble discusses the differentiation from tabes dorsalis, pleurisy, lead colic, ulcer ventriculi and gastralgia. The indications for surgical interference are frequent attacks of colic, septic symptoms, empyema of the gallbladder, localized or generalized peritonitis, persistent jaundice obstruction of the intestines and fistulas. Efforts to dissolve the stones are futile. In medical treatment effort must be directed toward preventing the formation of additional

stones and the relief of troublesome symptoms. Exercise, hygienic clothing, massage and a simple, well-proportioned diet tend to keep the gastrointestinal tract in good condition, indirectly relieving the stagnation of bile and catarrh of the gallbladder. Mineral waters, mercurials, salicylates and various antiseptics are useful. A tendency to gallstone morbinism is an indication for operation. [H.M.]

7.—**The Pile Shield.**—This is an oval, nickel-plated brass plate, $2\frac{1}{2} \times 2$ inches, with the edges turned up, except at the lower portion, which has a narrow slit for the purpose of slipping it behind the forceps that grasps the pile mass. On account of the elevated rim the cautery cannot slip over and touch the surrounding skin. [H.M.]

Boston Medical and Surgical Journal.

April 10, 1902. [Vol. CXLVI, No. 15.]

1. The School in Its Effect Upon the Health of Girls. E. G. BRACKETT.
2. The Health of School Girls. ROBERT W. LOVETT.
3. Statistics Regarding Health of School Girls. EDWARD MUSSEY HARTWELL.
4. The Effect of Public School Education Upon the Health of the College Girl. JANE KELLY SABINE.

1.—**The School in Its Effect upon the Health of Girls.**—Brackett is impressed by the large number of weak, anemic, and nervous girls and the marked difference between boys and girls in the development stage. Hardly more than 5% of children applying at the hospital for developmental defects are boys. Excessive mental exertion during this period interferes with normal development. Responsibility is divided between the home and the school. The home should demand for itself a proportion of the time for family duties, recreation and social associations, without which the child is a machine. In some of the older schools required work varies from 44 to 52 hours per week, the sessions covering five days in the week. The Massachusetts laws have restricted working hours for minors to 8½ hours and recovery from mental fatigue is slower than from physical. Chronic disorders are more frequent among children whose instruction extends over the whole day than those who go in the morning only. The girl needs an elastic consideration. The inelasticity of the school is injurious. It fails to recognize individual variations, and especially those between boy and girl. Its demands interfere with necessary sleep and outdoor play. [H.M.]

2.—**Health of School Girls.**—Lovett gives statistics demonstrating the impairment of mental processes by too continuous application and showing that among school children the amount of work diminishes in the fourth or fifth hour. In examination periods children have been found to average a loss of 3½ pounds. The endurance of girls is shown to be less than that of boys. The health statistics of one school are given showing 30% with habitual headache, 5% to 15% with constipation, biliousness, indigestion or cold hands. The average amount of home study exceeded four hours, average outdoor exercise, including the trip to school, covered 60 minutes. Much of the overwork has been credited to late hours, social or household demands, but the school should be corrective of the home rather than cumulative in its bad effect. The development of proper gymnasiums and sufficient physical training is an important part of the remedy. [H.M.]

3.—**Statistics Regarding the Health of School Girls.**—Hartwell notes that so little scientific study has been given to the health of the school population in the United States that comprehensive and trustworthy statistics are hardly to be found. Between 1885 and 1890 the deathrate per 1,000 for those between 5 and 15 years of age was: In Boston, 6.6; in Berlin, 4.8, and London, 3.9. In 1900 it was 1.2 less in Boston. The deathrates of Boston school girls compare favorably with those of the boys. Those who aver that pupils are heavily overburdened have not produced convincing evidence. He gives the maximum and minimum enrolment in the various grades of schools, and the figures do not suggest that the girls suffer overmuch. The medical profession is as responsible as the educational authorities for the present neglect of school hygiene and the undeveloped state of statistics. [H.M.]

4.—**The Effect of Public School Education upon the Health of the College Girl.**—Questioning reveals that the

foundation of bad health in the majority of cases is laid during puberty. The following statistics were tabulated from 2,000 students in finishing schools and colleges: 30% were either wearing glasses or ordered to have their eyes examined, 6% showed defective hearing, 4% had flatfoot, 5% had weak lungs, 4% had heart trouble, 2% had kidney lesions, 75% had menstrual irregularities dating from puberty, 60% had to give up from 1 to 2 days, 90% had leukorrhea. Of those whose records were kept, of four yearly examinations 30% showed marked improvement, 30% were not influenced either way, while 40% were not improved. [H.M.]

Medical Record.

April 12, 1902. [Vol. 61, No. 15.]

1. The Traumatism of Pregnancy. DENSLOW LEWIS.
2. A Clinical Report Relating to (a) Hemorrhage Persisting Notwithstanding Curettage, and (b) Secondary Hemorrhage Following Abdominal Section. EGBERT H. GRANDIN.
3. General Treatment of Measles. LOUIS FISCHER.
4. Rhinoliths and Foreign Bodies in the Nose. J. M. INGERSOLL.

1.—The Traumatism of Pregnancy.—The traumatism of pregnancy are conveniently divided by Lewis into those due to attempts at abortion and those resulting from accidents. It is wise, says Lewis, in every abortion to consider the possibility of its having been induced. If the fetal envelope is not injured and the condition of the patient is good, the case may often be let alone, unless the evidence of serious traumatism is plainly manifest, or the foreign body is still retained or has entered the peritoneal cavity. In cases of perforation the first indication after the arrest of hemorrhage is to secure coaptation of the edges of the wound. This is accomplished, according to Fritsch, by pressure of the abdominal walls and counterpressure of the floor of the pelvis. Vaginal douches should be avoided, swabbing out the parts is unnecessary, and the use of drainage, except perhaps a small strip of gauze, is ill-advised. The perforation of the peritoneal surface is apt to be small and the surfaces easily fall together. If the perforation is complicated by the presence of an incomplete abortion, it is desirable to remove the secundines without delay. If this can be done with the fingers or blunt curet without inflicting additional injury, it should be done. An interval of 12 or 24 hours will allow a partial separation of the decidua, often facilitating the removal of the secundines. If the foreign body is within the uterus and accessible, it must be removed. If it has escaped into the tissues and become the starting point for suppuration, the abscess, in most instances, can be easily reached through a vaginal incision. Traumatism due to direct or indirect violence or accidents are most varied. The treatment of these cases necessarily depends upon the character of the injury and can be governed by no rules, but must be left to the judgment and wisdom of the physician or surgeon. Lewis reports a variety of interesting cases and some peculiar injuries and their treatment. [W.K.]

2.—Six Cases of Hemorrhage.—Grandin presents clinical reports of six cases relating to (a) hemorrhage persisting notwithstanding curettage, and (b) secondary hemorrhage following abdominal section. His chief purpose is to secure an opinion as to the symptomatology of so-called shock and of intraperitoneal hemorrhage. He believes that after an elective abdominal section the word shock means hemorrhage. Uterine hemorrhage is, he says, suggestive of three cardinal conditions: (1) either there is something in the uterus requiring removal; (2) there exists disease of the uterus; or (3) there is present an extrauterine condition demanding careful scrutiny and often speedy operation. [W.K.]

3.—Treatment of Measles.—The temperature of the room should be from 70° to 76° F. When possible, red shades should be used to screen the sun's rays. There is less eye trouble when sufficient air and light are admitted. All discharges of nose, eyes, ears and mouth should be disinfected. Warm drinks and other diaphoretics will hasten the eruption. Stimulation of the enunciations is urgent. Aconite may be added to the diaphoretic. When cerebral symptoms occur, convulsions, etc., may be prevented by mustard footbaths, with icebags to the head, and sodium bromid. In vomiting, feeding may be omitted for six or more hours, or rectal feeding may be resorted

to. Irritating nasal and pharyngeal discharges may be treated with boric solution. When the catarrhal secretion is swallowed it is well to give castor oil or emetics. Distressing cough is allayed by medicated steam, codein, or malt extract. Hyperpyrexia is best treated with tepid sponging or packs, cold not being as well borne as in other eruptive diseases. Edema of the glottis frequently leads to laryngeal stenosis. Steam inhalations and emetics are indicated. Intubation is badly borne. Convalescence depends more on nutrition than drugs. [H.M.]

4.—Rhinoliths and Foreign Bodies in the Nose.—Ingersoll, after enumerating the various foreign bodies which may lodge in the nose states that rhinoliths form sometimes with a foreign body as a nucleus and at other times no nucleus can be found. The salts of the nasal secretion are deposited layer by layer and thus form a rhinolith. These may exist for many years and cause comparatively little inconvenience. A case in point is cited. The patient was a well-developed man of 46, whose left nasal fossa had been obstructed for more than 30 years. Externally, the left side of the nose appeared broadened, as the left nasal bone was pushed somewhat forward and upward. The left eye was inflamed and its tear-duct was obstructed. The septum deviated to the left, making a rather large right fossa, which was otherwise normal. The left vestibule was nearly filled by an irregular, jagged projection of the rhinolith, which extended down to the integument, and made it impossible to examine the left fossa. Posterior rhinoscopy showed that the rhinolith extended backward as far as the end of the inferior turbinal. It was removed in four sittings under local anesthesia. [A.B.C.]

New York Medical Journal.

April 5, 1902. [Vol. LXXV, No. 14.]

1. On the Treatment of Fracture of the Anatomic Neck of the Humerus by the Aid of the Röntgen Rays. CARL BECK.
2. The Differential Diagnosis Between Disease of the Gallbladder and Disease of the Vermiform Appendix; with a Report of Two Cases. JAMES C. KENNEDY.
3. Pulmonary Embolism After Operations Upon the Bladder and Prostate. EDWARD L. KEYES.
4. Human Asymmetry. WILLIAM S. ELY.
5. An Epidemic of Typhoid Fever in the Backwoods of Maine. E. F. BRUSH.
6. An Unusual Complication of Inguinal Hernia. A. C. SMITH.

1.—Fracture of the Anatomic Neck of the Humerus.—Beck reports a case in a boy of 12 in which in order to reduce the small fragment it was necessary to lift the arm vertically until he could feel the apposition of the fragments in the axilla. As soon as the arm left the vertical direction the fragment escaped again in the old position. He therefore immobilized it in the vertical position by means of a thoracic plaster-of-paris dressing, supported by the addition of moderate weight-extension. That the fragments were in apposition was proved by the x-rays. At the end of two weeks he lowered the arm, and the extension was discarded; in two weeks more the arm could be brought into a rectangular position without any difficulty, and perfect agglutination appeared to have taken place. The arm was immobilized again by the same means, this time in the rectangular position. After two weeks this dressing was removed and a plaster-of-paris splint applied. Seven weeks after the accident the function of the arm was perfectly restored. [C.A.O.]

2.—The differential diagnosis between disease of the gallbladder and disease of the vermiform appendix is discussed by Kennedy, and two cases are reported to illustrate the difficulties that may arise. The symptoms of the first case would justify almost any physician in making a diagnosis of appendicitis. When the patient was anesthetized a distinctly movable tumor was noticed on palpating the space about the lower border of the right lobe of the liver. The incision was made well over the tumor and it was found that the gallbladder was filled with a large quantity of a thick, viscid fluid, mixed with pus and an immense number of gallstones. The larger biliary calculus closed the mouth of the cystic duct, the hepatic and common ducts were healthy. The points of interest in the second case were: A previous attack of gallstone colic, which, the author says, perhaps the patient never really had; constipation, vomiting, peritonitis, tympanites, tumor well up in the region

of the gallbladder, suddenness and fury of the attack, apparent symptoms and history of gallstone ileus. An abdominal incision showed that it was a case of disease of the vermiform appendix, due to an intestinal concretion weighing 63 grains, and on section found to be composed of concentric layers of ammonium and magnesium phosphate with some inspissated mucus. The author says that in all such cases operation should be urged, and in the absence of a well-defined tumor, the small exploratory incision should be made between the biliary and appendiceal incision's points, so as to enable the surgeon to enlarge his wound. [C.A.O.]

3.—Pulmonary Embolism After Operations Upon the Bladder and Prostate.—Keyes has encountered personally and in the literature a number of cases bearing a striking similarity to each other and each emphasizes the danger of pulmonary embolism following operations upon the bladder and prostate. The most striking idiosyncrasy of this sort of pulmonary embolism is that it arises from a thrombosis of the pelvic veins, usually the internal iliacs, and thus may well escape detection until the fatal accident occurs. There is rarely any definite evidence of phlebitis. Movements of the thigh may be exquisitely painful; there may be continued intense pain within the pelvis; there may be more or less rise of temperature. In none of these cases was the diagnosis of thrombosis made before the patient died of embolism. The common run of cases follow the classic lines of dyspnea, precordial pain, and almost instantaneous asphyxia. They have occurred almost uniformly when the patient was doing well, often when his cure was considered complete. [C.A.O.]

4.—See *American Medicine*, Vol. III, No. 7, p. 256.

5.—See *American Medicine*, Vol. III, No. 7, p. 257.

6.—An unusual complication of inguinal hernia is reported by Smith. The patient, aged 41, had a very large inguinal hernia on the left side, which descended into the scrotum and was hard to reduce, in spite of the fact that there was no strangulation. The hernia first appeared 21 years before, but had not given much trouble until a few weeks before operation. After separating the sac from the cord, it was found that a large amount of tissue of the nature of thickened fascia remained about the cord, and the tissues of the scrotum were thickened and elongated, suggesting that there had been a previous hernial sac extending into the scrotum which had become obliterated. The contents of the sac consisted of omentum, nonadherent, which was resected. After the stump of the omentum was returned into the abdominal cavity, the author found in the large opening of the neck of the sac what appeared to be a coil of adherent intestine. It proved to be a part of the colon, and the peritoneum of the sac passed everywhere smoothly and evenly on to and over the surface of the gut. The same close union of the gut with the peritoneum existed as far as could be felt in the abdominal cavity, and it became evident that the condition dealt with was not an adhesion of intestine, but the true attachment of a portion of the colon, which had been dragged slightly outside the ordinary boundaries of the abdominal cavity by the downward and forward traction of a hernial sac, or rather of a second hernial sac after the first had become obliterated; that is to say, the foundation on which the bowel rested had slid downward, forward and inward with the peritoneum. [C.A.O.]

Medical News.

April 12, 1902. [Vol. 80, No. 15.]

1. On Amebic Abscess of the Liver. WILLIAM OSLER.
2. Spa Treatment of Gout. CHARLES C. RANSOM.
3. On the Early Diagnosis of Pleuritic Effusions. JAMES K. CROOK.
4. Report of a Case of Removal of the Gasserian Ganglion. JOHN F. ERDMANN.
5. The Etiologic Classification of Varicose Veins of the Legs. WILLIAM S. TERRIBERRY.
6. A Peculiarity of Vision, with Illustrative Cases. FREDERICK C. RILEY.
7. The Misleading Significance of Ovarian Pain. C. LESTER HALL.

1.—Amebic Abscess of the Liver.—The most frequent form of liver abscess in the vicinity of Baltimore is that following amebic dysentery. Out of 93 cases of the latter, 23 developed this complication. Osler reports five cases. One of these was remarkable for an unexplained diffuse cyanosis. Three had practically no leukocytosis. In one a diagnosis of

cancer was made, and two simulated empyema. Amebic abscess is not always associated with existing ulceration, as one autopsy demonstrated. The patient may have had dysentery months before, however, and the ulcers may have healed. [H.M.]

2.—Spa Treatment of Gout.—Spa treatment is contraindicated in acute attacks. In subacute and chronic gout the symptoms can be ameliorated or eradicated, and liability to recurrence can be lessened. Experiments of his own in administration of uric acid in chronic nephritis, in the use of shad roe in chronic gout, and in animal experimentation, have made Ransom skeptical as to the uric acid theory. Recent observations point to purin bases like adenin as the toxic principles. Treatment must be based on general hygiene. He discusses the physiologic action of cold, hot and thermally-indifferent baths. The temperature of the bath must be regulated to suit the condition of the patient. At Richfield the immersion bath is generally used, the temperature varying from 98° to 102°, duration from 8 to 12 minutes. The substances held in solution, particularly the sulfuretted hydrogen, have a stimulating effect on the glands, especially liver, kidneys and skin. These baths are not contraindicated by heart or kidney disease. The belief that uric acid producing foods have deleterious effect upon the gouty subject is not justified, and Ransom prescribes meats and carbohydrates freely. The latter are withheld in obesity. The diet must be adapted to each individual case. Alcohol in excess is pernicious. The amount and form of exercise should be specifically ordered. Moderate altitude and dry climate is the best. Chronically affected joints are treated with hot and cold douches, massage, hot air and electricity. [H.M.]

4.—Removal of Gasserian Ganglion.—Erdmann reports that a man of 45 had suffered for about five years, at first only occasionally but later almost constantly, from tic douloureux. The middle division of the fifth nerve, together with Meckel's ganglion, had been removed, affording but six months' respite from pain. He had lost much in weight and his suffering was great. Operation was performed and the Gasserian ganglion removed. This was followed by almost immediate cessation of pain, which relief has been practically permanent. Operation was not performed until all known internal remedies had been exhausted. [A.B.C.]

5.—Etiologic Classification of Varicose Veins of the Leg.—Pathologically there may be simple dilation, cylindric or fusiform, dilation with lengthening and tortuosity, circumscribed fusiform dilations throughout the entire vessel wall, or aneurysmal sacs; a number of dilated and circoid veins with aneurysmal sacs which have become adherent forming communicating cavities. Thrombi are rarely detached, occasionally phleboliths form. The return floor of blood depends on the driving force of the heart, the integrity of the venous walls and efficient action of the valves. There are no valves in the inferior vena cava, the iliac and upper portion of the femoral veins. A column of blood extends from the diaphragm to the saphenous opening unsupported by valves. Stenosis above the saphenous valves assists gravity, forces open the valves and regurgitation results. Stenosis is due to narrowing of the vessel lumen or increased abdominal pressure from muscular action, enlargement of the viscera or tumors. Dilation may also follow obstruction from constriction, thrombosis or obliteration of a large number of veins inferior to the saphenous valves due to narrowing of the total sectional area of the return circulation and regurgitation. Or cases may be due to stenosis without regurgitation from obstruction of single veins with small anastomosing connection. [H.M.]

7.—Misleading Significance of Ovarian Pain.—Lester Hall is convinced by long experience that pain in the ovary does not necessarily mean pathologic changes in that organ, but may be reflex and sympathetic. Infection, as a rule, progresses from the endometrium to the tubes and ovaries; and often pain in the ovary is the reflex of an inflamed endometrium or stenosed cervix. From many similar histories, Hall selects three which he gives as proof of his theory. The third was that of a woman who had suffered a long time from what she described as "pain and tenderness in the ovary," and one gynecologist had said that nothing but the removal of the

ovaries could give her relief. Hall thought from an examination that the ovarian pain was entirely reflex and due to uterine trouble, requiring no operation. The patient was treated according to this diagnosis, the pain entirely relieved and the woman restored to health. [W.K.]

Philadelphia Medical Journal.

April 12, 1902. [Vol. IX, No. 15.]

1. Rubella and the "Fourth Disease." J. P. CROZER GRIFFITH.
2. A Case of Intermittent Claudication, Terminating in Gangrene. I. HARRIS LEVY.
3. Ophthalmia Neonatorum. REYNOLDS WILSON.
4. Adenoid Vegetations and Their Influence on the Palatal Arch. FREDERICK H. MILLENER.
5. Vaccination. T. F. CAMPBELL.
6. The Relation of the Tubercle Bacillus in Pseudoleukemia (Sternberg's Disease). JOSEPH SAILER.

1.—Rubella and the "Fourth Disease."—Griffith cannot see a possible reason for the assumption of the existence of a "fourth disease." Every infectious disease is liable to variation in its type, both in the individual and in the epidemic, and aberrant cases and forms, and even aberrant epidemics arise; but a new name cannot be given to these variations. To prove positively that the type called rubella scarlatiniforme is a distinct affection from the form more commonly seen, it is first necessary to make certain that one form does not protect from the other; it is necessary to find a series of cases in which the patients have had undoubted measles, scarlet fever, rubella and the so-called "fourth disease;" and this has not been done. It must be proved that the same original infection cannot produce either form in different individuals. We still lack entirely the most important evidence of all that a "fourth disease" exists; we have yet to see the occurrence of rubella scarlatiniforme, as generally understood, fail to protect from an attack of rubella morbilliforme, or *vice versa*. [F.C.H.]

2.—Intermittent Claudication.—Levy details a very interesting case which terminated in gangrene of such progressive type of some of the toes of the right foot as to necessitate amputation above the knee. The appearance of the cramps shortly after beginning to walk, their disappearance after a short rest, together with the absence of pulse in the posterior tibial and dorsalis pedis arteries in both extremities, make this a typical case of intermittent claudication, as described by Charcot and Erb. But these symptoms, in addition to the vasomotor disturbances, make the symptom complex of erythromelalgia. Although Levy does not consider this a typical case of either erythromelalgia or Raynaud's disease, yet there are sufficient symptoms of both these conditions to warrant calling this one of those mixed cases which show the close relationship between intermittent claudication, erythromelalgia and Raynaud's disease. [F.C.H.]

3.—Ophthalmia Neonatorum.—Wilson gives a detailed study of this unfortunate type of purulent conjunctivitis. He thinks the most important step in prophylaxis is the elimination of the danger present in the infected vaginal discharge preceding labor. This consists in the daily application of a solution of silver nitrate, 30 gr. to the ounce, to the cervical canal, and the administration of an astringent vaginal douche. He summarizes his treatment as follows: The antepartum care of the birth canal, the scrupulous cleansing of the lids following expulsion of the head, and constantly thereafter in suspicious cases; the noninvasion of the palpebral sac by separation of the lids before the appearance of typical discharge, prompt and absolute isolation upon the appearance of conclusive signs of specific inflammation, thorough and systematic irrigation, and astringent applications of silver nitrate in cases of prolonged suppuration. As an important adjunct, codliver oil inunctions and whisky should be given in cases of debility and malnutrition. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Ankylostoma Duodenale.—*Ankylostoma duodenale*—or, as, according to C. W. Stiles, it should be called, *Uncinaria duodenalis*—has always been considered a worm indigenous to Egypt and Italy and occurring only

sporadically in other regions of the globe. No doubt, Egypt was its original habitat; and the disease caused by it is probably the earliest of which we have any graphic record; for it is now held by authorities that the *ana* disease of the Ebers papyrus is identical with the Egyptian chlorosis, or the anemia produced by the *Ankylostoma*. The worm is, however, beginning to make its presence felt in widely scattered parts of the world, and is, seemingly, becoming fairly prevalent in the United States. Cases were reported last year by Claytor,¹ Allyn,² Gray,³ and Schaefer⁴; and another case was reported by Claytor⁵ this year. With these reports to stimulate observation, no doubt others will be found in this country; and it is possible that the prevention of the spread of the disease will become an important matter of sanitation. Aside from being an intestinal parasite, the *Ankylostoma* seems to have the power of causing lesions of the skin. There is a disease known as *ground-itch* which is common in Assam, in other parts of India, in the West Indies, and probably elsewhere in the tropics. It is characterized by an intensely itching, vesicular eruption on the lower extremities. In the East it possesses considerable economic importance, as it especially attacks the coolies in tea-gardens, sometimes invaliding as many as 5% of these laborers. The cause of the disease was not definitely known, but recently Bentley⁶ claimed to have proved that it is due to the entrance into the skin of the larvae of the *ankylostoma*. The infection of the feet is through the soil, which becomes contaminated by the deposition of the evacuations of the laborers about the outskirts of the tea-gardens. The question naturally arises whether *ankylostomiasis* can be acquired through dermal infection. The personal experience of the helminthologist, Looss,⁷ of Leipzig, is interesting in this connection. He had cultivated the eggs in the feces of patients suffering from *ankylostomiasis* up to the larval stage and had observed that the larvae could penetrate filter paper. On one occasion, his health having become somewhat impaired, he examined his bowel discharges, and found to his surprise, innumerable *ankylostoma* eggs. At first, he was unaware of the source of the infection, but he did not think it likely that he had been infected through the digestive tract. One day, while washing the larvae, a drop of water containing them fell upon his hand and immediately produced an intense burning and itching. Further investigation showed that the larvae had penetrated the skin, and Looss now inclines to the view that this was the way in which he had been infected. There is not enough evidence, as yet, however, to warrant such a conclusion.

Pseudotubercle Bacilli.—At the meeting of the Verein für innere Medizin, of Berlin, held February 3, 1902, Dr. Moeller⁸ emphasized the clinical importance attaching to those bacteria which tinctorially resemble the tubercle bacillus in resistance to acids. Several of these pseudotubercle bacilli have been discovered in necropsies when there were no evidences of tuberculosis, and Koch describes them as being agglutinated by tuberculous serum and *vice versa*. The lepra bacillus of Armauer Hansen; the smegma bacillus of Taval and Alvarez or the syphilis bacillus of Lustgarten; the butter bacillus of Raginowitsch and Petry; and the lung and grass bacilli of Moeller all resemble closely *Bacillus tuberculosis*—and all but the smegma bacillus are capable of producing under certain conditions nodular diseases of animals. It is so easy to mistake pseudotubercle bacilli for the real bacillus of tuberculosis either by staining or culture behavior that extreme caution is called for in deciding as to the identity of any given acid-resisting microbe. [C.S.D.]

¹ Philadelphia Medical Journal, June 29, 1901.

² American Medicine, July 13, 1901.

³ Virginia Medical Semi-Monthly, September 27, 1901.

⁴ Medical News, October 26, 1901.

⁵ American Journal of the Medical Sciences, January, 1902.

⁶ British Medical Journal, January 25, 1902.

⁷ Centralblatt für Bakteriologie und Parasitenkunde, xxiv, 1898, 441, 483.

⁸ Münchener medizinische Wochenschrift, February 11, 1902.

Burns from Celluloid.—Ogston¹ states that it is evident that celluloid articles of uncertain composition and dangerously explosive quality are sold everywhere, and are in constant use, and that the conditions under which they may ignite in varying circumstances cannot be fully inferred from experiments regarding their ignition point made in a physical laboratory. Inasmuch as badly manufactured celluloid ignites at variable temperatures too low for it to be safely used, it is considered that restrictions should be imposed upon the sale of all such articles which do not sustain, without ignition, a temperature equal to that sustained by well manufactured celluloid, and that it is worthy of consideration whether all celluloid articles of personal wear and such others as might give rise to fires ought not to be compelled to have the word "ignible" conspicuously imprinted upon them. And finally it is believed that if the suggestion made to render celluloid incombustible by the addition of some chemical is practicable it would be the best solution of the difficulty, and such an addition ought to be made compulsory by legislative enactment. [A.O.J.K.]

A Test Paper for the Demonstration of Iodin in Clinical Examinations.—Absorption from the mucosa of the stomach is usually tested by the administration of potassium iodid in capsule. A grain and a half is given, and the saliva is tested for iodin. Normally, the reaction appears in ten minutes. For motility, the iodipin test is useful. Iodipin is decomposed in the small intestine in the presence of bile. Fifteen minutes after a test meal, a coffee-spoonful of a 10% solution of iodipin is administered. Iodin appears in the saliva in a quarter of an hour under normal circumstances. Iodin has also been used to determine inflammatory conditions of the cerebral membranes. Normally, the membranes are impermeable to iodin, but in tuberculous meningitis the cerebrospinal fluid contains iodin. In this test, 4 gm. (60 grains) of potassium iodid is given by the mouth and the fluid obtained by lumbar puncture tested for iodin. Deniges and Sabrazes² recommend a special paper, which is a delicate reagent for iodin. It is prepared in the following way: One gram of starch is dissolved in 10 cc. of cold water, in a porcelain dish. While stirring 40 cc. of boiling water is added, and the whole is boiled for one or two minutes, constantly stirring. The fluid is allowed to cool and 5 gm. sodium nitrite is added. After this is dissolved, a firm writing-paper is spread on both sides with the reagent, care being taken that one side is dry before the other is smeared. Afterward the paper is cut into strips, from 1 cm. to 1.5 cm. wide and from 8 cm. to 10 cm. long. In using, this paper is moistened with the fluid to be tested; and then, with a glass rod, a drop of 10% sulfuric acid solution is added. [D.R.]

Diphtheria Antitoxin Eruptions.—Stanley³ gives his observations of diphtheria antitoxin eruptions made on a series of 500 cases of diphtheria treated with antitoxin. Eruptions occurred in 112 cases as follows: Erythemas 58, erythema and urticaria 15, urticaria 30, scarlatiniform 6, morbilliform 3, and transient early erythema and urticaria (usually at the site of the inoculation) 17. The average day of the onset of the eruptions was as follows: Erythema 12.3 (varied from the fourth to the twenty-ninth day); urticaria 9.2 (varied from the fourth to the nineteenth day); and all eruptions 10.8. [A.O.J.K.]

Hypnotoxin.—Portier and Richet⁴ have isolated the toxin peculiar to the secretions of many urticating coelenterates (*Medusa*, *Physalia*, etc.), which substance they designate *hypnotoxin*. Its toxicity may be estimated from the fact that 2 grams of *Physalia* tentacles yielded sufficient to kill a pigeon weighing 300 grams within one hour. [C.S.D.]

A Case of Polyneuritic (Korsakow's) Psychosis with a Peculiar Condition of the Tendon Reflexes.—Westphal⁵ reports a case of Korsakow's disease in which not only was there a complete absence of the patellar reflexes but an attempt at their elicitation produced invariably muscular twitching of the opposite adductor muscle group. [H.N.C.]

Dietetics in Pulmonary Tuberculosis.—Bardwell⁶ be-

lieves that the large diets often given in sanatoriums are generally unnecessary and often harmful. The weight gained is associated with deterioration of general health and deranged metabolism. In supralimentation with proteids much of the intake, sometimes 50%, is wasted, being immediately excreted. Aromatic sulfates are increased, denoting greater intestinal putrefaction. The nitrogen excreted as urea is less, showing less thorough nitrogenous elimination and a steady fall in the percentage absorption of nitrogen. Anorexia and dyspeptic symptoms appear when previously absent. [H.M.]

Two Forms of Amebic Enteritis.—Jürgens¹ distinguishes two varieties of intestinal infection by *Amœbæ*; one primitive (diphtheritic colitis), encountered in Asiatic dysentery and characterized by ulcerations with poorly defined borders; the other, secondary, which complicates intestinal tuberculosis. In these cases peritoneal tuberculosis is found; but the internal surface of the intestine shows no tuberculous alteration, the amebas having invaded and destroyed the tuberculous tissues. [C.S.D.]

Albuminous Expectoration Following Thoracocentesis.—Riesman² reports a case of albuminous expectoration following thoracocentesis, gives a thorough review of the literature and of the previously reported cases (together with the results of analyses of the fluid and the theories that have been advanced to explain the phenomenon), and concludes: That albuminous expectoration is a very rare complication of thoracocentesis, usually serious and sometimes fatal; that it consists of the expectoration of a viscid albuminous fluid closely resembling the fluid of a serous effusion; that the condition is best explained on the basis of an intense congestion and edema of the lungs, congestion by recoil; that the principal cause seems to be either too rapid or too great withdrawal of fluid; that serious cardiac disease and morbid conditions of the opposite lung, hindering expansion, are predisposing causes; that under all circumstances, but particularly when these complications exist, aspiration should be performed slowly, and if the effusion is large the amount withdrawn at any one time should be moderate; that in some cases it may be wise to perform several tapplings, drawing off a small quantity each time; and that the treatment consists in counter irritation, venesection, and artificial respiration, together with the use of morphin if the cough is severe. [A.O.J.K.]

The Diagnosis of Inflammatory Processes Starting from the Cecum and the Appendix.—The following paragraph illustrates Curschmann's³ position on the treatment of appendicitis: "As is shown by the recent literature, experienced and deliberate surgeons are today in full accord with physicians. They leave to the latter the early treatment of all and the permanent treatment of the lighter cases. The few surgeons that still contend that every case of appendicitis, from its incipency, belongs to them and should be subjected to operation, no longer obtain a general hearing." As soon as it is proved, or is even probable, that an exudate has become purulent, Curschmann would advise the transfer of the patient to the surgeon. Regarding the diagnosis of abscess formation, he holds that neither the pain nor the fever is of great help. Fever may be entirely wanting, even when large abscesses are forming. He lays great stress upon the leukocytosis, and goes so far to say that if, during the first few days, the number of leukocytes remains normal or is only slightly and transiently increased, it may be inferred that there is only a small, nonpurulent exudate, and that the course of the case will be a relatively short one. In any case in which the leukocytes reach or exceed 20,000 or 30,000, the patient should be given over to the surgeon. The characteristic feature of abscess formation is that from the beginning—or, at least, from the second day on—the number rises rapidly and maintains itself, with but slight variations, at the level reached or goes even higher. After operation, the number usually falls immediately, although in rare cases it may rise higher than it was before. Curschmann has paid no attention to the differential count, and is inclined to think that there is no relative increase of any of the forms. In conclu-

¹ Lancet, February 22, 1902.

² Münchener medizinische Wochenschrift, December 17, 1901.

³ British Medical Journal, February 15, 1902.

⁴ La Semaine Médicale, February 5, 1902.

⁵ Deutsche medizinische Wochenschrift, January 30, 1902.

⁶ The Scottish Medical and Surgical Journal November, 1901.

¹ La Semaine Médicale, February 12, 1902.

² American Journal of the Medical Sciences, cxviii, 620, 1902.

³ Münchener medizinische Wochenschrift, November 26 and December 3, 1901.

sion, he maintains that in the diagnosis of abscess formation the behavior of the leukocytes far exceeds the temperature in value. [D.R.]

On the Fate of Diphtheria Bacilli in the Alimentary Canal.—Julius Süsswein,¹ of Vienna, discusses the conditions which decide the relative infrequency of cases of diphtheria of the stomach or the occurrence of diphtheria bacilli in the small or large intestine, notwithstanding the fact that the swallowing of diphtheric membrane must occur constantly. The secretions of the alimentary tract, digestive and otherwise, together with the antagonistic action of the colon-bacilli are probably the active factors concerned. [C.S.D.]

Should Milk be Boiled.—Ransom² discusses the sources of contamination of milk, the pathogenic properties of contaminated milk, the alleged scurvy from boiled milk, the alleged loss of nutrition of boiled milk, and concludes that there is no solid evidence to show that milk pasteurized or milk raised to the boiling point for ten or 15 minutes suffers any diminution of its nutritive qualities. Neither is it probable that, if consumed within 24 hours of the heating, it will cause infantile scurvy. None of the methods renders the milk absolutely sterile, but they do kill most pathogenic microbes, and if the milk is kept cool and drunk within 12 hours of the heating, few or no spores will have developed into bacilli. Pasteurization is probably less reliable and more difficult to carry out than boiling. In times of epidemic summer diarrhea the heating should be prolonged for at least a half hour, and the milk drunk within a few hours, or again subjected to boiling, as the spores of *Bacillus sporogenes enteritidis* are very resistant. Under all circumstances milk whether raw or sterilized should be drunk as fresh as possible, whereupon the liability to gastroenteritis and nutritional disturbances will be diminished; and under no circumstances should infants who live wholly or mainly on milk as at present supplied, be exposed to the dangers lurking in the raw fluid. [A.O.J.K.]

On Mastcells.—L. Michaelis,³ of Berlin, contributes a valuable review of the knowledge of those cells distinguished by the basophilic granules of their protoplasm pointed out by Ehrlich. Since he first called attention to their behavior with methylviolet, dahlia and gentian violet, a number of new basic anilin dyes, useful for their metachromatic power, have been discovered; they belong principally to the class of thiazin and oxazin, for example, thionin, toluidin-blue, and kresylviolet. Michaelis points out the nonidentity of the mastcells of connective tissue and of the blood, together with the fact that there is a marked difference as to the degree of solubility of mastcell granules in water. [C.S.D.]

Myelogenous Leukemia.—Detailing the clinical and hemic phenomena connected with two cases of myelogenous leukemia, Hirschfeld and Tobias⁴ state that in both cases they were able with the aid of Löwit's thionid methylene blue—Lugol staining method—to demonstrate the presence of structures in the leukocytes closely resembling the parasites described by Löwit. The two authors, however, failed to discover any of the flagellate, sporulating or navicular forms described by Löwit, and indeed regard the structures found by them as due partly to stain-precipitation and partly to degenerative changes in the cell-protoplasm or nuclei of the cells. [H.H.C.]

Pneumomycosis Aspergillina Hominis.—Dr. Gottfried v. Ritter,⁵ at the November 1, 1901, meeting of the Verein deutscher Aerzte of Prague, reported a case of mycosis of the lung due to *Aspergillus fumigatus*, an important and destructive affection of men and animals, recently treated monographically by Dr. Fr. Saxer, of Marburg. [C.S.D.]

The Anaphylactic Action of Certain Venoms.—Portier and Richet⁶ call attention to the fact that some venoms, such as that of the tentacles of *Actinia*, have the property of rendering the organism less resistant to subsequent doses; this property they term *anaphylactic* in contradistinction to that of toxins which confer immunity. [C.S.D.]

GENERAL SURGERY

MARTIN B. TINKER A. B. CRAIG C. A. ORR

Operative Treatment of Carcinoma of the Breast.—Operative removal of this form of malignant disease has been practised for many years, probably as frequently as for any form of malignant disease. Only during the past decade, however, have thorough radical operations come into at all general use, and as late as 1896 Sir James Paget said, "Survivals of three years such as are now often termed cures are not very rare, but I can remember very few who have survived without recurrence more than five years." Although the number who have survived more than this length of time is still not very large, they can no longer be called very few. Within the past few months two interesting papers have been published dealing with the subject. A. Marmaduke Sheild, surgeon to St. George's Hospital, London (*Lancet*, March 8, 1902), presents the later results of his experience in the treatment of sixty cases of malignant disease of the breast, and Rosenstein (*Arch. f. klin. Chirurgie*, 1901, Vol. 63, p. 555), gives a statistical study of 175 cases operated upon in the clinic at Königsberg, while under the direction of von Eiselsberg, from 1896 to 1900.

Sheild attributes the beginning of the present tendency toward extensive operation in breast carcinoma to Moore, of Middlesex Hospital, London, in 1867, who, at that time, advocated strongly wide and free excision. Moore's views were later supported in America by the elder Gross, but the comparative ease and safety with which the breast alone can be removed, leaving carcinomatous tissue in the axilla has always been dangerously fascinating from its very simplicity, and the disciples of imperfect operators have been numerous, and incomplete operations very prevalent. Sheild gives Halsted the credit of forcing upon the attention of the profession the importance of very free operating, and it is certainly only since the publication of Halsted's article that such methods have been commonly practised. In any complete operation for breast carcinoma the importance of free removal of the skin and careful dissection from the axilla of all infected tissue and removal in one piece with the breast, are the most important points. Sheild mentions that the diagnosis of a carcinomatous nodule from a deeply-seated cyst is in many cases impossible, except by extirpation, and in doubtful cases extirpation is as much indicated as in the case of doubtful tumors of the abdomen. He states: "Only since I have been in the habit of removing the pectoral and clearing the axilla in every case has it dawned upon me that the glands are almost universally infected, even in the early stages of mammary cancer. Time after time, when competent observers have made the written note that 'there are no enlarged glands,' I have at the operation removed from under the pectoralis minor glands of the size of a hazelnut or almond, distinctly cancerous, which it was impossible to feel, even with the axilla open, until the pectoralis was removed." He concludes that "the being unable to feel enlarged glands in the axilla goes for little or nothing in the diagnosis of early cancer of the breast." In six years, ending August, 1900, Sheild has operated upon fifty-nine cases of mammary carcinoma, one of mammary sarcoma. This does not take into account many operations for recurrences and twelve cases in which operation was refused because of extensive implication of the skin, thorax or glands above the clavicle. He states that Christian science was directly responsible for the hopeless and shocking state of a significant number of these deluded women. In one case he refused operation because of carcinoma of the spine, and in two cases because of the coexistence of carcinoma of the liver. Two patients were lost sight of after having remained well two years after operation. Of the fifty-eight remaining cases eighteen were treated

¹ Wiener klinische Wochenschrift, February 6, 1902.

² British Medical Journal, February 22, 1902.

³ Münchener medizinische Wochenschrift, February 11, 1902.

⁴ Deutsche medizinische Wochenschrift, February 6, 1902.

⁵ Prager medizinische Wochenschrift, January 2, 1902.

⁶ La Semaine Médicale, February 26, 1902.

too recently to estimate ultimate results, leaving forty cases for discussion. In this number there were two deaths, one from iodoform poisoning, the other from sepsis. Although the operations are said to have been of the most extensive character, not a single death is recorded as the result of the operation itself, with the exception of the case that died from sepsis. There was one slight suppuration, otherwise all ran an aseptic course. Although the operation practised by Sheild is quite extensive, it is not the true Halsted operation. Sheild removes a large amount of skin, the axillary contents and the sternal part of the pectoralis major, but he states that the amount of skin removed is not so extensive but what closure is usually possible by the means of flaps, and he simply cuts across the pectoralis minor muscle and clears away the fascia from beneath it. Drainage was employed universally in his series of cases. He emphasizes the almost universal freedom from local recurrence. Of forty cases, eight patients, or 20%, have remained well for five years or over; four for four years or over, and seven for three years or over. In all he has nineteen cases free from recurrence three years or over, or 47+%. In cases in which there was local recurrence he states that a second slight operation often gave the patients a considerable period of freedom from recurrence. One case of this kind has remained well over five years, one for over three years, one patient died four years and one two years after removal of recurrence from other causes. This does not agree with the experience of Halsted, who has had unfavorable results in operating for recurrences. Of the patients that died from carcinoma one remained in health for four years and died of carcinoma of the upper peritoneum, one died of carcinoma of the liver after an interval of three years. As regards the movements of the arm he states that formerly in a large number of cases the arm was tied down to the side by a neuralgic painful scar and the hand and forearm were nearly useless because of edema. This, he believes, is due to the too free removal of the skin of the axilla and keeping the arm bound to the side during convalescence. He advocates retaining the forearm in a sling for the first week; after this the arm is gradually raised by the insertion of cushions until it is brought to a right angle. By removal of the cushions it is again depressed and raised, this treatment being continued until after a fortnight gentle passive movements can be substituted and gradually increased. This method has given very satisfactory results and he considers it among the most important details of the after-treatment. In conclusion, he states that the risk of extensive operation is small and should not amount to over 1% or 2%. Sepsis is preventable and caused by error on the part of the surgeon. Early free removal gives prospect of years of freedom from disease and a good percentage of permanent recoveries. The cases which do badly are rapidly growing carcinoma in young vascular women and cases of long continuance before operation where the skin and cervical glands are widely involved. Early exploration of suspicious nodules followed by the complete operation if carcinoma is suspected is strongly urged. No one should undertake operation who has not sufficient experience to remove thoroughly all the tissues from the axilla. The prognosis is still dubious, instances sometimes arising which falsify ordinary experience. Some bad cases have long remained free from recurrence and certain early cases have shown recurrence. But such do not invalidate the rule to operate early and to operate extensively.

Rosenstein gives a more complete statistical study of breast carcinoma than does Sheild, taking up the etiology, clinical picture, etc., in considerable detail. He finds that of the cases that come under observation in the Königsberg clinic, 92.5% occurred in women who had nursed children and 13% were in women who had suffered from mastitis. The carcinoma never occurred directly after the mastitis, however, but usually many

years later. Trauma was noted in 6.8% of the cases and heredity in 3.1%. The left breast was affected in 65.9% of the cases. The growths were evidently quite extensive, 25.2% being mentioned as of the size of a walnut, 51.1% the size of a hen's egg and 21.5% the size of a fist. He believes that there has been a steady improvement in the methods of operation. Up to 1898 amputation of the breast with excision of the axilla was practised, the pectoral fascia being removed only in exceptional cases. Following June, 1899, the pectoralis major was removed more or less thoroughly, and since April, 1900, the pectoralis minor has also been taken. The supraclavicular glands were not excised unless palpable. Although the operation practised by v. Eiselsberg is evidently quite extensive, it is still not as thorough as that of Halsted. He states that the defect in the skin left is seldom so large as to require skin grafting, Tiersch grafts being used in only 8.1% of the cases. He lays great stress upon the careful arrest of hemorrhage even at the sacrifice of some time, and in the later cases has evidently done a very thorough operation. Though the results as regards healing are not bad they do not equal those of the best American clinics. He reports 94.29% of cases of healing per primam, with erysipelas, suppuration, necrosis and eczema in the remaining cases. There were in all three deaths from the operation, one from erysipelas twenty days after the operation, one from weakness two days after the operation, and one from bronchitis and heart failure eleven days after the operation. Definite information about the permanent results of operation was obtained in 107 cases. Of the total number of 175 cases, 54.1% remained well over one year without recurrence. Of the cases heard from, 14.3% remained well over four years after operation, and 42.2% over three years after the operation. Rosenstein estimates the number of permanent recoveries at about 22.7%, but properly states that as yet it is too early to determine the results of the more complete operations.

The results in these cases of far less thorough operation than that advocated by Halsted are extremely encouraging and we look for a great improvement after the complete operation has come into general use. It is surprising that so many progressive surgeons still hesitate to adopt the more thorough operation. For the results of those who have practised the operation show very little mortality and there can be no question as regards the more favorable prognosis as regards recurrence. The fact that so able a surgeon as v. Eiselsberg only adopted the operation in 1900 indicates the general state of affairs. The vast majority of those who claim to do the complete Halsted operation still fall far short of it as is evidenced by these and other recent reports. Halsted and Haidenhain have both pointed out that the removal of the muscles is not as important because of the danger of their involvement as from the fact that only after removal of the muscles can the axillary vein be thoroughly exposed and the dangerous tissues along it thoroughly removed. The claims of such surgeons as Mitchell, Banks and others who seek for credit for introducing the complete operation, while they hold that the glands of the axilla can be effectually extirpated by forcible retraction of the muscles, are certainly not deserving of much attention. The fact that carcinoma of the breast is situated in such a position that it usually attracts attention early and that the profession are gradually though slowly coming to recognize the importance of more complete methods of operating encourages us to believe that in the next ten years the results of complete excision of the breast will be far better than even the best at present.

Fatal Hemorrhage Following Tonsillotomy.—Damianos and Hermann¹ operated upon in a private clinic at about noon, a right hypertrophied tonsil having been removed by the tonsil-

¹ Wiener klinische Wochenschrift, February 27, 1902.

lotome. Hemorrhage began about an hour and a half after the operation, and the patient came to the hospital about 6.30 p. m., after various means of arresting the hemorrhage had been tried without satisfactory result. Ice had been applied, compresses saturated with ferric chlorid solution, digital compression, cauterization and the application of artery forceps had proved without avail. After entrance to the hospital, iodoform gauze saturated with ferripyrin was applied to the bleeding surface, and compression was exerted for an hour and a quarter. This arrested the hemorrhage. The patient was then put to bed with an ice bag to the neck, and ergotin was injected subcutaneously. An hour later the bleeding began again. Compression forceps were applied and arrested the hemorrhage until the next morning when they were removed. For three days there was no loss of blood, then the bleeding began again. The same means of arresting hemorrhage was again successfully tried. This procedure was repeated at intervals of about three days until 12 days after the operation when after a severe attack of coughing, profuse bleeding set in. The patient was then in a very critical condition from loss of blood. Under local anesthesia with Schleich's solution the right common carotid artery was ligated. After the operation the patient felt very well, but death resulted the same afternoon. Hemophilia is mentioned as a possible cause of the fatal result, but there is no evidence brought forward that the patient was a bleeder. In a search through the literature, 150 cases of this kind were found. The number is quite large, but in comparison to the thousands of tonsillotomies which are performed yearly, it is relatively very small. In the *Annals of Surgery* for July, 1901, Keen reports a case of ligation of the carotid artery for bleeding from the tonsil with a successful result, and recommends this procedure in cases when the ordinary measures proved unsuccessful. The fatal result in the above case and 150 similar cases shows the importance of Keen's suggestion to ligate the artery early. [M.B.T.]

Cholecystotomy—Some Experiments with the Biliary Flow.—McLean¹ reports a case of cholecystitis in which the gallbladder was opened and drained by means of a rubber tube. During the ten days this tube was kept in position, more than three quarts of bile was withdrawn without apparent effect upon the patient. He had no pain or distress; digestion was perfect, he was always anxious for his meals, and the stools appeared natural. The following conclusions are drawn: 1. The greatest amount of bile passes into the gallbladder during the quiescent period—that is, from one to 6 a. m. 2. The administration of calomel and podophyllin will increase the flow. 3. The first two hours after a meal only one dram was passed into the gallbladder. 4. The specific gravity varied from 1,010 to 1,014; no difference was noticed after the calomel was administered, and it was highest after taking solid food. 5. The gallbladder will contain only a small percentage of the bile secreted during the quiescent period, and is not a necessary appendage. 6. The bile flows more freely into the gallbladder the further down the small intestines the food products pass. 7. The secretion of bile is continuous, and the entire amount secreted is not necessary for perfect health. [C.A.O.]

Subpubic Cystoscopy.—Editorial comment in *La Semaine Médicale*, February 12 on Successful Subpubic Cystoscopy at the hands of P. Kraske brings a letter from H. Reynès,² of Marseilles recalling the fact that the honor of priority in the use of subpubic examination of the bladder by simple trocar or cystoscope belongs to the eminent English Surgeon, E. Harry Fenwick, of St. Peter's Hospital who described his operative method in the *British Medical Journal*, April 21, 1894, and in his book "Annals of Surgery," p. 81-82. [C.S.D.]

A New Incisor.—In view of the fact that the Bottini operation is the only satisfactory one in certain cases of prostatic obstruction and that uncertainty in the length of the incisions is a source of danger, Hugh H. Young³ has devised an instrument with several easily interchangeable blades of graded sizes which has proved to be practical and to overcome many defects in Freudenberg's instrument. [C.S.D.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

The Present Status of Symphysiotomy.—The first actual symphysiotomy was performed by Domenico Ferrara, in 1774, in the Hospital for Incurables at Naples, and ended fatally. It was in this same hospital, a century later, that the Neapolitan surgeon Morisani restored the discredited procedure to a recognized place in obstetrics. He is today its most ardent advocate, and in twelve operations, between 1886 and 1892, claims to have saved the lives of twelve mothers and twelve children. Mariana¹ gives the limits within which the operation of symphysiotomy is practicable as determined by the experience of Morisani. By the section of the pubic symphysis an increase of pelvic area is obtained, which has been accurately estimated by Leroy; and with a distance of six centimeters between the pubes, the sacropubic lines would gain about thirteen millimeters, which, added to the reduction in the biparietal diameter engaged in the pelvis, makes a gain in all of about twenty millimeters. With a conjugate of seventy millimeters, delivery is possible with a section of the symphysis. He makes the lowest limit of the operation a conjugate of between sixty-seven and seventy millimeters, and the highest limit eighty-eight millimeters. In his view cesarean section should be performed when the conjugate is below the limit of symphysiotomy, seventy to sixty-seven millimeters. Symphysiotomy may prove fatal to the mother if performed below the assigned limit; if it fails within the assigned limits, the failure is probably due to the time of labor when the operation is done or the methods of performing it; and the condition of the mother at the time of the operation must also always be taken into consideration. If the operation is done within the limits assigned upon a healthy woman, not already infected, and with a fetus in good condition, the result can scarcely fail to be a complete success. Ayers² has performed thirteen symphysiotomies without infection of the joint or any death due to the operation, and saved the lives of eleven children. He considers that the most influential point affecting the result is the performance of the operation when the patient is in a favorable condition. The determination of its scope depends upon the type of the pelvis, the justminor pelvis requiring a greater separation of the pubes than the other forms, and the funnel-shaped the least separation relatively, but the final decision can only be made during labor. On the contrary, pelvic contraction to such a degree as to require cesarean section can be determined before labor begins. Symphysiotomy is also justifiable in certain malpresentations: impacted posterior, occipital, and chin presentation when the fetus is living and delivery is not possible without mutilation. Ayers' experience and observation include 40 cases of pelvic contraction beyond forceps delivery, in only one of which was cesarean section clearly indicated, symphysiotomy being available in the others. Nature sometimes performs this operation, as in a case reported by Reinprecht. The woman, aged 36, had forceps applied at her first delivery, the remaining six terminated spontaneously. After all these labors she was unable to move her lower extremities for several days, but after convalescence could always walk with ease. At the eighth pregnancy the physician made several attempts with forceps, and at the end of two hours delivered a child 8½ pounds in weight, and in so doing produced a longitudinal rent in the anterior vaginal wall. Through this rent the free border of the right os pubis could be felt, and the articulation gaped an inch and a half. The gap between the bones was mainly filled in with connective tissue, and there was little movement at the joint. Zweifel³ says it must be

¹ The Medical Age, February 25, 1902.

² La Semaine Médicale, February 19, 1902.

³ Bulletin of the Johns Hopkins University, February-March, 1902.

¹ Yale Medical Journal, March, 1902.

² Journal of American Medical Association, March 18, 1902.

³ Centralblatt für Gynäkologie, March 29, 1902.

admitted that in Germany symphysiotomy is apparently excluded from the order of the day, but he advocates its use, and thinks that an essential part of the treatment is the drainage of the prevesical space or preperitoneal cavity, not with gauze, but with drainage tubes, usually through the vagina, but in certain conditions through the labium pudendi. Five cases treated in this manner had a satisfactory recovery. The high application of forceps when the head will not engage leads to so many bad results that Zweifel prefers symphysiotomy in such cases.

The constantly improving status of cesarean section has a tendency to diminish the indications for symphysiotomy, as the former operation insures immediate delivery in all cases irrespective of the degree of contraction. Symphysiotomy is contraindicated in ankylosis of one or both sacroiliac joints or by infection of the uterus. If infection is present, celiohysterectomy is indicated, and probably many American obstetricians will agree with Williams that cesarean section is preferable to symphysiotomy in minor degrees of contraction in which the use of forceps or version is inadequate. No operation or procedure, however, will be free from mortality or give satisfaction if its employment has been delayed or the patient has become exhausted or infected before pelvic contraction is recognized, and this leads us to emphasize the need of the more frequent and systematic use of pelvimetry as a routine procedure.

Heredity.—Modification of germplasm must take place frequently through the medium of the soma, but it may be assumed that only conditions exceptional by intensity, or prolongation, or frequency of repetition, will affect it. Only one of a million male gametes may succeed in penetrating the female. The rest are normally absorbed into the circulation of the parent female, and such nutrient and forceful plasma must necessarily influence the female economy, an influence not hitherto reckoned with in considering telegony. The fact that only one gamete effects fruitful conjugation shows that the struggle for existence is phylogenetic as well as ontogenetic. Species have become so closely adapted to their environment there is little room for further variation. Only those acquired characters are normally transmitted which are approved for the species by natural selection. Park¹ takes issue with Reid for rejecting too absolutely the possibility of modifications being transmitted, but admits that the cause must be intense, very special or prolonged. Trophic alterations of somatic content must precede acquirement by the germplasm, involving for the most part a pathologic etiology of germplasm modification. No data are recorded to exhibit the effect of genital and other diseases on the potentialities of the germplasm of progeny. The germplasm may be vitiated, but it doesn't follow that *all* the ova will be. "Casting back to a cross," as recognized by breeders, is an instance in which the parental soma has not been materially altered, but a recondite acquirement has been effected modifying some germ cells. [H.M.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Summary of the Therapeutics of Digestion.—Notwithstanding the splendid work which has been done of recent years in the investigation of dyspepsias, the causes of these conditions are still very imperfectly understood, and the treatment is essentially symptomatic. However, if carefully carried out, removal of the symptoms is generally followed by more permanent improvement. The most important measure in this respect is perhaps a proper regulation of the diet. An intelligent patient can give the best indications as to the diet which is best adapted to his particular case, and if this is adhered to for sufficient time improvement usually results. Any attempt at a rational therapeutic treatment can only be based upon a

thorough physical and chemic examination of the existing conditions; else it cannot be anything but empiric and haphazard, apt to do more mischief than good. When the pathologic state is well understood, we may, from our knowledge of the physiology of digestion and the methods by which this may be modified, arrive at the theoretic indications and the manner in which these should be met. Clinical observations made with all the aids of modern science are as yet hardly sufficiently numerous to bear out these theoretic data.

The indications are as follow:

(A) *Gastritis, Acute or Chronic.*—1. Removal of the irritant, whether toxic, undigested food, or toxic products arising from these. These indications are met by emptying the stomach. In acute cases this may be done by emetics, or in either acute or chronic cases by lavage.

2. If the cause lies in fermentation, the lavage should be carried out in weakly antiseptic and acid solutions. The antiseptics must, of course, be devoid of marked toxicity. Boric acid, salicylic acid, or salol are well adapted. The acidity should be that of the normal gastric juice, or about 0.2% HCl.

3. Protection of the organs against irritation may be secured by demulcents. Especially in chronic cases, it is best to employ those which are at once nutritive, such as milk or eggs. With irritant poisons mucilage or oil may be more effectual.

4. Physiologic rest may be secured by using food with the minimum of indigestible residue and the maximum of nutritive value to a given bulk. It should be as free as possible from large particles, and it may be necessary to use it entirely in liquid form. In some cases it will be necessary to have the food largely predigested.

5. In the chronic form a mild irritation may be indicated. This may be secured by carbonated waters, by salts, or by the general group of stomachics—bitters, light alcoholic beverages, etc.

(B) *Hypersecretion of mucus* demands lavage, which is rendered more efficient if a small quantity of alkali, most usually sodium bicarbonate, is added. The latter is frequently beneficial even without lavage. The astringents may also be useful, especially bismuth in the form of subnitrate.

(C) *Anacidity* demands acids. Alkalies tend to cause an increase in the secretion of acid as well as of ferment, and may in this way be useful if the anacidity is functional; they are worthy of trial. Stomachics act in the same manner, and are free from the objection of the neutralization of the acid.

Hyperacidity causes irritation, and should be removed by alkalies. The irritation may be lessened by the administration of demulcents or of oils.

(D) *Absence of Ferments.*—The ferments were supposed to be lessened in many chronic diseases, as chlorosis, tuberculosis, etc. There is no proof for this belief, and they are generally much less subject to change than the acid-secretion. It is established that they are often deficient in chronic gastritis, in carcinoma, and in certain nervous dyspepsias; whilst they are increased in other cases of the latter and in ulcers. However, it is doubtful whether the ferment action of the stomach is very important.

Deficiency of pepsin may be met by the introduction of the artificially-prepared ferment. Notwithstanding the doubts which may be entertained as to its theoretic indication, it appears to give clinical results, and can do no harm. Papain has the advantage of digesting in all media. The advantages of ingluvin are perhaps doubtful. Pancreatin can do no good, since it is destroyed in the stomach.

The secretion of ferments may be stimulated in a more rational manner by stomachics or alkalies.

(E) The symptoms of dyspepsia are as often due to motor deficiencies as to faulty chemic digestion. The indications in this condition are met by lavage; small amounts of food taken at frequent but regular intervals; the prevention of fermentation by acids; the application of cold and electricity; the administration of salts or nux vomica.

(F) Many cases of dyspepsia are purely nervous; i. e., unconnected with any pathologic alteration. In these cases the education of the patient to greater confidence is of most importance. Of drugs, caffeine, nux vomica, and bromids are variously successful. Some of the clinical symptoms may

¹The Scottish Medical and Surgical Journal, November, 1901

become sufficiently prominent to require special treatment. Pain can be relieved by heat, or if necessary by narcotics; gas by sodium bicarbonate; anorexia by stomachics; bad taste by aromatics (myrrh).

Intestinal digestion seems to require no special aid unless bacterial processes supervene, when a purge will answer the indication. If, however, the intestine is the seat of inflammation, or when excessive food is needed, it may be well to lessen its labor by the administration of predigested foods.—Torald Sollmann's "Pharmacology."

Michelia Champaca, L.—Nom. Vulg.—*Tsumpaka, Sampaka*, Tag.; *Champaca*, Fil.-Span. *Uses*.—The bark of the trunk is well known as a febrifuge and emmenagogue in India. It is slightly bitter and aromatic. Dr. H. Folliat has used it with success in the Island of Mauritius in the treatment of the common intermittent fevers; he administered the infusion (bark 30 grams, water 600 cc.)—or the decoction (bark 30 grams, water 1,200 cc.); boil till reduced to 600 cc.—giving a wineglassful every hour just before and after the paroxysm. An astringent decoction made from the leaves is used as a gargle in sore throat. The root is emmenagogue and the seeds are used in the treatment of anal fissure. Dr. Hooper has found the following substances in the bark of the *Champaca*: A volatile oil with a pine-like odor; a fixed oil, insoluble in alcohol, melting at 15° and forming soap with soda; a resin extremely bitter, acrid, brown in color; tannin; sugar; a bitter principle, albuminoids, coloring matters, mucilage and starch.—De Tavera, "Medicinal Plants of the Philippines."

Hydrogen dioxide in the treatment of lupus vulgaris and tuberculous abscess is urged by Gunston.¹

Tetanus Following Revaccination of the Leg.—Findlay² refers to the literature of the subject, and reports a case in which recovery followed the prolonged administration of chloral. [A.O.J.K.]

NERVOUS AND MENTAL DISEASES

J. K. MITCHELL.

F. SAVARY PEARCE.

Shock to the System.—The sequels of injury to the nervous system, whether functional or organic, are constantly confused in medicolegal determination by the fact that the functional or organic changes produced by injury are themselves often vague and indefinite even when malingering is ruled out of court. The practitioner should at the present day be able to state pretty positively that the neurosis is or is not a result of the alleged accident. The medical man is keen for the demonstration of physical injury obtainable by inspection, palpation, or the Röntgen rays, overlooking too much, we think, the fact that the finer chemie and anatomic and molecular changes, the result of cerebrospinal concussion, can produce symptoms as definite, albeit more difficult of determination, as harassing, and in some instances more incurable than those which may be caused by actual fracture of the skull.

If such so-called functional disease result from physical injury, the neurologist's position is to state the facts in a court of law just as every surgeon is properly willing to do in cases of determination of physical injury following accident. The possible combination of the two (functional and organic disease) must also be kept constantly in mind. A number of specific cases could be quoted of various combinations of disorders of the central nervous system, the result of railway and other accidents, in which the functional disease was quite as lasting as that definitely known to be organic. We wish to urge the difficulties of the whole subject and to stimulate more careful study of the individual case in the light of the latest scientific advances in neurology, and insist that more accurate determination of these post-traumatic affections should be made in justice to both plaintiff and defendant in damage suits. A still more difficult class of cases of shock are those which are the

result of psychic trauma alone, and here there are specific cases a-plenty to illustrate hysteria, neurasthenia, and exophthalmic goiter caused by fright. The question of whose the fault is for such damage is again too frequently confused by the expert medical witness. We take it that this is entirely beyond his province. Of course, the physician must aid both parties to the suit by a conscientious study of series of cases as regards heredity, and the nature of the disease, especially in its psychologic aspect, in order to assist, through more definite prognosis, the parties concerned in the suit; so that awarding of disproportionate damages may not be laid to us. The popular idea as recorded exists in the minds of the judiciary even, as has recently appeared in *The Edinburgh Law Times* (February 1, 1902), where the case is related of a lady, 56 years of age, traveling in a compartment alone, when the door flew open and was struck by a passing train; she was in great terror, particularly of being struck by broken glass and fragments of woodwork; and was, in consequence, confined to her bed for three weeks (what could be more productive of acute neurasthenia?). The judge, Lord Stormonth Darling, was of opinion that the lady's fears were unreasonable and said that the "test must always be, whether the terror produced was a natural result of the negligent act; in other words, would a mind of average intelligence and strength experience a shock in the circumstances." He accordingly withdrew the case from the jury. It is sufficient to call attention to the above injustice, to enforce the plea we make for exactness.

On the Etiology of Chorea.—There yet remains for solution the problem of etiology of Sydenham's chorea. Much evidence is at hand to point to a necessary vulnerability of the central nervous system, particularly the motor cortex of the brain, transmitted by heredity. But what is this *something* termed predisposition? It seems to be an inherent irritability of the upper motor neurons which psychic or physical trauma can excite to precipitate the typical syndrome of symptoms, often presenting many unique manifestations. But there is more than this vague pathogenesis to clear up in many of the cases studied clinically; much to lead up to the toxic etiology of the said predisposition in cases where a neuropathic heredity or shock do not exist as causative factors. Thus extreme anemia, remote rheumatic, and other diatheses, gastrointestinal catarrh, the infectious diseases of childhood, all seem to act as both predisposing and exciting causes in a minority of cases of acute chorea. Fröhlich¹ thus analyzes 47 cases of chorea observed, which he divides into four groups, the first of which contained 15 cases where acute rheumatism occurred during or before the attack. The second group consisted of 16 cases in which fever, sore throat, painful and swollen joints were observed before or during the attack. Group three considered those cases (four) where other infectious diseases preceded the chorea. And group four contained those cases where there had been no previous disease of an infectious nature. In 25 of the cases a cardiac murmur was heard, in 11 of which, or 74%, there was a previous history of rheumatism. An additional case of "choreic twitches" in a case of gonorrheal vulvovaginitis followed by gonorrheal rheumatism makes also toward proof of the infectious origin of many cases of chorea.

Syphilis and Tabes.—Fournier, who has held for twenty-six years to his belief in the causal and close relationship between tabes and syphilis, presents the result of his observations during this period, which now include 1,000 cases (*Jour. de Medecine Interne*, December 1, 1901). The patients were all studied in the Hôpital St. Louis, and cover only those in whom antecedent syphilis could be absolutely proven. Of the 1,000 tabetics 925 had had syphilis. Marion considers such figures

¹ British Medical Journal, February 22, 1902.

² Lancet, February 22, 1902.

¹ Jahrbuch für Kinderheilkunde, September 1, 1901.

to prove that tabes is always preceded by syphilis, but Fournier himself does not wish to go quite so far; first, because for the sake of his argument he will include only cases observed by himself; second, because tabes is a syndrome which may result from different medullary lesions, and syphilitic disease has no monopoly of this particular locality. Syphilis is not the sole cause, but is the principal cause of tabes. Neither is tabes the result of acquired syphilis only; it is well proved today that hereditary syphilis may produce it. Fournier quotes the case of Remak, which occurred in a girl of twelve years, the earliest symptoms appearing when she was but nine years old. Nor is a severe form of syphilitic infection the most likely one to be followed by tabes; ataxy may be observed after all degrees of infection, from the mildest to the most intense; in the great majority of instances (90-95%) it follows ordinarily mild specific disease. Auxiliary and adjuvant causes are not necessary. Often neither heredity, neurotic predisposition, alcoholism, nor excess of any kind can be discovered. It is true, however, as Charcot insisted, that there are two very frequent auxiliary causes of tabes after syphilis, namely, nervous heredity and overstrain from any cause, especially irregularity of life, excesses of all sorts, notably venereal, social disasters, ups and downs of fortune, care, fatigue, worry, and notably the general social overexertion and the like. Charcot's belief was that these were the chief causes, and syphilis the subordinate influence in producing tabes. Fournier holds the contrary opinion, and considers this justified by the fact, among others, that women, although much more disposed to all disorders of the nervous system than men, are yet but rarely the subjects of ataxy. He has observed but 55 female patients out of the 1,000 recorded. Syphilis is exactly 10 times less common in women, it is true, but $55 \times 10 = 550$, a very different total from the 945, which represents the frequency of tabes in the male sex. Obviously there is one reason unmentioned here for the frequent occurrence of tabes; that is, the insufficient treatment of syphilitics, and to this cause the author attributes a large proportion of the cases of tabes; 93% of the tabetics in whom details of treatment could be secured had been treated either insufficiently or not at all.

The gravity of the situation thus presented, if equally good and long-continued observation in this country should show similar results, is very great. Syphilis is serious enough, but if we are to count a very great probability of tabes as among the para-syphilitic accidents, the gravity of prognosis in syphilis is singularly increased.

On Provision for the Insane.—Dr. Henry M. Hurd, of Johns Hopkins Hospital (*Albany Medical Annals*, March, 1902), and Dr. William F. Wegge, of Milwaukee (*Bull. of Iowa Institutions*, October, 1901), have recently spoken on these subjects, and their two articles furnish matter for interesting comparison, though not on exactly the same lines. On the point in which they differ most, namely, the question of separate institutions for the chronic insane, we find ourselves more in accord with Dr. Hurd, who urges it, than with Dr. Wegge, who thinks nothing is to be gained by it. The differentiation of classes of insane patients appears to us one of the most important needs of the moment in hospitals for the insane. In most of them, overcrowded as nearly all are, we find chronic cases, senile, alcoholic, epileptic, and acute, not to mention criminal insane patients and insane criminals, if separated at all, are only rudely classified in different departments of the same institution. Too often one may see all these classes represented in one ward. Acute cases find causes for alarm or food for their delusions in the proximity of some of the others. Quiet chronic or half-lucid persons are disgusted, frightened, or distressed by the ravings of a maniac, the contortions of an epileptic, or the persistent talk of a paranoiac.

The possibility of occupations, especially outdoor work, for the chronic and quiet insane is also much greater where all can share in or follow like pursuits to a certain extent. Neither author suggests another advantage of this separation of different classes of cases, the greater facility for study of the acute and curable cases by the physician who is not burdened with the duty of seeing—he can often do little more than see—some hundreds of epileptics, imbeciles or hopelessly insane persons, when the utmost he should be asked to do should be to *know* and closely study a dozen or 20 acute cases. To ask for such a subdivision and arrangement of personnel as this would imply is perhaps today a counsel of perfection, a scarcely to be hoped for end, but we look confidently to the wisdom of the near future to provide it in a liberal fashion.

Abnormal Tonsils and Nervous Disorders.—The malign influences of adenoids has long been a matter of general knowledge; that enlargement of the tonsils is attended by a long list of reflex and other disorders is probably not so generally recognized. It is a pleasure, therefore, to note the recent communication of Berest (Thèse de Paris, 1901), who writes of the nervous disorders associated with diseased tonsils. Most of these conditions he believes to be of reflex nature and to have their origin in the hypertrophy of the tonsils. Thus the contact of the enlarged tonsils with the base of the tongue is sometimes sufficient to induce nausea and vomiting, which may occur during or between meals. Again esophageal spasm may be produced—of which interesting and rare condition Senez (Thèse de Paris, 1898) reported an instance: The patient had been treated medicinally (antispasmodics) for dysphagia for some time but without avail; excision of the hypertrophied tonsils resulted in considerable improvement. Cough, generally of a dry and hissing character, may also be due to such enlargement of the tonsils, it being presumed that the cough in these cases results from pressure upon the faucial pillars and consequent irritation of the palatal branches of the trigeminal nerve. Rarely, spasm of the glottis or attacks of bronchial asthma may occur, of which Schmidt has reported several instances. Deafness may result from obstruction of the eustachian tube, which may be due to mechanic obstruction, to local nasopharyngeal catarrh, or to paresis of the dilator of the eustachian tube (Noquet, Weber-Liel and Woakes). Other more unusual conditions are ocular and visual disturbances, especially blepharospasm and asthenopia; paresthesias of the throat and tongue, and neuralgia of the tongue (Boulay). It would seem wise, therefore, in the presence of certain obscure nervous disorders to investigate the condition of the tonsils. This is all the more important as in the instances cited the tonsils varied much in character—being firm and fibroid or soft in different cases. Treatment by excision and local sedative applications resulted in cure or amelioration of the symptoms, and would probably do likewise in similar cases. The association of the disorders is certainly worth while remembering.

Psychology and Neurasthenia.—James G. Kiernan¹ states that neurasthenic psychology varies with the period of attack and the nosologic state when attacked. In the normal adult attacked by neurasthenia there is, particularly, disturbances of coordination constituting the "ego." Certain cortical areas not connected with the peripheral part of the body constitute the anatomicophysiologic basis of the "ego." Disturbances of these intimate relations may render the "ego" impossible. Correction of countless errors made during a lifetime is possible only by inhibitions exercised by association fibers, and this correction, with maturity, is more and more delegated to the "abstraction" field (automatic act). Fatigue breaks up associations constituting automatism, and the individual then becomes actively conscious of the necessity of controlling con-

¹ *Medicine*, October, 1901.

ceptions constantly relieved from sense impressions. Will or volition is the factor that supposedly secures balance; but it is the effect, not the cause. The higher the mental state the greater the transference from conscious to subconscious states. The nervous paths are not distinctly enough traced to permit, without destruction in the final effect, reflex movements or reflex ideation sensations. When the balance of the "ego" is disturbed, primitive instincts occur. Excessive spirituality, as Spurgeon pointed out years ago, is near to sensuality. Algophily is often little suspected in patients treating for gynecologic distress, as emphasized by G. Frank Lydston, as also proved by minor experiments with the plethysmograph. Erethismic conditions resulting in disturbance of the "ego" may produce paradox sexual instinct in which sexual frigidity is combined with intense sexual preoccupation, which may become a sexual inversion. Through the rhythmic law of the nervous system circular neurasthenia, with its alteration of depression and exaltation, often appears without external cause. Disturbance of anatomic inhibitions permit the trivial, the occult and criminal to rise to consciousness, whence obsessions and phobias of neurasthenia.

Experiments on the Motor Precision of the Sane and the Insane.—Dr. Carlos Scapucci¹ has made a number of experiments in Dr. Ferrari's psychologic laboratory (Psychiatric Institute of Reggio-Emilia) "for the purpose of determining the degree of the practical value of the mental test suggested by Drs. Guicciardi and Ferrari, in 1897." The test consists of an analysis of motor precision of the insane by the following method: "A copper plate is covered with one of ebony; the latter is 134 mm. long, 65 mm. wide, and $4\frac{1}{2}$ mm. thick. This upper plate has 30 holes, which are disposed regularly in three lines; the largest hole is marked by the figure 30 and measures 10 mm., while the smallest hole is marked by the figure 1, through which a dissecting needle can pass with difficulty. The needle is put into a holder, placed at a distance of 10 cm. from the plate with the holes, and the subject is asked to put the point of the needle into every hole of the plate, beginning with the largest and ending with the smallest. Both the needle and the copper plate are connected with a Grenet coil and an electric bell, so that every time the needle touches the copper plate through the holes in the plate above an electric contact is established and the bell rings." A small indicator is attached to show how many times the subject has tried to pass the needle through the hole. All the experiments were recorded on charts shown very well in illustrations accompanying the paper. The right hand was tried first, then the left, and the experiments were tried on different days as check against false conclusions. Conclusions reached in this preliminary report are that among the insane there is great irregularity (a want of precision) in motor acts as compared to the sane. [This is emphasized by the fact that in normal men and women the right hand was particularly free from errors—i. e., the highest educated member.]

A Contribution to the Study of Acute Delirium. A Psychic Disease of Scorbutic Origin, Hemorrhagic Encephalitis of Strumpel.—Benjamin Semidalow,² of Moscow, confirms the causative basis of acute delirium (a hemorrhagic inflammation of the cerebral cortex) as formerly studied by the writers, Drs. Veidengammer and Broukhansky, Beinswager and Beranger. "The variety of individual symptoms depends on the clinical conditions of the case, and a high temperature at the onset is generally indicative of an infectious origin." He states that sudden initial hyperpyrexia is due to the circulation of debris in the bloodvessels caused by hypermetabolism of the tissues. Disturbances of consciousness and muscular movements, as well as the paralytic phenomena, are of essential significance in the diagnosis of acute delirium. The author reports a case exemplary of this affection, the unusual end—recovery of the patient occurring. The patient was a widow, 55 years old. Mother had died of psychopathic disease. The patient herself never had psychic disturbance, was not syphilitic or alcoholic. She was a nurse in wards where scorbutus prevailed. July 1 showed scorbutus

in form of hemorrhages about the ankles, etc. Temperature rose to 38.5° C. Twelve days later psychic disturbance—irritability; she threatened those about her. There was lack of judgment of time and space; illusions of sight and hearing and of smell; she refused to eat, became filthy; insomnia, marked constipation. Fourteenth day, slight convulsions about face and general increased muscular activity; gums were spongy, scorbutic odor; pupils normal, reflexes normal, kidneys normal; hands kept constantly moving; swallowing difficult. Twenty-fourth day, general convulsions. Thirty-third day, could walk. Fifty-fifth day, mind much improved. Gait became normal end of three months. The author believes that gradual resorption of the exuded blood may take place in such a case.

The Relation of the Human Cranial Forms During Fetal Development and Adult Age.—Professor G. Sergi,¹ in this study of the definition and classification of the cranial forms according to his morphologic method, has introduced the word *eurafrian* to describe a species of pentagonal form. Two other forms of cranium of this same species are the ellipsoid and the ovoid. He finds the pentagonal far more frequent in the fetal than in the adult forms, ascertained from a collective study of 119 craniums taken from the Italian and French museums, including Broca's Anthropologic Museum in Paris. The following is a summary of the study of the forms: "Of the Italian collection, consisting of 41 craniums, almost all at full term, between eight and nine months, 33 are pentagonoidal, or 80.49%, and 8 are of various forms, as follows: 3 ellipsoid and 2 ovoid—in all 19.51%. The French collection of 78 craniums is composed of the following forms: Pentagonal, between the seventh month and full term, 41, or 52.56%; ovoidal, between seventh month and full term, 6, or 7.69%; ellipsoid, idem, 8, or 10.25%; other forms, idem, 3, or 3.87%; ellipsoovoidal, below the seventh month, 18, or 23.95%; total, 78; 100%. In other words, the craniums between the ages of seven months and full term are of pentagonoidal form in the proportion of from 70% to 80%. The adult craniums on the contrary (as is shown in a table of 1,692 craniums) show 16.84% only of pentagonal forms, and 83.15% of ellipsoovoidal; thus the proportion is inverted and shows that the pentagonoidal form in the *eurafrian* species is only transitory and is characteristic of the fetal state."

The Insane Criminal.—Butler Metzger² gives the results of analysis of the last 400 cases admitted to the Massachusetts Asylum for insane criminals. The term "insane criminal" is here used to cover both "criminal insane"—the man who is insane at time of commitment of crime, and the "insane convict," the man who becomes insane while serving sentence. Bad heredity and environment are the principal factors in the etiology of the insane criminal. Of 266 cases of the 400 studied 59.4% have bad family history as to insanity, epilepsy and alcohol. A later record sends the proportion up to 71.9%. Crimes committed were: 24.75% against the person, 29.75% against property, and 45.50% against public order. Percentage of dementia præcox is very large. Attention is again called to the large number of insane men sent to prison instead of asylum, and he emphasizes the fact that the "offense committed by an individual is not always a criterion by which to judge his danger to society." To sum up these 400 cases in men, 216 were apparently irresponsible at the time they were tried (over 50%), but only 40 of these were recognized as such.

A Contribution to the Clinical Significance of Absence of the Tendo-Achillis Jerk.—Ed. Bramwell³ makes a study of this interesting subject from the records of 1,009 patients and reviews the literature. The reflex is most easily obtained in the kneeling position, next in the prone. It is constantly present in healthy persons under 50 years, hence in them in absence of edema or other local difficulty is significant of organic disease. Beyond 50 years of age the tendo-Achillis reflex diminishes with increasing age. It is not significant either if absent bilaterally. In the majority of cases of tabes and neuritis in which the knee-jerk is absent the tendo-Achillis jerk is absent. It is frequently lessened or absent, too, when the knee-jerk is unaltered, and in cases of suspected tabes with preservation of

¹ Rivista Sperimentale di Frenitria, Vol. xxvii.

² The Journal of Mental Pathology, Vol. ii, No. 1.

¹ The Journal of Mental Pathology, February, 1902.

² American Journal of Insanity, Vol. lviit, No. 2.

³ Brain, 1902, No. 96, Vol. xxiv.

the patellar reflex the tendo-Achillis reflex should be looked to as a valuable diagnostic aid. Babinski points out that it is lost early also in sciatic neuritis and is a point therefore in diagnosis between the organic and hysteric forms of sciatica. It may be absent some time after the neuritis is cured.

Seat of Psycho-Physical Processes.—W. McDougall¹ defines these phenomena as physiologic processes that are invariably accompanied by a psychic process (following Prof. G. E. Miller's definition). He correlated the known facts and theories and concludes that much transference of nerve energy must be at the synapses (or junction of the neurons),—that here body and soul are united as far as the evidence will permit judgment. He goes over the anatomic, physical, physiologic and sensory theories, dwelling particularly upon experiments in physiologic optics in drawing his conclusions, as this is one of the most sensitive systems in the human body, and therefore the more quickly exhausted and the best for study.

Medical Treatment of Epilepsy.—William P. Spratling,² the medical superintendent of this useful institution, reports upon the employment of drugs to control epileptic attacks. "The potassium, sodium and ammonium salts (of bromin), either singly or in combination, are those most preferred and frequently employed." The author refers to the difficulty of combating bodily and mental intoxications resulting from the necessarily continuous sedation, and to this end tonics, reconstructions, massage, gastrointestinal antiseptics, enteroclysis, hypodermoclysis, baths and special dietetic principles have been constantly employed. An adjuvant principle to reduce the possibility of bromism, also used at the "Colony," is the so-called Toulouse hypochlorization, or salt starvation, in the epileptic dietary. "Ordinarily we use the sodium salt, which is given on the patient's food in prescribed doses," it forming a fair substitute for flavoring of table salt. The tissues thus the more readily store up and hold the bromin; bromin substitutes chlorin physiologically and acts as a therapeutic agent of sedation. But one-half of the ordinary dose of bromid is required. The use of a 10% solution of bromin in ol. sesamum has also been commended. It can be used by hypodermic injection, or in feeble cases in the form of nutrient emulsion, being nonirritant to the digestive tract. Dose is twice that of an equal volume of bromid salt. Spratling urges the advantage of colonization principles of care as above drugs. [The reviewers would like to urge the use of solanum or horsetail in 3ij doses of the fluid extract of the berries in patients suffering from bromism of idiopathic type of epilepsy.]

A Contribution to the Study of Erb's Disease or Myasthenia Gravis.³—The authors review the clinical history and pathologic findings of a case of myasthenia gravis. Laquer records the clinical features as follows: Double ptosis, more marked on right side; great fatigue of the laryngeal and masticatory muscles and those of the extremities; repeated attacks of cardiac failure. The administration of potassium iodid with arsenic, and four months' rest in bed produced no improvement. Great weakness of the entire musculature followed, and brought on after the slightest exertion. The muscles of respiration finally became involved. Death. Weigert made the pathologic study. Brain and cord preparations for fiber sheaths and connective tissues showed no disease. A red tumor was found in the anterior mediastinum, which on section contained numerous white nodules, the tumor occupying the site of the thymus gland, showing its typical elements on microscopic examination; lymphoid and epithelial cells and the corpuscles of Hassal. The growth appeared malignant and was permeated with hemorrhages. The perimysium, endomysium and epimysium of the diaphragm, deltoid and heart muscles showed infiltration with cells characteristic of cells of the thymus. Two other cases are recorded with symptoms of myasthenia gravis, in one of which Hausenmann found a sarcoma of the thymus gland, and in the second Weigert found a mediastinal tumor, whose origin was uncertain. An etiologic relation is assumed from these three cases, but he wisely admits the findings may be but a "peculiar group of conditions." [F.S.P.]

The Obsession of Redness or Ereuthophobia.—In this paper by Drs. A. Pitres and E. Regis¹ some discussion is made as to their priority of discovery of this symptom-complex of blushing, and in reviewing the subject as a whole. A. Hoche and Caspar are the principal observers who contend the discovery, the latter of whose remarkable case was recorded in part in the brochure of Westphal, in 1877. Bechterew had not been able to verify in the case of Caspar a case of pure ereuthophobia. A study of the radial and capillary pulse in ereuthophobic emotions shows that they produce the same effect on either, viz., in the first form there exists a rapid, radial pulse, with a lightly-pointed and accentuated diastole; in the second form there is found a slow, radial pulse, with shortened pulsation and the diastole lightly accentuated. The capillary pulse, under the influence of an emotion of the first order, becomes rapid with the wave of less amplitude with slight vasodilation, but under the influence of an intense emotion it produces the contrary, i. e., vasoconstriction with considerable effacement of the pulsation, and an enfeeblement of the capillary pulse. In both forms there is blushing of the patient, however, and therefore the authors contend that vasodilation is not alone the vascular accompaniment of blushing. Blushing, like any emotion, is of cerebral origin. Vaschide and Marchaud have established that under the influence of awakening the phobic idea, their patients presented consecutively manifestations of neurovascular involvement, blushing, and anxiety. Thus clinical observations have confirmed the experimental researches. The writers contend further that ereuthophobia is not proven to be an intellectual phenomenon, for these experimenters did not provoke a simple idea in the mind of their patient, but an apprehension, a fear, i. e., an emotional idea, an emotion similar to the mental state found frequently in hysteric and hypnotic subjects. As to the pathogenesis of ereuthophobia they refer to the theory of Mosel of "emotional delirium." Soury, adopting the manner of Bechterew, sees in causation of ereuthophobia an excitation of cortical vasodilator neurons that has been described by Mislowski as in the anterior segment of the sigmoid gyrus. The authors do not uphold the above hypothesis, but hold that the blushing in ereuthophobia is the result of an ensemble of phenomena, and that the totality of these phenomena so varied finds its explanation in the single emotion of great sympathy which overshadows all other emotions.

Fibroendothelioma of the Cerebellum; Successful Removal.—Dr. Ferrier² reports this case in a boy aged 12 years, who had been suffering several months with headache, cerebral vomiting, cerebellar gait and optic neuritis. A protrusion of the tumor from the right occipital region was evident. This tumor was shelled out easily. The optic neuritis and other cardinal symptoms disappeared, the boy entirely recovering. At this same meeting of the London Neurological Society Ferrier and A. Turner reported the case of successful removal of a fibroma from the right rolandic region in a woman aged 34 years. Her symptoms had begun in 1894 by "twitching" in the left face. In 1895 she began to have convulsions of left limbs and face. In 1898 fits became frequent. In 1900 left hemiplegia developed. In January, 1902, optic neuritis set in, general fits continued. August 10, 1902, Mr. Cheatle removed the small encapsulated tumor as indicated above. Convulsions, the hemiplegia and the optic neuritis entirely cured.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended April 12, 1902:

SMALLPOX—UNITED STATES.			Cases	Deaths
California:	San Francisco.....	Mar. 22-29.....	7	
Colorado:	Denver.....	Mar. 22-29.....	4	
Illinois:	Chicago.....	Mar. 29-Apr. 5.....	9	
	Danville.....	Mar. 29-Apr. 5.....	3	
	Peoria.....	Mar. 1-31.....	17	

¹ Archives de Neurologie, March, 1902.

² Brain, 1902, No. 96, Vol. xxiv.

¹ Ibid, 1902, No. 96, Vol. xxiv.

² Eighth Annual Report of the Board of Managers of the Craig Colony for Epileptics.

³ Laquer and Weigert: Neurologisches Centralblatt, 1901, No. 13.

Indiana:	Evansville.....	Mar. 29-Apr. 5.....	4	
	Indianapolis.....	Mar. 29-Apr. 5.....	18	
	Terre Haute.....	Mar. 22-Apr. 5.....	1	
Iowa:	Ottumwa.....	Mar. 1-29.....	32	
Kentucky:	Covington.....	Mar. 30-Apr. 6.....	18	
Louisiana:	Shreveport.....	Mar. 29-Apr. 5.....	14	
Maryland:	Baltimore.....	Mar. 29-Apr. 5.....	2	1
Massachusetts:	Boston.....	Mar. 29-Apr. 5.....	23	
	Brockton.....	Mar. 29-Apr. 5.....	2	
	Cambridge.....	Mar. 29-Apr. 5.....	3	1
	Everett.....	Mar. 29-Apr. 5.....	5	
	Holyoke.....	Mar. 15-Apr. 5.....	11	
	Melrose.....	Mar. 5-Apr. 5.....	2	1
	New Bedford.....	Mar. 29-Apr. 5.....	1	
	Newton.....	Mar. 29-Apr. 5.....	3	
	Quincy.....	Mar. 29-Apr. 5.....	3	
	Somerville.....	Mar. 29-Apr. 5.....	1	
Michigan:	Detroit.....	Mar. 29-Apr. 5.....	15	
	Ludington.....	Mar. 29-Apr. 5.....	9	
Nebraska:	Omaha.....	Mar. 29-Apr. 5.....	24	
New Jersey:	Camden.....	Mar. 29-Apr. 5.....	4	
	Elizabeth.....	Mar. 22-29.....	1	
	Newark.....	Mar. 29-Apr. 5.....	20	3
	New York.....	Mar. 29-Apr. 5.....	75	20
North Carolina:	Charlotte.....	Mar. 1-31.....	30	1
Ohio:	Cincinnati.....	Mar. 28-Apr. 4.....	13	1
Pennsylvania:	Altoona.....	Mar. 29-Apr. 5.....	1	
	Johnstown.....	Mar. 29-Apr. 5.....	1	
	Philadelphia.....	Mar. 29-Apr. 5.....	26	6
Rhode Island:	Providence.....	Mar. 29-Apr. 5.....	2	
South Dakota:	Sioux Falls.....	Mar. 29-Apr. 5.....	1	
Tennessee:	Memphis.....	Mar. 29-Apr. 5.....	15	
	Nashville.....	Mar. 29-Apr. 5.....	1	
Utah:	Salt Lake City.....	Mar. 29-Apr. 5.....	1	
Virginia:	Roanoke.....	Mar. 1-31.....	32	1
Washington:	Tacoma.....	Mar. 29-30.....	5	
West Virginia:	Wheeling.....	Mar. 29-Apr. 5.....	1	
Wisconsin:	Green Bay.....	Mar. 28-Apr. 6.....	2	

SMALLPOX—FOREIGN.

Belgium:	Antwerp.....	Mar. 15-22.....	11	6
Brazil:	Rio de Janeiro.....	Feb. 16-Mar. 16.....	1	21
Canada:	Winnipeg.....	Mar. 22-29.....	1	
China:	Hongkong.....	Feb. 16-Mar. 1.....	8	8
Colombia:	Cartagena.....	Feb. 15-22.....	1	
France:	Paris.....	Mar. 15-22.....	2	
Great Britain:	Glasgow.....	Mar. 22-28.....	10	6
	London.....	Mar. 15-22.....	419	53
	North Shields.....	To Mar. 15.....	21	2
	South Shields.....	Mar. 15.....	8	
Italy:	Palermo.....	Mar. 8-15.....	9	2
Mexico:	Mexico.....	Mar. 16-23.....	3	2
	Para Cruz.....	Mar. 15-29.....	2	
Russia:	Moscow.....	Mar. 8-15.....	2	2
	Odesa.....	Mar. 15-22.....	3	2
Uruguay:	Montevideo.....	Feb. 22-28.....	71	5

SMALLPOX—INSULAR.

Port Rico:	Ponce.....	Mar. 15-22.....	6	
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YELLOW FEVER.

Brazil:	Rio de Janeiro.....	Feb. 16-Mar. 16.....	128	
French Guiana:	Cayenne.....	Mar. 27.....	Present.	
Mexico:	Vera Cruz.....	Mar. 15-29.....	6	3

CHOLERA.

China:	Sheklung.....	Mar. 31.....	Sporadic.	
	Tung Kun.....	Mar. 31.....	Sporadic.	
Straits Settlements:	Singapore.....	Feb. 15-22.....	2	

PLAGUE.

Brazil:	Pernambuco.....	Apr. 4.....	Declared infected.	
	Rio de Janeiro.....	Feb. 16-Mar. 16.....	1	
China:	Hongkong.....	Feb. 15-Mar. 1.....	1	1
	Tsang Shing.....	Mar. 31.....	20	
Japan:	Nagasaki.....	Mar. 12.....	1 case on S. S. Taichu Maru, from Formosa.	

Changes in the Medical Corps of the U. S. Army for the week ended April 12, 1902:

Major William D. Bell, surgeon, Captain Francis J. Pursell, assistant surgeon, and Contract Surgeons Harrison W. Stuckey and C. Edward Sears are relieved from duty in the department of North Philippines, and will report to the commanding general, department of South Philippines, for assignment to duty. First Lieutenant Frederick A. Dale, assistant surgeon, now in the First Reserve Hospital, Manila, P. I., is relieved from duty in the department of South Philippines, and upon being returned to duty from sick in hospital, will report on the transport Sumner, for duty as transport surgeon.

JONES, Captain PERCY L., assistant surgeon, is assigned to duty as surgeon, post of Iloilo.

CALVERT, First Lieutenant W. J., assistant surgeon, will proceed from Fort McHenry to Fort Barranas, for temporary duty.

HUTTON, First Lieutenant PAUL C., assistant surgeon, leave granted is extended 10 days.

BISPHAM, First Lieutenant WILLIAM N., assistant surgeon, is granted leave for one month, to take effect upon his arrival in the United States.

HARTMANN, JR., EMILE, hospital steward, now in Washington, D. C., having performed the duties assigned him in orders of post of Moro Castle, Santiago, Cuba, of March 28, will return to that station, with permission to delay two months en route.

FEENEY, JOHN M., contract surgeon, is relieved from further duty at San Jose, Nueva Ecija, and will proceed to Tuguegarao, Cagayan, for duty, relieving Contract Surgeon Charles J. Wyche.

MURTAGH, First Lieutenant JOHN A., assistant surgeon, will proceed to Hagonoy, Bulacan, for duty, relieving Contract Surgeon William V. Kellogg, who will then proceed to San Miguel, Bulacan, for duty, relieving Contract Surgeon Lewis H. Wheeler.

STREET, LIONEL A. B., contract surgeon, is relieved from further duty at Bulacan, Bulacan, and will proceed to Santa Cruz, Laguna, reporting to the commanding officer, brigade hospital, for duty, relieving Contract Surgeon Harper Peddicord.

WARRINER, BENJAMIN B., contract surgeon, is relieved from further duty at Castillejos, Zambales, and will proceed to Aparri, Cagayan, reporting upon arrival to the commanding officer, brigade hospital, for duty.

PRESTON, WILLARD D., contract surgeon, is relieved from further duty at Calocan, Rizal, and will proceed to Abulug, Cagayan, for duty, relieving Captain Michael E. Hughes, assistant surgeon, who will proceed to Batangas, Batangas, for duty.

The following named contract surgeons are relieved from duty at the stations set opposite their respective names, and will proceed to Manila, reporting to the adjutant-general of the department for instructions: James C. Rutledge, now at Masinloc, Zambales; Leonard P. Bell, now at Santa Maria, Bulacan; William V. Kellogg, now at Hagonoy, Bulacan; David W. Overton, now at Santa Cruz, Zambales; Frederick A. Lewis, now at Alaminos, Zambales; Frank E. Thompson, now at San Felipe, Zambales; George B. Tuttle, now at San Antonio, Zambales; Edgar J. Farrow, now at Pantabangan, Nueva Ecija.

CHALMERS, Major THOMAS C., surgeon, now in Manila, P. I., will proceed to Cebu, Cebu, and report to the commanding general, department of South Philippines, for assignment to duty.

Cox, Captain FREDERICK W., assistant surgeon, in view of exceptional circumstances, is granted leave for one month, with permission to visit the United States.

AMES, Major ROGER P., surgeon, and Contract Surgeon Erle H. Sargent, now in Manila, P. I., will proceed to Cebu, Cebu, and report to the commanding general, department of South Philippines, for assignment to duty.

KIMBALL, Colonel JAMES P., assistant surgeon-general, having been found by an army retiring board incapacitated for active service on account of disability incident thereto, his retirement from active service, April 7, 1902, under the provisions of section 1,251, R. S., is announced. Colonel Kimball will proceed to his home.

STEWART, Captain WILLIAM J. S., assistant surgeon, now on temporary duty at Fort Slocum, is relieved from further duty in the department of the East, and will proceed to San Francisco, Cal., for temporary duty and assignment to duty on a government transport when a vacancy shall occur.

WAHL, HUGO A., contract surgeon, is granted leave for two months, with permission to go beyond sea.

THORP, CHARLES W., contract surgeon, extension of leave granted March 5, is further extended one month.

SHAW, First Lieutenant HERBERT G., assistant surgeon, is temporarily relieved from duty at Alcatraz Island, Cal., and assigned to duty as transport surgeon of the army transport Sherman during the voyage of that vessel to the Philippine Islands and return.

MEAD, JAMES E., contract surgeon, will proceed to his home Detroit, Mich., for annulment of contract.

MEAD, Captain JAMES E., assistant surgeon, recently appointed, now at San Francisco, Cal., will report for transportation to the Philippine Islands, where he will report for assignment to duty.

GIBSON, Captain EDWARD T., assistant surgeon, recently appointed, now at San Francisco, Cal., will report for temporary duty and for assignment to duty upon a government transport when a vacancy shall occur.

Orders of January 28 are so amended as to direct Contract Surgeon James B. Ferguson, upon his relief from duty at Fort Yellowstone, by Major Edgar A. Mearns, surgeon, to proceed to Boise Barracks for duty.

HORNE, WILLIS S., contract surgeon, now at Fort Sheridan, is relieved from further duty in the division of the Philippines, and will proceed to San Francisco, Cal., and report for assignment to temporary duty.

Orders of March 5 are so amended as to direct First Lieutenant Arthur M. Line, assistant surgeon, to proceed to Fort Riley for duty.

BERNHEIM, JULIEN R., contract dental surgeon, now at San Francisco, Cal., will report for transportation to the Philippine Islands, where he will report for assignment to duty.

BALL, THOMAS Z., contract surgeon, is granted leave for two months, to take place when his services can be spared.

WADHAMS, First Lieutenant SANFORD H., assistant surgeon, is granted leave for one month, to take effect upon the arrival of First Lieutenant Llewellyn P. Williamson, assistant surgeon, at Columbus Barracks.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended April 10, 1902:

AUSTIN, N. W., surgeon, to proceed to the Delaware Breakwater and Reedy Island quarantine stations as inspector of unserviceable property, April 4, 1902.

GLENMAN, A. H., surgeon, to report at Washington, D. C., for special temporary duty, April 9, 1902.

HODGSON, S. H., acting assistant surgeon, granted extension of leave of absence for 10 days from March 30, 1902—April 7, 1902.

JACKSON, J. M., acting assistant surgeon, granted leave of absence for three days from April 9—April 7, 1902.

Changes in the Medical Corps of the U. S. Navy for the week ended April 12, 1902:

BERRYHILL, T. A., surgeon, granted sick leave for six months—April 5.

KERSHNER, E., medical inspector, retired, commissioned medical inspector on the retired list from April 2, 1902—April 10.

American Medicine

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No money to protect the public health is the excuse everywhere. In New York City the Health Department has asked for \$1,000,000 for new buildings, etc. Old buildings are unfit for further use, and in Richmond and Queens, 227,000 people have no hospital for contagious diseases, so that patients have to be carried thirty miles to a hospital. In Pittsburg gangs of workmen in camps in and about the city bring infectious diseases to the city and spread them, while the city health authorities have no jurisdiction over them and the appeal to the State Board brings the answer "No money!" The entire appropriation to the State Board for two years is \$12,000. Of this amount \$4,000 is for the salary of the secretary, and the other \$8,000, as the law expresses it, for the employment of necessary clerical aid in the office of the board, postage, telegrams, express charges, rent, incidental expenses, traveling and other necessary expenses of the members and secretary while engaged in actual duties of the board, and for sanitary inspections, abatement of nuisances, control of contagious diseases and scientific investigations. Think of doing all of this for over 6,000,000 people at an annual expense of \$4,000! For the care of the life and health of these 6,000,000 by the wise legislators of this great state there is allotted the magnificent sum of less than one-tenth of a cent a head a year! Surely opera bouffe has nothing so ludicrous to offer as the farcical legislation and governments of our modern American bosses!

Surgical Statements for Patients.—In these days when surgeons are legion, and major operations are of daily occurrence in all our large hospitals and often in the private practice of many men, it becomes very necessary that a careful record should be kept of the procedures practised upon the various individuals; and that these patients should be given a brief, lucid statement of the operation they have undergone. If for some good reason the surgeon does not care to give such a statement to the patient himself, then the same should be given to some responsible member of the family. The reason for this is obvious, particularly when an abdominal operation has been performed; for any physician who subsequently attends the patient will have only a scar in some portion of the abdominal wall to guide him in determining the character of the operation with the unreliable statement of the patient him-

self. Abdominal operations are so numerous, various organs may be extirpated with apparent impunity and others may be transposed or sutured in abnormal situations leading to considerable confusion of anatomic relations. It is a well-known fact that patients frequently move from one community to another, or sometimes change their physicians without changing their residence; on the other hand, the physician sometimes, though rarely, becomes wealthy and retires from practice, or pays the inevitable debt of nature before the patient, or may change his residence in hope of finding a more lucrative field of practice, so that the patient must find himself under the care of new hands to whom a knowledge of the previous surgery becomes of paramount importance for any successful treatment of the case. A simple statement of surgical facts, carefully preserved by the patient, will often obviate dangerous delay or the necessity for a prolonged search of hospital records.

The Public Health Service.—The bill to increase the efficiency and change the name of the Marine-Hospital Service, introduced in the House by Mr. Hepburn (H. R., 7,189), and in the Senate by Mr. Perkins (S., 2,162), has received partial hearings in both Senate and House Committees. A hearing was given by the House Committee to those who might be opposed to the bill, but as a result of a conference of state health officers and quarantine officers a strong endorsement of the bill was given at this meeting, but as it was not a stated meeting the committee could not take action upon it, though the chairman remarked that had it been a stated meeting the committee would have undoubtedly put it through. The Senate Committee expressed themselves favorably upon the bill, but deferred reporting until after one session relating to conventions should be put in the shape to express the desired changes. A formal report is looked for in a short time. In addition to the endorsement given to the bill by the conference of state health and quarantine officers in March last, another conference of medical men has heartily endorsed the measure, namely, the Legislative Committee of the American Medical Association, composed of delegates from the state medical societies. Some 20 states were represented at the meeting in Washington on April 10. The bill, therefore, has the very solid endorsement of the profession.

Physicians and Blackmail.—To find in the lay press any leaning toward the medical expert is a matter of such rare occurrence that it is with feelings of gratitude and surprise that we note in the editorial columns of the *New York Times* for April 10 a recognition of one of the most annoying modes of attack to which the medical practitioner is liable. While we are awake to the kindness which points out the fact that the profession itself is largely to blame for the frequency with which physicians are made defendants in suits for damages by patients alleging malpractice, our sense of gratitude is particularly aroused by the wise suggestion which we give below, and which calls for action, not only on the part of the medical associations of New York State, but of those in every state in the Union. "We commend," says the *New York Times*, "to the regular practitioners represented in the medical associations an agitation for the enactment in New York of a statute like the English law which provides that when one attacks the skill or reputation of a medical practitioner in good standing he shall file an adequate bond for the costs of the suit; and if he fails to maintain his contention he thereby establishes against himself a *prima facie* case of libel." Three of the most reputable physicians of New York were recently sued for \$100,000 damages on a charge of conspiracy to secure the imprisonment of a patient in an asylum for the insane. In true professional spirit the defendants made every preparation for the trial. Fortunately the court recognized the groundlessness of the plaintiff's case and dismissed the case with costs for the defendants. But suppose the judge had not been so judicially minded? Instances of this kind of injustice to medical men are constantly occurring. The foregoing suggestion would prevent the great majority of them.

Aztec Medical Lore.—In the Royal Library of Madrid, and in the *Biblioteca Nazionale Centrale* of Florence, are preserved two valuable manuscripts which throw light on the practice of sorcery, medicine and surgery in ancient Mexico, for an interesting review of which we are indebted to Dr. Zelia Nuttall, of Baltimore.¹ From this we learn that the native Mexicans practised massage, employed the *temazcalli* or sweat-house, performed simple surgical operations, and understood the medicinal value of various plants, and other natural products. Splints were used in the dressing of fractured bones, inflamed gums were lanced with obsidian knives, aching teeth were extracted, salt was used as an antiseptic, and ground obsidian as a dusting powder. Stiffness of the muscles and joints was treated by the sweat-bath, followed by pinching and squeezing, and sprains by gentle rubbing. Wounds were sutured with human hair, the actual cautery was applied to the edges of wounds, and venom was drawn out by sucking, while bleeding was practised in cases of obstinate headaches. Near Montezuma's palace was a garden for the cultivation of indigenous medicinal plants. Capsicum served then as now for purposes of counterirritation. The herbs *tlalcaote* and *iztanhiati* and the juice of the agave were used as vulneraries, and the *ecusco*, *cocoatiac*

and pepper plant as sternutatories in the treatment of headaches. The Listerian method has its prototype in the employment of the juice of the *ulli* or caoutchouc for the exclusion of air from wounds; while various resins served for the preparation of plasters and incense. As the betel nut is used in the east, so tobacco was employed by the Mexicans as a masticatory, the bruised leaves being mixed with lime or charcoal; it formed the *ye-qualli* or tobacco-food, and in the form of pellets was carried about the person in small gourds. Under the name of "divine food," the priests used tobacco in combination with dried and powdered spiders, scorpions, etc., a mixture not unlike one recommended by the Reverend Cotton Mather, or Governor Winthrop's favorite prescription of sow-bugs. The smoking of tobacco appears to have been less common, and the reed-tobacco, compounded with fragrant substances, was a luxury to be used after banquets and upon festive occasions. The hygiene of the teeth was well looked after, very hot food being avoided, as was the use of cold water after eating hot food. Wooden toothpicks, clean water and powdered charcoal served for dentifrice. In short, the practice of medicine among these early Mexicans compares very favorably with that in vogue at the time of the landing of the Pilgrim fathers, as pictured by Oliver Wendel Holmes in his review of the "Medical History of Massachusetts." They had their sorcerers and snake-charmers; but, it is interesting to note, that the practice of medicine was not confined to men, mention being made of women doctors. The doctrine of signatures appears to have existed among the Mexicans, and included minerals as well as plants; thus the heliotrope or bloodstone, so-called from the resemblance of its red spots to drops of blood, was thought to possess the virtue of stopping the nose-bleed, the chronicler recording the fact that by simply holding a piece of the mineral in the hand, many lives were saved in the year 1576, during the pestilence of nose-bleeding.

New Strength Record.—A very promising index of the fact that a reaction has set in against the exaggeration of specialism so popular in athletics and gymnastic training is the increased interest in universal muscular development that is so manifest just now. We note with satisfaction the development of all-around athletes and the establishment of standards that shows how well every muscle of the body has been trained to do its special function. This is especially apropos of the recent announcement that the record for the strength test has just been broken at Columbia University. The new holder of the record is not a large man as athletes go, weighing only 159 pounds. He has beaten the big captain of the Columbia football team, however, in the strength trial. The former record held by Captain Weekes was 1,709 points, the new one is 1,827 points. These points represent the number of kilograms of weight moved by the power of the various muscles. The kilograms are measured by self-registering dynamometers. The strength of the muscles of both forearms is measured by grip manometers not unlike those employed by nervous-disease specialists. The strength of the back is estimated by a dynamometer so attached

¹ Johns Hopkins Hospital Bulletin, April, 1902, pp. 87-91.

to the floor that it registers the force exerted by the back when the gymnast, keeping the knees unflexed, straightens up. The strength of the arm muscles is measured by the number of times the trunk can be lifted up so that the chin touches a horizontal bar. The strength of the shoulder muscles is considered to be indicated by the number of dips (or joshes) on parallel bars that the athlete can accomplish. In order to decide the value of these in points the weight of the body in kilograms is by convention divided by 10. The capacity of the lungs counts as another evidence of power, the value of which is calculated by means of a spirometer and a conventional divisor. The former method of testing the force of the lungs by actual blowing into a monometric apparatus has been given up because it gave rise to vertigo and other inconveniences and was not without its dangers for persons of weak lungs. As medical men, the all-around development that is encouraged by tests such as these seems eminently more desirable and less fraught with possible dangers to subsequent health than the exaggerated development of special groups of muscles that it has become the custom to associate with college athletics.

"Am I My Brother's Keeper?"—It is said that some 1,500 unnecessary deaths occur in one southern city each year from lack of sanitary knowledge, and in the entire south the number must be tens of thousands. This word "unnecessary" does not mean the normal unnecessary number that die everywhere from the customary general negligence of hygiene, but the excess due to highly exceptional unsanitary life. And this abnormal excess is among the negroes, the mortality of the whites alone not being greater than in northern cities. The doubled negro mortality swells the total deathrate, "and," says the reporter, "it is not desirable or indeed possible to make these explanations," and hence the official figures of vital statistics "present the southern cities in an unfavorable light." The violation of sanitary laws by the colored is also a constant source of disease among the whites. The movements among the negroes to better their conditions will, it is said, have little effect unless the whites help. This help, says a southern observer, they are not giving to the extent desired and necessary. Schooling does not better conditions so long as unhygienic living is so prevalent. Disease thus teaches the solidarity of the race and of all races in a most effective and convincing way.

A Question for Osteopaths.—As is well known the osteopaths find most human diseases arise from malposition, or partial and complete dislocation of the bones, with consequent disease-producing relations of the bones and soft structures. In a person apparently osteologically perfect, great defects are found, producing most marvelous morbid results, curable, of course, by the mystic art known only to the "D.O." of reinstating the proper relations of the hard and soft parts of the body. But how about rachitics, dwarfs, humpbacks, etc., who seem at least to enjoy life? Should they not all, according to the theory, have the most awful, intense

and complicated diseases with the most intense sufferings known? By thorough investigation could not these diseases be found in the chronically deformed? By osteopathic treatment should not these afflicted ones be made the most happy of mortals? Nay, should they not thereby be made of normal shape and size? Why are these their brethren so sadly neglected? The clay awaits the potter's hand. The D.O.'s should have orthopedic hospitals in every city. But hospitals are not in the osteopathic line.

A Section of Physiology and Experimental Medicine of the American Association for the Advancement of Science has been organized. The parent association, which has long exerted its great influence in the promotion of science, wishes to extend that influence by contributing to the promotion of medical science. The experience of the German Association of Naturalists and Physicians has clearly demonstrated that a combination of the interests of medical science with the interests of other branches of science works for the welfare of all, and leads to their greater advancement. Accordingly, this association, at its recent meeting in Denver, organized a new section of Physiology and Experimental Medicine, and the first scientific meeting of this section will be held during the session of the association at Washington, D. C., during Convocation Week, December 29 to January 3, 1903, under the vice-presidency of Dr. W. H. Welch. A large number of physicians are already members of the association. The establishment of the new section will, it is hoped, be an inducement to many members of the profession to join the association, the meetings of which are expected hereafter to exert an important influence on the development of medical science in this country. The occasion is a most excellent one for demonstrating the scientific interest and habit of mind of physicians, and also for making the general public aware of the fact. L. O. Howard, Cosmos Club, Washington, D. C., is the permanent secretary of the association.

The Advantages of a Corps Trained in Marine Hospitals and Available for Quarantine and Public Health Service.—Under present conditions the quarantine stations maintained by the federal government and controlled by the Marine-Hospital Service are administered by officers who have received their practical medical training in the marine hospitals maintained by that service. The advantages resulting are apparent. At the quarantine outposts of the country the treatment of vessels having suspicious disease on board depends upon the diagnostic acumen of the medical officer in charge. On the one hand, the public health will be endangered if a case of contagious disease is permitted to pass quarantine; on the other hand, much hardship and pecuniary loss result if a vessel is detained through the lack of experience and training on the part of the quarantine officer. Practical training in the detection of the various forms of disease and the highest development of the diagnostic faculty can be had only by the prolonged study of the sick. A quarantine officer originally appointed as such, and given no more opportunity

to gain knowledge of disease than is afforded at a quarantine station, cannot be expected to perform his functions with the certainty and confidence born of long experience, and when a mistake is made the public suffers and pays the cost. The hospitals and the hygienic laboratory are the training schools of the officers sent out to administer the quarantine stations. In the former they acquire the practical acquaintance with disease necessary for its prompt detection; in the other they receive instructions in bacteriology and in the use of the instruments of precision which modern science has placed in the hands of the practitioner of medicine. The three divisions of the Marine-Hospital Service thus complement each other, and could not be divorced except at the expense of the public health functions of that service. The quarantine officer should, from time to time, renew his acquaintance with hospital work, otherwise he is likely to lose to some extent the diagnostic acuteness which should distinguish him. The cases which he is called upon to decide admit of no hesitation, and the mental equipment necessary for prompt decision must be acquired elsewhere than under the exigent conditions which obtain at an active quarantine station. The training must be had under more favored conditions, and can be acquired best in the calm atmosphere of the general hospital and the scientific laboratory. Accordingly, the regulations of the service prescribe a tour of three years' duty at a quarantine station, and the officer in command is then returned to hospital work. His place at the quarantine is supplied by an officer who has been for one year his assistant. Moreover, the officers engaged in quarantine work are given special courses of instructions in bacteriology in the laboratory of the service.

Duping the Doctor to Dupe His Patients.—From the number of circulars and advertisements of a certain kind filling the mails and newspapers it is plain that the medical profession is to be thoroughly exploited by a new method. The physician is invited to become a partner in both the wholesale and retail drug business, and is assured that enormous profits will accrue to him if he will take stock in the company which furnishes him with his medicines. His stock may be in part or entirely paid for out of the future profits of the business. He thus becomes the manufacturer of certain medicines and the prescriber of them; the profits under such conditions must, of course, be enormous, and the trustful doctor supposes he will get them. But, first, how about the patient? In the minds of the promoters and the shareholding prescriber that appears to be "another matter." The "500% profits" will, of course, induce the shareholding doctor to prescribe only those drugs upon which these profits are made. If the patient can not get well upon these products of the doctor's manufactory then, alas! so much the worse for him. But the doctor who enters upon this oversharpe game should remember one old rule, already proved a thousand times in a thousand years of history: The biter will be bitten! The duping doctor is sure to become the dupe. His 500% profits are based on promises. What guarantee has he they will be made good? In all such cases the

physician should consult a good business lawyer before investment. The man who promises enormous profits is, *ipso facto*, to be avoided.

Deaths by Lightning.—The effect of lightning and thunder upon the mind has been intense from the days when primitive man invested his principal gods with the power of wielding the thunderbolts down to time of the latest "Old Probabilities" of an up-to-date Weather Bureau. How much money has been uselessly wasted upon lightning rods is impossible to estimate. It is pretty certain that the millions have not saved a life. Statistics also fail to convince the frightened ones that they are as safe in a thunderstorm as in ordinary going down stairs. It is difficult to get accurate figures, but as near as a capable meteorologist, Mr. Alfred J. Henry, of the United States Weather Bureau, can learn, there were in 1900 in the United States 713 deaths from lightning. Of this number, 219 were killed in the open, 158 in houses, 57 under trees, and 56 in barns. The circumstances about the rest, 151, were unknown. The number more or less injured was 973, of whom 327 received their injuries in houses, 243 in the open, 57 in barns, and 29 under trees. The circumstances under which the remaining 317 cases occurred is unknown. There is a common belief that there is less danger in cities than in the country, because of metal roofs, telegraph and telephone wires, etc., which facilitate silent discharges. There is a fallacy, however, in this, because the area of cities as compared with rural districts is of course so small that relatively few strokes fall within their limits. The more densely populated the area the less the death-rate.

"Full Mail Course, Diploma, and Degree, D.O., for \$10.00."—Our esteemed contemporary, the *Cleveland Medical Journal*, is justly astonished that the "National School of Osteopathy" offers to prepare "men and women, young and old" for practising "the great science of healing without drugs" in three weeks, enabling them to begin "a lucrative practice" at once. But the down road to Avernus is easy traveling, and we have before us a far better offer than this. Why should one pay the big fee of \$25.00 for a complete medical education, and work for it even three weeks, when it may be had by return mail for \$10.00? A correspondent sends us a letter from another "College of Osteopathy" from which we make the following selections:

"We are offering our full Mail Course in Osteopathy, bound in five parts, examination papers, Diploma and Degree D.O., to you upon payment of \$10.00 only, instead of \$25.00. We do not wish you to miss the chance of getting right to work at this best of all professions merely because you cannot afford the full fee. To compensate ourselves, however, for this reduction in price, we must withdraw the offer of the Anatomical Chart and books on Physiology and Anatomy, which we offer to our \$25.00 students. However, as these latter works are not essential to your success as an Osteopath, you will probably be much better pleased with this \$10.00 offer. There will be no further reduction in cost of our course at any time; in fact, we are seriously considering whether in justice to our students, and to maintain the dignity of our Diploma we can continue to offer these privileges longer than a few weeks. I am consulting your interests in advising you to join this Spring Class at once,

remitting full or part payment for the same. We do not find that any of our students are unable to pass our examination, because our instruction is so plain."

The Organization of the Profession was the appropriate theme of Dr. Chas. A. L. Reed in his address before the Physicians' Club of Dayton, Ohio, which we are glad to publish in this number of *American Medicine*. We trust that every subscriber will read this address. It breathes the true spirit as we conceive and wish it not only of this journal but of American medicine generally. It is the American spirit acting and speaking in medicine. Let us encourage it in every way we can. In its reverence for law and for the democratic spirit which, while obeying the law, seeks for better laws more in accord with ideals; in its obedience to the rule of the whole, but sacrificing not at all the demand for individual freedom; in its large and healthy personal heartiness while still governing opinion and action by the demand for scientific thoroughness and the public welfare—in these and many other ways the American spirit in our professional life is to be welcomed. Who is a more fitting spokesman of this than Dr. Reed!

Labor as a therapeutic agent in asylums, etc., is not a new idea, but there can be no doubt that its value is insufficiently appreciated everywhere. In the first place there is a sociologic injustice in compelling the community to support defectives, the insane, epileptics, etc., if a certain amount of labor is not harmful to them, and if compulsion or hardship is not made a means of securing it. The expenses of all such institutions may be greatly lessened by the industrial productivity of the inmates. Then, too, nothing can be more certain than the fact that idleness, whether enforced or chosen, is destructive of both mental and physical health. Nothing is more cruel and pathogenic than the sickening do-nothingism of the patients in many of our sanatoriums, asylums, etc. There is scarcely any class of patients except those bed-ridden with acute disease for whom some kind of occupation could not be found, and who would not be bettered by the activity and interest. The testimony of those superintendents who have tried the plan is unanimous that in the epileptics, for instance, and the insane labor is of positive therapeutic value. This is especially true when the work and life is in the open air. To crowd such people in buildings and compel them to live in idleness is precisely the best method of increasing disease. Great care and wise regulations are needed on the part of the state, and the most perfect tact and enthusiasm on the part of the superintendents, overseers, etc., to avoid the evident dangers, and to bring out the greatest good, but the colony and farm method of institutionalizing in many kinds of disease should some time make them largely self-supporting and curative.

The University of Michigan's New Medical Building.—Through a grant of the Board of Regents of the University of Michigan, the Medical Department of the University will soon have a magnificent building. Its cornerstone was laid on October 15, 1901, with impressive ceremonies, an account of which has just

been published by the University, together with a description of the plan of the building written by Professor Huber. When completed the building will measure 175 x 145 feet, and will consist of a high basement and three stories. An interior court, measuring about 75 x 45 feet, will afford light to all parts of the building. The latter will accommodate the Departments of Hygiene, Bacteriology, Physiologic Chemistry, Pathology, Anatomy, Histology, and Embryology; and will provide a faculty room and offices for the dean and secretary of the Medical Department. The University of Michigan has always been animated by high ideals, and the state has always been generous to it. The new medical building will enable the Department of Medicine and Surgery to maintain those high traditions of excellent laboratory teaching for which the University of Michigan has long been noted.

Another Eddyite homicide occurred last week in Philadelphia, a child dying of diphtheria without medical attendance, while the unchristian unscientists "prayed." As no charge was said to be made for the services—the services of allowing death to take place—the coroner was unable to prosecute for illegal practice of medicine. In the first place this falsehood as to "no charges" should not longer be permitted. Secondly, true or untrue, it should not constitute an excuse for illegal practice. Thirdly, laws should be secured against those who cause the death of the innocent by ignorance or fanaticism.

EDITORIAL ECHOES

Raising the Standard of Medical Education in New York.—The College of Physicians and Surgeons, which is the medical department of Columbia University, New York, has announced that the University trustees had decided to raise the requirements for admission to the college. This marks only one stage in a gradual advance which has been made for several years. At first every student was required to have to his credit 12 academic "counts;" then the number was increased to 24. The next advance was to 48, with the proviso that if the student presented 36 he could "make up" the other 12 during his first year. Now this proviso is annulled. Moreover, after July 1, 1903, every student upon entering either must have completed one full year of study at a college or scientific school or an equivalent course of study in Europe, or must demonstrate, by examination, that he has acquired the equivalent. It is the ambition of the University ultimately to admit to its medical department only those who have received the bachelor's degree in arts or science. The profession of the physician is scarcely surpassed—indeed, under certain circumstances scarcely equaled—in influence upon human character by the profession of the clergyman. For this reason it is of the utmost importance that every effort should be made to set high standards of character before the medical student. Education in the liberal arts is one of the means of achieving high standards of character. Laymen as well as physicians have therefore reason to be glad that one of the foremost medical schools of the country has determined to lessen the number of its students and simultaneously to increase their quality by raising its requirements and standards of admission. —[*The Outlook*.]

AMERICAN NEWS AND NOTES.

GENERAL.

Advance of Salary.—A recent report states that the Senate has advised the salary of the supervising surgeon-general of the United States Marine-Hospital Service to be advanced from \$4,000 to \$5,000.

Smallpox in the United States, as officially reported from December 28, 1901, to April 18, 1902, amounts to 29,304 cases with 850 deaths. The total for the corresponding period in 1901 was 16,734 cases with 225 deaths.

Cholera.—There have been reported 411 cases and 319 deaths in Manila, and 888 cases and 626 deaths in the provinces. A law passed by the United States Philippine Commission authorizes municipalities to appropriate funds for combatting epidemic diseases.

Health in the Philippines.—The health report of the Philippine Division for the month ended February 15 shows 2,611 cases of sickness. Malarial fever is reported to be increasing among the troops, but this is more than compensated for by the decided decrease of cases of gastric and intestinal diseases. The slight increase of the number of sick over the preceding month is attributed to measles brought on the transport Sheridan. Variola for the first time in months has not caused a single death.

The Sale of Virus and Antitoxin.—The Spooner bill was introduced to regulate the sale of virus, toxins and serums, and analogous products in the District of Columbia, and to regulate interstate traffic in these products penalizes by fines or incarceration or both, at the court's discretion, the taking from one state to another, or the sale or exchange of any virus, therapeutic serum, toxin, antitoxin, or analogous article for therapeutic use in the diseases of human beings, unless the same is produced at an establishment operating under a license from the treasury department. Every package of such organic preparation which may be legally taken from one state or territory to another for sale or use shall bear the name, address, and license number of its maker, and the date at which it may be expected to lose its therapeutic value. Establishments working under license from the treasury department are to be at all reasonable times open to inspection by its authorized representatives or agents. The action of the secretary in granting or revoking licenses for the domestic production of such preparations shall be taken on the recommendation of the supervising surgeon-general of the Marine Hospital Service, and none of foreign production shall be received into the country unless the foreign producers shall permit the same inspection of their establishments as is provided in the case of licensed manufacturers in this country.

EASTERN STATES.

Elliot Hospital, at Keene, N. H., is the recipient of a gift of \$12,000 from the children and grandchildren of the late Mr. Joslin for the construction of a nurses' building to be known as the Edward Joslin Home for Nurses.

Bovine Tuberculosis.—To test Professor Koch's theory in regard to the relation of bovine tuberculosis to that of man, Professor H. W. Conn has made a series of experiments extending over more than a year at the Storrs State Agricultural College of Connecticut, in which it is demonstrated that the spread of tuberculosis through the milk of affected animals is not so great as has been heretofore alleged, and in the earlier stages of the disease when the udder is not involved danger from the milk appears to be limited. He points out the impossibility of the farmer knowing with any accuracy when the tuberculous germs will affect the udder, and recommends the segregation of every animal upon which the tuberculin reacts as the only method of prophylaxis against the greatest danger which menaces the herds of the country.

NEW YORK.

Mt. Sinai Hospital.—Dr. Joseph Brettauer has been appointed attending gynecologist, to succeed the late Dr. Paul Mundé.

Mortality of New York City.—During the last three months of 1901, 15,932 deaths were reported, forming a rate of 17.98 per 1,000 of population. Tuberculosis caused the greatest number of deaths, pneumonia ranking second and Bright's disease third. During this period there were only 29 deaths from smallpox.

Hospital in Queens.—A petition has been sent to Mayor Low for the establishment of a hospital for the treatment of contagious diseases in the borough of Queens as under existing conditions it is often necessary to convey patients 20 miles in order to reach Kingston Avenue Hospital or the boat for Riverside Hospital, the only available places for contagious diseases.

Opposed to Crematory.—An attempt by a company to erect a crematory, for which the foundation was laid and which was sanctioned by the Board of Health, resulted in revolt of the citizens of the Dutch Kills section of Long Island City, and the formation of an organization which passed resolutions to employ counsel at once and to serve notice on the company building the foundation not to proceed, as to do so would be at its own risk.

The feeble-minded children, about 90, have been transferred from Kings County Almshouse to Randall's Island where the facilities for industrial training and out-of-door employment are better, and announcement has been made by the Commissioner of Charities that some of the more able bodied epileptics of the Blackwell's Island almshouse will be transferred to Staten Island to assist in cultivating the farm and supplying vegetables for the various charitable institutions of the city.

Medical Law Amended.—According to an amendment of the medical law of New York state the regents of the University of the state may, at their discretion, admit conditionally to the medical examinations in the preliminary subjects anatomy, physiology and hygiene and chemistry applicants who meet the requirements and who are 19 years of age. By this amendment the regents have power to grant an allowance of one of the four years of study in a medical school to graduates of college courses registered by them as entitled to this privilege.

Military Hygiene.—The Secretary of War has directed the academic faculty of West Point to prepare a course of study which will embrace full instruction in military hygiene extending over not less than 30 hours in each academic year. The superintendent and other line officers favor this action and advise that the scientific and technic training should be limited if necessary to allow time for this very important subject, holding that military efficiency depends to a great degree upon complete knowledge of suitable armament, proper food, efficient transportation service, and careful sanitary government.

PHILADELPHIA, PENNSYLVANIA, ETC.

The Garrett memorial wing of the Bryn Mawr Hospital will be formerly opened April 26, 1902.

Smallpox in Pennsylvania, as officially reported from December 28, 1901 to April 18, 1902, amounts to 1,412 cases, with 216 deaths; the total for that state in the corresponding period in 1901 was 130 cases with five deaths.

Compulsory Vaccination.—In his annual report Director English strongly recommends, on behalf of public health, that an Act of Assembly should enforce vaccination and revaccination, and that a public record should be kept of such vaccination. Revaccination should be required at each recurring five years or whenever it is deemed necessary. The Municipal Hospital statistics are cited as sufficient and practical proof of the value of vaccination.

The Nazarene Home for the Aged has been condemned by the Board of Health as unhygienic, overcrowded, and a menace to public health. Notification has been given to reduce the number of inmates and put the building in a sanitary condition within 20 days or the institution will be closed. The home now affords protection to 79 persons, and when the building was inspected from one to nine beds were found in the different rooms and some even in the basement.

Large Fees.—A correspondent of the Philadelphia Times has collated the following list. We cannot vouch for its correctness: Samuel J. Tilden's physicians charged \$143,000 for seven years' service. The sum of \$14,800 was the fee for a post-mortem examination of the body of Vice-President Wheeler, who died in 1887. Jay Gould, who died in 1893, leaving an estate valued at \$72,000,000, paid his doctor a regular salary of \$15,000 a year, whether sick or well. For two months' attendance upon his daughter, Mr. Gould paid \$87,000. President Garfield's physicians received \$27,500 for service rendered the distinguished patient at Elberon, N. J. In 1768, when the Empress of Russia was stricken with smallpox, her physician received \$60,000. When Edward VII was ill with fever he paid his doctor \$50,000 for four weeks' service. The Czar of Russia paid \$50,000 for only two days' attendance from physicians. Nawab Rampin paid \$150,000 to an Anglo-Indian surgeon for three months' treatment for rheumatism. The Emperor Frederick of Germany paid \$100,000 for medical attendance. A millionaire of Nice paid a doctor's fee of \$25,000. Sir William Jenner, Dr. Coull and Dr. Clark, famous London physicians, had an average yearly professional income each of \$6,000. Three New York doctors make more than \$100,000 yearly each; five more than \$50,000, and 50 more than \$20,000. But the majority of medical men make less than \$100 a month. Dr. Emma Warner wants \$100,000 for attending Francis Wheeler, of Chicago, who is worth \$3,000,000. In all the cases mentioned above, except those of President Garfield and Vice-President Wheeler, the patients were millionaires. In connection with the recent death of the New York merchant, C. B. Rouss, the comments upon his standing offer of \$1,000,000, which was never claimed, to

anyone who would restore his sight, has brought the subject of medical fees into prominence, and evoked some interesting data. The largest medical fee is said to have been given to the blind physician, Dr. Gale, of Bristol, England, who received £50,000 from a wealthy patient whose knee he had cured by electric treatment. In the United States, William C. Whitney probably has given the largest fee, \$25,000, to his physician for a week's attendance. The famous William Jenner was called in for a period of four weeks to attend King Edward of England—then Prince of Wales—ill with typhoid and received £2,500 per week and a baronetcy. Sir Morell Mackenzie, who attended the Emperor Frederick in his last illness, received £20,000. Professor Zacharin, of Moscow, who was called to attend the Czar Alexander III, who lay dying, was the recipient of a check for \$15,000, in addition to all expenses, for two days' attendance.

SOUTHERN STATES.

Shaw University, at Raleigh, N. C., has had a recent gift of a generous sum from John D. Rockefeller, and other friends have given money for a new operating room in the medical department.

Inspection of Milk.—A deficiency appropriation of \$500 has been asked by the Health Officer of the District of Columbia for the enforcement of laws relating to the sale of food, including milk. He asks for authority to send inspectors to the sources from which the milk supply of the District comes.

The South Carolina Medical Association, at the annual meeting, held recently in Spartanburg, S. C., elected the following officers for the coming year: President, Dr. Manning Simons, of Charleston; secretary, Dr. T. P. Whaley, of Charleston; treasurer, Dr. B. E. Baker, of Charleston. The next meeting will be held at Sumter, S. C., April 15, 1903.

Medical Legislation.—A conference of the Legislative Committee of the American Medical Association and the Chairmen of the Legislative Committees of State Medical Societies was held recently in Washington. There also was present a representative from the Army, the Navy, the Marine-Hospital service and the Bureau of Animal Industry of the Agricultural Department. Reports were made showing what had been accomplished during the year in national and state legislation affecting medical interests. Committee reports were adopted which had for their object the securing of uniform legislation permitting a physician to practise in any state or territory, and the organization of state medical societies to secure the enactment of legislation of importance to the profession. The conference favored changing the Marine-Hospital Service into the United States Public Health Service. Strong resolutions opposing the proposed measure to regulate vivisection in the District of Columbia were adopted, and favorable action was taken on the Proctor bill providing for the payment by the government of the medical expenses of sick officers and enlisted men while absent from duty.

Transportation of Corpses.—A measure lately adopted in Texas absolutely forbids the transportation of bodies dead of smallpox, Asiatic cholera, yellow fever, typhus fever or bubonic plague. The bodies of those dead of diphtheria (membranous croup), scarlet fever (scarlatina, scarlet rash), cerebrospinal meningitis, glanders, anthrax or leprosy may be accepted for transportation when thoroughly disinfected by an embalmer holding a certificate approved by the state health officer, quarantine officer or local health officer, and enveloped in a layer of cotton not less than one inch in thickness, completely wrapped in a sheet and bandaged, and then encased in a hermetically sealed metal-lined coffin or iron casket. When death is due to typhoid fever, puerperal fever, erysipelas, tuberculosis, measles or other dangerous communicable diseases, the bodies must be treated in the same way; but the air-tight sealing may be dispensed with when the bodies can reach their destination within 48 hours from time of death. Bodies of those dead from other causes, when reaching their destination within 30 hours after death, may be encased in a sound coffin or casket enclosed in a strong outside wooden box, otherwise they must be treated the same as those dead of a communicable disease. The body must not be accompanied by persons or articles which have been exposed to the infection of the disease, unless certified by the health officer as being properly disinfected. The body must be in charge of a person who is provided with a passage ticket and a full first-class ticket marked "corpse;" also a transit permit showing physician's or coroner's certificate, the name and age of the deceased, with the cause, date, hour and place of death. This transit permit must be made in duplicate with signatures of physician or coroner, health officer and undertaker on both copies. The undertaker's certificate and paste of the original must be detached from the permit and pasted on coffin box. When the body is expressed the whole original permit must be pasted on the box and the agent must forward the duplicate to the quarantine department. Disinterred bodies must be regarded as dangerous to public health, and when shipped must be enclosed in a hermetically sealed box. Their transportation must be approved by state health officer, quarantine officer or local health authority. Consent to such removal must also be obtained from the health authorities of the locality to which the corpse is to be sent. Bodies placed in receiving vaults are considered the same as buried bodies.

WESTERN STATES.

Osteopathy.—A law approved by regular physicians and osteopaths has just become effective in Ohio, which provides for a special examination of osteopaths by the State Medical Board; this will not require an exhaustive knowledge of medicine or surgery.

A new embalming fluid which was tried on the body of a negro six months ago at Battle Creek, Mich., is reported to have preserved it without any trace of decomposition or wasting, as was found on recent exhumation. The flesh resembled vulcanized rubber, and the features retained their fullness.

Mortality of Michigan.—There were 2,959 deaths reported to the Department of State during March, a deathrate of 14.1 per 1,000 of population. The greatest number of deaths (385) were due to pneumonia. An increase is shown in the number of deaths from pulmonary tuberculosis, scarlet fever, measles and whoopingcough.

Chicago Lying-in Hospital.—The annual report submitted recently to the board of directors shows that more than 1,000 poor women have received gratuitous treatment during the past year. Of these, 939 cases were treated in the out-department, the patients receiving treatment in their own homes, and 142 were treated at the hospital.

Health of Chicago.—The report of the Health Department for the week ended April 13 shows a total of 562 deaths, representing an annual rate of 16.10 per 1,000. Ten deaths from puerperal fever were noted, the greatest number in any one week since weekly records were begun. Scarlet fever is still epidemic and there is an increase in deaths from typhoid.

The New Mexico Medical Society held its twenty-first annual meeting in Albuquerque, April 15. The officers elected for the ensuing year are: President, W. G. Hope, Albuquerque; vice-presidents, G. C. Bryan, Alamogordo; T. P. Martin, Taos, and E. B. Shaw, East Las Vegas; secretary, J. Frank McConnell, Las Cruces; treasurer, G. W. Harrison, Albuquerque. The subject of "Licensure of Physicians in New Mexico" was discussed with vigor.

Smallpox in Nebraska.—C. P. Wertenbaker, of the United States Marine-Hospital Service, detailed to confer with the Nebraska State Board of Health in reference to the suppression of smallpox in that state, reports that in consequence of the mild type of the disease that has prevailed there for a number of years, and the opposition of the people to measures for its suppression, caused an apathy on the part of the local authorities, which has led to a wide spread of the disease. Dr. Wertenbaker believes that if his recommendations for isolation, vaccination and disinfection are carried out faithfully, there will soon be a complete eradication of the disease.

Restraint for Insane.—Dr. Delia Howe, of Kankakee Insane Hospital, has devised an effectual method to keep the restless insane both safe and warm. This consists of a large blanket lined with strong canvas, and quilted to make it indestructible. About one foot and a half from the upper end a round opening is made to fit loosely about the patient's neck. About the four sides of the restraint blanket, six inches apart, are small, strong, leather straps, with a patent catch or snap lock attached, stitched by machine to the leather-bound edges. Over the usual bedclothing is spread the restraint blanket, with the patient's head out through the opening, which fits about the neck. While the nurse holds the refractory patient down (if necessary) others hastily fasten the straps at the edges to the side and end rails of the iron bedstead and the patient cannot get out or become exposed, but has perfect freedom of motion under the coverlid. The slit from the neck opening to the upper end of the blanket is laced with strong cords, which are tied to the bed rail at the head. The opening for the neck, which is not large enough to allow the head to pass through, is bound with some soft material, which also faces it for several inches, to prevent any uncomfortable chafing of the neck and face.

CANADA.

Physicians' Licenses.—A bill now pending in the British Columbia legislature requires that the council of medical examiners must issue licenses to practise without examination to all physicians presenting diplomas from any college of medicine in Great Britain or its dependencies. These physicians, however, must confine their practice to the country and are debarred from practising in any city until they comply with all the conditions of the existing act.

Immigration.—The close surveillance exercised by the American officials at the Canadian border has led to the rejection of about 100 immigrants each week. The statement is made that 98% of the immigrants are suffering from serious infections, the most prevalent being trachoma and favus. The attention of the Canadian government has been called to the fact that most of these persons remain in Canada, and it is expected that Parliament will make a prompt investigation.

FOREIGN NEWS AND NOTES

GENERAL.

Plague.—The situation in the Punjab is steadily assuming more alarming proportions. There are now an average of nearly 70,000 deaths reported monthly.

Cholera.—There have been 270 deaths reported at Medina and Mecca, and 32 at Djiddah. At Tunis, a quarantine is required for pilgrims returning from Mecca.

Note on Mosquitos.—K. B. Barnett, writing to the *British Medical Journal* from India of some experiments with mosquito larvae, says that after a careful study of the larvae of *Culex* in test tubes of ordinary cistern water for several weeks his experience has been that they invariably feed upon each other, the older and larger devouring all the smaller ones until none but the big ones remain—a survival of the strongest—when these often attack and succeed in eating each other. They do this both when swimming free in the water and also when hanging head downward at the surface. The head at its juncture with the thorax is always the point of attack and when once a grip has been obtained it is never released. This cannibalistic tendency has been noted by Christy in his book "Mosquitos and Malaria," page 36. The writer suggests the utility of introducing *Culex* larvae into pools where *Anopheles* breed.

GREAT BRITAIN.

In memory of Queen Victoria 600 of the servants of her household have endowed a bed in Clewer Convalescent Hospital.

Edinburgh University, under the will of Mr. Robert Irvine, of Royston, has received \$150,000 for the establishment of the professorship in bacteriology.

"Medical Register."—The issue for 1902, recently published in England, contains a table showing the total number of physicians registered on December 31 in each year. For 1900 there were 36,355, and for 1901, 36,912. The total number added by registration in 1899 was 1,351; in 1900, 1,345; and in 1901, 1,318. This decrease in names is of little importance for practical purposes, but when viewed in connection with the increasing population it may be significant.

British Association for Prevention of Tuberculosis.—At the third general meeting held recently under the presidency of the Earl of Derby the consent of the King to become patron of the association and the acceptance of the Prince of Wales of the position of president, was reported as well as good progress of the work in hand. In the future results are hoped in the direction of the suppression of indiscriminate expectoration; adoption of voluntary notification of pulmonary tuberculosis in all towns and districts; the recognition of the detrimental effect of foul air on the public health and the establishment of sanatoriums on self-supporting bases for the laboring classes.

CONTINENTAL EUROPE.

The Victor Hugo prize of 1,000 francs has been awarded by the Paris Academy of Medicine to Dr. Melanie Lipinska, of Warsaw, for her book on "History of Female Physicians from Ancient Times to the Present Day."

A prize of 2,500 pesetas is offered by the Barcelona Academy of Medical Sciences for the best work in Italian, French, Portuguese, or Spanish on "Comparative Histology of the Fovea Centralis," received before December 31, 1902.

The Pan-Hellenic Medical Congress will convene for the second time at Athens, May 17 to 21, 1903. Paludism in its various aspects will be one of the most important subjects under discussion, especially in its relations to pregnancy and malignant disease.

The lowest deathrate ever recorded by a civilized nation is shown by the census of Sweden and is reported as 16.49 per 1,000 during the last 10 years. Norway ranks next with 17.9 and England third with 18.8. At Skegness, in Lincolnshire, in a population of 2,500 only 25 deaths occurred last year.

Death and Catalepsy.—A method of distinguishing death from catalepsy has been submitted to the Académie des Sciences by Dr. Icard, of Marseilles. Fluorescein is injected into the veins, and if the blood is still circulating the body will turn green within two minutes, the color disappearing in two hours without injury.

Illegal Legacies.—The French Chamber of Deputies has been asked to consider an amendment which will abrogate the present law that makes it illegal for physicians, surgeons or apothecaries to receive a legacy from their patients or customers. Strong arguments have been used to show that such amendment should be made, but it is thought extremely improbable that the Chamber will counsel the proposed alteration.

Dental Anesthesia.—A new method which obviates the use of cocaine or any of the more or less toxic anesthetics used in extracting teeth was recently communicated to the Academy of Medicine in Paris by Messrs. Regnier and Didsbury, and consists in the use of an electric current of high frequency applied to the tooth by means of a gutta-percha cap lined with gold leaf, and in this way the field of application of the current is limited to the tooth to be extracted, and perfect analgesia is obtained in a few minutes.

Mosquitos and malaria still attract considerable attention in Italy, especially at Naples, says Mr. Neville Rolfe in his last consular report from that place. Next to Sardinia, the province of Basilicata is the largest malarial tract in Italy, and security from the disease can rarely be reckoned upon there until November. Mosquitos are not wind-borne, as some have supposed, but are carried from place to place about men or animals, and on any baggage which attracts them. This explains isolated cases and epidemics of malaria which have occurred in places remote from marshes or stagnant water. Some interesting cases of fever, owing to this cause, occurred at the station of Termini, near Rome, the cases having probably originated from the mosquitos conveyed by the Terracina train, which crosses the most deadly part of the Pontine marshes.

OBITUARIES.

Meredith Clymer, a physician of prominence in New York, and author of many medical works, April 20, aged 86. Dr. Clymer was a native of Philadelphia, and was graduated from the Medical Department of the University of Pennsylvania. He studied in Paris, London and Dublin, and practised his profession in Philadelphia for 10 years, during which time he was consulting physician-in-chief to the Cholera Hospital in that city, and Professor of the Practice of Medicine in the Hampton-Sidney College, at Richmond, Va. He went to New York in 1851, and became a specialist in mental and nervous diseases. He was professor of the practice of medicine in the University of New York, and professor of mental and nervous diseases in the Albany Medical College. During the Civil War he was a surgeon in the United States Volunteers, and medical director of the Department of the South. He was a grandson of George C. Meredith, a signer of the Declaration of Independence.

Moriz Kaposi, the great Viennese dermatologist, died on March 6, 1902, aged 65 years. Only recently he celebrated his twenty-fifth anniversary as professor in the University of Vienna. As a pupil of Hebra, he continued the traditions of the Viennese school, and by his own efforts greatly broadened the field of dermatology. He combined with acute clinical insight a thorough knowledge of and fondness for pathology. He was, therefore, able to add much more to the subject of his choice than if he had been merely a clinician. As a diagnostician, he is said to have been unsurpassed by anyone in his branch. His pupils and disciples are found in all parts of the world, many occupying positions of great prominence.

Julius Wise, of Chicago, April 19, aged 50. He was a physician of high repute and was especially known for his heroic work during the epidemic of yellow fever in Memphis, Tenn., in 1878-79, being at the time Professor of Materia Medica and Therapeutics at the Memphis Medical College. He was widely known as an editorial writer in medical and religious journals, and under the pseudonym of "Nicker-don" won national fame.

Charles Wirgman, of Philadelphia, a trustee of Jefferson Medical College, and physician to the Howard Children's Hospital and Orthopedic Hospital, April 19, aged 55. He was born in Baltimore, and was a graduate of the University of Pennsylvania, of the Jefferson Medical College, and the Philadelphia College of Pharmacy.

David A. Plank, of St. Clairsville, Bedford county, Pa., April 12. He was a graduate of Jefferson Medical College, and a veteran of the Civil War.

Moses H. Detweiler, of Hopewell, Pa., April 15, aged 60. He was a graduate of Jefferson Medical College, 1870, and served in the Civil War.

Joseph R. Gallagher, of Brooklyn, assistant house surgeon of St. Catherine's Hospital, April 9, aged 26.

Hans Buchner, president of the Hygienic Institute of Munich, and an able bacteriologist, April 5, aged 52.

Joseph T. V. Blocksom, a well-known physician of Wilmington, Del., April 15, aged 55.

Franklin A. Meacham, assistant insular health commissioner at Manila, April 15.

Edward A. Maris, one of the oldest practitioners of Baltimore, April 20, aged 82.

William F. Shepard, a prominent physician of Maine, April 15.

Charles E. Bartlett, of Battle Creek, Mich., April 15, aged 85.

Nathaniel Marston Freeman, of New York City, April 18.

W. L. Bain, formerly of Toronto, in Chicago, April 13.

Cephas L. Bard, of Ventura, Cal., April 20, aged 59.

R. O. Cotter, of Barnesville, Ga., April 13.

SOCIETY REPORTS

TRI-STATE MEDICAL SOCIETY (IOWA, ILLINOIS AND MISSOURI).

TENTH ANNUAL MEETING, HELD IN CHICAGO, APRIL 3 AND 4, 1902.

[Concluded from page 653.]

Cataract Operation in the Very Old.—Dr. A. B. Hale, of Chicago, in a paper on this subject, reported six cases of operation for cataract. The first patient was a man, 91 years old; the second, 81; the third, a woman of 81; fourth, a woman of 80; fifth, a negroess reported to be 120; sixth, a woman of 80. He drew the following conclusions: (1) Tissues in the old are apt to be friable and the cataract overripe; (2) vision need not necessarily be impaired; (3) patients stand the operation surprisingly well, and with little reaction; (4) every case of cataract in the very old, if the retina and nerve seem to functionate well, should be given the chance of operation; (5) emergencies should be anticipated and met at once as they arise; (6) repair proceeds slowly, but as securely as at an earlier age.

Tetanilla.—Dr. J. W. Hanna, of Winfield, Iowa, detailed a case of tetanilla which came under his observation. He said that this name was applied to a peculiar neurosis characterized principally by paroxysmal tonic convulsions of certain groups of muscles. The disease attacks by preference children and young adults, varying in age from 15 to 30, yet he was inclined to believe that the disease attacks persons of any age. The cause or causes producing this affection were not well understood. His patient was a farmer, 55 years of age.

The Hygiene of the Pregnant and Puerperal State.—A paper with this title was read by Dr. C. E. Paddock, of Chicago. Pregnancy borders so closely upon a pathologic condition that a physician's advice is necessary. The diet, exercise and general habits must be regulated. Careful examination of the urine must be made frequently, and at least once a month a twenty-four hour specimen is to be had. The prophylactic treatment of eclampsia lies in strict attention to this, and also in the use of the daily bath. During the puerperium no arbitrary rule can be established regarding the time the patient may get up. The character of the lochia should be the guide. As involution advances, the lochia changes, and when all color has ceased and the lochia but scanty or none at all, the patient can begin to get up slowly. This change may occur in one case in a week, while it might be several weeks in another. The patient is neglected during pregnancy and the puerperium by the busy general practitioner. The physician who carries out a systematic treatment of his cases has fewer mortalities and fewer conditions of morbidity.

Infections of the Puerperal State and Their Surgical Treatment.—Dr. Emory Lanphear, of St. Louis, Mo., said that the fatality from cases of puerperal infection attended by midwives was appalling. The mortality arose from several things. First, nonfamiliarity with the various causes of puerperal infection. Second, inappreciation of sepsis. Third, gross carelessness. Fourth, meddling interference with natural processes. Fifth, the spread of venereal diseases. He dealt largely with nonfamiliarity with the causes of puerperal infections. The normal vulva constantly contains myriads of bacteria, pathogenic as well as innocent, which might be introduced into wounds of the genital tract by careless methods. The normal vagina of the pregnant woman does not contain any pathogenic microorganisms, hence autoinfection is not a possibility in natural labor. The vagina contains innumerable forms of non-infective bacteria, but these disappear at the cervix, no microbes ever being found in the cavity of the uterus under natural conditions. The secretions of the cervix uteri, as well as to a less degree those of the vagina, possess mildly antiseptic powers, so that unless an unusually large number of virulent organisms be introduced, infection is not apt to occur. He spoke of ten varieties of infection, and reported several cases, illustrating the different types of infection. He has been disappointed in the use of Marmorek's serum in the treatment of puerperal infections. Women in labor should be treated upon the same principles and rules of antisepsis and asepsis as given surgeons in the most extensive operations.

The Pathologic Status of Retroverted Uteri.—Wm. A. Tichenor, of Chicago, thinks there are certain grave pathologic conditions found in the uterus and adnexa in which the first step is backward displacement. Among the more grave is prolapsus. Practically all cases of prolapsed uteri were first displaced backward, for it is practically impossible for a uterus to slide down the vaginal canal if the cervix is well back toward the sacrum and the fundus well up against the pubes. In this position the organ lies across the axis of the vaginal outlet, and will not prolapse; but when the fundus is in the hollow of the sacrum the organ is in the most favorable position for gravitating toward the vaginal outlet. The retroverted position militates against the expulsion of menstrual and other secretions. This position retards venous circulation, thereby favoring the growth of any pathogenic bacteria that may find lodgment. It lessens the woman's ability to bear children by decreasing the chances of conception and increasing the chances of abortion. He thought about one-third of all gravid

uteri abort. The retrodisplaced uterus is a prominent etiologic factor in prolapsed ovaries. Retroverted uteri and prolapsed ovaries are in the most favorable position to be irritated and injured by the passage of hard feces and during the act of coitus. He does not attribute that importance to an uncomplicated case of retroversion without pelvic symptoms in a young unmarried woman that has generally been given to it in the past few years. If the subject is a young unmarried woman, and without symptoms, he would advise against local treatment, looking after the general health and suggesting the assumption of the knee-chest posture night and morning. But if the patient presents decided symptoms that were distressing and referable to the pelvis, he would advise mechanic and medicinal measures. To relieve malposition of the uterus, he would first endeavor to relieve congestion and tenderness, if present, by boroglycerid tampons and hot vaginal douches. After this, he would replace the uterus by careful bimanual manipulation. To attempt to replace a uterus by a sound or other intrauterine instrument was reprehensible; it might possibly require several seances before the organ was completely restored to its normal position. When this was accomplished he would try to retain the uterus in anteversion by a well-fitting pessary. Before attempting to use a pessary to retain the uterus in anteversion, the organ must be freely movable, put in normal position, not sensitive to the touch, and the ovaries not where a pessary will press upon them. With due consideration of these points and using a pessary of proper shape and size in each case, the use of the pessary would prove very satisfactory. The author then considered cases of retroposed uteri accompanied with other pelvic troubles, and discussed the Alexander operation, also the comparatively recent operations devised by Dr. Alexander Hugh Ferguson and Dr. J. Clarence Webster, of Chicago.

Dr. Frank P. Norbury submitted a revised report of the constitution and by-laws, in conformity with the plan of reorganization of the American Medical Association, which was adopted. Dr. Fenton B. Turk, of Chicago, offered a resolution, which was adopted, that dietetics, hydrotherapy and mechanic physical therapeutics be taught by practical methods in the medical schools of the United States.

Officers for the Ensuing Year.—President, Dr. Alexander Hugh Ferguson, Chicago; first vice-president, Dr. Flavel B. Tiffany, Kansas City, Mo.; second vice-president, Dr. J. C. Sullivan, Cairo, Ill.; secretary, Dr. W. B. LaForce, Ottumwa, Iowa; treasurer, Dr. Emory Lanphear, St. Louis, Mo.

Place of meeting, Hannibal, Missouri.

WESTERN OPHTHALMOLOGIC AND OTOLARYNGOLOGIC ASSOCIATION.

SEVENTH ANNUAL MEETING, CHICAGO, APRIL 10, 11 AND 12, 1902.

Officers for the Ensuing Year.—President, Dr. Wm. L. Ballenger, Chicago; first vice-president, Dr. J. O. Stillson, Indianapolis, Ind.; second vice-president, Dr. J. Morrison Ray, Louisville, Ky.; third vice-president, Dr. Edwin Pynchon, Chicago; secretary, Dr. Derrick T. Vail, Cincinnati, O.; treasurer, Dr. O. J. Stein, Chicago. Indianapolis, Indiana, was selected as the place for holding the next annual meeting.

Thiosinamin and Electrolysis in the Treatment of Tubal Obstruction.—J. C. Beck, Chicago, said that his observations in treating 14 cases of ear diseases led to the following conclusions: (1) The injections of thiosinamin without mechanic treatment did not materially improve the condition, except to remove tinnitus; (2) with the aid of electrolysis and injections of thiosinamin a simple bougie could be passed with greater ease, and inflation was more free after a short time than in cases without thiosinamin or electrolysis; (3) all the cases treated with thiosinamin and electrolysis improved in the time from two to eight months in all respects, as regards hearing, tinnitus, general condition, etc.; (4) before using thiosinamin careful inquiry should be made for possible contraindications, such as existing chronic tuberculosis, malignant tumors, scars which support the abdominal organs in the abdominal wall, such as are formed after laparotomy; (5) the drug may be used with just as good results, though it is not as rapid in its action, by mouth administration as hypodermically.

The Value of Electrolysis in the Eustachian Tube.—Norval H. Pierce, Chicago, concludes: (1) In sclerotic disease electrolysis is useless; (2) in the great majority of catarrhal disease it has no advantage over other methods of treatment; (3) in a certain few cases, where there is probably a soft exudate near the isthmus, it may be regarded as of value.

President's Address.—Christian R. Holmes, Cincinnati, Ohio, in lieu of the customary stereotyped presidential address, gave an illustrated lecture on the development of the ear from the lowest animal up to man, thinking that this might be of more profit and interest to the members.

The Neighboring Parts of the Middle Ear and Their Infection.—Otto J. Stein, Chicago, reviewed the manner and avenues through which infection reaches the neighboring parts of the middle ear, and the manner in which involvement of such parts take place. He mentioned two ways. First, by continuity of the tissue, and second, by way of the blood and

lymph channels, independent of or associated with, but not dependent upon, any previous ear trouble, as in cases of syphilis and tuberculosis.

Relation of the Facial Nerve to the Tympanum.—B. Alexander Randall, Philadelphia, delivered a lantern lecture, by invitation, in which he pointed out the above relation, especially in tympanic exenteration.

The Principles of the Treatment of Otorrhea.—Wm. L. Ballenger, Chicago, said the treatment of suppurative processes of the middle ear and mastoid spaces should be based upon three principles. *First*, the establishment and maintenance of free drainage of pus and secretions. *Second*, the removal of all morbid material, whether it be pus, debris, or sequestrums of bone. *Third*, the maintenance of asepsis of all parts. Success will be proportionate to the accomplishment of the foregoing conditions.

The Best Means of Removing Nasal Obstructions.—J. W. Murphy, Cincinnati, Ohio, said that he finds himself resorting to the cautery less and less each year, since more satisfactory and more permanent results can be secured by other means. His experience has been that more damage results from repeated cauterizing than follows a clean surgical operation along the under-surface of the bone, where the glands are few and the hypertrophied tissue is most marked. The operation which he has practised for several years consists in removing the redundant tissue by means of saw and scissors. He always aims to remove a very small portion of the under-edge of the bone. Often this sliver of bone is so small that it is scarcely perceptible, but the success of the operation consists in getting a linear scar along the entire under-edge of the turbinate body, since it is by means of this scar that the permanency of the opening is to be maintained and the blood supply cut off from the underlying connective tissue.

The Hypertrophied Faucial Tonsil: with a Report of the Morbid Histology of the So-called Submerged Tonsil.—E. O. Sisson, Keokuk, Iowa, said the originally hypertrophied tonsil has become partially atrophied and largely submerged. In some cases the faucial pillars are greatly enlarged, causing an even lateral fullness with the tonsillar thickening. In others the enlarged tonsil is hidden by the plica triangularis, which sometimes extends downward and backward from the margin of the anterior pillar. The pathologic histology of the submerged form did not differ markedly from the other forms of tonsillar hypertrophy, only that the "hard" fibrous predominated over the "soft" adenoid variety, and there was an even greater increase of connective tissue. As regards treatment, he concludes: (1) The surgical treatment is the only form yielding satisfactory results; (2) no one method is applicable to all cases; (3) the danger from hemorrhage is so slight it should not deter operative steps when indicated.

The Misuse of Glasses.—F. C. Hotz, Chicago, said that glasses are often prescribed when the apparent asthenopia is due to pathologic conditions of the conjunctiva, which are overlooked because they are confined to the upper retrolid folds, and because these folds are not brought into view by the ordinary method of everting the upper lid. But they can be easily exposed by a gentle, steady back pressure applied upon the eyeball, while the everted lid is firmly held against the supra-orbital margin. Blepharitic patients, especially when applying themselves to close work, usually complain of blurring of vision and pain in the eyes. In many cases the scales along the lid borders are like fine dust and easily overlooked, and the patient's discomfort is mistaken for accommodative asthenopia. Glasses are prescribed and faithfully worn, but without the expected benefit. The proper treatment of the lid-borders quickly relieves the patient, so that he can use his eyes with perfect comfort, though the glasses are discarded. In other blepharitic cases the disease is too well marked to be overlooked, but still the oculist prescribes no local treatment, because he believes that blepharitis is caused by refraction errors and cured by the correcting glasses. This doctrine is not sustained by clinical facts. Refraction errors are not the cause of the lid disease, but they may sometimes aggravate it and render the local treatment less effective. The refraction, therefore, should always be tested, and if the disease does not promptly yield to treatment the ascertained ametropia should be corrected. But neither science nor common sense can approve the prescribing of glasses for slight refraction errors when the apparent asthenopia is plainly due to local or general disorders.

Section and Exsection of the Rectus Muscle in Case of Paralysis, for Cosmetic Purposes.—A. E. Prince, Springfield, Ill., says that all attempts at correcting the deformity of confirmed paralysis of the rectus will be failures unless the muscle is weakened to correspond with the paralyzed muscle. Indications for the operation: (1) Permanent atrophy or paralysis; (2) irrecoverable loss of either rectus through accidental section of the muscle back of its capsular perforation; (3) extreme over-correction of long standing following tenotomy, with excessive laceration of the capsule, permitting the retraction of the tendon back of the equatorial meridian, whence, owing to atrophy or adhesions, it cannot be successfully advanced; (4) irrecoverable traumatic dislocation of the rectus. Conclusions: (1) In the case of complete paralysis of either rectus, the exsection of the opposing muscle will enable the eye to be retained in the straight position, without motion in that meridian; (2) in the case of retraction of either rectus muscle into the orbit, under conditions rendering its advancement impossi-

ble, an equalization of the deviating power is to be obtained through section of its capsular attachment, following which, excursions in that meridian will be restored to an extent varying between 20° and 50°; (3) in paralysis, or retraction of either rectus, the operation of section or exsection of its antagonist has not been observed to develop or increase preexisting exophthalmos to any marked degree.

Sympathetic Ophthalmia, with Complete Recovery of Both Eyes.—Derrick T. Vail, Cincinnati, Ohio, laid especial stress upon the value of the one great therapeutic agent—total darkness and complete rest for the retina and accommodation in the treatment of sympathetic ophthalmia and allied affections of the eye. He concluded that sympathetic ophthalmitis occurring in young persons is often not so violent nor so fatal to sight integrity as the same disease in adults; that if no foreign body has remained in the eyeball it is often wise to watch and wait; that the rational treatment is complete rest of the retina and accommodation, which can only be brought about by total darkness.

Toxic Amblyopia.—Dudley S. Reynolds, Louisville, Ky., selected for purposes of illustration a case of nearly total blindness, the result of drinking essence of cinnamon; a typical case of autotoxemia, and four cases of tobacco amblyopia in persons who had never taken alcohol.

Is the Dislocation of the Lens Into the Vitreous Ever Justifiable?—George F. Suker, of Chicago, concluded: (1) The percentage of failures in the class of cases in which depression can be performed is no larger, on the contrary, less than in the same cases operated upon by extraction; (2) do not depress a lens in cases with choroiditis or retinitis; (3) consider depression where one eye has been lost by extraction, and its fellow must be operated upon; (4) depression of the lens must not be indiscriminately performed, but only in such cases where the contraindications of extraction outweigh its own objections; (5) reclamation of the lens is an exceptional procedure, and is only unquestionably indicated when the general constitution of the patient, or the previous experience with the fellow eye, unhesitatingly points to a failure if the extraction method were resorted to. It is only in rare instances that suitable cases present.

Transient Astigmatism.—O. A. Griffin, of Ann Arbor, Mich., said that coincident with increasing strain of succeeding years and improved methods of examination the emmetropia of Donders has given way to correction of small errors which demand careful attention. Of his ametropias, 89% are astigmatic, 0.25 D., or more. A sphere will improve vision in astigmatism up to one-half of the error. An induced transient astigmatism is not corrected. Variability of position of mires in ophthalmometry was shown to be due to accommodative efforts on part of the examiner, in the majority of cases, instead of to temporary changes in corneal curvatures. Variability in position of distinct line of astigmatic chart is accommodative on part of patient in presence of low degrees of uncorrected astigmatism. He endorsed ophthalmometry, saying that skillful control of accommodation and knowledge of limitations of method are necessary.

Ocular Affections Secondary to Syphilis.—Randolph Brunson, Hot Springs, Ark., said that of all diseases of the eye syphilis is probably responsible for a greater number of ocular affections than any one disease known. The iris and ciliary body are perhaps more often invaded by syphilis than any one part of the globe, and syphilis is frequently the common predisposing cause of iritis. About 70% of all cases of iritis are caused by this disease. The histories of 1,500 cases of syphilis show that iritis occurred in over 3% of all cases. Syphilitic cyclitis may be plastic, serous, or gummatous, and is almost invariably associated with iritis. Interstitial keratitis had its origin in syphilis, and in perhaps 60% or more of all cases is hereditary. He had never seen a case caused by acquired syphilis, and believes the cases reported as such have simply been produced by irido-choroiditis, which has involved the deeper layer of the cornea. Disseminated choroiditis is caused by syphilis in perhaps 80% of all cases.

Enucleation of Blind Eyes Caused by Traumatism.—C. D. Wescott, Chicago, said that ever since his pupillage in ophthalmology he has had a prejudice against hopelessly blind eyes, made so by traumatism, or inflammation of the anterior segment of the globe. The fact that there is a well-known difference of opinion as to what ophthalmologists should do or recommend in such cases is his excuse for speaking on the subject. As an illustration of what may happen in consequence of leaving a blind eye from traumatism, in spite of the fact that the eye is quiet, not shrunken, not painful, not tender, he recounted two or three cases terminating in loss of the sound eye. Dr. Wescott's treatment in this and other cases was endorsed in the discussion by Drs. Eugene Smith, A. Alt and George F. Suker.

Epicritic Remarks Upon Methods for Estimating the Economic Damage from Accidental Injuries to the Eyes.—H. V. Würdemann, Milwaukee, Wis., refers to the work of Professor Magnus, of Breslau, Germany, and his own essays upon "Visual Economics," and takes up the following propositions: Earning ability is economically synonymous with visual earning ability for the majority of trades and professions. Injury to vision generally necessitates loss of earning powers. The economic value of vision is equivalent to the wages of the individual. After injuries involving loss of earning ability

the loss of wages may be reckoned from experience in examining large numbers of individuals, or the probable loss in any given case may be found by reckoning the percentage of damage to the normal function and applying this to the calculation of the probable pecuniary loss. A mathematical formula may be made for this purpose in which the several factors comprising vision should be properly related, and this formula for working vision should be modified by the ability to use the eyes for gainful purposes, the whole forming a formula for the earning ability. By this means a percentage of the loss to the earning ability may be figured and this percentage applied to the probable wages and duration of working life in the individual who has received the accident. Damages to ambition, to hopes and plans cannot be considered. We must deal with the station in life, and expectation of wages and life which belongs to the individual at the time of the accident. Compensation for injuries from accidents to the eyes should be based upon the economic damage modified by the present rulings of American courts in allowing an empiric amount for pain, suffering and mental anguish and for philanthropic or punitive purposes, or for contributory negligence; the latter amounts being only of forensic importance. By the rules of Magnus and Würdemann, the economic damage may be calculated in a manner fair and just to all interested parties.

Rapidly Fatal Carcinoma of the Epipharynx.—Hanau W. Loeb, St. Louis, Mo.—Mrs. D. C. H., aged 40, consulted him October 29, 1901. Sudden deafness, tinnitus, nasal obstruction on the right side, bloody fetid discharge from the right naris, and from the epipharynx. Had been present for six months, and although they had developed rather suddenly, they had become gradually worse. The patient suffered from slight pain in the region of the right side of the throat, radiating toward the ear, teeth and occiput. There was some obtundity of olfaction, but no interference with the sense of taste; slight paresis of the right facial, involving the branches distributed to the muscles of the mouth; the right orbicularis palpebrarum and the right eye muscles were apparently unaffected; the tongue was unaffected, but the right side of the palate was but slightly movable; left nostril was unobstructed and normal; right nostril contained bloody discharge, which came from the posterior portion of the nasal fossa, otherwise presenting nothing of interest. Examination of the epipharynx showed the left side entirely free from anything abnormal. On the right side a growth was found involving and including the Eustachian tube, and extending along the lateral wall of the pharynx to the posterior wall and roof, but not the latero-anterior wall and posterior naris. The mass was surrounded by an inflammatory area which did not extend beyond the median line. Nasopharynx, epipharynx, larynx, bronchi, heart and lungs, showed no signs of disease. The closest examination revealed no evidence of syphilis, recent or old. Left ear, negative; right ear, membrana tympani greatly retracted, some injection of vessels of hammer. Whisper heard one-third of a meter from the ear. A portion of the growth was removed, and subjected to microscopic examination, and the tumor pronounced to be carcinoma. The author said that under surgical methods in vogue at present there can be no hope of cure, absolute or relative. It is doubtful if the technic will ever be improved so that a carcinoma in this region can be removed with sufficient completeness to warrant any relief or stay in the progress of disease.

Pneumatic Massage in Aural Practice.—Edwin Pynchon, Chicago, said that it is principally in the treatment of the so-called cases of nonsuppurative catarrhal otitis with ground glass drumhead, which is so often the forerunner of sclerosis, wherein pneumatic massage is indicated to improve the hearing, and additionally to control or diminish the accompanying tinnitus, which is probably most often due to labyrinthial pressure. Vertigo, another symptom occasionally complained of, is also at times a result of pressure. Through its favorable effect upon the cause—middle ear adhesions, etc.—pneumatic massage is often beneficial in both of these conditions. It also assists greatly in the correction of itching of the external auditory canal, and furthermore is generally instrumental in increasing the secretion of wax when the canal has become too dry, both conditions being concomitant with chronic catarrhal otitis media. Additionally, in hypertrophic cases, inflation by the Politzer method soon becomes more easy of execution. Pneumatic massage has proved of value in suppurative conditions of the middle ear, particularly in cases of long standing, and when employed in addition to the usual line of treatment will often greatly expedite a cure, owing to its mechanic effect in jarring or drawing down discharges from the attic.

The Significance of Aphonia in Aneurysm of the Arch.—William Porter, St. Louis, Mo., believes that early diagnosis and proper care will increase the life expectancy and comfort of the patient. It is possible that aneurysm is more frequent than formerly, owing to the increase of the conditions which cause it. The only positive proof is the radiating expansile pulsation simultaneous with the heart beat, yet, as a rule, distinct from it. Pain at the site, or about the sixth dorsal vertebra, and increased area of dullness, are valuable but not positive signs. The x-ray often fails in early stages, but it is important, as is the new method of intracardiac investigation. Pressure on the recurrent nerve does not always produce aphonia. Sometimes there is arytenoid compensation and the crossing of the median line by the one cord, while the other is

in the cadaveric position. Unilateral congestion, or loss of symmetry of movement, is always suggestive. The laryngeal evidence of pressure may also be sequences of interference with nerve function by tumors or enlarged glands.

XXXI CONGRESS OF THE GERMAN SURGICAL ASSOCIATION.

[Special Report to *American Medicine* by Herr Med. Dr. Heinz Wohlgemuth, Berlin.]

FIRST SESSION.

The First Surgical Dressing on the Battlefield.—Dr. v. Bruns (Tübingen). Owing to the fact that gunshot wounds due to small caliber bullets are, as a rule, aseptic, the only dressing necessary is the covering of the wound with the view to the prevention of secondary infection. In place of dusting powders, such as iodoform, v. Bruns favors the use of such paste dressings as may be carried in collapsible tin tubes, and finds that xeroform paste (bismuth tribromphenol) answers the purpose very satisfactorily. For retaining the dressing he prefers rubber adhesive plaster to bandages. Küttner, of Hamburg, referring to the treatment of wounds in South Africa, urged the prompt covering of the wound, owing to the danger of tetanus infection.

A case of gunshot wound of the heart followed by recovery and healing with the bullet in the heart, was demonstrated by Trendelenburg, of Leipzig. The patient had attempted suicide by shooting himself in the middle line of the breast. He recovered promptly. Skiagraph examination demonstrated the bullet in the right ventricle, at first moving about, but later becoming stationary. The pulse of the first period was irregular, but became regular in a second. Experiments made on rabbits by introducing small shot into the right ventricle by way of the jugular vein gave rise to similar irregularity of pulse.

Penetrating Wounds of the Abdomen Made by the Mantle Rifle Bullet and their Treatment in the Field.—Hildebrand (Berlin). These abdominal wounds have a mortality of about 70%; the deathrate is greatest when there is perforation of the small intestine and less in cases of perforation of the stomach and transverse colon. The speaker recommended that laparotomy be performed as promptly as possible after the diagnosis of perforation was sure.

SECOND SESSION.

Treatment of Fractures by Means of Primary Bone-sutures. Nölker (Heidelberg) has made a study regarding the extent to which primary operations are allowable in fractures as now generally performed on the patella and olecranon. His experience leads to the conclusion that bone-sutures do not hold so important a relation to healing as is supposed. The slipping of fragments cannot always be prevented by suturing in oblique fractures and retention fractures. In those of joints and in all complication-fractures the suture, however, comes into play; also in cases where there are two fractures in one limb.

Results of Primary Bone-sutures in Fractures.—Arbuthnot Lane (London). The unsatisfactory results of ordinary methods of treating fractures as seen in the dissecting-room are so frequent as to have induced the speaker to undertake a special study of the problem. There is great difficulty in securing perfect apposition even under narcosis, and even when secured great liability to displacement. In oblique fractures when two methods meet the requirements, it is decided not to operate; that is, to secure apposition before hemorrhage occurs, or to wait until the hematoma has been absorbed and the inflammation allayed. The first method is scarcely possible, while in the second shortening will have set in, so there remains only the third method of primary suture. The speaker found the teaching of the textbooks at fault in respect to fractures. Bones broken by direct force show transverse or more or less oblique surfaces, and are frequently splintered; those broken by indirect force are always spiral, each fragment ending in a sharp, bony point, showing at the opposite end a retracting angle. In operating the speaker used silver wire or ordinary screws for fixation.

In the discussion which followed, Koenig, of Altona, was of the opinion that perfect coaptation of the fragments is not always necessary for securing good function; however, in fractures of the joints, early suture is important for securing perfect coaptation necessary to good function and the smallest amount of callus. Therefore, in the treatment of ordinary fractures, the operative method should be pursued only in cases where the skiagraph shows that satisfactory function is impossible, owing to the relation of the bones to each other. Trendelenburg, of Leipzig, sanctioned the operative method only in fractures of the joints, in fracture of the head of the femur he passed a large screw from the trochanter into the head. Pfeil-Schneider had successfully employed the suture in fracture for some ten years, but could not recommend the screwing together of bones, as from his experience the screws did not become encysted. Henle (Breslau) referred to the long time required for consolidation in cases of primary suture, and stated that in his treatment of fractures of the shoulder-joint the arm was allowed to hang, and the patient instructed to begin movement

of the dependent extremity on the very first day, also in ordinary fractures of joints early movement was advisable, and good functional results were frequently secured, notwithstanding the imperfect anatomic restitution. Lauenstein, of Hamburg, insisted on the suture in cases of fractures with pointed fragments thrust deep into the muscles. He recommended the Hausmann screw, which he had employed in some 60 cases with good results, although his observations coincided with others as to the increased time required for healing. Schede, of Bonn, had in fractures of the neck of the femur secured good results by means of a peg of ivory passed through the trochanter, neck and head. He had also used ordinary nails for the same purpose. Schlange, of Hanover, recommended aluminum bronze wire for bone-sutures. Kocher, of Bern, found fixation bandages sufficient in cases of fractures of the diaphyses and of the epiphyses. Sutures are advisable in fractures of the tuberculum majus. Sutures also give best results in fractures of the epiphyses, especially in children. Nevertheless, poor functional result will frequently occur, notwithstanding the apparently good coaptation that has been secured.

On the Recuperative Power of Amputation Stumps.—Honsell (Tübingen) pointed out the good results obtained from v. Bruns' operation with the greatest retention of periosteum. He employed a large anterior and a smaller posterior flap.

On the Implantation of Dead Bone into the Soft Parts Alone or in Connection with Periosteum.—As the result of many experiments, Sultan (Göttingen) arrived at the conclusion that living bone is best implanted in connection with periosteum. Bone killed by boiling must, however, be surrounded by periosteum in order that it may heal and not act as a foreign body; periosteum in this case must, of course, remain in connection with its blood supply. He had noticed that with this periosteum there was an absorption of the dead bone with replacement of new bone.

THIRD SESSION.

A series of Röntgen photographs on the construction, position and anomalies of the patella was exhibited by Joachimstahl (Berlin). Albers-Schönberg demonstrated an apparatus which he claimed gave sharper and clearer pictures of renal calculi in that it brings the plate as near as possible to the kidney, whereby concretions may be detected which have hitherto escaped notice. Perthes, of Leipzig, projected on the screen Röntgen pictures of Chinese feet. Sudeck (Hamburg) showed skiagrams of inflammatory conditions of the bones and joints. Albert Stein (Berlin) a demonstration of pictures of subcutaneous paraffin prothesis in cases of saddle nose. Doyen, of Paris, gave a series of splendid cinematographic illustrations of major operations, which establish the value of the kinematograph as a scientific instrument and its importance in teaching. The conclusion of his demonstration was a record of the separation of the Hindoo xiphopagi, Radica and Doodica.

FOURTH SESSION.

On the Question of Recurrence of Carcinoma.—v. Kahlden (Freiburg) took the stand that the local recurrence of carcinoma could only take place where the epithelium had undergone carcinomatous alteration or in such cases as carcinomatous substances had been left behind in operating. Recurrence also occurs along lymph channels. A third form of recurrence is that which has recently received frequent mention, the so-called inoculation recurrence.

On Recurrence of Carcinoma.—Peterson (Heidelberg). The unicentric and multicentric modes of dispersion were discussed. Unicentric carcinoma is direct recurrence, multicentric is both direct and indirect recurrence. Inoculation recurrence, better called implantation recurrence, is very rare; late recurrence is frequently indirect and very seldom direct. The interval between operation and recurrence can only be spoken of as a period of latency, in case of an indirect recurrence. As regards the cure of carcinoma, attention was called to the fact that the tissues in the neighborhood of the primary tumor often become saturated with the epithelial toxins whereby the carcinoma cells become imprisoned. This perhaps explains the rarity of blood metastasis in carcinoma. We must take into consideration this healing process in connection with the properties of epithelial-cytolysis, and it is possible that in this connection experimental carcinotherapy may give valuable results.

Treatment of Intestinal Carcinoma.—Mickulicz (Breslau) reported 106 cases of malignant tumors of the intestines and of the author's dichronous method of operating.

Results of Treatment in Carcinoma of Large Intestine.—Hochenegg (Vienna) reported 282 cases of intestinal carcinoma and recommended the dichronous operation and gave a demonstration of his sacral method. Of 174 cases of carcinoma of the rectum he had had 30 permanent cures, over three years having elapsed without recurrence. Of these 10 had entire continence. Hochenegg accepts Krönlein's critical triennium as a standard of permanent cure, in accordance with which he has had 120 permanent cures out of 174 radical operations.

Carcinoma of the Stomach by Internal and by Operative Treatment.—Krönlein (Zurich), in connection with the question whether operation for carcinoma of the stomach can be curative or only palliative, presented his experience in 264 cases, of which 53 were inoperable, in 14 the patients would not consent to operation, of the remaining 197 he had performed lapa-

rotomy in 73, gastroenterostomy in 74 and gastrectomy in 50. On the average, life was prolonged by gastroenterostomy three months; by gastrectomy 14 months. On the other hand, he had 13 cases of recovery after primary gastrectomy, the oldest of which was eight years, showing that the operation undoubtedly prolongs life.

On Disease of the Lymphatic Glands in Cancer of the Stomach.—Lengemann (Breslau) in a demonstration of the lymphatic glands of the stomach about the pylorus and cardia showed that that portion of the stomach most liable to carcinoma has no lymph glands. Notwithstanding this his experience demonstrates that the lymph glands are always affected and therefore the entire chain of glands should be duly removed.

Regarding the Question of the Cancer Parasite.—According to Nöske's (Leipzig) investigations the so-called Plimmer's bodies may be regarded as functional manifestations of the protoplasm and in no way connected with carcinoma.

Micrococcus Neoformans and the Treatment of Cancer.—Doyen (Paris) referred to his discovery of a spheric microbe in chains of six to eight links in carcinomatous lymph glands. The organism is hard to cultivate but can be grown in different media. The center of carcinomatous swellings is very often sterile and the best culture results come from inoculations taken at a distance from the center. Though difficult to discern in sections, *Micrococcus neoformans* stains well with thionin or safranin. The use of Gram's method in connection with carmin staining shows a small number of single cocci or of diplococci. This microorganism he has found in a great variety of tumors in carcinoma of the breast and the affected lymph glands, in cancer of the uterus, of the rectum on its peritoneal metastases in the proliferating cystomas of the mamma and of the ovary, in struma of the thyroid gland, in pleuralympho sarcomas, in spindle-celled sarcomas of the glands of the neck, in myosarcomas and their metastases, in lipomas, etc. In another group of new growths he was unable to secure any cultures. In all of these, however, there was no recurrence. On the other hand, recurrence was always rapid when there was an abundant culture. Inoculation in dogs gave two lipomas, in guineapigs a hyperplasia of the cells in the mamma and in the cylindrical epithelium of the liver. In the testicle the microbes were eaten up and destroyed by the phagocytic epithelial cells. The so-called cancerous growths of animals are, however, not proven to be identical with the cancer of man. The pathogenesis of human tumors was regarded by the speaker as due to irritation of normal body elements, which by division and proliferation endeavored to overcome *Micrococcus neoformans*. If phagocytic power of the proliferating cells was active the tumor was checked in growth. The microbes might remain latent and serve eventually to change an originally benign tumor into a malignant form. Before *Micrococcus neoformans* can be regarded as specific in its pathogenic power it will be necessary to establish the action of its toxins attenuated by treatment with quinin sulfate and caedyl. While Doyen does not claim that he has discovered the cause of cancer and a means of cure, he can point to the fact of being able to procure pure cultures of the microbe in over 400 cases, that it is pathogenic for animals and that injections of the toxins prepared from it give a peculiar reaction with carcinomatous patients and when only slightly advanced a favorable result.

On the Parasitic Origin of Carcinoma and Sarcoma.—Schüller (Berlin), referring to the criticism of Hauser that his preparations showed only fragments of cork, stated that he had since found the little bodies to which he had referred in the midst of tissues and the "capsules" in urine.

The Problem of the Etiology of Cancer.—O. Israel (Berlin) says the proof of the parasitic etiology of carcinoma lies in the demonstration of its infectiousness. In repeating Sjöbring's experiments he had been able to produce ameboid bodies which were purely artificial and due to bringing fat in an alkaline medium into contact with a third substance, the movement lasting as long as the alkaliescence. He held fast to the idea that new formations only occur when epithelial cells resist and when proliferation is set up as a compensation. This is benign so long as the epithelium does not overstep its limits regarding the underlying cells.

FIFTH SESSION.

Report of 60 Operations for Subphrenic Abscess.—Körte (Berlin) says about one-half the cases of this affection pass for appendicitis, and are very frequently referred to gastric ulcer. Free communication between the abscess cavity and the stomach rarely exists; only in one case was the abscess found in the right lobe of the liver. Operation was successful in two-thirds of the cases.

Treatment of Infectious Collection of Pus in the Peritoneal Cavity.—Rehn (Frankfurt a. M.) says early operation is indicated in all cases, with thorough washing out followed by drainage, preferably with smooth rubber tubing.

[To be continued.]

Leprosy in Western Nicaragua is reported as existing to an alarming extent. About 15 years ago the number of lepers in Nicaragua was estimated at 200 and now amounts to 1,500 or 2,000. All are allowed to roam at large and beg.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

A CASE OF IMPACTED FOREIGN BODY.

BY

FREDERIC GRIFFITH, M.D.,

of New York City.

Surgeon, Bellevue Dispensary; Fellow of the New York Academy of Medicine.

The history of a case of impacted foreign body remaining in the palm for two months without the patient's knowledge is as follows:

Eight weeks ago J. L., a forgerman, aged 42, while working at the anvil with his hammerman assistant, the latter struck a false blow with his sledge upon the heated metal they were working. L. felt a sting in his left hand, he was holding the work a foot away in a pair of tongs. Free bleeding coming from a small open wound over the inner side of the base of the metacarpal bone of his left thumb, and the solicitations of his shopmates, who declared there must be something in the wound, led L. to seek treatment from a physician. The wound quickly healed, leaving a small star-shaped scar at the site of puncture.

Coming under my notice at the hospital, L. stated that while he believed there was nothing foreign in his hand, he desired an opinion to settle the arguments he held almost daily with his fellows since he had returned to work. He then showed me the scar. Examining his hand I found the site of the wound to be a white, glazed, well-healed cicatrix. During my manipulations I became convinced that there was a foreign body deeply imbedded in his hand, without giving rise to external signs. It could rather be felt as lying between the third and fourth metacarpal bones in the center of the palm.

While L. declared positively that he felt no sign of abnormality I decided, after seeing him twice, that on the grounds of possible future trouble arising in his case, considering the nature of his work, that attempt at removal was justifiable. Under an average 1% cocaine hydrochlorate solution I made a longitudinal incision $\frac{1}{2}$ of an inch long in the center of the palmar surface, dissecting through the dense, subcutaneous tissue. Beneath the fascia and tendon sheaths could be felt by means of a probe a metallic substance, and after much labor with forceps and knife handle I was able to draw out a flattened, irregularly shaped piece of metal $\frac{1}{4}$ of an inch in length, $\frac{1}{8}$ wide and $\frac{1}{4}$ thick, weighing one pennyweight. But little hemorrhage took place during the removal, which was followed by rapid healing by first intention. On viewing the scale L. pronounced it to be a piece of anvil steel which had doubtless chipped off at the time of the accident.

An explanation of the inactivity of such a comparatively large body remaining in the hand without giving rise to symptoms is that it was owing to the metal being sterile from germs by heat, it being a fact that scales flying off from heated metal under the blows of a hammer may cool sufficiently in their flight not to cause flesh burns.

A PHYSIOLOGIC PECULIARITY OF THE YELLOW RACES.

BY

ALBERT S. ASHMEAD, M.D.,

of New York City.

To the Editor of *American Medicine*:—The credit for the discovery, "A physiologic peculiarity of the yellow races," which you give to Dr. Baelz, of Tokio, belongs to Dr. Faulds, formerly of Tokio. In his biologic notes, Asiatic Reports, 1878, he speaks of it and says further that "Race has some influence on pathologic processes. Blisters stain black in Japanese and not white as in negroes. Japanese and European mixed progenies are darker than European." Every one has noted the pigmented spots of Japanese sclerotics, a peculiarity belonging to negroid races. And Japanese women of leprosy families believe that by ligating the black spot at the end of the newborn infant's spine, development of leprosy can be avoided. Brinton and Quatrefoiges believed the Japanese to be a fused negro race. Brinton wrote me: "If not negroid then negritoid." Quatrefoiges says that Malaysia presents a perfect mixture of most different races from white to the black. In China, and especially in Japan, the white allophyllan blood is mixed with the yellow blood in different proportions, forming four different hybrids. The Malay races are the result of the

amalgamation, in different proportions of whites, yellows and blacks. The Malay people are not a species, but merely a population, in which, under the influence of Islamism (and Buddhism) these various elements have been more completely fused. The wide separation of the two, whites and black, is shown particularly in Japan in the Imperial family, the purest white, while the lowest stratum of the people is the curly-headed negroid, etc. The great middle class is the most completely fused mixed blood, and in this class atavism asserts itself by producing not only whitish children (always suspected of leprosy), but children of decided negro characteristics. The occurrence of the dark spot on the Japanese at birth merely signifies, in the opinions of anthropologists, that the race is a fused black race, just as is the Chinese race, but not yet so completely as this last.

A NEW DEVICE FOR FACILITATING MACROSCOPIC AND MICROSCOPIC EXAMINATION OF FECES.

BY

C. D. SPIVAK, M.D.,

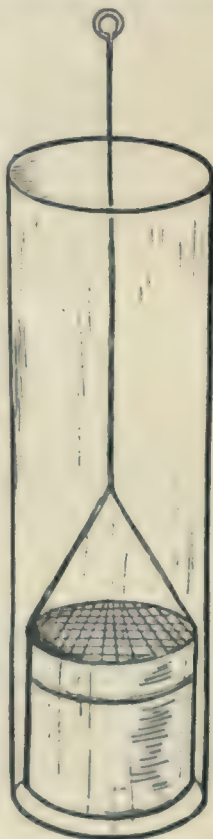
of Denver, Col.

Professor of Clinical Medicine (Diseases of the Gastrointestinal Tract), and Chief of the Clinical Laboratory, Denver College of Medicine, University of Denver, Denver, Col.

In order to make a thorough examination of a specimen of fecal matter it must be broken up into small sections, these sections being minutely subdivided. For this purpose a glass rod or a piece of wood can be used. The specimen should be spread out in layers. It may be placed in a sieve and water poured on it. Another portion should be suspended in water in a cylinder and from time to time stirred with a glass rod. After it has settled the fluid may be decanted and the deposit examined macroscopically and microscopically.

We are acquainted with only one device for separating the solid particles from the feces—namely, that of Dr. Boas.¹ It consists of a spheric vessel, the upper hemisphere being screwed on the lower. A fine sieve runs horizontally both in the upper and lower hemispheres. The specimen to be separated is placed upon the lower sieve. The vessel is hermetically covered, and the top of the vessel connected with the faucet. The water passing from the upper sieve strikes the fecal matter in a fine spray, and after it has played for 15 to 20 minutes only the solid particles of the feces remain upon the lower sieve.

I do not claim for my apparatus any great originality, nor does it possess extraordinary advantages. It is based upon the principle of washing feces in a sieve, long known to the medical profession. It consists of a bucket and a glass cylinder, the diameter being two or three inches, the bucket fitting snugly into the cylinder. The cover and bottom of the bucket are made of fine wire mesh. The specimen is placed in the bucket, the cover screwed on and the whole is lowered into the cylinder nearly full of water. By giving the bucket a churning motion by means of the long wire handle, the whole volume of water in the cylinder must rush through the bucket from above down and from below upward,



Fecal Segregator.
Bucket and glass cylinder for washing out feces.

¹ Boas, *Deut. med. Wochenschr.*, No. 30, September 6, 1900; Schmidt and Strassburger, *Die Faeces des Menschen*, 1 Teil, p. 9. There is a fine illustration of Boas' apparatus in Hemmeter's *Diseases of the Intestines*, Vol. 1, p. 230.

and thus carrying away everything except debris, stones, mucus, concretions, proglottides, etc., which remain in the bucket. Too much force should not be used. Five minutes is sufficient.

The instrument is simple, does not need flowing water and can be made by any tinsmith from any old tin box.

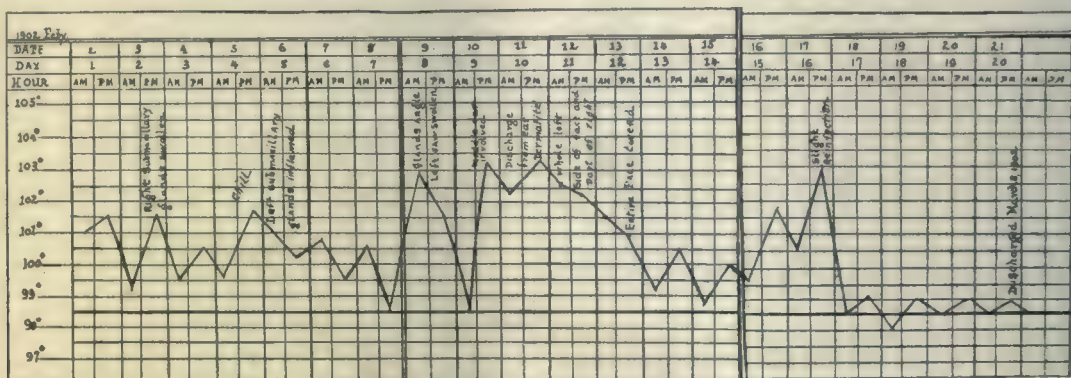
A CASE OF PRIMARY ERYSIPELAS OF THROAT, MIGRATING TO FACE, VIA LEFT EUSTACHIAN TUBE AND AUDITORY CANAL.

BY

EDWARD L. FROST, M.D.,
of Buffalo, N. Y.

Mrs. S., a widow, aged 58, has a negative family history; always well, with the exception of attacks of facial neuralgia and small areas of eczema. February 2, 1902, she had not been feeling well for a day or two, and is now suffering with pain throughout the body; this is especially severe in the head and back. Her throat is very sore, dark red in color, anterior pillars, pharynx and tonsils are swollen and greatly congested; there is no exudate visible.

This condition failed to improve under the usual treatment. The uvula soon became edematous. The pain in throat was out of all proportion to the amount of swelling. On the second day the right submaxillary glands became swollen and extremely sensitive to touch, the swelling subsiding during the next two days, when the left lower submaxillaries became involved; followed two days later by an involvement of the glands between the angle of the jaw and left ear. Nervous symptoms were very troublesome, insomnia, restlessness and at times delirium. Dysphagia was very annoying, swallowing liquids causing attacks of choking and strangling, this being probably



due to the swelling of the epiglottis. As the mouth could only be slightly opened, satisfactory laryngoscopic examination was prevented. Some difficulty in breathing followed these choking attacks several times. There was a moderate degree of gingivitis, tongue dry, breath somewhat foul. Secretion in the throat consisted of a tenacious white mucus, necessitating a swab for its removal. Albuminuria appeared on the fifth day, and was present in considerable quantity by the eighth day. On the morning of the ninth day her temperature was normal, lymphadenitis was apparently subsiding when she commenced to complain of pain in the left ear, continuing until the following day, when perforation and the escape of a purulent fluid occurred. This was quickly followed by a cutaneous erysipelas which spread rapidly over the ear, cheek and forehead, and continued to spread until the fourteenth day of the disease, when it covered the anterior portion of the scalp, and the whole face including the chin, also the neck completely encircling it; the right middle ear also became involved, but subsequent to the involvement of the face. With the exception of a slight recurrence on the sixteenth day due to a small focus of reinfection on the left side of face the patient made an uninterrupted recovery.

She had a relatively slow pulse throughout the disease, never higher than 110, probably due to individual peculiarity (being a large woman), and to stimulation, brandy and strychnia being used freely.

Local treatment Unguentum Crede 2.5 grams by inunction thrice daily was commenced on the fifth day for the lymphadenitis discontinued on the ninth and resumed again on the twelfth on the left side of face using 10% ichthyol on the right. While it may have had a beneficial constitutional effect it did not prevent the spread of the disease, and I could not see that it possessed any advantage over the ichthyol. The usual gargles and sprays were used for the angina, but with little relief until the dermatitis appeared, when it gave no further trouble.

The consulting physician was Dr. William H. Thornton, to whom my thanks are due.

MENTHOLIZATION OF THE MUCOSA OF AIR PASSAGES.

BY

W. A. BRIGGS, M.D.,
of Sacramento, Cal.

To the Editor of *American Medicine*:—Mentholization of the mucosa of the air passages before, during and after etherization has given me such satisfaction as to impel me to submit the method to the profession at large. The method is as follows: Sprinkle a dram of oil of peppermint or of saturated alcoholic solution of menthol in the cone; let the patient inhale of this freely for three minutes, then saturate the cone with ether and bring it down slowly over the face; after a few full inhalations crowd the cone down well and push the etherization as rapidly as is consistent with safety; continue the use of the mentholized cone through the whole period of anesthesia, replenishing the ether as usual. After the operation let the patient inhale oil of peppermint or menthol from a handkerchief freely and often until the tendency to nausea subsides.

The advantages of this over the usual method are the following:

1. Entire freedom from cough and sense of impending suffocation and comparative freedom from nausea, vomiting, and retching.
2. Ease and rapidity with which anesthesia may be induced and the ease and smoothness with which it may be maintained.
3. The entire absence or marked abbreviation of the period of excitement.

4. Economy both of ether and of time.
5. Profounder first anesthesia, under which minor operations may be done with more certainty.
6. Probably less postoperative nausea and vomiting.

THE SURGICAL USES OF THE HAIRPIN.

BY

JOHN J. REPP, V.M.D.,
of Ames, Ia.

To the Editor of *American Medicine*:—I have read with interest the article of Dr. Rugh, Vol. III, No. 14, p. 556, under the above title. I beg leave to call attention to a very important surgical use of the hairpin that has not been referred to by Dr. Rugh. In *The Journal of Comparative Medicine and Veterinary Archives*, Vol. xxiii, No. 3, p. 160, Cecil French, D.V.S., of Washington, D.C., in an illustrated article describes very clearly the use of the hairpin in performing enteroenteral anastomosis in the dog. The hairpin in this case takes the place of the Murphy button, the Laplace forceps and other contrivances for facilitating this operation. For this use of the hairpin Dr. French, doubtless properly, claims originality. He does not refer to the possibility of its use in human surgery, but I have no doubt surgeons would do well to read the article to which reference is made.

A Pettenkofer Memorial.—A committee with Professor v. Zittel as president has been formed for the erection of a monument to Professor Max v. Pettenkofer in Munich.

ORIGINAL ARTICLES

PNEUMONIA: AN ACUTE SELF-LIMITED SYSTEMIC INFECTION.

BY

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Pneumonia is here held to be an acute, self-limited, systemic infection, with sundry diverse, though chiefly pulmonary, disclosures. Furthermore, it is endemic and sometimes epidemic in almost every community. More than a quarter of a century has now elapsed since Theodore Jürgensen,¹ that prince of observers and diagnosticians, advanced the following proposition, namely: "Croupous pneumonia is a constitutional disease, and is not dependent upon a local cause. The pulmonary inflammation is merely a chief symptom, and the morbid phenomena are not due to the local affections. The hypothesis of a morbid cause is indispensable. Croupous pneumonia belongs to the group of infectious diseases." Meantime, this doctrine was proclaimed in our country by the distinguished physician, the late Dr. William H. Draper;² and subsequently, Austin Flint,³ than whom there was no greater teacher and clinician in America, came also to a similar conclusion. "The pulmonary affection," says Austin Flint, "is doubtless inflammation, but it is the local manifestation or the anatomic characteristic of an infectious febrile disease, sustaining to the latter a relation analogous to that which the infection of the solitary and agminated intestinal follicles sustain to typhoid fever." Still, notwithstanding the dicta of these eminent men, a question of fact, at least among scientists, is settled not so much by authority as by demonstration. Quite recently Dr. Andrew H. Smith,⁴ whose renown as an observer and writer entitles his statements to most respectful consideration, has taken the position and defended it by forceful argument that "Lobar pneumonia is an acute disease in which a specific parasite invades the air cells of one or more pulmonary lobes where it grows in a fibrinous medium exuded from the functional capillaries, and generates a toxin that infects the system at large." There are several questions that suggest themselves in regard to this declaration; for example, what determines this exudation of fibrin into the air cells, admitting an entire absence of parenchymatous inflammatory reaction? And in default of a provident exudation awaiting them, upon what do the bacteria exist and reproduce; for, like all living matter, food is essential to their existence and reproduction? Furthermore, if as a result of this alleged primary growth of the pneumococci in the air cells toxins are developed and absorbed as described, why are these perishable germs not then and there destroyed by their own poisonous excretions? But such questions, like their solution, being purely theoretic, are generally unconvincing. Some who have made a special study of physical exploration find that the initiatory chill and the fever, and various symptoms of pneumonia may precede by many hours, nay even days, any local pulmonary evidences, and argue from this absence of signs that the disease cannot therefore have begun in the air vesicles. The reply to this objection is that these organisms are meanwhile passively growing in their vesicular lodgment. Here, again, proof is difficult in either direction. It would seem that the chill of pneumonia is analogous to the chill in malarial fever, and that these rigors are brought about by the eruption in the blood of their respective parasites, only the outbreak in the former disease is final, while in the latter it may be periodic. Not long ago it was my fortune to be at the side of a person during the chill and the fever which

preceded a deposit in the lung. From the previous history pneumonia was foreseen, the patient therefore was put to bed and the chest examined carefully and repeatedly. Nothing was found but a lessened intensity of the breathing on the side eventually affected during the following 24 hours, when finally dulness and bronchial breathing, without râles or crepitation appeared, and in a week disappeared. Observations like these would practically leave unsettled whether or not the diplococci are first in the blood or in the lungs.

We are not without conclusive testimony, however, that these microbes are in the blood exclusive of hepatization, or of presumptive evidence that they are there prior to hepatization. Washbourn⁵ says: "Last year, in a paper read before the Royal Medico-Chirurgical Society, I brought forward evidence to show that the constitutional symptoms of pleurisy and empyema, when caused by the pneumococcus, are exactly similar to those of pneumonia; and I have no doubt that they are due to the same cause, *i. e.*, the absorption of the toxins produced by the pneumococcus." Also from the same source, "but the pathogenic role of the pneumococcus in the human body is not limited to the production of pneumonia. It is the cause of many cases of pleurisy and empyema, meningitis, and otitis, *occurring quite independently of pneumonia*, and is also the cause of ulcerative endocarditis and various suppurative affections of joints and other lesions following upon an attack of pneumonia." Moreover, it is recounted by Wm. Osler⁶ that "An acute general infection with *Micrococcus lanceolatus*, without localized foci, may prove rapidly fatal, constituting a pneumococcus septicemia comparable to the typhoid septicemia already described." Townsend has reported a remarkable case in a girl aged 6, who had pain in the abdomen, vomiting, and a temperature of 104.2° F. There was no exudation in the throat. Twenty-four hours from the beginning of the symptoms she had a convulsion and died six hours later. There was found a general infection with the pneumococcus, which occurred in the blood, lungs, spleen, and kidneys.

In Flexner's study of terminal infections, "*Micrococcus lanceolatus* was found 4 times in acute peritonitis, 11 times in acute pericarditis, 5 times in acute endocarditis, 3 times in acute pleurisy, and 3 times in acute meningitis." Curry⁷ states that in 1896 he examined 32 consecutive cases of acute lobar pneumonia, and in every one *Micrococcus lanceolatus* was demonstrated. He further remarks that the coccus is easily overlooked, especially in mixed infections. Moreover, this author has repeatedly cultivated this microorganism from the blood and various organs, when it was absent from a culture from the lung. Lenhartz⁸ found the pneumococcus in the living blood in 20.7% of a continuous series of 130 cases of pneumonia, and according to his observation this parasite is found in the living blood oftener than has been stated hitherto, but these pneumonias he reflects were always of the severest type, and generally ended fatally. Hereafter, in my opinion, with extended experience and improved methods of investigation, the diplococcus will be found in the living blood of practically all patients suffering from pneumonia in the same manner as the plasmodium is found in malarial affections.

Inasmuch as the texture of the lung in pneumonia is not materially altered by the process which we are wont to call inflammation, and because of the arguments in regard to this subject so ably advanced by Dr. Andrew H. Smith,⁹ the assumption appears reasonable that what takes place in the lung as one of the results of this parasitic infection is not in reality what we understand as inflammation but is rather simply an exudation. The late Sir Andrew Clark,¹⁰ of London, likewise more than 16 years ago maintained that true pneumonia is not an inflammation. Herein is an illustration of what so frequently occurs in life, namely, that various minds in different parts of the world, thinking in like

directions, arrive at similar conclusions and often independently. With respect to the generic term "inflammation" in connection with this discussion and Dr. Smith's suggestive pamphlet on the desirability of a change in the name to meet our modified conception of the process due to modern pathologic investigations, it would appear that the time-honored word is too deeply rooted in our medical language and literature to be easily extirpated. We shall probably be constrained to continue to employ the old familiar expression, though it has gradually come to signify not what was formerly understood thereby, but rather a proceeding which is recognized, and which has been especially brought to our recognition by Dr. Smith's interesting monograph, as simply the direct reaction of the cellular tissues, no mediate entity being posited, against poisons, foreign bodies and pathogenic microorganisms. Infection and the resulting acute degenerative changes of the cardiac muscles, to a much greater extent than obstruction in the lesser pulmonary circuit through filling up of the lung, is the cause, in my way of looking at it, of the gradual failure in the power of the heart in pneumonia. So long as this important organ does not become badly infected it remains equal to all such mechanic emergencies. My conviction would seem to find support in the following experiment of Carnot and Fournier.¹¹ Rabbits, to which the authors gave minute quantities of toxin derived from the pneumococcus, were attacked by severe inflammation of the heart muscle, intestinal hemorrhages, and degeneration and fragmentation of the muscles of the shoulder, legs and spinal column. This toxin is, therefore, according to these tests, an intense poison for the muscles, including those of the heart.

The question regarding the exact relation of pathologic leukocytosis to the diagnosis of pneumonia, as well as to the prognosis, in view of my experience and that of others, would still seem to be open for discussion. For instance, in six of a series of cases of pneumonia recently in my service at the New York Post-Graduate Hospital, during the acute activity of the disease in various degrees of seriousness, a count of the white blood-corpuscles was made in the laboratory with the following results, viz: 5,400, 6,800, 8,000, 9,000, 15,000, and 33,000, respectively. Seeing that these patients recovered, and only two of the number can be said to have had leukocytosis, whereas at least two fell a little below the normal average, albeit from limited data, the issue of the blood-count appears somewhat equivocal. It suggests the idea that a moderate degree of leukocytosis may indicate two different conditions, that is to say, a corresponding moderate degree of poisoning, or, on the other hand, an inability to react to a profound infection. Still, it must be admitted that this enumeration was not made during the first few hours of the attack; nor is this prompt counting often possible in either hospital or private practice. Lenhartz¹² states that "in acute lobar pneumonia the increase (leukocytosis) occurs here within a few hours after the chill, rapidly reaches the height of 20,000 to 30,000, even 60,000, cells per cubic millimeter, falls very decidedly after 24 hours, but remains more or less above normal until the crisis, and falls still further only with the decline of temperature, again reaching the normal a few days later. In cases ending fatally the increase over what already obtains, if present at all, is insignificant. A definite parallelism between the degree of leukocytosis and the local and general pathologic phenomena has not yet been positively determined. A point of diagnostic importance is the fact that the results thus far obtained may be advantageously employed in those not infrequent instances in which it is desirable to make a differential diagnosis between croupous pneumonia and typhoid fever, and between purulent and tuberculous meningitis. Under these circumstances, a normal or a subnormal leukocyte count will decide the diagnosis in favor of typhoid fever and of tubercular meningitis, as against croupous pneumonia and purulent meningitis, in

the order designated. The fact that the termination of those diseases in which inflammatory leukocytosis occurs at all is favorable when the leukocytes are considerably increased and unfavorable when they are diminished, suggests that this process is a salutary one. A satisfactory explanation, however, of acute inflammatory leukocytosis is still lacking."

Granting this sudden accession of leukocytes in the early hours of pneumonia, it certainly strikes the imagination as an uprising, as it were, of the cellular elements of the body to repel invasion; the fever, meantime, if not an ally is a pretty accurate indication of the internal conflict which is being waged for self-preservation. If, by the way, it is true that the death struggle is a form of poisoning, it is interesting to note that Lenhartz¹³ indicates a possible connection between the action of certain toxic products at this fatal juncture and the presence of an unquestionable terminal leukocytosis.

What can be the import of saying that a person is "threatened by pneumonia," which is now and then heard, is difficult to understand unless it is another way of expressing simply apprehension. Likewise the frequent statement that some one has suddenly "died of pneumonia." Granting the somewhat brief duration of this malady, death is seldom very sudden, relatively speaking. The seeming suddenness is possibly owing to a failure to detect the disease until death is already imminent from neglect on the part of the patient to promptly summon medical attendance, or from an inability on the part of a physician for some reason to make an early diagnosis. According to Pye-Smith,¹⁴ "in unfavorable cases it is very rare for death to take place on the first or second day; even with double pneumonia the patient seldom succumbs before the fourth day."

The previous history of the individual has much to do with the prognosis in an attack of pneumonia. Many persons assailed by the disease have sealed their fate in advance owing to an habitual neglect to provide for such a contingency. To be sure, the majority of those attacked in early life recover, and, contrariwise, the majority of those in advanced life succumb. But the terms youth and old age are elastic, and while many grow old prematurely, to maintain the integrity of the cells of the body with advancing years is to remain young and to retain the perquisites of youth far beyond the customary limits of youthfulness. Moreover, although with the progress of years the disease becomes more fatal as a general statement, nevertheless such is the power of an established habit of living there often appears to be a better chance for recovery along in the eighties than back in the sixties.

In my opinion, with the infection of pneumonia it is not so much the number of germs introduced into the human economy which works the havoc as an antecedent exceeding fertility of the soil for their growth and reproduction. It seems fallacious to believe and teach that pneumonia ever attacks those in perfect or so-called robust health. Such belief and teaching cannot be well-founded and is prone to work injury, for it puts a premium upon carelessness in regard to what is daily required to make for health and thereby immunity. The liability to this affection of many who are worn out by other diseases and by intemperance is recognized. Why not, therefore, reason that whoever is attacked by this malady in an apparently normal condition must of necessity be otherwise, in conformity with what generally obtains, rather than conclude that something out of the natural order of events, as an effect without an adequate cause, is either probable or possible? The insidious changes that may take place in the human system through defective oxidation, for instance, and that are known to reveal themselves by the presence of indican in the urine, and the often ill-defined evidences of chronic interstitial nephritis that during considerable periods evade detection by the urine, as well as elsewhere, furnish reasons for such an argument. Pernicious

bacteria fall upon stony places when they light among the healthy cells and tissues, and if they grow at all it is but a stunted growth and unproductive.

The virulence of individual attacks at all times, or of all attacks at different times, depends much more upon extraneous causes that ensure fertility of the field—the culture medium, in other words—than upon any inherent difference in the pathogenic power of microorganisms. The seed is constant, the soil variable, the harvest contingent. Finally, “it is a very old belief,” says that profound thinker, Theodore Jürgensen,¹⁵ “that men of strong constitutions are especially liable to be attacked by pneumonia. The fact is otherwise; a strong constitution protects against disease.”

Bouchard¹⁶ makes it plain that self-poisoning is averted only by the activity of the excretory organs, in his estimation chiefly the kidneys, and he shows that one day of vigorous muscular exercise in the open air of the country reduces the toxicity of the urine by one-third for the 24 hours. It does not seem to occur to him, however, that this change in the urine is chiefly an index of what the liver, lungs and skin are doing in the fresh air under the stimulus of physical exertion for the neutralization in the body of poisonous substances. But it is an argument, none the less, in favor of daily outdoor exercise as a means of preserving the integrity of the tissues and thus their invulnerability; a doctrine whereof it has been my constant endeavor to uphold and to proclaim. An accumulation in the system of the products of worn-out tissue and of excessive alimentation injures the delicate cellular elements of the organism and invites infection only a little less than the depraved condition resulting from poverty and starvation. Indeed, if Bouchard's experiments are correct, and my conclusions are not erroneous, the human economy is so delicately poised always between health and varying degrees of the reverse that mankind can ill afford to neglect the ordinary precepts of hygienic teaching if he would escape an ever-threatening microparasitic invasion.

Exposure to sewer gas of considerable duration establishes a proneness to the infection of pneumonia, and the degree of the intoxication is an important factor in the gravity of an encounter with the vagrant diplococcus. There was formerly a patient of mine who occupied a room at the top of a hotel where, on the roof, near his window, was a ventilator for the sewage. Inhaling this mephitic air, night after night, and, meanwhile, leading a sedentary life during the daytime, he finally became thoroughly poisoned and debilitated. Thereupon one afternoon in the early spring he took a long ride in an open street-car, hoping thus to mend matters. This exposure, however, was promptly followed by a chill, high fever, pain in the side and dyspnea. In due time the physical signs of pneumonia appeared in the lungs, and the man, who was entirely free from alcoholism, immediately became wildly delirious, and going rapidly from bad to worse, died within a week. Here, in my opinion, the virulence of the pneumonia was due to the lowered resistance caused by the already existing poison in his system from prolonged exposure to these noxious emanations. Quoted in the monograph on Pneumonia, by Sturges and Coupland,¹⁷ is the following:

“Dr. Gooch writes of an epidemic at Eton, June 5, 1883. The first case was that of the butler, who was taken ill with double pneumonia and nearly died. A few days after, two boys had sore throats, and another boy had an attack of pleuropneumonia. Two days after this, several other cases of sore throat and two or three of diarrhea occurred in the house, and then another boy was seized with acute double pneumonia, which ran a severe course. At the same time a third boy in another boarding-house was attacked with pneumonia, but though boarding elsewhere, he was often at lessons in the house first mentioned. ‘We examined,’ wrote Dr. Gooch, ‘the water and milk supply; also the drainage, which was imagined to be in perfect order, and we ultimately discovered that the trap from the sink in the butler's pantry was defective and through it sewer gases were escaping into the house. In this pantry the

butler slept, and the pupils' room and boys' room are not far distant from it. I think there can be no doubt that all this illness was caused by the defect in the drain mentioned.’”

These conclusions are but partially correct in view of our more recent and exact knowledge of the natural history of the pneumococcus. Preparatory sewer gas poisoning plus an infection of the omnipresent diplococcus are here unmistakable. Sturges and Coupland¹⁸ also repeat that “Ritter gives an instance of five persons dwelling in the same house being attacked (with pneumonia) within five days (March 13 to 18, 1879), and two others who had visited the house later falling ill.” Likewise, these authors note that “Bielenski records the incidence of pneumonia upon nine out of ten inhabitants in one house attacked within two weeks of each other and all recovering. Here, moreover, there was not only overcrowding, but the house lay near a graveyard.” Again, an excerpt from these writers: “Mendelssohn gives other illustrations, notably one in which a convalescent from typhoid fever died from pneumonia contracted, it was believed, by his transference to a bed just previously occupied by a patient with the latter disease.” Commenting upon these revelations, Sturges and Coupland¹⁹ conclude that “the spread of pneumonia through a district or street or house is no evidence of infection; it is evidence only of epidemic prevalence in this particular area;” but, on the contrary, viewed from the present standpoint of bacteriology, this extension from person to person in house, street, and even district, impresses me as very good evidence of infection and as being now beyond the realms of controversy. It has been my lot to observe one case of pneumonia succeed another in the same household. William Osler²⁰ has seen three members of a family attacked consecutively with a most malignant type of pneumonia, and two or three cases in a ward follow each other in rapid succession. And direct contagion has been more than once suggested in my experience as well as in that of William Osler²¹ and other investigators. But why multiply these citations? Medical literature abounds with examples that indicate infection, if not contagion, in pneumonia, and the marvel is that at present any physician exists who can conceive of other than this interpretation. The doctrine long held and enunciated by a few close observers, that pneumonia is an acute self-limited systemic disease of specific causation, has successfully emerged at last from the bane of ridicule through repeated demonstrations of its soundness, and it must soon, by virtue of its reasonableness and the proof of its truthfulness, receive the unqualified adherence of all thinking members of the profession.

SUMMARY.

To repeat concisely what this essay has ventured at some length to uphold, pneumonia is an acute, self-limited, systemic infection, whereof the concomitants, though various, are chiefly pulmonary; it is endemic, occasionally pandemic, in many countries, and it occurs everywhere sporadically; regarding the lung tissue, the affection seems more in the nature of an exudation than an inflammation; the frequency of detection of the diplococcus in living blood in pneumonia suggests that by improved technic it will be found, like the plasmodium in malaria, invariably; infection of the heart muscles with resulting degeneration has more to do with heart failure than mechanic obstruction; the exact significance of pathologic leukocytosis requires further elucidation; preexisting fertility, as to the condition, determines the degree of infection, rather than the number of microbes, which are in quality unchangeable; although neglect of personal hygiene and of sanitation predisposes to pneumonia, unqualified good health, on the other hand, is a protection therefrom.

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MARROW AND SPLEEN CELLS, CONSIDERED IN THEIR RELATION TO THE BLOOD-CELLS.

BY

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MARROW CELLS.

The proper myelocytes, or marrow cells, were first described by Professor Robin, of Paris, in 1845,¹ who named them medullary cells (*cellules médullaires*). His observation was confirmed in 1850 by Kölliker, of Würzburg,² who called them marrow cells (*Markzellen*). The first English description of them is to be found in Kölliker's Manual of Histology (*Handbuch der Gewebelehre*), translated by Busk and Huxley, and published by the Sydenham Society in 1854.

These cells are round or ovoid, and from 15 to 20 microns in diameter; that is to say, from two to three times as large as a red blood-corpuscle ($7\frac{1}{2}$ microns), and from one and a half to twice the size of the ordinary lymph-cell (10 microns). They contain a single large and usually excentric nucleus, sometimes round, sometimes ovoid, sometimes kidney-shaped, and sometimes distinctly cleft. This nucleus stains readily with the basic dyes, though less deeply than that of the lymphocytes. The body of the cell takes the same dyes, although less deeply than the nucleus, and decidedly less deeply than the cell bodies of the lymphocytes. In a word, the true marrow cells are basophiles, a point hitherto unnoticed.

I gained my first inkling of this important fact from a paper on myelomas by Dr. J. J. Thomas, of Boston.³ These tumors consist chiefly of marrow cells, which, when stained with eosin and methylene-blue, take a stain "varying in tone from a faint pinkish tinge to a distinct bluish one, the latter greatly predominating." I afterward found a superb plate by Clarkson,⁴ representing the cellular elements of red bone-marrow, stained with eosin and methylene-blue. In this plate all the myelocytes are blue.

I determined at once to make a test of it. The technic is perfectly simple. A common smear of red bone-marrow shows the cells quite well, without going through the tedious process of hardening, decalcifying and sectioning. I got this hint from Stöhr.⁵ The rib of a veal, pork, or lamb cutlet yields a good supply of marrow. The rib should be cut in two to get a clean specimen, and the marrow squeezed out with a stout pair of pliers. It exudes in thick red drops, which can be spread in the ordinary manner on glass slides and covers,

which may be fixed by heating over a spirit lamp or Bunsen burner, or still better by the convenient method recommended by Mallory and Wright⁶—that of toasting them on a hot copper strip at or about the temperature of boiling water (212° F.).

I tried several stains. Eosin and methylene-blue show the basophile protoplasm well enough, but fail to bring out a perfect demarkation of the nucleus. I obtained the best pictures with alum-hematoxylin and Bismarck-brown, staining half an hour in hematoxylin, then washing it thoroughly, and finally counterstaining with a dilute solution of Bismarck-brown. The hematoxylin stains the nuclei purple-blue, while the protoplasm takes a beautiful golden-brown color. This makes a fine picture, and demonstrates perfectly the basophile character of the protoplasm. Hematoxylin and basic fuchsin also make a fine picture.

I next conceived the notion of trying to bring out all the cellular elements of the marrow by the consecutive application of hematoxylin, eosin, and Bismarck. In this experiment I was disappointed, as I found that the intercellular substance took a coppery tinge from a blending of the red and brown, and so obscured the cells. Yet it is possible that the same combination might answer well as a blood stain as a substitute for the troublesome and uncertain triple stain of Ehrlich. This I hope to test later.

The fact that the marrow cells are basophile shows them to be identical with the so-called large lymphocytes of the blood, whose origin has heretofore been in dispute. The large lymphocyte is the true myelocyte of the blood. The neutral and alkaline (oxyphile) myelocytes of Cornil and Ehrlich, found only in diseased blood, are probably degenerated forms of the true myelocyte, with which they are morphologically identical, though differing in tinctorial properties. These tinctorial differences are due, as I conceive, to chemic changes in the cytoplasm, the nature of which I have considered elsewhere.⁷

I find it stated by Mr. Clarkson⁸ that the marrow cells are capable of amoeboid movement. A careful study of the nuclei makes it pretty clear that these also are capable of movement, probably of a rotatory character. Evidence of this is found in the generally excentric position of the nucleus, and its tendency to curl and break into twisted and irregular shapes. Here we trace the formation of the lobulated or multiform (polymorphous) nucleus. Cells with multiform nuclei are extremely common in red marrow, and resemble precisely the multinuclear leukocytes, except that the cytoplasm is basophile. It is perfectly well understood that the multinuclear leukocytes are not really multinuclear, or at least rarely so. The nuclei are not multiple, but multiform, many-shaped. Still the old designation is well enough, provided we know what is meant by it.

From these facts it is clear that marrow cells are in all probability the progenitors of the multinuclear leukocytes. Böhm and von Davidoff hold a similar opinion.⁹

SPLEEN CELLS.

The spleen, or milt, as the butchers very properly call it (the name is common to all the Teutonic languages), consists essentially of cells in a meshwork of connective tissue, interlaced with elastic and smooth muscle fibers, blood and lymph vessels, and nerves. It has been superficially compared to a lymph gland, though with little reason, since the lymph glands contain but one sort of cell and are provided with afferent and efferent ducts, while the spleen has no ducts and contains several kinds of cells. These are red and white blood-corpuscles, and multinucleated giant-cells resembling those of bone-marrow. In fact, so far as the cellular elements are concerned, the spleen-pulp more closely resembles red bone-marrow than any other tissue in the body.

The best material for the study of spleen tissue is found in the spleens of freshly killed animals, which can

be procured at any slaughter-house or ordered from the nearest butcher. For the study of the cellular elements, common smears of the pulp¹⁰ answer better than sections, since by this method one gets rid of the tissue fibers, which confuse and obscure the picture. I speak from experience, since I have tried both.

Of all the spleen cells the red blood-corpuscles are by far the most numerous. They are decidedly more numerous here than they are in red marrow, though this also contains great numbers of red blood-cells. They are best demonstrated under eosin and hematoxylin. Nucleated red cells (erythroblasts) are also far more numerous in spleen than in marrow. Many of these contain dividing or mitotic nuclei, a fact recognized by many observers and figured in many plates. I have seen many of them myself, though I have never been able to find them in marrow. One finds also a great many microcytes and poikilocytes.

The white corpuscles are far less numerous in spleen than in marrow. The majority of these are small uninuclear cells, like the lymph cells. They are distinctly basophile. This I proved definitely by staining with hematoxylin and Bismarck-brown. It is customary to designate these cells as lymphocytes, but they are not all produced in the lymph glands. Many are found in the marrow and connective tissue spaces, as well as in the spleen. Still there is no objection to the term lymphocyte, provided it is used merely to indicate a certain type of cell, without meaning to specify always the exact source from which it comes.

I find also very many large uninuclear leukocytes, often twice the size of the lymphocytes, and nearly if not quite identical with the true marrow cells or myelocytes. They exhibit the same basophile staining with hematoxylin and Bismarck, a point heretofore unnoticed. The only difference I can discover between these cells and the marrow cells is that the nucleus is more apt to be centrally placed, and shows less tendency to divide. In fact, the dividing, mitotic or multiform nucleus is seldom seen in these cells. Multinuclear leukocytes are also comparatively rare in the spleen.

The facts stated lead to certain deductions. As regards the red corpuscles, the obvious conclusion is that they are elaborated by the spleen. The presence of so many nucleated and developmental forms seems quite conclusive on this point. The production of red corpuscles in the red marrow rests on much slenderer evidence, and yet is universally admitted. Why then the reiterated assertion by so many authors that there is no proof of the formation of red corpuscles in the spleen? This brings us to a curious chapter of medical history.

Over a hundred years ago William Hewson, a contemporary of the Hunters, made an interesting study of the blood-corpuscles, and reached the conclusion that they were formed in the spleen. This doctrine held sway for nearly 80 years, when it was suddenly attacked by the German histologist, Kölliker. In 1846 the Sydenham Society of London published a complete edition of Hewson's works, with notes and additions by Gulliver. In the following year (1847) Kölliker, who knew English perfectly well, and once delivered a Croonian lecture in London,¹¹ published a paper on the Structure and Functions of the Spleen.¹² In 1852 he reembodyed the substance of this paper in his *Mikroskopische Anatomie und Handbuch der Gewebelehre*. He took strong ground against the theory of Hewson, and tried to uphold the contrary hypothesis that the spleen was an organ for the destruction of the red corpuscles. This improbable theory has been earnestly combatted by such men as Remak, Gerlach, Funke, Tizzoni, Crédé, and Zesas. I shall adduce but one argument against it. Extirpation of the spleen in men and animals, whenever recovered from, causes marked diminution in the number of red corpuscles and an immediate fall of the hemoglobin index.¹³ This seems a complete refutation of the theory of Kölliker. It is also a partial, though

incomplete, confirmation of the doctrine of Hewson. In 1868 Neumann and Bizzozero propounded their theory that the red blood-corpuscles are formed in the red bone-marrow. This theory has been generally adopted. I believe in it myself; yet I believe also that the spleen is an active sharer in the work and will ultimately be recognized as such. In this view I find myself sustained by Böhm and von Davidoff,¹⁴ as well as by Dürk, of Munich.¹⁵

Respecting the leukocytes, I have little to add, except that the spleen seems to have a less important agency in the formation of these bodies than the marrow and lymph glands. The spleen seems to have little share in the production of the multinuclears. It probably does contribute a few of the large uninuclear leukocytes designated by Virchow as splenocytes. Yet the name is really of little value, since it is impossible to distinguish them, practically, from the true or basophile myelocytes.

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PRINCIPLES OF HYDROTHERAPY.¹

BY

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Hydrotherapy means a methodic application of water at various temperatures for dietetic, prophylactic and therapeutic purposes. In order to use this powerful method intelligently, it is necessary to understand the action upon the healthy organism. The organism is surrounded by air, the temperature in immediate touch with the body varying, according to a number of observers, from 33° to 36° C. Rubner states that man dresses so that the heat he loses corresponds to a loss he would sustain naked at a temperature of 33° C. The skin acts as a protective covering, defending internal structures from external violence mechanically and essentially as a great complex organ of sensation.

The application of water causes a sensation of touch and temperature and produces slight irritation by chemie action. In some instances this action is increased by the addition of various salts or mustard; in others it is decreased by the addition of bran or slimy substances. It is at once clear that all these factors act in unison and that we never can produce with water application a sensation of temperature alone without producing a sensation of touch as well, though according to the mode of application we use either the one or the other may be predominant.

Mechanic irritation is slight in a simple bath but becomes powerful under a douche. The temperature of the water may be varied to suit the purpose, and this is

¹ Read before the Orleans Parish Medical Society, January 25, 1902.

by far the most important factor in hydrotherapy, because the water can be employed as a heat-carrier at any degree of temperature. The chemic properties of water are only of great importance when used for internal medication.

Another factor of importance in the study of water as a therapeutic agent is that with each application we either add heat or abstract it from the body. In order to keep its temperature permanent the organism will increase or decrease heat loss, and if this is not sufficient, heat production. The former is of a physical nature, the latter is a purely chemic process. We may then say that the effect of water upon the organism is due to the changes it produces as an irritant and causes by its abstraction or addition of heat.

Recent investigations have shown that certain nerves convey heat and others convey cold. The sinking of the surface temperature, therefore, acts as an irritant for the cold-conducting nerves and a rise in surface temperature as an irritant for the heat conductors. It is within the experience of everyone that a quick change of temperature will increase the effect and a gradual change may decrease it to such an extent that it becomes almost unnoticeable. Absolute temperature and mode of application may cause an entirely different effect, and the modifications that can be produced by varying one or the other factor are innumerable. The surface of the body subjected to the procedure influences the result, as is well shown by Weber's experiment. If we immerse the index finger of one hand and the whole other hand in hot or cold water we will find that the sensation produced is not the same, but the water touched with the whole hand feels warmer or colder, the sensation being of greater intensity. Treating a larger or smaller surface will change the effect, and the intensity will be proportionate to the size of surface. However, the final result further depends on the particular place irritated and the state of the nerve termini in the skin after various irritations have preceded it. It also changes with individuals to such an extent that the same application may produce severe pain in one person while in another it will call forth only an agreeable sensation. The addition of mechanic and chemic irritants may still further enhance the effect.

A consideration of these points will enable us to produce for practical purposes the effect needed in each case, from an almost insensible irritation to a shock.

A consideration of the effect of hydrotherapeutic measures upon the various organs and structures of the body will show that we can greatly influence the *circulation*, producing hyperemia and anemia at will. For instance, an icebag applied to the cutaneous surface causes an impression upon the terminal nerve endings, sensory impulses are conducted at once to the central nervous system which in turn sends reflexes, influencing every function of the body. The direct effect of cold upon the vasomotor nerves produces a narrowing of these vessels and raises blood-pressure by offering resistance to the current. The muscles contract and the bloodless, pale and flabby skin shows the picture of a "cutis anserina." This is followed by dilation of the vessels and reddening of the skin, which becomes cyanotic if the application is not removed. When the icebag is removed the pallor lasts for a little while; this is followed by dilation of the vessels and the skin shows a healthy glow, accompanied by an agreeable sensation of warmth.

If heat below 40° C. is applied, the dilation of the vessels and reddening of the skin occurs at once, and gradually becomes more intense. The application of great heat will cause immediate paling followed quickly by reddening, and this persisting for some time after the application has been removed.

Though heat and cold act in an entirely different way both produce an active hyperemia, that is, one due to arterial dilation in contradistinction to passive hyper-

emia due to venous stasis. Both act directly and by reflex. Hyperemia is accompanied by increased, and anemia by decreased, volume. These changes influence the blood distribution throughout the body. Winternitz observed an increase of volume in an arm placed in a plethysmograph during a cold sitz-bath and a decrease during a hot sitz-bath. Schullers' experiment on the rabbit shows a dilation of the pia vessels on application of cold to the abdomen and a narrowing on application of heat. In general we can say that the vessels of the internal organs, and especially those of the abdomen, possess an antagonistic, compensatory action to those of the skin. The vessels of the organism never contract or dilate all at the same time.

Being able to control circulation, we can relieve congestion and inflammation by causing contraction of the vessels in the inflamed portion and by diminishing its blood supply. Priessnitz taught that inflammation of feet and hands should be treated with cold applications to the knee and elbow, those of the head with applications to the carotids. We can make the meninges anemic with a hot foot-bath, this result being due to reflex action. The vessels of the skin can be filled, influencing thereby the circulation of the internal organs. We can exercise a similar influence upon the abdominal vessels, emptying and filling them by causing them to contract or to dilate, by it influencing the circulation in other organs. This is not all that can be done with hydrotherapeutic measures, but with them the very composition of the blood can be changed. Winternitz was the first to observe that after a cold bath the number of red cells and white cells was enormously increased, the former up to 1,860,000 and the latter up to 25,000. These observations have been confirmed since by many observers. I believe that the extraordinary change also observed after muscular work is due to the improvement of the circulation, and that the cells though formerly present are by means of these applications thrown into the general circulation. They disappear after a short time, but so long as they circulate they function and improve metabolism. Warm and hot baths and the steam bath diminish both corpuscular varieties.

The heart can be influenced directly by cold and hot applications. Clinical experience has shown that after suitable hydiatic measures, dilated hearts decrease in size and show improved functioning. Cold applications slow the pulse and hot applications increase its frequency. A cold bath increases blood pressure, and a hot bath diminishes it. The heart answers promptly greater demands with increased work, and the secondary hyperemia of the skin following the cold bath means improved circulation. Valvular disease, inefficiency of valves, has been and is treated successfully by hydrotherapy. Carbon dioxid baths, which cause increased pressure and force the heart to work at the same time, cause vasomotor changes which are beneficial to nutrition. Man, and with him all mammalia, keeps the same temperature under all climatic conditions, notwithstanding the fact that the same physical laws that govern inanimate nature govern the animate; that is, cold lowers the body temperature and heat raises it. If the body produces more heat than is necessary to keep its temperature constant it will correspondingly lose it. For instance, during great muscular activity the peripheral vessels dilate, the skin becomes red and warm, and gives off more heat by radiation and conduction, by sensible and insensible perspiration, and this process is further aided by the lungs' rapid and shallow respiration. If heat abstraction surpasses the usual rate, the peripheral vessels contract, the skin becomes bloodless and heat radiation, conduction and perspiration are limited. If this physical process is not sufficient, heat production will be increased and this is done by muscular contraction.

If in a cold bath we keep the surface vessels dilated, we can abstract heat without increasing production, the cooled blood returns and lowers the temperature of

muscles and organs, and reflexes are minimized. We can understand now why two baths given at the same temperature and of the same duration may have an entirely different effect. In the first we lower body temperature by keeping the peripheral vessels dilated, and in the second we cool down the surface and stimulate heat production. If we bear in mind that by controlling with mechanic means blood distribution, heat loss and heat production we improve temporarily the composition of the blood and create an artificial leukocytosis, which is thought so important in typhoid fever, we will find that in hydrotherapy we possess a sovereign remedy for the treatment of all febrile diseases. Considering the influence hydratic measures exercises on the respiration, we have seen that a hot or cold application is followed by a deep inspiration, then a short apnea, which is followed by a deep expiration, and then the respiration is lastingly deepened. The inhalation of oxygen and exhalation of carbon dioxid are increased, and as this depends entirely on chemic processes carried on in the cells we see that these measures influence the internal as well as the external respiration. Experience has shown that cold applications to the neck especially increase the depth of the respiration, and as this is accompanied by a narrowing of the pupils, it is believed that its cause is a direct irritation of the medulla, though no doubt the increased amount of carbon dioxid in the blood is an additional factor.

Skilled application will increase function, strengthen enervation and change circulation. The regeneration of cells can be directly effected. Constant heat application causes arterial dilation, and in consequence a more rapid growth of tissue. Cold slows growth and may lead to necrosis. Penzons' experiments on animals have shown that heat increases tendency to heal. Secretions and excretions are altered. A larger volume of urine is voided after each bath, warm or cold, and the desire to urinate is pronounced in a warm bath. A bath that causes perspiration diminishes the amount of urine, if the water ingested is not increased. In the treatment of heart disease with the cold bath, in combination with carbonic acid, an early symptom of a reestablishment of compensation and an improved circulation is the increased amount of urine voided. Uric acid excretion after a hot-air bath may be increased to 1% per 24 hours. It must not be forgotten that hemoglobinuria and passing albuminurias have been observed after the cold bath, and that the hot-air bath has caused albuminurias as well as glycosurias. Cold and hot applications, or better still a combination of both, increase the flow of bile. This is thought due to an improved portal circulation, a stimulated intestinal peristalsis, an increased diaphragmatic contraction. Digestion is improved, appetite increased, and a change in the character and amount of gastric secretions has been many times observed.

The alteration that may be caused by hydrotherapeutic measures in the functioning of the skin is even more evident because these changes are visible and the process of perspiration has been well studied. For practical use, thermic measures are employed to cause profuse perspiration in order to obtain an entire change of water excretion, and with it the process of diffusion taking place in the internal organs causes an entire change of blood distribution and a ridding of the organism of noxious substances with sweat excretion. Though perspiration as a rule contains only from 0.2% to 0.4%, inorganic substances, mostly sodium chlorid and potash, traces of urea, fatty acids, aromatics, and various gases of which carbon dioxid should be mentioned, and pus bacteria have been found. Drugs excreted with the sweat are mercury, potassium iodid and arsenic. That cold applications strengthen the muscles, and warm applications tire and relax them, has been shown. This has been demonstrated exceedingly well by the curves constructed by Vinnay and Maggiora. These authors also show that a similar effect can be obtained by massage. The effect

of water applications upon the nervous system is of great interest. They may act directly or by suggestion. An application of cold may remove depression and awaken consciousness from a deep syncope, while a like application under other conditions may cause shock and syncope. A cold application is followed by the beginning reaction and an agreeable "bracing" sensation, a warm application by a tired feeling and by sleep. Cold applications may cause complete anesthesia and analgesia, and hot applications are employed constantly to alleviate pain. Lost patellar reflexes have been restored after cold applications, and tactile sensation also been modified. Hydrotherapeutic measures act by suggestion through the general refreshing or tiring sensations they produce, through immediate removal of hysteric symptoms, and educationally by teaching the patient to endure disagreeable sensations in order to obtain beneficial results.

It is of interest to note generally the prompt action of a warm bath as a sleep-producer. Many theories have been advanced as to the physiology of sleep. Physiologists agree that the proximate condition of sleep is a diminution of the cerebral circulation. The circulation is retarded during sleep, the number of pulsations is reduced and the combustion of the economy is slowed, the cerebrum also taking part. Remembering this we can understand readily why a warm bath is a true hypnotic.

After a treatment with water, patients with a very sensitive skin may suffer occasionally from eczema and urticaria, especially after a combination of mechanic and thermic applications. A free use of ointments or powders may prevent these disagreeable reactions. An addition of bran or slimy substance acts sometimes as a prophylactic. Furunculosis, acne, herpes tonsurans and other parasitic infections can be prevented by strict attention to cleanliness. There are some very sensitive individuals who have an idiosyncrasy to cold water applications and in whom they react with profound and lasting cyanosis. It is dangerous to treat such patients by hydrotherapy. It is practically impossible in a paper of this character to give a complete description of the numberless modifications of water in its various forms as liquid, solid, or gas, but those who understand the principles can follow their own method. The dosage, not the form, of the thermic applications, is of highest importance, though the technic must not be neglected.

The works of Winternitz, Strasser and Matthes, upon which I have drawn freely, may be consulted on this subject.

A NEW METHOD OF BISECTING THE UTERUS.¹

BY

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Abdominal hysterectomy, through more recent solution of its technical difficulties and a little better understanding of the advantages afforded by it, has found progressively a wider field of application.

The facility with which abdominal hysterectomy is performed, especially in chronic inflammatory pelvic disease, is now more readily appreciated than a few years ago, when surgery was largely influenced by the so-called vaginal route of the French school of gynecologists.

Of the many technical modifications which have been presented recently, there is, perhaps, none which affords greater facility in the operation than that which involves a median or partially median section of the

¹ Read at a meeting of the Medical Society of the State of New York, January 28, 1902.

uterus, as a preliminary to the enucleation of bilateral pus sacs or densely adherent uterine appendages associated with fistulas.

The distinct advantages it presents require no argu-

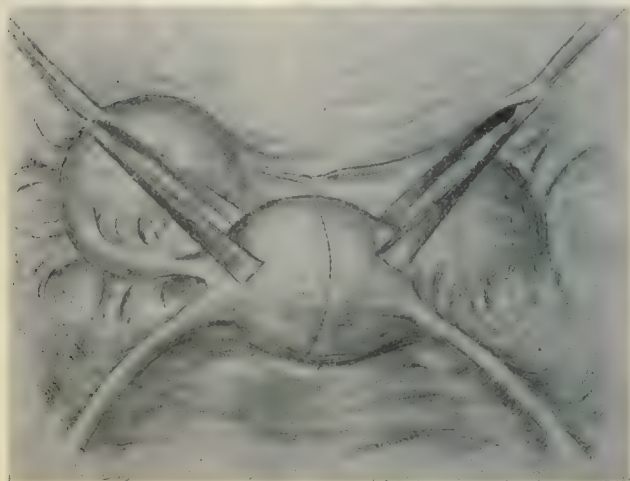


Fig. 1.

ment to compel its use with those familiar with its minute technic.

Concerning the propriety of removing the uterus in cases of extensive inflammatory disease, although not strictly relative to the subject of this paper, I cannot refrain from saying that I believe nothing is gained by leaving a uterus that necessarily has become hypertrophied, soft and flabby from chronic passive congestion, and usually associated with chronic endometritis, especially in cases of gonorrheal origin.

The number of patients requiring a secondary operation for its removal before complete cure is effected testifies to this fact. The operation as ordinarily performed is as follows: The patient is placed in the Trendelenburg position and the abdomen opened. If adhesions to the omentum and intestines exist, they should be carefully dissected with the knife from their adhesions rather than torn, as minute tears of the intestines are apt to occur from this procedure which are overlooked at the time of the operation.

The abdominal cavity is thoroughly packed off with gauze tampons. The uterus with its adhesions can now



Fig. 2.

be seen, and it is separated from the rectum without much danger of laceration. The uterus is brought well up and both coronaria seized with strong forceps, and firm traction exerted by assistants. An incision is made

in the median line of the uterus, carried through the body and necessarily through the *uterine cavity* as well. The tension on either half prevents any considerable hemorrhage.

If removal of the entire cervix is contemplated, the median incision is carried down to the attachments of the bladder and rectum, and these organs freed from their attachment in the usual manner and the incision carried clear through the median line of the cervix.

Most operators prefer to leave a short stump of the cervix, as this saves opening the vaginal vault, thereby eliminating the chances of infection from the vagina.

This I think the much safer procedure. If a stump is to the left, when it is desirable to amputate the cervix, a second pair of forceps seizes either half of the cervix and lateral incisions complete the amputation.

Dr. W. G. Macdonald called attention, in a paper read before this Society in October last, to the supreme importance of dividing the tissues of the lateral wall of the cervix, fiber by fiber, to prevent wounding the uterine artery. When it presents, it can be grasped with an artery clamp and ligated separately. The tissues to be removed are now practically divided in halves. The fingers are used to separate the adhesions of the tubes and ovaries from *below*, and the ease with which they will "lift up" with the line of cleavage started from



Fig. 3.

underneath, so to speak, is appreciated by those who have tried it.

It is quite easy to remove a large adherent pus tube or a thin-walled cyst without rupture, when, if attempted from above, it would be wellnigh impossible.

The operation is completed by continuing the incision along the base of the broad ligament, the bleeding points clamped as they present, and a side to side, overlying continuous suture controls all capillary hemorrhage. (See Figures 1 and 2.)

While it is true that infection does not often take place when the uterus is bisected in the median line, yet exposing the pelvic cavity to the chances of infection from the endometrium of the uterine cavity has been the principal objection so far to this most valuable procedure. With my method of bisection, the objection is obviated, as the uterine cavity is not opened at all.

Instead of making the incision in the median line, it is made on either side, beginning near the horn of the uterus, and carried down through the tissues of the *walls of the uterus* and cervix; so when completed one section contains practically the whole body of the uterus with its cavity, and the other only a narrow strip of the wall. (See Figures 3 and 4.) A little practice will teach

one to keep within the wall of the uterus. The hemorrhage is a trifle more profuse from the narrow strip than when divided in equal parts, but this is of minor importance.

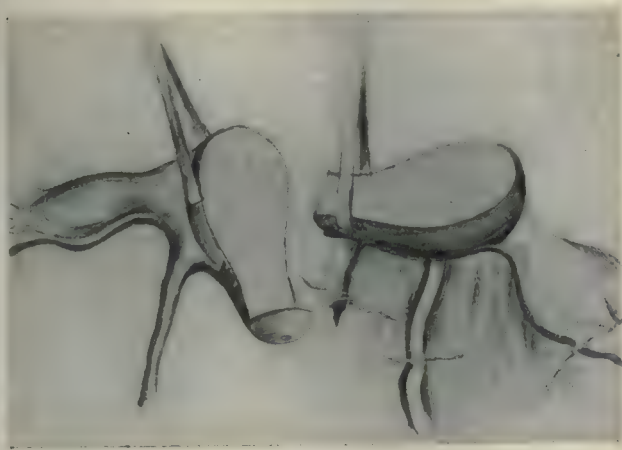


Fig. 4.

It will be seen at once that this method of bisection allows all the advantages of median bisection, but admits of no danger of infection from the uterine cavity, the heretofore principal objection of its opponents.

ANOMALOUS POSITION OF CECUM AND COLON FROM FAILURE OF ROTATION.

BY

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of Grand Forks, N. D.

A young man, aged 22, living 15 miles from Grafton, N. D., had been suffering for one week from complete obstruction of the bowels, without vomiting. When on the morning of January 10, 1902, the temperature and pulse-rate began to rise, he was brought at once to the hospital here and operated upon the same evening by Dr. J. E. Engstad, assisted by Dr. Countryman, of Grafton, myself administering the anesthetic. He went on the table in bad condition, with a pulse-rate varying from 130 to 140.

The immense distention rendered operation extremely difficult, but collapsed bowel was found and a Murphy button introduced between the nearest loop of distended small intestine and what appeared to be the collapsed descending colon. After the button was in position gas passed freely into the portion of bowel beyond the anastomosis. He did not rally after the operation, and death came at 4.45 the next morning.

At the postmortem examination the intestines were found slightly adherent to the operation wound, the liver normal, the gallbladder distended to the size of a large egg, the stomach and upper part of the duodenum normal and empty, and the small intestine immensely distended, dark in color, and its coils adherent throughout.

When the right iliac fossa was exposed it was found empty, the peritoneum passing smoothly over the right side of the posterior abdominal wall from pelvis to diaphragm, there being no mesenteric attachments whatever, only the duodenum disappearing behind the peritoneum in normal position. This was loosened and drawn forward, and the small intestine traced downward, its mesenteric attachment (a, Fig. II) being entirely on the left side.

The distention began at the entrance of the common bile-duct and extended beyond the cecum. The colon, from the cecum to the flexure in the left hypochondriac region (marked z in the diagram, Fig. I), was partially distended by gas which had passed through the opening made by the Murphy button, while the descending colon, sigmoid and rectum remained in complete collapse. There were three divisions representing the normal ascending, transverse and descending colon, lying side by side in close proximity. This is fairly well shown in the drawing (Fig. I), but they were crowded closer together and the cecum pressed upon the flexure with sufficient force to close it against even the passage of gas. The anastomosis had not been made with the descending colon, as thought at the

time of operation, but with what took the place of the normal ascending colon. Therefore, even had the patient been possessed of sufficient vitality to withstand the prolonged shock, the obstruction would not have been relieved and life would not have been prolonged. It can be readily seen how the anomalous position of the parts rendered the condition perplexing and the operation difficult.

The walls of the cecum were so thin that on slight traction being made to break up adhesions they tore through, allowing more than a quart of fluid to escape into the abdominal cavity. The ruptured organ measured 8 x 5 inches, and easily contained a quart. The omentum was small, nodular, dark colored and attached only to the anterior surface of the cecum. The appendix, 8 inches long, lay along the back of the cecum directed downward and imbedded in the mesocecum. It was normal and patent throughout.

The cause of the difficulty proved to be an inflammatory nodular and hemorrhagic mass of tuberculous origin in the mesentery, extending from behind the junction of cecum and colon upward, inward and backward toward the foramen of Winslow, size 7 x 3 x 3 inches. This produced pressure on the bowel at each end, the upper constriction accounting for the absence of vomiting, and the lower for the obstruction. The distention of the gallbladder was also due to pressure on the duct at its entrance into the duodenum.

In the proceedings of the St. Louis Medical Society, published in the *St. Louis Medical Review* of January 11, 1902, Dr. A. R. Kieffer reports a case of left-sided cecum. In commenting thereon Dr. V. P. Blair said: "In all vertebrates (above the sloth) there is a revolution of the cecum around the superior mesenteric artery by which the cecum moves from its place in the left iliac fossa

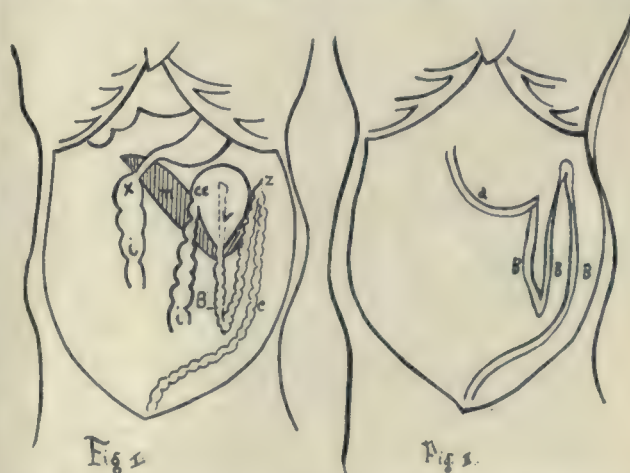


Fig. 1

Fig. 2

over to the right. In man this goes farther and by a change in the attachment of mesenteries the cecum becomes bound down in the right fossa and the colon in its normal position.

"In the early stages of development there are no anterior parietes and the intestines hang out from the future abdominal cavity, revolution occurring by the cecum traveling first cephalad, then dextrad across the lower end of the duodenum, and then caudad to the right iliac fossa. Morris suggests that this process might be interrupted at any stage, but no case is on record in man in which the revolution has not taken place. The anomalies reported are in mesenteric attachments."

Left-sided cecum is extremely rare. Smith, Moullin and Keith report one. Dr. Kieffer reports the one before mentioned. Byron Robinson reports one, and Henry Mudd has seen one at operation, as reported by Dr. Blair in the proceedings quoted from.

In this case we have not only a left-sided cecum, but a whole left-sided colon as well. The anomaly is not only in attachment of mesenteries (all the mesenteries being on the left side—Fig. II), but in failure of rotation of the cecum. The cecum evidently became early attached, and as the colon developed in length it

dropped toward the pelvis forming a loop, the two limbs of which took the place of ascending and transverse colon in the normal development.

Thus the surmise of Morris that the process of rotation of the cecum might be interrupted at any stage is proved true. The cecum has been found a number of times between the liver and its normal position, having failed to descend completely. Again, it has been found in congenital umbilical hernia, having failed to make the trip across the abdominal cavity. And finally in the case here reported the failure took place at the very beginning, no attempt having been made to pass from left to right, the cecum having been early bound down in almost its original position: the development of the gut in length going on upon each side, as in a normal case.

In connection with the above case a symptom worthy of notice was the total suppression of urine for 48 hours, the secretion being restored before operation.

A CASE OF EXTREME GASTROPTOSIS.¹

BY

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The case of Mrs. H. C. H., aged 47, presents features of unusual interest. The patient was referred to me early in November by Dr. Bates. There have been cases reported of extreme gastroptosis as marked perhaps as the one presented, but none, I venture to assert, in which the stomach, dilated so little, occupies such a pendent position. Einhorn's gastrodiaaphane shows that the stomach literally rests upon the pelvic organs. It would not be possible for it to occupy a lower position. Upon making a careful physical examination, I found that condition so ably described by Hemmeter as splanchnoptosis. The liver is from two to three inches below the rib margin, and the right kidney can be felt near the umbilicus. A constant dragging pain in the region of the left kidney led me to suspect a displacement, although I was unable to feel it in any position I directed the patient to assume. The transverse colon is at least two inches below the normal position, and the stomach is dilated, but not markedly so. When first seen the patient had a pale and anxious expression; her tongue and throat were fiery red; pulse 92, temperature 99°, weight 90 pounds; lost 14 pounds since September. She complained of weakness and a burning sensation in the mouth and throat which had been present for over a year. For two years previous the burning sensation had been confined to the epigastric region and chest. Headaches were of frequent occurrence. She had great distress in the abdomen, but always a craving appetite. Bowels were extremely constipated. Urine was found practically normal, only the phosphates being diminished in amount. I made four attempts to secure stomach contents, but did not succeed. The last time I found, upon washing out the stomach, blood in sufficient quantity to redden the water very perceptibly. The hemorrhage was probably due to the suction made in attempting to get the stomach contents. Why I was unable to succeed in getting a test-meal, I do not understand. The cause of gastroptosis is attributed to diseases that cause weakness and relaxation of the system generally, such as typhoid, grip, etc. The stomach and intestines being supported by ligaments and the tonicity of the abdominal walls, it is easy to understand that when these supports are weakened, from any cause, ptosis more or less complete must follow. It is not strange, therefore, that this condition should exist oftener than most practitioners realize. To those who recognize this condition, it is full of interest. I have often wondered what the anatomist thought, prior to

Glenard's time, when he found a well-marked case of gastroptosis. Mrs. H. had never been in a state of perfect euphoria. Twenty years ago she caught cold and suffered from neuralgia for two years. From that time up to the present she has been an invalid, more or less pronounced; eight years ago she had typhoid fever with a sequel of parotid or cervical abscess, from the effects of which she nearly succumbed. Menstruation ceased at that time, and has never returned but once. She has had an attack of la grippe every winter since she had the fever. To make the causative history of the case more complete, and to more fully account for the extreme ptosis of the stomach, it may be well to mention the fact that two years ago she had a severe fall from a stepladder, which, as she says, "seemed to tear everything loose," and resulted in a great deal of abdominal pain.

Within very recent years surgical means have been employed to relieve the distressing symptoms of ptosis of the contents of the upper abdominal cavity. Nephrorrhaphy was employed in many cases before it was fully known that the detached kidney was only a part of a general condition, splanchnoptosis or Glenard's disease. It is possible for the kidney to become loosened and the remainder of the abdominal contents remain in their normal position, but this seldom occurs. This leads one to read the numerous reports of curative results following fixation of the kidney alone with the usual medical skepticism. During the past three or four years fixation of the stomach has been practised by several operators (see Coley in *Progressive Medicine* for June, 1900). As the operation is attended by little risk, and as marked relief follows in the majority of cases, it is probable that gastrorrhaphy and nephrorrhaphy will soon be the generally accepted way of treating patients having cases like the one presented today.

The condition of Mrs. H. has improved since I first saw her, still I feel that the change for the better will not prove permanent. I have employed lavage, intragastric faradism, static baths, bandaging, massage, strychnin, malt with pepsin and pancreatin, and for the burning sensation, or fermentation, I have used with marked relief the Stockton mixture of oxalate of cerium, subcarbonate bis. and calcined magnes., one, two and four parts each, respectively. Should my fears be realized and no further improvement take place, with a tendency to relapse into her former uncomfortable and painful condition, I shall have no hesitancy in advising a surgical operation.

THE SERUM TREATMENT OF PNEUMONIA.¹

BY

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of Cincinnati, O.

The mortality rate of pneumonia, as observed in American hospitals for the past decade, has been so appallingly high that clinicians have been forced to ask themselves whether the deathrate were not steadily increasing, either as the result of an increasing virulence or because of the radical change in treatment; a departure from the practice of the fathers so marked that the mere recital of the older plans of treatment would introduce drugs wholly unfamiliar to many of the present generation of practitioners, not to mention the fledgling students.

In the first rank of the old practice it is proper to speak of bleeding. I quote from the article on Bleeding, in Jaccoud's Dictionary of the Medical Sciences: "Tommasini of Bologna practised 14, 15, and even 20 blood-lettings of 4 to 500 grams, say about a pint each, in the course of an attack of pneumonia of from 5 to 8 days."

¹ Read before the Schenectady County Medical Society.

¹ Read before the Ohio State Medical Society, May 8, 1901.

The patients were thus relieved of about 20 pounds of blood.

But the most ardent champion of the method was Broussais. Broussais recommended bleeding in frank pneumonia and in tuberculous pneumonia, particularly at the onset, also during the course of the disease, and at its close; principally in subjects of good physical development, but it was also highly commended for those of frail habit. Boulland had scarcely less reserve. He bled the first day, and the second, third and fourth if the pneumonia was not jugulated, whatever that may mean; the general rule being not to discontinue the bleeding until after the decline of the fever and the cessation of pain and digestive disturbances. Many patients, however, triumphed over both the disease and the physicians.

If, in conformity with the modern pathologic doctrine of its causation, we regard the symptomatology of the disease as due in great measure to the effect of toxin circulating in the blood, we can understand how such a constant and extensive withdrawal of blood might be of benefit merely by a direct reduction of such poisonous principles. It is needless to recall the rapid absorption of fluid from the body tissues when considerable amounts of blood have been withdrawn. This resorption of fluids, of which the patient's great thirst is a tangible expression, still further dilutes the toxic principles of the blood. The good effects of bleeding could thus be explained on strictly logical grounds and in harmony with the more modern pathology.

With the gratifying success which has attended the use of antitoxin in diphtheria, of the serums, preventive and curative, for the bubonic plague, of antistreptococcus serums, and serums for tetanus and yellow fever, it was but natural that the profession should apply similar methods to the treatment of a malady which, from every point of view, might well be regarded as the type of infectious diseases. The brothers Klemperer were the pioneers in this line of work, and suggested that the sudden change which comes over the patient at the time of the crisis was due to the development in the blood of chemic substances which neutralized the toxins incidental to the multiplication of *Diplococcus pneumoniae*. To this mythical chemic substance the name of antipneumotoxin was given. In 1891 the Klemperers,¹ Foa, and Corbonne, Emmerich and others, proved that the blood serum of rabbits immunized to pneumococcus possessed the property of protecting other rabbits against infection with this microorganism, and these investigators have continued to use rabbit serum in the treatment of human beings suffering from pneumonia.

Washbourne, in England, inoculated a pony with successively larger doses of cultures of pneumococcus, using at first broth cultures heated to 60° C. for an hour, following these with living cultures. From the pony he obtained the serum used for his patients, having first tested its strength in protecting rabbits. English observers have used Washbourne's preparation.

Weisbecker, in Germany, published three years ago the results obtained in a number of cases from the use of a serum taken from human beings then convalescent from pneumonia, a procedure open to the obvious and cogent criticism that the danger of communicating syphilis or other blood diseases is altogether too great to justify its general employment.

In Italy, DeRenzi and Pane obtained exceptionally virulent cultures of pneumococcus from which they developed a serum, using the horse, ass, and the cow as subjects for inoculation, drawing their supplies of serum from these.

It would appear that anything like the uniformity already obtained in the manufacture of diphtheria antitoxin has not as yet been secured in the pro-

duction of pneumococci serum, and variation in results may be in part explained by inherent difference in the serum employed. The manufacturers state that all anti-infectious serums retain their strength only for a limited period, differing in this respect from antitoxins, such as diphtheria and tetanus antitoxin. The fresher the serum, therefore, the better.

Antipneumococci serum, which might for convenience be simply called pneumonia serum, should, according to all observers, be employed in fairly large dosage, frequently repeated. The curative dose is 20 cc. which, according to direction, is to be repeated every 4 hours. Nearly all observers attest its harmlessness, so far as any immediate ill effects are concerned. Washbourne has reported the occurrence of an urticarial rash in several instances. It is further claimed that some immediate improvement should be noted in the form of lowered temperature, relief from pain and dyspnea, and the lessening of cough and expectoration. The instructions accompanying the serum are to give a full dose of 20 cc. every 4 hours until some tangible impression has been made in one or other of the directions indicated.

General experience has shown that the use of the serum will not precipitate the crisis, the disease running its course for about the usual number of days, with greatly diminished severity.

Weisbecker believes that early injection may abort the disease. It must be conceded that early diagnosis is not always possible, and that the use of the serum in doubtful cases is greatly to be deprecated, as vitiating the results of what bids fair to be a most promising field of therapeutic inquiry. The employment of the serum does not exclude the use of other remedial agents, medicinal or otherwise, though its real value can only be tested by employing it to the fullest extent, making use of other measures rather as adjuvants.

The range of applicability of the serum would seem to be coequal with the distribution of the disease. Thus it has been successfully employed in aggravated senile pneumonia, in pneumonia of pregnant women and in pneumonia complicating various forms of cachexia and acute rheumatism. That there is a place for some remedy in addition to those already possessed by the profession may be shown from an inspection of mortality tables:

NEW YORK HOSPITAL.

1895	108 cases	38 deaths	equals 36%
1896	75 "	41 "	" 41%
1897	97 "	24 "	" 24%
1898	87 "	26 "	" 29%
1899	67 "	20 "	" 29%
1900	102 "	35 "	" 34%

Average, 32.16% for last 6 years.

JOHNS HOPKINS HOSPITAL.

1889	6 cases	3 deaths	equals 50%
1890	8 "	0 "	" 0%
1891	14 "	3 "	" 21%
1892	6 "	1 "	" 16%
1893	28 "	10 "	" 39%
1894	22 "	8 "	" 36%
1896	30 "	10 "	" 33%
1897	19 "	5 "	" 26%
1898	22 "	6 "	" 27%

Average for Johns Hopkins Hospital, 28.40% for 7 years; only 155 cases in 7 years.

ROOSEVELT HOSPITAL.

1894			29.1%
1895			31.6%
1896	91 cases	45 deaths	equals 49%
1897	84 "	23 "	" 27%
1898	91 "	41 "	" 45%
1899	101 "	33 "	" 32%

Average for 6 years, 35.6%.

PENNSYLVANIA HOSPITAL.

1897	62 cases	12 deaths	equals 19%
1898	76 "	11 "	" 14%
1899	78 "	13 "	" 16%

Average for 3 years, 16%.

¹They used filtered bouillon cultures or glycerin extracts of pneumococcus growths.

BOSTON CITY HOSPITAL.

1891	296 cases	100 deaths	equals 33%
1893	528 "	218 "	" 41%
1894	290 "	93 "	" 32%
1895	328 "	124 "	" 37%
1896	424 "	138 "	" 32%
1897	351 "	111 "	" 31%
1898	374 "	136 "	" 36%
1899	447 "	159 "	" 35%

Average for 8 years, 34.6%.

ST. BARTHOLOMEW.

1895	121 cases	13 deaths	equals 10.7%
1896	108 "	12 "	" 11%
1897	181 "	15 "	" 8%
1898	146 "	18 "	" 12%
1899	135 "	13 "	" 9%

Average for 5 years, 10%.

CINCINNATI HOSPITAL.

1895	56 cases	20 deaths	equals 38%
1896	98 "	37 "	" 37%
1897	51 "	13 "	" 25%
1898	35 "	10 "	" 28%
1899	50 "	27 "	" 45%
1900	38 "	13 "	" 34%

Average for 6 years, 34.5%.

Our own city hospital furnishes a very large mortality. It is easy to juggle with figures, but we have included under pneumonia all forms, such as influenza pneumonia, the terminal pneumonia of Bright's disease, etc. The serum treatment of pneumonia has not found an acceptance that is wholly uniform, but this could be expected. In the early history of diphtheria antitoxin, many a bitter cry was made against its use from within the ranks of the profession; and the searchlight of Diogenes turned on today would discover more than a few highly respected and, in their own opinion, progressive physicians *who do not believe in antitoxin*.

Pane's mortality in 30 cases was 9%. Weisbecker reported in all 17 cases with 17 recoveries. DeRenzi reported 32 cases with 29 recoveries, possibly using some of the same material as quoted in Pane's tables.

Wilson gives parallel reports of 2 series of cases, one series treated with the serum and the other without it. Of 18 cases in the first class, the mortality was 22.27%; of the second there were 20 cases with a mortality of 20%.

Besides there are a few scattered cases from English observers, mainly favorable in termination.

The natural tendency is to institute comparison both as regards treatment and results between every new form of serum and the antitoxin of diphtheria. In regard to pneumonia serum, all of us know there are difficulties primarily in the matter of diagnosis. We can see the patch on the pharynx, tonsil or uvula; it is a more difficult matter to recognize the initial physical sign of pneumonia, and if, as is maintained by some, it shall appear that early administration counts for as much in pneumonia as in diphtheria, the responsibility of the physician becomes the greater and the success of the treatment will depend on his individual ability to diagnose the disease. It remains to be seen in this connection whether a coagulating reaction with blood serum on the lines of the Widal reaction may not be available as an aid to diagnosis.

Some time must elapse ere the collective experience of the profession shall crystallize into definite shape. In therapeutic matters, professional sentiment grows up from multiplied individual observations. So must it be here. If the hopes of its advocates are realized to the utmost, it may well be questioned whether in one direction at least the use of the serum is a boon to humanity. For pneumonia is in one sense the friend of old age. It promptly snuffs the candle instead of allowing it to feebly sputter in the socket; and the advocates of the Malthusian theory might well protest against the prolongation of life under conditions which, when nature has marked the limit, would be purely artificial. But these are problems of a transcendental philosophy. Pneumonia

claims too many victims from the best, most vigorous, and most useful period of active manhood. A death-rate of from 20% to 40% in a disease constantly endemic in the temperate zone is appallingly high; should the new discovery maintain itself, it will be another marvelous gift of science to the closing decade of the nineteenth century.

I report several cases. In one, the first case in private practice, the treatment was not fairly tested, owing to the objections of the family. I saw the patient for the first time on the fifth day. One injection was given; another, ordered for the night, was not permitted in my absence. There was some improvement for 2 days, then a gradual decline, though a second injection was given as soon as the symptoms became more threatening. The histories of the other cases are appended in full. One objection has already been urged against the use of the serum—namely, the quantity necessary for each administration, 20 cc. for adults, the dose being repeated every 4 hours. If the apparent harmlessness of the serum be taken into account, the momentary inconvenience to the patient, resulting merely from distention of the skin with so large an amount of fluid, should not be allowed to weigh as against possible benefits to be derived.

In connection with the patients who recovered, I would like to call attention to the almost complete cessation of cough and expectoration soon after the administration of the serum. The process of resolution in the consolidated area was accomplished apparently without any liquefaction, for no moist sounds were heard, though the consolidation was manifestly clearing. Efforts to institute blood-counts, with a view to observations on leukocytosis, failed because of the prompt clotting of blood in the counters. Examination of stained cover-slips showed an enormous increase in the number of blood-plates. Thanks are due to my colleagues of the clinical staff for material placed at my disposal.

CASE I.—Admitted May 16, 1901. R. K., aged 25, male. Jockey of powerful physique met with an accident 6 weeks before when a horse fell with him and rolled over on the right side of his chest. There was pain for a day or two. Has had syphilis. Drinks. Two days before admission had chills and pain in chest, and when admitted had a slight cough. Face flushed; R. 22, T. 101.6°, P. 80. Slight increase of tactile fremitus and of vocal resonance in right axilla. Cough dry, no expectoration. Pain in the chest increased by coughing and taking a deep breath. Was ordered $\frac{1}{2}$ gr. calomel every hour. Codeia given for pain. There was slight hemoptysis with cough. Temperature rose to 105°, R. 56. May 17, fine crepitant rales at right base posteriorly. No dulness on percussion. Was given 20 cc. of serum at noon and at 4 p. m. Sputum, in the early afternoon, prune juice in character. Cough and pain in chest relieved after serum injection. During the afternoon and all through the night the patient was delirious. Bowels were moved 3 times during the day. May 18, 20 cc. of serum at 8 a. m., 1.30 p. m. and 5 p. m. Whole right lower lobe posteriorly consolidated. Blowing respiration. Bronchophony. Passed 58 oz. urine in 24 hours. May 19, 20 cc. at 7 a. m. Mind perfectly clear, feels very well, slight cough, scarcely any expectoration. No pain. Temp. at midnight 101°; this morning at 6 a. m., T. 103.6°. Physical signs unchanged. Temp. 97.8° at 6 p. m. Passed a very good night. Voided 44 oz. urine in 24 hours. Temp. 98.4° at 6 a. m., R. 18, P. 66. Very few scattered moist rales heard over right lower lobe. Breath sounds no longer blowing. No cough, expectoration or pain. May 21, patient very hungry. Anxious to get out of bed. Conditions apparently perfectly normal. May 22, insisted upon discharge. Said he must travel with his horses, and was able to do so. Became very fractious and was dismissed. Able to walk without any signs of weakness. Left the hospital and city the same day.

CASE II.—Occurred in the practice of my friend, Dr. J. H. Landis. The patient received but 1 injection, on the morning of the fourth day. This was followed by a fall in temperature lasting 48 hours. Crisis occurred on the fourteenth day. The patient was a young man of 17 years, driver of an express wagon. Patient had articular pains and slight delirium for 24 hours following the crisis. Muscular pains in back and extremities. These gradually disappeared on the third day.

CASE III.—C. B. V., a boy of 8 years of age, had a severe attack of acute articular rheumatism a year before. This was complicated by a very severe endocarditis, pericarditis, with effusion and lobar pneumonia, affecting the whole of the right lung. Convalescence had been slow, and left him with a marked mitral insufficiency and considerable dilation. Almost a year after his first sickness a second attack of rheumatism

occurred. No sign of cardiac involvement, but on the eighth day the boy again developed a pneumonia now involving the left lower and upper lobes. There was no special feature indicating the onset of this complication, except the sudden development of cyanosis and dyspnea. The respiration rose to 60, occasionally somewhat more rapid. There was great restlessness and a marked bluish discoloration of the lips in contrast to the almost waxen pallor of the face. No improvement occurred for 3 days. There was neither cough nor expectoration, but the consolidation slowly extended. On the third day he received 10 cc. at 4.50 p. m. and 9 p. m. On the next day 2 injections of 10 cc. each at 11 a. m. and 3 p. m. On the following day 2 injections of 10 cc. each at 12 noon and 4 p. m. The consolidation persisted without change for 6 days longer, when the bronchial character of the breathing changed, and resolution quickly occurred. During all this time there was neither cough nor expectoration. The rheumatism continued with diminished severity. No increase of the cardiac trouble was noted. One week after the last injection the boy developed a severe urticaria, lasting for several days. The father of the boy, himself a physician, said that he firmly believed the serum saved the boy's life. After each injection there was a notable improvement, not always measurable in pulse, respiration and temperature, but very apparent in the general comfort of the patient.

CASE IV.—Male, aged 32. Colored, teamster for brewery. Admitted to hospital, Mar. 28, 1901. Heavy drinker. Patient delirious, pain in side, fever, cough. Man of strong physique, slightly jaundiced, wild delirium, had to be strapped to the bed. Lips and tongue dry, glazed and cracked. R. 40. T. 104°. P. 96. Severe cough, bloody, mucopurulent sputum. Dulness, bronchial breathing, bronchophony over left upper lobe. Urine, trace of albumin, 1,022. March 29. Very restless and delirious all night. At noon today received 20 cc. of serum. T. 104°. Patient became wildly delirious in the afternoon and had to be removed to the strong ward. T. 99.2° at 10 p. m. March 30. Delirious but much quieter than the day before. T. 100°. At noon received 20 cc. of serum. Some dyspnea. Slight change in physical signs. Dry crepitation heard over dull area to-day. T. 105° at midnight. March 31. T. 101° at 6 a. m. Patient seems to have had crisis. No expectoration. April 1. Still delirious. Physical signs unchanged. No cough. April 2. A few moist rales over area of dullness. Bronchial breathing no longer heard, has given place to puerile respiration. April 3. Improving rapidly. April 4. Appetite good. Eruption of herpes at left labial angle. April 6. Only vestige of trouble is a harsh, slightly prolonged expiratory murmur. April 8. Patient permitted to leave bed.

CASE V.—A. W. Female, aged 44. Housewife, married. Admitted March 28, 1901. Complaints of pain in the side, and shortness of breath. Father and 1 sister died of pneumonia. One sister of throat trouble. Never seriously sick before. No venereal history. Denies alcoholism. Onset 2 days before with pain in shoulder, chills lasting an hour, severe pain on right side. Fever, headache, cough. On admission T. 103.8°. Pulse 90. R. 36. Cheeks flushed, expression of suffering on face, alae nasi move with inspiration. Short restrained cough, rusty sputum. Pain in right side and shoulder. Tympanic dullness over right upper lobe. Breath sounds in this area suppressed. Vocal resonance and fremitus greatly increased over area of dullness. Ordered strychnia, whiskey and codeine. March 29. Much pain and dyspnea. T. 104.2° at 3 p. m., 105° at 6 p. m. Received 20 cc. of serum. March 30. Less pain in side. T. 102.4° this a. m. Less dyspnea. Perspiring freely. Little change in physical signs. At 12.30 p. m. T. 102.8°. Received injection of 20 cc. serum. Grew delirious immediately afterward and has been wildly delirious for remainder of day. March 31. Quiet and comfortable. T. 99.2° this a. m. Physical signs unchanged. P. m., P. 21, R. 22, T. 102°. April 1. Delirium more marked. Mental condition bordering on coma. Roused with difficulty. T. 99°, P. 124, R. 13. Urine normal. Died at 5.30 p. m.

CASE VI.—A. H., aged 18, male, barber. Admitted March 27, 1901. Pain in left side and fever. Began 2 days before with chills, pain in left side with severe racking cough. T. 103.4°, P. 112, R. 32. Dulness on percussion over left base posteriorly. Bronchial breathing and bronchophony over this area. March 28, at 3 p. m., T. 104°, received 20 cc. of serum. March 29, temperature declined steadily since injection. This a. m. T. 100.8°. Reduc crepitus at extreme base. At 11.30 a. m. received 20 cc. of serum. T. 101.6°. Soon became slightly delirious, then wildly maniacal, so that he had to be strapped to bed. March 30, still violent and delirious. Passing urine and feces involuntarily. Dulness, bronchial breathing and bronchophony at right apex. At noon again received 20 cc. of serum. At 6 p. m. T. 104°, received 20 cc. of serum. Since morning patient has received plunge bath of 5 minutes' duration at a temperature of 105° every 3 hours. In the evening T. was 104°. March 31, plunge baths continued through the night. This morning T. 99.6°, quiet, rational; crepitation heard over solid areas. T. 103.4° in the evening. April 1, rested well, plunges discontinued yesterday. Dulness over left apex anteriorly and posteriorly to 1½ inches below the spine of scapula. Breath sounds harsh and puerile. T. 100° this morning; perspiring profusely. Evening T. 98.6°; apparently passed through crisis. April 2, slept all night; slight dullness at left apex, scattered dry rales, no cough or expectoration; T. 99° all day. April 3, normal

resonance on percussion; harsh expiratory murmur over left apex; no moist sounds heard at any time over affected area. April 4, normal vesicular breathing; allowed to sit up. During convalescence the boy developed an urticaria, which lasted 48 hours.

THE EXAMINATION OF THE BLOOD IN RELATION TO SURGERY OF SCIENTIFIC, BUT OFTEN OF NO PRACTICAL VALUE AND MAY MISGUIDE THE SURGEON.

BY

J. M. BALDY, M.D.,

of Philadelphia.

In *American Medicine* for March 29 appears a criticism of my recent article on the above subject. In this criticism the author, Dr. Willson, speaks quite freely of the contents of an article published by Dr. John B. Deaver and to a large extent seems to deal with the two papers as one. In my article I thought I guarded carefully, by the wording, against just such misunderstanding as seems to have entered into Dr. Willson's article. In order to avoid any similar mistake I must state that I am responsible only for what I have written and not for the interpretations others may choose to put on my words. I am not responsible for misreadings or misunderstandings of it. What I have said alone speaks for my beliefs. What I have to say now relates solely to my own article; Dr. Deaver is fully capable of taking care of his own statements and beliefs. If the congratulatory letters Dr. Willson has received from eminent members of the profession carried with them a full endorsement of all Dr. Willson has said about the value of blood-count in surgery, then I more than willingly take my stand by the side of Dr. Deaver, and in doing so believe I am a better friend to the laboratory than those who make unwarranted and easily disproved claims for it. The great pity is that by this "claim all" policy such a great institution as the laboratory should risk receiving a mortal hurt. All true friends of the laboratory must and do deprecate such a stand.

If I read Dr. Willson's criticism correctly, he conveys the idea that I have considered in the diagnosis of my cases the blood-count alone; that I have ignored the clinical symptoms, etc., of the case; that I expect the blood-count alone to make the diagnosis of pus or not as the case may be. This is an error and has no basis in fact. On the contrary, my article is full of evidence which would have saved him from such a mistake had not the apparent feeling, that every dissent from extreme views was an attack on laboratory methods, obscured for him what is plainly written. The very first case I mentioned in my paper and which is quoted by Dr. Willson should have guarded him against this error as well as others. I state (verbatim):

"A fairly normal case which illustrates the laboratory position in the matter of being able to diagnose pus follows: A woman had acute pus-tubes a week or more old. The blood count showed 13,450 white corpuscles; polymorphonuclears, 80.08%; small lymphocytes, 15.2%. This shows an increase to almost double the normal number of leukocytes, an increase of over 10% of the polymorphonuclears, and a corresponding decrease in the small lymphocytes. The *clinical diagnosis* (italics new) was pus, the blood count shows pus, and at the operation pus was found as indicated by *both clinical and laboratory* (italics new) examinations."

Dr. Willson's reference to this case (verbatim):

"Case I, as considered by Dr. Baldy, is admittedly in line with the usual blood picture found when pus is present in the body. He, however, misstates the fact when he says that it 'illustrates the laboratory position in the matter of being able to diagnose pus.' The laboratory does not claim to *diagnose* pus in any such way, and the blood examination may even prevent the diagnosis in certain cases if the surgeon who fails to combine with his study of the blood picture the reading of the thermometer, the physical examination, the subjective symptoms, and the examination of every other obtainable secretion and excretion of the body at the time. The internist or sur-

geon who omits these precautions is negligent. I will not carry the discussion of this point further."

On the authority of Dr. Willson's own words, I repeat that this case "illustrates the laboratory position in the matter of being able to diagnose pus," viz., the whole clinical aspect of the case ("the reading of the thermometer, the physical examination, the subjective symptoms, etc."), fortified by the blood examination. Dr. Willson ignores the fact that I mention the "clinical examination" made in this case, and creates the contrary impression; even conveying the idea that I was and am negligent in these matters. In addition I quote these words from a later part of his paper:

"And if an abortion or tubal rupture (Case IX) is imminent, it is fair to presume that the medical man has known of the pregnancy, and will consider this in advance of any other condition. If he has not known of it, the blood examination cannot be expected to, and will not supply his lack of knowledge. Such unfairness in the consideration of a scientific problem does not impress."

In spite of all this, "such unfairness" is the charge. In all charity, in what terms can I refer to the above perversions of what I have written and meant?

In referring to three cases mentioned by me (*a*, chronic salpingitis; *b*, fibroid of uterus; *c*, threatened abortion) in which there was an increase of the leukocytes, as well as of the polymorphonuclear cells, but no pus, Dr. Willson says:

"Let me again say, with serious emphasis, that the blood picture in not one of these cases indicated pus, unless the clinical picture bore out the suggestion. And if I may be permitted to suggest such a thing, it seems uncommonly strange that this lesson cannot be learned."

This is another illustration of inability to grasp the meaning of an illustration, and an ignorance of certain well-known clinical aspects of certain groups of cases. And in passing, let me remark that this is a good illustration of just where the laboratory man often attempts to go beyond his province, to his undoing. I grant to the laboratory and its votaries to develop and demonstrate certain facts, but when it comes to applying those facts to actual practice, the nearer a man is to the clinical and bedside position the more competent is he to judge of what aid it is to him in its practical application. Here the usefulness of the laboratory man is limited, and that of the clinician begins. It is somewhat confusing to one's understanding to have long-labored articles published with the object of convincing the medical world that a man does not know what he is talking about when after a full trial of certain things he has found they did not aid him, individually, in his diagnosis. I have always labored under the impression that a man himself was the best judge of what helped him. This would seem especially true of a man of the clinical astuteness of Dr. Deaver.

To return to the above cases. It is notorious in certain cases of chronic salpingitis the surgeon is unable to say definitely if pus is present or not. Again, many cases of fibroid tumors are complicated by pus tubes. With the exception of the questions of the pus the diagnosis is completed in the ordinary way. We now turn to the blood-count to aid us in settling this final point which we are unable to determine. We find an increase in the leukocytes and an increase in the proportion of polymorphonuclear cells. Everything else being properly accounted for, if we are not now warranted in saying that the blood-count indicates pus then I am ready to stand convinced that there is even less in this method than I have believed. If it is not reliable here it is never reliable, and if it is admitted that it is uncertain under the above circumstances then it is always uncertain, although in other cases when it gives the same result, pus be found.

That one or two exceptions do not disprove a rule is true (this I practically state in my paper), but when the exceptions occur so frequently and in such a variety of

cases and circumstances as they do in the blood-count and as I show fully and in detail in my paper, the rule is not proved. I quote from Dr. Willson:

"There may not be present in the blood what is ordinarily indicated by the term leukocytosis, but in the great majority of cases of acute and chronic suppuration . . . so long as the tissues of the patient resist the inflammatory process, the relative number of polymorphonuclear leukocytes will be increased, and this fact may be depended upon as religiously as if the leukocytosis were of the largest size."

In all the above cases and in others mentioned by me there was an increase of the relative number of polymorphonuclear leukocytes. I ask (if pus is present, we have all the requisites even according to Dr. Willson) if the result cannot be depended upon, where is the aid of the blood-count to the diagnosis? Would it not be better to have omitted the count altogether? It has made us believe pus was present; events prove it was not. Is not that portion of the heading of my paper which says "and may misguide the surgeon" proved and justified?

Dr. Willson says "Dr. Baldy states that chronic suppuration gives no leukocytosis" (what I did say was, "*We are told* [italics new] chronic pus cavities do not give leukocytosis, but that the suppuration must be acute"), and then criticises me on the basis of his misquotation! As to the question of leukocytosis in chronic abscesses, there is hardly any need of Dr. Willson trying to turn attention from the main question by clouding the issue with what I have never said nor intend to say. The plain truth of this whole question is that in chronic pus cavities there is usually a very low grade of leukocytosis, and oftentimes none. Of this Dr. Willson is aware, or if he is not I will do better than furnish him with authorities to that effect. I will demonstrate the fact to him on patients. Is such a quibble as this "fairness in considering a scientific subject?" Dr. Willson's reference to the case of Dr. Deaver which Dr. Kalteyer criticised is only another instance of a misunderstanding of the words as they are written and as he has himself quoted them. Dr. Kalteyer himself considered the case a chronic one, and so stated. Dr. Willson so quotes him and no other possible interpretation could be put on his words as printed and quoted.

Dr. Willson implies that my blood-counts are unreliable. "The blood examination then showed leukocytosis 12,850, polymorphonuclear cells 86%, lymphocytes 6% (no reference made to conditions of red corpuscles, to degenerative or regenerative changes or to the hemoglobin)." I note that Dr. Willson in mentioning one of his own cases states that Dr. Longcope made the blood examination at the Pennsylvania Hospital. This means, of course, that he accepts Dr. Longcope as a perfectly competent man for such examination. In order to dispense with any possible doubt as to the thoroughness of my blood-examination I wish to state that it was by Dr. Longcope and his assistant that most of mine (some 40 or 50 cases) were made and of course with equal thoroughness to the one made for Dr. Willson and which he seems to accept without question. I shall therefore ask that my cases be also accepted without question and that it be understood if I have in any case omitted to mention the percentage of hemoglobin or the number of red corpuscles it was merely to save space and that they were of purely negative importance in the case. I make this statement more for the reason that Dr. Willson has in both his papers repeatedly implied that these blood-counts were unreliable and the gentlemen making observations from them were incompetent. I therefore take the opportunity of establishing beyond cavil the competency of at least the examination of the blood, without in the slightest degree, however, agreeing with him that there is any set of physicians who have any peculiar knowledge on this subject which is not open to any physician of average intelligence and honesty in the search of truth. As to omit-

ting unnecessary details of the blood examination, it is a singular coincidence that he has done exactly the same thing himself in the four cases reported by him, satisfying himself with the general remark, "no other pathologic changes." In reporting these four cases he has also unconsciously slipped into another position for which he criticises me. He states "that it is necessary for the refutation of an established fact or theory that more than a single exception or two be noted to that fact." So it does, but it also takes more than a few cases to establish a rule or theory. He objects to my using a few cases (although I at the same time state that I had plenty more to quote if necessary) to illustrate the error of the supposed rule, but finds it perfectly convenient for himself to do the very same thing (quotes four cases) to illustrate the supposed rule. In seeking the full truth on this subject, the positive cases do not interest me nearly so much as do the negative ones. In mentioning the very first case in my former paper, I conceded and illustrated the positive side of the subject. I have never denied nor thought that certain facts about the blood were not true, but I have questioned, and do question the reliable, practical adaptability of these facts to clinical surgery. It is in respect to this word "reliable" that the numerous negative examples with which all practical surgeons meet, has called forth a protest against the extreme views entertained and taught by some of the laboratory men. I say *some* because I have found in my talks with some pathologists that their views and mine did not differ so widely that I despair of our getting together on a common ground of ideas as to the reliability of these examinations.

Dr. Willson refers me "to the vast army of medical men and surgeons who are every day," etc. It is this same "vast army of medical men" that a few of us are endeavoring to save from the inevitable errors of the false teaching of himself and others, a teaching which they are in danger of accepting as true, unless they know by the protests of men in whom they have confidence that it is only a half truth, and that not fully proved as yet.

I shall refer to but one other thing in Dr. Willson's criticism. He says, "Dr. Baldy has attacked this problem from the position of a man who has already recorded himself in opposition to the microscopic examination of other pathologic issues than the blood on the ground that the surgeon is again led astray." That statement is absolutely incorrect. Dr. Willson refers, of course, to my views on the subject of the microscope in cancer of the uterus. His subsequent words imply as much, and the reference he gives is to my paper on that subject published in *American Medicine*, August 3, 1901. I have known this view of my statements to be entertained and verbally repeated many times by many men. I have never before seen it in print. Of course it is the result of the most careless kind of reading and the propensity of a certain class of men to imagine because any one dare hold a different view from their own that they are attacking all that is good in an institution. When I read that paper at the St. Paul meeting there were but two or three men of all who discussed it that had even understood its drift and man after man by discussion showed ignorance of what I had in reality been saying. However, I cannot be held responsible for what they think I said; the paper has been published and if men cannot understand their own language when it is spoken and printed it is no fault of mine. I never made such a statement. I do not believe or teach it. On the contrary, I believe in the microscopic examination of "other pathologic lesions" as well as of the blood. But I do believe that at times and in places too much stress is laid upon it and this tendency I have opposed and will oppose. Such careless quotations are the more inexcusable from Dr. Willson as in the past he has examined many specimens for me in the laboratory of the Pennsylvania Hospital, has heard me often express my views on the subject of

the microscopic examination of cancer and has the published article before him in which there is not a word which ought to lead any man to believe that I was "opposed to the microscopic examination" of cancerous tissue.

The statements contained in the heading of my paper are as certainly true as anything I know in surgery and a careful reading of Dr. Willson's papers show that he fully admits every one of them. Blood-examinations are of scientific interest, they are often of no practical value and they may misguide the surgeon. I am unable to see how a denial of these self-evident truths can do the laboratory any good or can increase the respect of the general medical man for the opinion of those who make the denials. As to assumptions concerning what I believe I am of course not interested. Criticism from that point is gratuitous.

SPECIAL ARTICLE

ORGANIZATION OF THE PROFESSION.¹

BY

CHARLES A. L. REED, M.D.,
of Cincinnati, Ohio.

The invitation to address the Physicians' Club, of Dayton, on this, its initial meeting, is one for which I am profoundly grateful. This gratitude is all the more deep and real because the basis of your organization and the objects which you have before you are in consonance with views that I have long entertained and that I have never hesitated to express on all proper occasions—and possibly, as I have heard intimated—on some improper ones. I do not know what your constitution and by-laws may set forth, but I infer that you are so highly evolved, that you so thoroughly understand yourselves and your aims, that you are—as I know you to be—such gentlemen that you have no necessity for written compacts of government. The basis of your organization, and the objects that you have in view, are, however, so admirably set forth in your announcement, that I may be pardoned if I employ your own language. "It was argued," in a preliminary conference, so your circular says, "that the state provides that certain persons, having shown by an examination that they are qualified therefor, shall be known as physicians; to them is committed the care of the sick and wounded; they are also expected to devise and execute sanitary measures for public and private welfare; in this the state recognizes no 'schools' or 'sects,' but holds all to be equal and equally responsible; therefore it would be greatly profitable to these physicians if they could meet together and harmoniously discuss such things as are of importance to the public welfare, and of interest to themselves professionally, politically and commercially."

It seems that actuated by the throbbing impulses of your profession, and encouraged, as you state, by the example of your Present-Day Club—an organization that, from such contributions as that of our distinguished colleague, Dr. J. C. Reeve, on politicoeconomic questions, has attracted the attention of the country—I say, thus prompted and encouraged, it would seem that you had proceeded systematically to give tangible expression to what must be recognized as the spirit of the twentieth century. In keeping with this idea, it appears that the representatives in your midst of the so-called "schools" or "sects" met and organized a governing committee, subject to the censorship of which any legal practitioner of medicine may become a member of your Physicians' Club—and "physician," too, without a qualifying adjective. I am further advised, confidentially, that in effecting the initial organization the sectarian question was discussed and equitably recognized; I am told, also, that I am at liberty to allude to it in a more or less indefinite way this evening, but that from now henceforth the man who shall bring the ancient theme into these counsels

¹ Read before the Physicians' Club, of Dayton, Ohio, March 20, 1902.

shall have his voice drowned by the derisive notes of a song that makes some reference to "The times of old Rameses." It would seem, indeed, that this event is the inauguration of a new régime—new in your city, new in our state, and it is eminently gratifying to see the good round hundred of loyal and high-minded men who are here to celebrate the event.

I congratulate you, in the first place, upon having effected this organization upon the broad basis of good citizenship. You have recognized the primacy of the law, not only by conforming to its provisions in your individual relations to the state but tonight you have gone further by bowing with loyalty to that sentiment that makes law possible. This sentiment, more important in a democracy than the law itself—the sentiment that, while underlying the law, rises above it—must be recognized in all walks of life, in all ranks of society, as a chief safeguard of the republic. That profession, craft or calling which, in its organized capacity, declines to recognize that which the law recognizes lends itself to the propagation of a sentiment that is inimical to law itself. It is not to be implied from this that I advocate the surrender of the highest ideals on the part of the individual; not that I believe, for a single moment, that we should relinquish our efforts to secure the crystallization of those ideals in our laws; on the contrary, I am convinced that the very way to secure the desired end is, first, to foster the sentiment upon which law in general depends, next to disseminate the very ideals that we desire to have established by statute, and finally by union and concert secure the necessary legislative action. I have stated that I am convinced of the truth of the foregoing conclusions, and my language may be construed to imply that I look upon them as mere deductions from theoretic premises. As a matter of fact, I feel that I am presenting not a theory, but a condition—that I am dealing with actual affairs as they are exemplified in every state that is blessed with a medical law.

The second point of my discourse must be addressed to the soon-to-be-tabooed subject of sectarianism and its relation to the state whose interest, I feel, you are subserving by your example to-night. It is needless to speak of the genesis of sectarian medicine, or of dogmatic therapy; it has existed, in one form or another, from Ptolemy Soter to Theodore Roosevelt, and there is no period in the history of the world when it has not been a factor in social development. Sects have arisen around a central idea, have met their varying fortunes, and have passed away, while their central ideas, if true, have been absorbed into the great body of medical learning. This fact, however, has no relation whatever to the practical question that today confronts, not only the medical profession, but society at large. The state, by authority of the governed, has authority not only to protect society against imposition, but to secure it to the best development in any department of science. In the exercise of this authority the various states of the union have declared unanimously that one who shall assume responsibility, professionally, for the treatment, care and conduct of the sick and injured, shall have a certain knowledge of the fundamental branches of medicine which include anatomy, physiology, chemistry, hygiene, obstetrics and surgery; and the states have, with almost equal unanimity, assumed in effect that physicians who are competently educated in these departments may be left either to themselves or to the supervision of their sectarian associates in matters of therapeutics. This has been and is the wise middle ground, the fruits of which are obvious all over the country—are obvious here tonight, where, with a complete understanding upon the fundamental branches, and with an abandonment to the spirit of truth, an open, frank, free and understandable discussion may be had upon all correlated subjects of science. But the essential, the paramount question is that of the fundamental studies, without which as a basis no system of medicine, whatever its sectarian title, can lay the slightest claim to being being scientific. When gentlemen, having mastered these fundamental studies to the satisfaction of the state, entertain peculiar views upon purely subsidiary topics, they should be left to the exercise of the largest possible discretion. On the other hand, however, when an alleged sect comes into a state as that of osteopathy into Ohio, and asks to have its adherents examined in these subjects, not by the thoroughly nonsectarian

and absolutely independent machinery of the state, but by examiners who have been educated in their own alleged and certainly questionable schools, that sect subjects itself circumstantially to the suspicion of interested motive—to the certain conviction of a desire to evade reasonable responsibility. It looks very much as if the state was being asked to grant a special license for the blind to lead the blind. The situation is not improved in the least by the specious excuse that these new sectarians are not whole doctors, but just partial doctors, as they admit, who wish to treat only certain cases and refer others to real doctors; for the ability to do this implies a knowledge of the fundamental subjects such as is demanded under the reasonable requirements of the state. It is certainly to be hoped that the great state of Ohio, having taken the advanced position that it has in the protection of society, through the regulation of the practice of medicine, will not be induced to adopt a retrogressive policy. The chief hope of averting such a disgrace is to be found in the complete organization of the profession of the state along the lines indicated by the Physicians' Club of Dayton.

I have already said that cooperation in the profession is no longer a theory, but a condition. As a matter of fact, the regime that we are inaugurating so auspiciously in Ohio tonight, and the principles of organization such as you have here adopted, have become rather extensively established in the American medical profession. It began as long ago as 1876, when the physicians of California assembled without reference to denominational predilections, and secured the adoption of the first effective law for the regulation of the practice of medicine anywhere in the United States. It is true that those conferences called for temporary purposes did not assume the form of permanent organizations for social and scientific purposes, such as you have here established, but the principle of reciprocal recognition and cooperation was then and there promulgated. The same steps were taken during the succeeding few years in Illinois, Alabama and Colorado. In each instance the movements resulted in the establishment of state licensing boards, composed of representatives of the different "schools" or "sects," who consulted, not upon the trivial question of a dose of medicine, but upon the vastly more vital question of the qualifications of those who were to practise the healing art. Thus it happened that under the influence of the state, instigated by the profession itself, the lines of demarkation between the contending denominations of physicians were subjected to the gradual but sure process of effacement. From these beginnings the process has spread all over the country, and it has been accomplished, with but a single exception, with that smoothness characteristic of evolutionary growth. The only exception was that of the state of New York, in which the physicians of the dominant and controlling school of practice, as a result of doing precisely what had been done without protest in the other states—as a penalty for doing precisely what you are doing here tonight—was subjected to the penalty of excommunication by its national organization. This action has stood for 20 years as the one conspicuous stain upon the escutcheon of the American medical profession. I am happy to state that, under the broader knowledge of today, this wrong is about to be remedied. I feel that I am violating no confidence when I state that committees, representing the affiliated body of the national organization on the one hand, and the excommunicated state organization on the other, each actuated by the *Zeitgeist* of the twentieth century, are arranging a few purely trivial details with the object of reestablishing the complete unity of the national profession. I may go a step further and say to you in all confidence that the great sentiment of the American Medical Association touching this unfortunate incident is such that it awaits with impatience the successful completion of these negotiations. You may, therefore, look forward with confidence to the meeting to be held in Saratoga in June as the date which shall mark the close of that period in our national profession when a reputable physician shall be denied recognition and fellowship because he exercises the most fundamental prerogatives of individual liberty.

It is not unknown to you that this consummation has been made possible by the important steps that were taken at the last meeting of the American Medical Association. On that

occasion delegates were received from societies that had received into their membership, and that had formally adopted by-laws by which they could receive into their membership, any legal practitioner, without reference to his educational antecedents. Recommendations were adopted looking to the organization of the profession in the different states along the same broad and catholic lines. These recommendations, in the hands of a committee of which Dr. P. Maxwell Foshay, of Cleveland, is the chairman, are now being formulated with reference to their formal adoption at the next meeting of the Ohio State Medical Society. Similar steps are being taken in a number of the other states of the union. I mention these facts to show that you are today, while distinctly in the lead, only exemplifying the spirit which is dominating the profession all over the country.

And now that I have said thus much, by way of gratulation, permit me to add a word by way of admonition. This is a reform movement, and like all reforms it may defeat its purpose in an effort to go either too fast or too far. I would look with extreme apprehension upon any agitation that has for its object the coercion of individual physicians into membership. No member is so dangerous as an unwilling one. It must be remembered that opinions long entertained are surrendered slowly, and the more slowly when honestly entertained. In many instances it is necessary to demonstrate that the changed relation does not, after all, involve so much a surrender of conviction as what the individual himself is surprised to discover are his prejudices. It must be remembered, also, that there are established personal and professional relations that imply established material interests, and that these, in many instances, must undergo a more gradual process of adjustment before the individual feels at liberty to act. It seems to me that the ultimate success of a movement of this kind must come from a demonstration of its desirability—to the personal, professional, social and intellectual welfare of the individual. It is needless to say that in the light of such demonstration all desirable physicians will wish to be identified with the movement, and it is likewise needless to add that, when they manifest such a desire, they will be greeted with the right hand of fellowship. And now that you have taken this step—that we have taken this step, for I wish most heartily to be counted in—I fancy that we shall discover tomorrow that we are very much the same men that we were yesterday. Our relations will not have changed to any appreciable degree, but we shall know each other a little better and feel a little more kindly and do our duty with a little more lightness of heart—that is all. And as time moves on, so shall we, with a little more impetus that we have received tonight, and we shall move on convergent lines until finally we shall arrive at the standpoint of complete abandonment to the spirit of truth, the standpoint of complete professional unity, the standpoint of complete devotion to the highest exactions of citizenship.

It is, indeed, the dawn of a better epoch when members of a learned profession, and a profession with growing liberality, maintain an open tribunal before which may be represented any scientific truth. It bespeaks an era when the professional mind, untrammelled by dictum or authority, shall assume a judicial poise. It is an era in which the chief point of pride shall be, not to maintain a preconception for the sake of personal achievement, but gladly to yield it in the light of demonstrated truth. With such a spirit dominating our profession, and with the unwritten code of the gentleman controlling the personal conduct and the professional relations of its members, we may feel that we are in the way of fulfilling, in highest degree, our functions as the conservators of the public welfare. In conclusion and just as the sun is breaking in richest effulgence upon this new day, I can only congratulate you for having thus earnestly and auspiciously demonstrated what is meant by that increasing purpose that runs through the ages, and by those thoughts of men that broaden with the process of the sun.

National Hospital and Sanatorium.—Under this name a new \$1,000,000 hospital is to be incorporated in Chicago. A site valued at \$2,000,000 has been selected overlooking Lincoln Park.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

April 19, 1902. [Vol. XXXVIII, No. 16.]

1. The Etiology and Spread of Typhoid Fever. VICTOR C. VAUGHAN.
2. A Synopsis of the Sanitary Census of Manila. HARRY L. GILCHRIST.
3. Agreement Between the History of Yellow Fever and Its Transmission by the Culex Mosquito (*Stegomyia* of Theobald). CHARLES FINLAY.
4. The Diagnostic Value of Tuberculin. C. M. WOOD.
5. The Paraffin Injection Treatment of Gersuny, with a Report of Cases. ROBERT M. PARKER.
6. A New Coupler for Rapid Intestinal Anastomosis. EVAN O'NEILL KANE.
7. Diagnosis, Prevention and Treatment of Puerperal Infection. FREDERICK HOLME WIGGIN.

1.—Typhoid Fever.—Systematic study of hundreds of samples of drinking water has shown that the typical colon bacillus does not cause typhoid. The more markedly the germ found differs from the colon bacillus and resembles the typhoid bacillus the more likely is fever to appear among those using the water. Vaughan has never found a typical Eberth's bacillus in any sample. He believes in the specific nature of the Eberth's bacillus and that it never is converted into a colon bacillus and the latter never causes typhoid. Typhoid is never spread by exhaled air but may be by sputum. Posttyphoid abscesses may discharge virulent germs for years. Elimination by the stools begins soon after introduction by the mouth, and one may distribute the germ thus without developing the disease himself. Preventive diarrhea is thus explained. Sunlight kills in a few hours, but in the soil, drinking water, clothing, etc., the germ lives many months. Infected dust is carried by the wind and inhaled or deposited on food. Investigations during the late war led to the conclusion that flies were the most active agents in spreading the disease. Season affects epidemics by modifying chances of water infection. Those due to dust and flies are likely to occur in summer or autumn. Prevalence between the ages of 15 and 35 years is due to greater exposure to infection then. Men are more frequently exposed than women. Fatigue predisposes. Typhoid is more prevalent among the robust than the delicate. Immunity in tuberculosis is due to emaciation. [H.M.]

3.—History of Yellow Fever and Transmission by the Culex Mosquito.—Investigations show that endemic foci from pre-Columbian times till the seventeenth century were limited by the twentieth and eighth or ninth parallels of north latitude and extended from the Atlantic coast to the Leeward Islands. During and after this century the zone extended. Transportation of the mosquito *Stegomyia fasciata* appears to have been of frequent occurrence. To it must be attributed the "modorra pestilencial" in Santo Domingo and the Canary Islands in 1494. Healthy mosquitos must have been imported frequently into subtropical countries as along the Mediterranean, where they now exist, having acclimated themselves. This constitutes a dangerous complication whenever a case of yellow fever happens to be introduced in a place usually free from it. The Andes have stood as a barrier to migration, but this obstacle will disappear with an isthmian canal. The foci of disease should be previously extinguished by the joint efforts of the nations. [H.M.]

4.—The Diagnostic Value of Tuberculin.—Tuberculin in doses of .005 carefully increased to .010 produces no bad effects. The characteristic reaction is shown by a rise of 2°, reaching its height in from 6 to 36 hours, typically at the eighteenth, and accompanied by at least two of the following symptoms: chilliness, headache, nausea and muscular pains. The test ranks in value with that of Widal, the technic is simpler, the materials more readily obtainable and more permanent, the danger no greater and the information scarcely less reliable. Wood presents a table of 100 cases of which 59 failed to react, and only one of these showed subsequent evidence of tuberculosis; 41 reacted, 36 of these proved undoubted cases; 3 were syphilitic and 2 profoundly neurotic. [H.M.]

5.—The Paraffin Injection Treatment.—Parker briefly reviews its use in cases of incontinence of urine and feces, in inguinal hernia, to prevent reunion of resected nerves, in oral surgery and unsightly deformities, and reports two cases of

nasal deformity much improved by the treatment. The ordinary soft paraffin in lumps and oleum petrolati were mixed to secure the desired consistency. The product had a melting point of 102° F., and its consistency was that of vaselin. It was sterilized by boiling, and allowed to cool in the syringe sufficiently to exude from the needle as a worm-like semisolid string. A steel syringe was used. The injection was preceded by one of Schleich's solution. The needle was introduced at some distance from the site selected for the prosthesis to prevent escape. The paraffin was distributed as desired, an assistant molding the prosthesis as it was deposited. Toxemia is not to be feared. No case has been observed long enough to decide whether final absorption occurs. Lung embolism has occurred from injection into a vein. [H.M.]

6.—A New Coupler for Rapid Intestinal Anastomosis.—

This consists of one inner and two outer cylinders, the former equalling in length the two latter, which are large enough to slip easily over it with a layer of gut interposed. The inner cylinder has a depression around each end, and a projecting flange. The margins of the outer cylinders are incurved. Perforations in the incurved distal surfaces of the outer cylinders and in the flanges allow the passage of strong linen threads. One severed end of the gut is drawn over an outer cylinder and tied firmly into the depression at the end of the inner cylinder. The other end is similarly treated. After thorough lavage, traction is made on the threads until the outer cylinders are drawn so snugly together as to bring the inverted serous intestinal surfaces into accurate apposition. The knot is hidden deeply between these surfaces. The coupler prevents leakage, therefore no suturing is necessary. The pressure required is a serious objection to the Murphy button, as is also its small aperture. This coupler is one-quarter the weight of the latter, being made of aluminum. [H.M.]

7.—Puerperal Infection.—The symptoms of the different forms are discussed, and the importance of an early bacteriologic examination is insisted on. The necessity for strict asepsis, delivery of intact membranes and repair of lacerations is emphasized. Drugs are only temporary aids in treatment. The main reliance must be on nourishment, activity of the skin, kidneys and bowels, saline injections by enemas under the skin or intravenously according to the urgency of the symptoms, and appropriate local treatment. Curettage and other operative measures should not be universally condemned. Early recognition of infection is of supreme importance. [H.M.]

Boston Medical and Surgical Journal.

April 17, 1902. [Vol. CXLVI, No. 16.]

1. Papers on the Diagnosis of Appendicitis. MAURICE H. RICHARDSON.
2. Vaginal Hysterectomy for Carcinoma of the Uterus. WILLIAM R. PRYOR.
3. Pathology and Pathologic Diagnosis of Carcinoma of the Uterus. T. LEARY.
4. Abdominal Hysterectomy for Uterine Cancer. J. C. IRISH.
5. The Surgical Aspects of Carcinoma Uteri, Complicating Pregnancy, Labor and the Puerperium. CHARLES GREENE CUMSTON.
6. The Treatment of Cases of Carcinoma Uteri Not Justifiably Treated by Radical Operation. ALBERT H. TUTTLE.

1.—Appendicitis and Acute Intrathoracic Disease.—

Maurice Richardson calls attention to the fact that acute thoracic disease may set up a train of abdominal symptoms pointing strongly to appendicitis, when in reality no abdominal lesion exists. Reference is made to several cases in the author's own experience where pneumonia or acute pleurisy led to abdominal pain, vomiting, rise of temperature, leukocytosis, and right iliac tenderness—all strongly suggestive of appendicitis. What complicates the situation further is that these symptoms, when present, usually appear early, before there is any manifestation of intrathoracic disease. He warns the profession against making a too hasty diagnosis of appendicitis in those cases in which there is any evidence of intrathoracic trouble. A careful examination of the chest should be the routine practice before any diagnosis of appendicitis is made. [A.B.C.]

2.—Vaginal Hysterectomy for Carcinoma of the

Uterus.—As essentials to be remembered in removing cancerous growths, Pryor mentions (1) that the localities of natural increase or recurrence are parametrium first and vagian

second; (2) the surgical rule that no trauma or section should be inflicted upon the involved field during its removal, lest hitherto uninvaded absorbents be opened up for the reception of the cancer elements, and lest severe trauma upon the cancerous growth result in the projection of the cancer elements along the absorbents directly in connection with the cancerous mass; (3) consideration of the general bodily condition of the patient. The first essential requires that the parametrium be removed, together with the upper third of the vagina, in all cases of cancer of the cervix; and in cases of cancer of the body the parametrium only. As no incision should be made through the cancer, these organs must be removed en masse. This can best be done by opening the abdomen, and in young women who bear the strain of abdominal operation better than the aged, and in whom cancer of the cervix tends to spread more rapidly and recur more promptly, he prefers abdominal hysterectomy. Hence he finds a distinct indication for vaginal hysterectomy in but a limited percentage of cases of cervical cancer, although it may be the operation of choice for cancer of the body except in case of young women in whom the cancer has pus foci or is associated with fibroids. [W.K.]

3.—Pathology and Pathologic Diagnosis of Cancer of the Uterus.—

Leary reviews briefly the three types of epithelial structure found in the uterus, each giving rise to a different type of cancer. These forms would be considered only mildly malignant if found in some other part of the body, but the enormous lymphatic connection of the uterus may account for the earlier metastasis of these growths. To make a certain diagnosis in early stages of cervical cancer, if the growth is small, a portion from its edge, together with some of the neighboring normal tissue, should be cut out and sent in moist gauze to a pathologist. If he cannot be reached in a few hours the piece of tissue should be dropped into 80% or 90% alcohol. Be sure to obtain enough material. The diagnosis depends, in most cases, not upon finding a thickened epithelial or gland layer, but rather upon invasion of the underlying muscle. [W.K.]

4.—Abdominal Hysterectomy for Uterine Cancer.—

Irish has employed abdominal hysterectomy in 50 cases of uterine cancer, 35 being cancer of the cervix and 15 of the body, and considers it the preferable operation. Of these cases of cervical cancer six have lived from five to eight years without any recurrence and may be regarded as permanent cures; some have died from other causes without any recurrence. Hence he thinks the teaching that cervical cancer is incurable is not correct, and that it is also well to remember the months and even years of comfortable life often granted by a radical operation to these unfortunates before a recurrence. For cancer of the body abdominal hysterectomy seems to fulfill all operative requirements and any improvement in the cure of cancer must come from earlier diagnosis and operation. [W.K.]

5.—See *American Medicine*, Vol. III, No. 15, p. 528.

6.—The Treatment of Cases of Carcinoma Uteri Not Justifiably Treated by Radical Operation.—

When a hopeless case of cancer is to be dealt with, it is obvious, says Tuttle, that our first duty is to relieve suffering and for this we must rely principally upon opiates. Small doses should be used and in order to obtain the longest continued effect they should be administered per rectum. By surgical means and local treatment we can keep down cauliflower growths and painful granulations, purify the secretions, prevent autoinfections, and allay the irritation of neighboring parts. Hemorrhages may be treated by curet and cautery. Rarely it may be necessary to resort to packing or chemical hemostatics. [W.K.]

Medical Record.

April 19, 1902. [Vol. 61, No. 16.]

1. Instances of Spontaneous Cure in a Leper Family. DOUGLASS W. MONTGOMERY.
2. A Contribution to the Study of Peritonsillar Abscess. DONALD M. BARSTOW.
3. Mind and Body. J. ALLEN GILBERT.
4. On the Penetration of the Human Body by Ordinary Actinic Light. WILLIAM S. GOTTHEIL and MILTON W. FRANKLIN.
5. Suprapubic Cystoscopy. DONALD KENNEDY.
6. Asepsis in Dental Surgery. WILLIAM J. LEDERER.

1.—Spontaneous Cure in a Leper Family.—In support of the view that patients frequently recover from maculoan-

thetic leprosy Montgomery submits a family history in which there were seven leprous descendants, five of whom are still alive and have recovered, while one who died was free from the disease for 10 or 11 years previous to her death. The others have passed the probationary 10 years. Conditions seemed to point strongly to hereditary leprosy until it was learned that most of those affected had been in contact with leprous playmates and infection was probable in the other cases. A fact against heredity was the robust health of the children. The striking feature was freedom from tuberculous leprosy, but one patient having this form apparently, and this may have been a maculoanesthetic type with marked central infiltration. A dry, temperate and bracing climate seems favorable to cure. [H.M.]

2.—Peritonsillar Abscess.—Barstow believes that in peritonsillar abscess or quinsy the real trouble lies not in the tonsil itself but in the supratonsillar recess. In persons subject to attacks of quinsy even between attacks a cotton-wrapped probe inserted into this recess will bring away a cheesy, foul-smelling material. Some irritant will cause a swelling of the tonsil and thereby enclose this material in a cavity, germs will at once proliferate and cause an abscess. The author's treatment is as follows: Open up the supratonsillar recess so widely that it will drain itself freely. This is accomplished by injecting a 4% solution of cocain into the tonsil and cutting away the offending part of that organ. [A.B.C.]

4.—Penetration of the Body by Actinic Light.—In estimating the value of any special source of light for influencing the deeper tissues it is necessary to prove the efficient penetration of the actinic rays only. In experiments with an electric arc and condensation apparatus the film side of a sensitive plate was bound to a developed negative and the two fastened to various parts of the body so protected that light could reach the film only by passing through the body and the negative. The results showed that light in proper concentration will penetrate the entire thickness of the human body, hence all the internal organs are accessible. This opens a field for its successful employment as a therapeutic agent in internal maladies. [H.M.]

5.—Suprapubic Cystoscopy.—On two occasions Kennedy has tapped the filled bladder, suprapubically, with trocar and cannula for relief from retention caused by hypertrophy of the prostate. He used the opening for the purpose of inserting a small light for exploration of the interior of the bladder and prostate. He was not fully satisfied with results obtained, but believes with improved technic much valuable information can be obtained in this way. [A.B.C.]

6.—Asepsis in Dental Surgery.—Lederer states that asepsis can be obtained in dental surgery. The hands are prepared as in ordinary surgery. Forceps and all larger instruments are sterilized by boiling in a solution of formaldehyd $\frac{1}{2}$ % to $\frac{1}{4}$ % before and after use. Hypodermic needles, nerve brooches and engine drills are passed through alcohol and burned off, then before use are dipped into carbolic acid full strength. The area to be operated upon is cleansed by rinsing repeatedly with formaldehyd, chlorinated soda or potassium permanganate. In other respects the patient is treated in practically the same way as if operated upon by the ordinary surgeon. [A.B.C.]

New York Medical Journal.

April 12, 1902. [Vol. LXXV, No. 16.]

1. State Care of the Insane. L. J. MORTON.
2. A Case of Round-celled Sarcoma of the Stomach, with Secondary Manifestations in the Already Adenomatous Thyroid. JOHN MCCRAE.
3. Reflections on Some of the Causes for the High Deathrate and High Venereal Non-efficiency of the Tropics. P. R. EGAN.
4. The Mammary Glands in Primipara. THERESA BANNAN.
5. The Management of Cases of Cephalopelvic Disproportion by the General Practitioner. EDWARD A. AYERS.
6. Surgical Shock from a Clinical Standpoint. EUGENE BOISE.
7. A Case of Sarcoma of the Tonsil. ARTHUR G. ROOT.
8. A Phenomenon Observed on the Tongue in Acute Malarial Infection. LUCIEN LOFTON.

1.—State care of the insane is discussed by Morton, who approves of the method of caring for the insane individuals in fine state hospitals or asylums where they are under the care of well qualified men. He favors the cottage system because it allows the separation of the mentally sick into small families

and recovery is more rapid. Insanity is increasing. Stringent living, brisk business competition, the desire to become rich, etc., are causative factors. Emigration also aids greatly in increasing the number of insane. The commitment of patients to either public or private hospitals behooves the exercise of care and judgment. The author is never willing to send patients away unless they are dangerous—suicidal, homicidal, destructive or noisy, but if there is an hereditary strain in the family he does not hesitate to advise commitment. The mild forms of nervous disorders, as a rule, can be cared for at home or in some other quiet place. Even in cases of acute mania, if the friends have accommodations, the home treatment should be given a trial. The hypnotic preferred by the author is paraldehyd in dram doses. Trional in 10 or 15 grain doses may be given. Hyoscin may be given in sthenic cases with great care. [C.A.O.]

2.—Round-celled Sarcoma of the Stomach.—McCræe reports a case in a woman of 69. The history indicates that a fetal adenoma of the thyroid gland had been in existence previously to the occurrence of the sarcoma; sarcomatous metastasis attacks the thyroid and invades the adenomatous tissue in the same way as it invades the normal glandular tissue. Metastatic growths occurred in the chain of lymph glands from the stomach to the thyroid; midway, the lung was involved, probably by the blood channels, rather than by direct continuity. The thyroid was involved at its lower part, free at its upper part. The spleen was not enlarged. Microscopic examination showed a homogeneous growth of round cells, slightly larger than lymphocytes, mostly circular or subcircular, no blood-vessels being discoverable in its structure. [C.A.O.]

3.—Causes for High Deathrate, etc., of the Tropics.—Egan has made some investigations as to the causes of the high deathrate in the tropics, especially of Puerto Rico, and says that in order to diminish it the first necessity is a sand-filtered water supply, some adequate system for the removal of excreta, and sanitary habitations for all classes of the population. Russell found that 54% of the perfectly healthy and 84% of persons sick from every variety of disease harbored *Uncinaria duodenalis*, while according to Manson it is found in nearly every cadaver in Egypt, and in India it was found in over 75% of natives to whom thymol had been given. There are no statistics of venereal diseases for the natives, but in soldiers 20% of the total illness has been due to this scourge. Egan advocates that a soldier should only be admitted to hospital, as a rule, for the following venereal conditions, viz.: Epididymitis, suppurating bubo, ulceration of the mouth, and iritis. In this manner he believes the others would come for necessary treatment without going on the sick-list when they know it would not count against them. [C.A.O.]

4.—The Mammary Glands in Primiparas.—Bannan discusses the treatment of the breasts both before and after parturition. The imperfect or inverted nipple should be developed by drawing it out with the fingers or breast pump. The removal of the products of secretion by soap and water or alcohol as required, and the daily bath, constitute the simple hygiene of the nipples. To prevent striae, gentle massage of the tissues over the glands may be used. When the babe is not nursed because of fissure or other injury, massage of the gland should take its place, and as much milk as possible be expressed. If "cakes" are present, they require special care in manipulation. It is by no means necessary to reduce them completely, as partial relief with subsequent bandaging will effect this. When a fissure or erosion occurs on the nipple, suckling should be prohibited for several hours or days. The nipple should be carefully bathed with some mild antiseptic to the deepest part of the fissure, then dried, a healing ointment used, and the whole gland covered with cotton and a firm roller bandage applied. In the meantime, the infant is nursed on the other nipple. When in spite of the bandage the breast fills with milk and cakes, the dressing should be removed and the process of bathing and dressing the breast repeated. When both nipples are fissured, a compromising line of treatment must be pursued. [C.A.O.]

5.—Management of Cephalopelvic Disproportion.—Ayers discusses the methods used especially by the general

practitioner in the management of cephalopelvic disproportion, and maintains that there is much greater ease and surety of proper preparation for symphysiotomy than for other operations. He gives in particular his subcutaneous method. The urethra is held to one side, the symphysis severed by introducing the bistoury under the clitoris upon the face of the joint, while hemorrhage is prevented by pressing a wet wad of cotton on the small opening. The child is delivered with the forceps, the afterbirth removed, the catheter inserted (after bringing the pubic bones together), the wings of the pelvis are strapped with adhesive plaster, and the wound completely closed by bringing the knees together and binding them. In the after-treatment, such a sling as Dickinson's can be readily set up, if a hammock bed is not available. [C.A.O.]

6.—Surgical Shock from a Clinical Standpoint.—Boise believes that the essential condition in shock is a profound disturbance of the entire vasomotor and sympathetic systems, but that this disturbance is in the nature of a hyperirritation rather than a paresis. This disturbing influence may reach the vasomotor center through various channels, as, for instance, by direct irritation of the sympathetic nerves in abdominal operations; by crushing injury to the skeletal nerves, as in railroad injuries; and through the medium of the brain, as in sudden fright; or two or more of these factors may unite as a causative influence. There is a condition of arterial anemia with venous engorgement, causing the clinical manifestations of livid pallor. The profuse and clammy perspiration is caused by stimulation of those secretory branches of the sympathetic system which are distributed to the sweat glands, and is not due to paresis. The relaxation of the sphincters is another witness to the hyperirritation of the entire sympathetic system. Boise says the most beneficial line of treatment also coincides with this theory. The remedies are opium, strychnin, intravenous saline infusion and external heat; to these should be added amyl nitrite and nitroglycerin. Strychnin and amyl nitrite should be given in doses that would ordinarily prove almost toxic. To get the greatest benefit from normal salt solution, intravenous injection at about 115° or 118° F. should be given. [C.A.O.]

7.—A case of sarcoma of the tonsil in a man of 23 is reported by Root. The mass involved the whole of the left tonsil, pressed the anterior pillar forward and upward, and extended downward below the margin of the epiglottis. Externally, the chain of lymphatic glands was to some extent involved. He had lost some flesh, which was probably due to the fact that swallowing had been difficult and he was worried over his condition. Microscopic examination of a small portion of the growth revealed the fact that it was a short spindle-celled sarcoma. Lateral pharyngotomy was done seven days after the patient applied for treatment, and the mass with the infected glands and tissues removed. He left the hospital 36 days later. For a time he made remarkable progress, but six months later the disease returned, involving the lower jaw and surrounding tissues, and death resulted in about four months. [C.A.O.]

8.—A phenomenon observed on the tongue in acute malarial infection is described by Lofton. This condition is present in 95% of all cases of acute malarial poisoning and consists in one or more (generally two) dark lines running from the base of the tongue to the apex. They are usually separated by a clearly defined tract of clean mucous membrane about $\frac{1}{8}$ to $\frac{1}{4}$ of an inch wide. These lines are pyramidal in appearance and begin among the larger papillae at the base of the tongue. They vary in width, and may be from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch wide, gradually coming to a point in the middle of the tongue. In color they resemble the stain of a 10% solution of potassium permanganate that has been exposed to air for some time. This condition will most likely be found from one day to two weeks after exposure or inoculation. It is more beautifully defined from 6 to 12 hours after the initial sporulation, and remains until the system is thoroughly cinchonized. [C.A.O.]

Medical News.

April 19, 1902. [Vol. 80, No. 16.]

1. Compulsory Vaccination Essential. The Example of Porto Rico. AZEL AMES.
2. Clinical Expression of Chronic Myocarditis. J. H. MUSSER.

3. The Sanitary Condition of Street Cars in New York. GEORGE A. SOFER.
4. General Anesthesia in the Plethoric. M. L. MADURO.
5. The New Method of Approximately Estimating the Number of Blood Corpuscles from Stained Specimens. MAX EINHORN and GEORGE L. LAPORTE.

1.—Compulsory Vaccination.—Ames gives a detailed account of the compulsory vaccination campaign in Porto Rico in 1899, which reduced the average deathrate of 621 of previous years to two per annum in a population of 960,000. This is conclusive proof of the efficacy of vaccination in stamping out the disease under the worst conditions. He discusses the causes of the epidemic in England and America; describes the method of producing the virus in a tropical country under the difficulties complicated by unskilled assistants, etc., and the scheme by which compulsion became possible in a widely scattered population. Recorded experience determined conclusively that lymph, especially glycerinated, loses its efficacy in the change from a temperate to a tropical climate; that the best lymph can be produced in tropical countries with care in protection from alterations of temperature; that glycerinated virus has nothing to recommend it for tropical use; that it is better to limit animal vaccinations in tropical countries to about 20 on each side of the calf to prevent too great reaction and the ravages of the screw worm. In 860,000 vaccinations 87½% were successful. In already infected cases the variola was modified or absorbed by vaccination. He notes cases of immunity to vaccination acquired in utero by variola and vaccinia in the mother. [H.M.]

2.—See American Medicine, Vol. I, No. 11, p. 493.

3.—Sanitary Condition of Street Cars.—The foul atmosphere and inadequate warmth of the cars in winter predisposes to disease, and the unclean habits of a dangerous minority of the passengers sow bacterial poisons. Laws should be directed to a reduction of overcrowding, the prevention of spitting and proper ventilation and warming. Proofs of insufficient ventilation and bacterial infection are given by the writer, and he discusses at length these conditions in tunnels and subways. [H.M.]

4.—General Anesthesia in the Plethoric.—Maduro calls attention to the respiratory difficulty sometimes arising in administration of ether to plethoric persons. Plethoric patients take nitrous oxid very well but ether rather poorly, unless allowed to switch off to chloroform for awhile, when they will again bear ether very well. Hence the author administers the narcotics in the following order: Immediately after nitrous oxid a few whiffs of ether are given, then chloroform for about ten minutes, resuming ether for the rest of the operation. In this way it is claimed the duskiess and respiratory difficulty are much diminished. [A.B.C.]

5.—A New Method of Blood Corpuscle Counting.—The writers describe a method of estimating the number of red and white cells from coverslip specimens, spread uniformly without pressure, and stained for two minutes with Jenner's stain. The number contained in a square millimeter is calculated from the fields counted. By comparing this with the number contained in 1 cmm. as determined by the Thoma-Zeiss apparatus it is shown to be sufficiently accurate for clinical purposes. The technic is given in detail. Any physician can carry a few coverslips in his pocket, and thus can have everything necessary for obtaining a specimen. The number of leukocytes can be estimated in three to five minutes, and both white and red cells in 10 to 15 minutes. Rapidity and simplicity make more frequent counts possible, which is an advantage in appendicitis, internal hemorrhage, etc. [H.M.]

Philadelphia Medical Journal.

April 19, 1902. [Vol. IX, No. 14.]

1. Perineal Prostatectomy. JOHN B. DEEVER.
2. The Prevention of Neurasthenia After Surgical Operations. CHARLES W. BURR.
3. Four Cases of Estivoautumnal Malarial Infection at West Point, New York. THOMAS W. JACKSON.
4. The Bacteriology of Erysipelas. G. E. PFAHLER.
5. Rational Therapeutics. BRACE W. LOOMIS.
6. Twin Pregnancy in a Uterus Bipartitus. CHARLES W. DOUGHTIE.
7. A Case of Moist Gangrene; Its Treatment. LUCIEN LOFTON.

1.—Perineal Prostatectomy.—Deever gives a concise review of the pathology and anatomy of the prostate. Although

the Bottini operation in selected cases may afford the desired relief, 15% of failures, partial failures 34% and a deathrate of over 7% in the hands of men who rank as the most skillful operators in these cases, are sufficient to show that this is not the ideal operation for the relief of prostatic hypertrophy. Perineal prostatectomy is the operation which appears to be founded upon sound principles. The technic of this operation and a report of five cases are detailed. Of the five cases two died. The deaths do not retract from the value of the operation, but rather from the suitability of the patient. Both operations were done "in extremis" as a forlorn hope to afford relief. These cases argue for prostatectomy before septic cystitis and septic nephritis have rendered the operation unavailable. This operation is more suitable for the earlier cases than those in which periprostatis has made the operation difficult, and prolonged sepsis from cystitis and pyelitis has rendered the patient unfit for any major surgical procedure. [F.C.H.]

2.—The Prevention of Neurasthenia after Surgical Operations.—Burr states that postoperative neurasthenia is most frequently seen after surgical treatment of the chronic affections of the internal or external genitalia of women. Neurasthenia may follow acute surgical affections, but in these cases there is not the time for preoperative treatment should the patient be neurotic. It is unwise to resort to immediate surgical interference in a neurotic woman who has chronic pelvic disease. It is best to treat the patient by the rest cure for several weeks prior to operating. The diet should be regulated, and overfeeding should be resorted to if there is chronic starvation. Exercise by massage and faradic electricity is indicated. Under such a course there will be some gain in weight, some restoration of color to the face, renewed cheerfulness and the shock of operation will be less, and recovery will be more rapid. Sometimes operation may be entirely avoided. [F.C.H.]

3.—Estivoautumnal Malaria.—Jackson details four cases occurring at West Point, N. Y. Only one of these cases originated in Cuba, none of the other patients having been on that island. The variety in the type of fever in these cases emphasizes the irregularity of the manifestations of the malignant parasite, and the necessity of correct diagnosis, based less upon the temperature than upon the microscopic finding, inasmuch as the treatment accorded the ordinary benign malarial fevers is inadequate in infections of the tropic parasite. [F.C.H.]

4.—The Bacteriology of Erysipelas.—Pfahler's investigations are based upon the study of 98 cases occurring in the wards of the Philadelphia Hospital. Diplococci were found in 86 of the cases. Judging from the detailed results, it appears that the diplococcus as described is the most common cause of erysipelas, or of a disease which in the light of our present knowledge cannot be distinguished from erysipelas. [F.C.H.]

6.—Twin Pregnancy in a Uterus Bipartitus.—Doughtie reports the case of a woman in whom the uterus was divided by a septum which extended as low as the os uteri into two compartments, each of which contained a fetus, cord and placenta enveloped by its bag of waters. The following history of her pregnancies is of interest: She has been pregnant five times. The first terminated at term, with an instrumental delivery; the second, twins, miscarried at the fifth month; third, proceeded to term, normal delivery; fourth, abortion of twins at second month, followed by curettage; and fifth, twins, which miscarried at fifth month. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

New Light Phagocytosis and Chemiotaxis.—The suggestion of the theory of phagocytosis by Sternberg, in 1881, and its enunciation and demonstration by Metschnikoff in 1884, mark the beginning of an epoch in the history of medical science. The conclusion of the latter, "that in the property of the ameboid cells to include and destroy microorganisms, the animal body possesses a formidable means of resistance and defense against these infectious agents," gave a new significance

to the notion of a *vis medicatrix naturæ*, and the ability to recover from microbic infection, as well as the power of acquiring immunity, came to mean the ability of the devouring host of *macrophags* and *microphags* to subdue the horde of intruding germs. It was noticed that in some cases the leukocytes were active to ingest and digest microbes, while in other cases there was apparently no desire for a bacterial diet. To account for this behavior the theory of positive and negative chemiotaxis was formulated, and Metschnikoff asserted that leukocytes are powerfully attracted by many microorganisms and as powerfully repelled by others. In the presence of negative chemiotaxis, being shunned by the phagocytes, the microbes propagate and bring about death. He pointed out the mutability of chemiotaxis, and called attention to the loss of resisting power following the transformation of positive into negative chemiotaxis, or acquirement of immunity by the reverse action. Then arose the theory of antitoxins of Behring and Kitasato (the *alexins* of Buchner, the defensive proteids, *sozins* and *phylaxins* of Hankin, etc.), which relegated phagocytosis and chemiotaxis to a back seat for a time; but now comes a countryman of Metschnikoff, Dr. Werigo¹, who concludes from his experiments on chicken cholera in rabbits "that in many diseases the specific microorganisms possess a layer of dissolved bacterioprotoen which stimulates the white blood-corpuscles and determines phagocytosis. In the latter stages of chicken cholera in rabbits this layer fails to be produced, and as a result phagocytosis ceases. Immunity-conferring sera dissolve the bacterioprotoens and thereby lead to the development of phagocytosis. Immunity is determined by phagocytosis. Antitoxic and bactericidal sera strengthen phagocytosis and only exceptionally act as independent agents." Thus we have chemiotaxis accounted for by the presence or absence of dissolved bacterioprotoen, the action of antitoxins and the transformation of one form of chemiotaxis into the other elucidated and the theory of phagocytosis rehabilitated.

The Blastomycoses.—An illustration of the advantage accruing from the abundant opportunities for biologic training which have of recent years been opened to medical students, is to be found in the increasing number of reported cases of mycotic origin. The literature of blastomycetic affections, for example, runs back to Berg, Osterleben and Robin, in the early forties, with less than 50 contributions between 1840 and 1890; after the latter date the training of medical men in cryptogamic botany began to give results in a rapid amplification of the literature of the diseases due to budding-fungi. In looking over the splendid monograph of Dr. Howard T. Rickets on "Oidiomycosis (Blastomycosis) of the Skin and Its Fungi,"² we are impressed with the fact that out of 142 references covering the bibliography of the subject 96 refer to reports of cases made since 1890. This cannot be accounted for on the ground of more frequent occurrence of affections due to the blastomycetes, but rather to an increase in the men with training, which enables them to correctly diagnose the cases when they do occur. Among the yeasts proper, a very considerable number have been proved to be the cause of diseases in animals, and an enumeration known pathogenic species may be suggestive of the possibilities that lie in further investigation. *Blastomyces dermatidis*, Gilchrist (1894), produces a scrofuloderma in man. *Monospora bicuspidata*, Metschnikoff (1884), is the cause of a disease (*Sprosspilzkrankheit*) of copepod crustaceans of the genus *Daphnia*. *Saccharomyces capelitii*, Oudemans and Pekelharing (1886), was found in a case of pityriasis capitis. *Saccharomyces granulomatosus*, Sanfelice (1898), was obtained from granulomatous nodules in a pig. Inoculated into swine, it produced similar

¹ Deutschen medicinischen Wochenschrift, March 27, 1902, Bericht der Elften Congress russischer Naturforscher und Aerzte, St. Petersburg, 2-12, January, 1902.

² Journal of Medical Research, December, 1901.

lesions, but was not pathogenic to other animals. *Saccharomyces lithogenes*, Sanfelice (1895), was isolated from a carcinomatous metastasis in an ox, the primary tumor having occurred in the liver. Subcutaneous inoculation of white mice produced death in eight days. *Saccharomyces neoformans*, Sanfelice (1895), occurring in fermenting grape juice, was pathogenic for guineapigs, producing nodules in all organs except brain, heart and suprarenals, death following in 20 to 30 days; Sanfelice emphasized the similarity of the organism to the so-called coccidia of cancer. *Saccharomyces niger*, Maffucci and Sirles (1894), obtained from the tissues of a guineapig which died of marasmus. It produced enlargement of lymph glands and suppuration at the point of inoculation in various animals. *Saccharomyces ruber*, Demare (1891), a red, budding-fungus found in milk, which produced gastroenteritis in children. It was proved by Casagrande to be pathogenic for guineapigs and mice when inoculated subcutaneously into the abdomen. *Saccharomyces septicus*, de Gaetano (1897), an exceptionally virulent species found in urinary sediment, and productive of a fatal fibrinous peritonitis and septicemia in guineapigs in 12 hours. *Saccharomyces subcutaneus tumefaciens*, Curtis (1896), a yeast producing pyemia in man. Finally the cases described by Rickets under the designation Oidiomycosis, or when occurring in the skin Oidiomycosis cutis, and produced by organisms belonging to the genus *Oidium*. This paper by Dr. Rickets is an important contribution to the literature of mycologic infection, and should be widely read.

Nonperforating Head Injuries and Meningitis.

—The relation of cephalic injuries to meningitis is a matter of pathologic and clinical interest and, from a medicolegal point of view, is at times of great importance, as was illustrated by a recent murder trial in New Jersey. All authorities agree that injuries causing a solution of continuity in the skull or its coverings may bring about a meningitis by affording an entrance to pathogenic bacteria; but upon the question of whether injuries that are not attended with any solution of continuity can be provocative of meningitis, much difference of opinion exists. It has been known that in childhood head injuries at times determine the development of tuberculous meningitis, but that they may also bring about other infectious processes has not been definitely established. The subject has recently been carefully studied, both clinically and experimentally by Ehrnrooth,¹ who reports, together with a series of experiments, two pertinent cases that came to autopsy in Helsingfors. The experiments were made upon rabbits which, having received blows upon the head, were afterward inoculated with pathogenic microorganisms into the circulation, in order to determine whether the bacteria could become localized in the brain. The organisms employed were the streptococcus, staphylococcus, and pneumococcus. In some instances the blows were inflicted after the bacterial inoculation, and in a few simultaneously with the latter. The results were that of the animals that had received injections of streptococci, 54.4% developed infectious processes in the brain; of those in which the staphylococcus had been employed, 56.3%; and of those in which the pneumococcus had been injected, 63.6% reacted with inflammatory lesions. Although these results can be applied only with great caution to human pathology, they show that head injuries which in themselves afford no infection atriun, may produce in the brain a *locus minoris resistentie* in which bacteria present in the circulation may find a nidus and set up an inflammatory process. We should be pleased to receive for our Correspondence Department reports of cases bearing upon this important question.

Hay's Reaction for Bile Salts.—Beddard and Pembrey¹ give a short account of Hay's test for bile salts. It is pointed out that the fluids in which a delicate test for bile salts would be most useful are vomit feces, and urine. Hay's test, however, is less reliable in a case of vomit and feces than in that of urine—for it has been shown that substances other than bile salts, which also have the power of reducing surface tension (upon which the test depends) may occur in vomit and feces, and might, under special circumstances, be present in sufficient quantity to introduce serious fallacy. The most important of such substances are alcohol, ether, chloroform, acetic acid, acetone, turpentine, phenol, skatol, and soaps. In the majority of these the power to reduce surface tension is small as compared with that of bile salts. With urine the case is different, as none of the normal constituents give the reaction; none of the substances other than bile salts that do give the reaction has ever been found in the urine in sufficient quantity to introduce a fallacy, and there is no drug known at present which, when taken, invalidates the test. The simplest way to perform the test is to place some urine in a test-tube with a diameter of about one inch, and to throw some sublimed or finely-powdered sulfur upon it. If any sulfur begins to fall in the urine at once, there is at least one part of bile salts per 10,000. If none falls at once, then, after waiting a minute, the test-tube is given a gentle shake; if sulfur now begins to fall, there is at least one part of bile salts in 40,000, and so on for further dilutions. The test is said to be much more delicate than Pettenkofer's. [A.O.J.K.]

Observations on Sleeping-Sickness.—Rouget² reports a case of African lethargy in which examination of the blood revealed the presence of a filaria at all hours of day and night, and which differed totally from *Filaria perstans* of Manson. [C.S.D.]

Tuberculosis of Cold-blooded Animals.—Herzog,³ of Würzburg, has been successful in his attempts to inoculate frogs with cultures of tubercle bacilli, producing pathologic alterations similar to those of fish tuberculosis. [C.S.D.]

A Case of Atropin Poisoning.—A boy of 11 swallowed nearly $\frac{1}{2}$ grain of atropin. He developed violent delirium with tremendous motor excitation, but recovered. The treatment consisted in the use of a vinegar enema and the rectal administration of $7\frac{1}{2}$ grains of chloral. [D.R.]

Affections of the Mouth Associated with the Fusiform Bacillus and Spirillum of Vincent.—Mayer⁴ reviews the literature and reports a case of an affection variously described—diphtheroid angina, chancriform angina, ulceromembranous angina, ulcerous angina, spirochetous angina, etc. The affection seems to have a predilection for the adult male, and the symptoms, as a rule, are of the slightest—the deposit existing for quite a time without being noticed. The lesion has a distinct chancriform appearance at first, and while usually situated on the center of the tonsil, it is often on its most dependent portion. The deposit is white, soft on top, readily detachable, and leaves an excavated and bloody surface. There is a certain amount of induration, the breath is fetid, salivation is present, the submaxillary glands are infiltrated, and there is slight pain on deglutition. The borders of the gums, the lips, and the tongue frequently are affected. The duration of the disease is from eight days to six weeks. The prognosis is good, but there is a tendency to recurrence. The treatment consists in the use of a solution of boric acid as a gargle, and the local application of iodine and of hydrogen dioxide. The disease has to be differentiated from diphtheria and from syphilis, and the diagnosis in great part rests upon bacteriologic examination. [A.O.J.K.]

Staining Living Phagocytes.—The term "vital" staining has been applied by Plato⁵ to his process of staining living leukocytes with neutral red, which gives an intensive and lasting stain only with the granuloplasma, but differentiates the various ingested bodies, microorganisms, erythrocytes, etc. [C.S.D.]

The Study of the Flagella of the Hematozoön of

¹ British Medical Journal, March 22, 1902.

² La Semaine Médicale, February 26, 1902.

³ Centrbl. f. Bakt. Parasit u. Infektkd., Bd 31, Hft. 3, 1902.

⁴ Münchener medicinische Wochenschrift, November 26, 1901.

⁵ American Journal of the Medical Sciences, cxxiii, 187, 1902.

⁶ Archiv. für mikroskopische Anatomie und Entwicklungs geschichte. 86 Bd.

¹ Till kändedomen om traumats betydelse för uppkomsten af infektiösa cerebrala kommor. En klinisk-anatomisk och experimentell studie. Akademisk afhandling. Helsingfors, 1901. Abstracted in Nordiskt medicinskt Arkiv. 1901, Bd. xxxiv.

Paludism.—Laveran¹ employs the blood of pigeons recently arrived from a malarial region. The blood is not examined pure, but with the addition of physiologic serum, whereby the flagella persist much longer and the staining is more readily affected. [C.S.D.]

Subcutaneous Injections of Gelatin in Pneumorrhagia.—Thieme,² of the Bermerschen Lungenheilstalt at Görbersdorf, reports 12 cases of hemorrhage of the lungs in which the patients received hypodermic injections in the upper thigh region of 2% gelatin solution, containing salt in amounts of 100 cc. and 50 cc. at a time. Local anesthesia by Schleich's method made the operation absolutely painless, and the results were favorable in the majority of cases. [C.S.D.]

Etiology of Carcinoma and Autoimplantation of Carcinoma Cells into the Walls of the Stomach and into the Lung.—Fütterer³ says that normal epithelial cells which are exposed to chronic disorders of circulation undergo various changes in form and function. Their method and time of multiplication are also changed, and this leads to abnormal grouping of cells. Proliferating epithelial elements under the influence of a mechanic trauma are pressed into the deeper tissues, accompanied by sprouting bloodvessels and surrounded by hyperemic and edematous areas and more or less cellular infiltration. Here they form the body of the primary tumor, and from here some of their cells are carried mainly by the lymphatics. The cells of the primary growth may develop noticeable physiologic activity, manifesting itself also in the metastasis or physiologic function which may not be recognizable in the primary growth, but again is plainly discernable in the metastasis. Carcinoma cells may retain the physiologic function of the cells from which they are derived. A case of carcinoma of the right labium majus is reported in which one metastasis had developed in the myocardium and pericardium. The cells of the metastasis contained eleidin as found in the cells of the skin. The author reports one case and mentions six others in which there is no doubt as to the origin of the secondary carcinoma in the mucosa of the stomach from an implantation of squamous epithelium coming from a part of the digestive tract above the stomach. Another case of primary carcinoma is reported which developed from the posterior portions of a colloid goiter and invaded the mucosa of the larynx and trachea in several places. This was followed by implantations in the lungs and metastasis from those implantations in the pleura. [C.A.O.]

The Cause and Prevention of Typhoid Fever in South Africa.—Turner,⁴ after considerable experience, holds that typhoid fever in South Africa is due almost entirely to polluted water supply, and discounts the statements that it is due also to dust and flies. He advocates the enforcing of stricter sanitary precautions in the army. [A.O.J.K.]

The action of urotropin in typhus bacteriuria is discussed by Fuchs⁵ of Prague, with the conclusion that it is due rather to a hindrance to the development of the bacilli than to any directly antiseptic power. The article is accompanied by a bibliography of 34 titles. [C.S.D.]

On the Persistence of Dysentery Bacilli.—Pfuhl⁶ called the attention of the "Gesellschaft der Charité-Aerzte," of Berlin, at the meeting of January 30, to the presence of dysentery bacilli in the intestines of soldiers returned from China one year after the initial attack, and the bearing of this persistence on the geographic distribution of bacillary dysentery. [C.S.D.]

Phrenic Nerve Injuries.—Schroeder and Green⁷ report a case of operative injury to the phrenic nerve, detail the results of some experimental and anatomic researches, and give a review of the literature, as a result of which they conclude: That from the clinical and experimental data it would seem that the diaphragm is not an essential muscle of respiration; that as the symptoms commonly described as caused by an irritation of the phrenic nerve were uniformly absent not only

at the operation but in all of the experimental work as well, it is safe to infer that they may have been due to something other than a simple injury of the phrenic; that while from an anatomic point of view the diaphragm undoubtedly is innervated by branches from the intercostal nerves, this nerve supply is secondary to the phrenic and is sufficient to carry on the action of the diaphragm after a division of the phrenic; that a division of the phrenic nerve, producing a partial collapse of the lower lobe of the lung on the affected side and an atrophy of one-half of the diaphragm, might predispose to infection of the lung or be followed by a diaphragmatic hernia; and that a division of one phrenic nerve in man, resulting in paralysis of one-half of the diaphragm only, is not necessarily fatal. [A.O.J.K.]

Mixed Typhoid and Malarial Infection.—Fioeca¹ describes a case which proves that typhoid and malarial infection may coexist in the same individual without in any way becoming confused. Upon the establishment of the typhoid symptoms, the parasites of paludism disappeared from the blood to reappear only after the fever had disappeared. A typhoid relapse caused the hematozoa to again disappear, but upon the return of complete apyrexia 11 days thereafter, they reappeared. [C.S.D.]

Meaning of "Climate."—A philologic and historic review of the meanings of the word climate, together with a survey of its present connotation, leads Ranke² to suggest the following definition: The sum total of the thermic conditions of life at any one point of the earth's surface. The factors involved in a discussion of climate are: (1) Thermic constants of the environment; (2) temperature of the air and of the solid surroundings; (3) irradiation—(a) from the sun, direct or reflected; (b) from the earth, direct or reflected; (4) thermic effects of the humidity; (5) atmospheric motion and atmospheric pressure. [D.R.]

Streptocolsin.—Besreoka³ calls attention to the peculiar hemolytic properties of *Streptococcus pyogenes aureus*, the only microbe capable of producing hemolysis within the body of the living animal. It is possible by filtering cultures of streptococci made with mutton serum mixed with about one-fourth its volume of rabbit serum, to obtain a solution of streptocolsin. This, when diluted with physiologic serum serves to break down the erythrocytes of animals of distinct species; absence of specificity being a characteristic property. [C.S.D.]

The Disinfection of Rooms Inhabited by Tuberculous Patients.—Ottolenghi⁴ criticises Steinitz's assertion that a 10% solution of mercury bichlorid is sufficient to disinfect the walls of chambers occupied by tuberculous patients. He, Ottolenghi, believes that no weaker solution than one containing five parts to 1,000 should be employed. [D.R.]

Primary Tuberculosis of the Liver.—Frank,⁵ from a study of the literature and the investigation of a case, concludes that primary tuberculosis of the liver though rare may occur; that the infection may take place by way of the intestine and the portal circulation, the bacilli finding entrance through an ulcer in the bowel and leaving no trace of entrance into the body; that tuberculosis of the liver may infect the other abdominal viscera and also the peritoneum secondarily; that the process may cause a great increase of the connective tissue in the liver (interstitial hepatitis); and that the disease results fatally within 12 months. [A.O.J.K.]

Injections of Egg-yolk in Cases of Pulmonary Tuberculosis.—Charles Bayle,⁶ of Cannes, claims to have had gratifying results in combating the evolution of tuberculosis. He employs hypodermic or intramuscular injections of fresh yolk of egg mixed with equal volume of salt solution, in doses of 4 to 7 cc. twice a week. [C.S.D.]

Investigations Concerning Puro.—Schaefer,⁴ who tested puro in the infirmary of the Munich prison, found it very useful to stimulate the appetite and to supply nutrition in grave gastric diseases. [D.R.]

¹ La Semaine Médicale, February 19, 1902.

² Münchener medizinische Wochenschrift, February 4, 1902.

³ Medicine, March, 1902.

⁴ British Medical Journal, February 15, 1902.

⁵ Wiener klinische Wochenschrift, February 13, 1902.

⁶ Münchener medizinische Wochenschrift, February 11, 1902.

⁷ American Journal of the Medical Sciences, cxxiii, 196, 1902.

¹ Il Policlino, September, 1901.

² Münchener medizinische Wochenschrift, December 24, 1901.

³ Ann. de l'Inst. Pasteur, December, 1901.

⁴ Münchener medizinische Wochenschrift, December 17, 1901.

⁵ American Journal of the Medical Sciences, cxxiii, 630, 1902.

⁶ La Semaine Médicale, February 26, 1902.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

Modern Laboratory Methods in Surgical Diagnosis.—During the past year a number of papers have appeared by surgeons in criticism of modern laboratory methods of diagnosis. Many of these criticisms have come from those who have not had personal experience in the use of such methods and whose criticisms for this reason have been, we believe, in some degree unjust and possibly have had a harmful tendency. During the same time there have appeared a large number of other papers discussing the value and limitations of such methods, some defending them from the criticism mentioned. We believe that such criticisms are less likely to do serious harm than some of the champions of laboratory methods seem inclined to believe. Comparatively few of the older school practitioners who have not been trained in such methods are likely to take them up later, while the younger generation of practitioners who have such training appreciate their value as well as their limitations and will scarcely be likely to be influenced by opinions which conflict with their own experience and that of competent authorities. The discussion as regards the value of blood examination in surgical diagnosis has been attracting a particularly large share of attention during the past year. We have been told that leukocytosis as an aid to the surgeon in diagnosis is far from having positive value; that the facts are too much at variance and too contradictory to be relied upon; and that as at present developed in the hands of the average surgeon if consistently acted upon they would do great harm. This is possibly partly true, for many surgeons are apparently looking to the count of the white corpuscles for a positive indication to operate or not to operate in acute inflammatory intraabdominal conditions. It should be recognized with this, as with other clinical methods, that the blood count is only one of many aids in reaching a diagnosis, and when carefully made and correctly interpreted, taken with other aids to diagnosis, it may be of considerable value. It would be interesting to know if at the time of the introduction of the clinical thermometer there was as much discussion as to its value and the possible misleading character of the information obtained by its use. At the present time we presume there are a few surgeons who neglect to take the temperature of their patients at somewhat frequent intervals in acute cases. Yet every surgeon recognizes the fact that in appendicitis and in other acute inflammatory conditions within the abdomen, there may be very slight, if any, elevation of temperature. In case of brain abscess there is frequently a subnormal temperature, yet all surgeons recognize the fact that elevation of temperature is an important sign in inflammatory conditions, and few would consider it justifiable to neglect the use of the clinical thermometer. In the same way the leukocyte count alone, while not giving a positive indication to operate or not to operate, is of too much value in determining the condition of the patient to be neglected. Probably most surgeons who have used the leukocyte count for some time in all cases have come to look upon a moderately high leukocytosis as very positive evidence of acute inflammation. Active inflammation, pus under considerable tension, gives usually a high leukocyte count, while a more or less chronic inflammation with pus under little if any tension may give no increase in the number of white corpuscles whatever; for example, in the case of a patient with moderate abdominal pain with slight elevation of temperature and with a comparatively high leukocytosis, a surgeon might well be influenced to early operation, while if the count were normal the indications for operation would certainly be much less. We know of cases of the latter kind with lack of very definite symptoms of appendicitis in which surgeons have removed a

normal appendix and have seen their patients go on during convalescence from operation into a typical attack of typhoid fever. These surgeons, no doubt, belong in the same category with those of whom we also have knowledge who remove the normal appendix without investigating the pelvic organs, the condition of the kidneys or gallbladder at the time of operation. We have dwelt at some length upon the question of the leukocyte count because the debate upon this question has been particularly hot. Those who say that the microscope as a means of diagnosis is vastly inferior to clinical symptoms and observation are no doubt partly right. Few would claim that the microscope alone can be relied upon as a means of positive diagnosis, except in certain conditions, such as anemia, malaria, etc. It is, however, a most important aid not to be neglected by any man who is endeavoring to do thorough, conscientious work. Those who do not take advantage of the examination of the blood; who do not test the coagulation-time before operating for diseases of the gallpassages with jaundice; who do not recognize the importance of determining the percentage of hemoglobin before undertaking extensive operations of any kind, and who do not either themselves subject the diseased tissues removed at operation to both careful macroscopic and microscopic examination, are neglecting most valuable aids. Many men who would not think of decrying the importance of the use of the clinical thermometer, the routine examination of the urine and the careful physical examination of the chest before operations of any sort, do not recognize that these newer laboratory methods which we have mentioned belong in the same category. We cannot determine the exact condition of the kidneys or bladder by examination of urine, neither is it usually possible to determine the exact condition of intrathoracic organs by physical examination of the chest; but by using these methods we often obtain most valuable information. No surgeon is doing his duty in these enlightened days who does not make use of every means in his power to determine the exact condition of his patient before undertaking an operation of any importance. Those who persistently depreciate the value of modern methods not only tend to hinder the progress of scientific medicine, but put themselves in a bad light in the eyes of those who have perseveringly studied modern methods and who appreciate both their limitations and their value.

Elbow Fractures in Children.—Cotton¹ in his thorough study of these injuries covers so much space that it will be possible only to give a few of his conclusions. The injuries most frequently met are fractures of the external condyle, supracondylar fracture, epitrochlear separation, separation of the entire epiphysis, the frequency of these injuries being in the order mentioned. Special forms of deformity are associated with these injuries. In external condylar fracture there is tendency to spur formation with or without displacement of the condyle itself. Supracondylar fracture frequently shows gunstock deformity as well as backward displacement of the lower fragment. Epitrochlear separation shows displacement of the fragment downward and forward. The loss of motion from external condylar fracture is not great and is confined to extension. Supracondylar fractures and separation of the epiphysis show loss of flexion usually from backward displacement. Epitrochlear separation may show loss of extension apparently caused by muscular shortening. In the treatment of these conditions he recommends for the external condylar fracture reduction by flexion and pronation with lateral pressure. The arm is put up in the acute angle position. Cotton has made a series of five experiments on newly born children, and confirms Smith's experiments which show the value of the position of acute flexion. Extension is likely to produce displacement, and there is no good reason for treatment of such fractures in the extended position. Right angled flexion has no special advantage. It is certain that acute flexion holds the ulna in place, and it is probable that it also fixes the external

¹ Annals of Surgery, March, 1902.

condyle by tension on the ligaments and fascia. With the ulna and radius fixed, displacement from acute flexion is not to be feared. In the supracondylar fractures reduction is accomplished by traction in the flexed position and is maintained by a right-angled splint with adhesive strapping to prevent the forearm from slipping backward, and a pad in the bend of the elbow is used to give counterpressure. In epitrochlear separations the acutely flexed position best relaxes the muscles. The prospect of bony union is poor and early massage is advised in such cases. [M.B.T.]

Pitfalls in Anesthesia.—Luke¹ emphasizes the danger attending operations on the posterior portion of the encephalon and upper part of the cord. The prone position handicaps the respiratory muscles with the body weight. Anesthesia should be as brief and operation as rapid as possible. If morphin is used less chloroform is required. Strychnin and digitalin may be given prior to operation. Cessation of respiration in many cases is due to excess of cerebrospinal fluid in the fourth ventricle and will recommence generally when some fluid is withdrawn. In empyema chloroform, the best anesthetic, must not be pushed. For the primary incision the second stage of anesthesia is sufficient. If artificial respiration is necessary it must not be too vigorous, as pus may be pumped into the air passages. Probably the safest position is with the patient partially supine and partially on the sound side. Tumor near the trachea is apt to cause trouble. Chloroform or A.C.E. are indicated. In cardiac disease struggling is extremely dangerous. Anesthesia should be induced quietly with as little oxygen deprivation as possible. In mitral disease and atheroma chloroform or A.C.E. is best. In intestinal obstruction anesthesia is dangerous; ether is safest but the stomach should be emptied and washed before administering it. The shock and collapse from dilating the sphincter ani and the os uteri, cutting the spermatic cord, the external rectus or optic nerve or handling the kidney can be avoided by sufficiently profound ether anesthesia. [H.M.]

Cleft Palate.—Lane,² in an extended discussion of this subject advises that patients should be operated upon as early as possible. The fourth or fifth week of life is considered the most favorable time, provided there is no special indication to the contrary, as at this early period the vessels are very small and the amount of blood lost is always trifling. On the other hand, in older patients the bleeding is often quite profuse. Children bear the operation well. (A third decided advantage which Lane does not mention is that if the operation is performed early there is usually no defect in speech). As to the method of operation in the majority of cases he prefers to raise a flap of mucous membrane and periosteum from one side turning the flap over and suturing it to the freshened margin of the other side of the defect. There is practically no limit to the amount of flap that can thus be obtained. Great care should be taken not to tear away this flap from the margin of the cleft in the hard palate. The flap can be separated readily by means of a knife or sharp-pointed scissors. The palatine vessels are exposed as they emerge from the loose periosteal sheath and should be cut long and ligated to avoid hemorrhage. In case of narrow defects the old method of freshening the edges and removing the tension by parallel incisions often gives good results. When the patients are also afflicted with harelip Lane prefers to operate upon the palate first. The harelip gives more room for operation which is an advantage and the harelip can be closed equally well later on. [M.B.T.]

Struma Accessoria of the Tongue.—Friedrick Teweles³ reports a case of struma of the root of the tongue operated upon by Gersuny by forward traction of the tongue and excision of the tumor. This is the eighteenth recorded case. [C.S.D.]

Hydrocephalus by Obliteration of the Aqueduct of Sylvius.—Touche,⁴ of Brévannes, communicated to the Société Médicale des Hôpitaux de Paris at the session of February 21, the case of a woman of 29, who at 4 years of age had suffered from convulsions with subsequent paralysis of the lower extremities; about the same time the head began to increase in

size, and the intelligence stopped development. The autopsy which followed her sudden death demonstrated internal but no external hydrocephaly. The aqueduct of Sylvius was obliterated which appeared to be the cause of the dilation of the lateral and fifth ventricles. [C.S.D.]

Suture of the Common Carotid Artery.—Depage¹ reports suture of the carotid artery for an injury occurring during an operation for removal of carcinoma of the tongue. The patient was a woman of 52 who had an extensive carcinoma of the right side of the base of the tongue involving the floor of the mouth and the anterior pillar of the fauces. The operation was performed November 20, 1901. Intervention on the tongue was preceded by ligation of the external carotid and tracheotomy. In course of the ligation of the artery, while separating the external and internal carotid at their bifurcation the common carotid was injured by a dissecting forceps. A large jet of blood escaped. Hemostatic forceps were applied to the opening immediately and after ligation of the external carotid a lateral ligature was applied to the wound in the common carotid. After a few pulsations the ligature slipped off and hemorrhage was more profuse than before. The vessel was then clamped above and below the injury and with a fine needle two sutures of fine silk were taken in the outer coats of the vessel. On removal of the forceps the hemorrhage was found to have been completely arrested and pulsation returned in the artery. After suture of the skin, resection of the tongue was rapidly performed. An uneventful recovery followed. The patient has remained in good general health since the operation. [M.B.T.]

Röntgen-rays and Epithelioma.—Prof. Schiff² reported to the Gesellschaft der Aerzte, of Vienna at its meeting of February 21, the successful treatment of an epithelioma of the bridge of the nose by means of the Röntgen-rays. [C.S.D.]

High-frequency Currents in Dental Surgery.—L. R. Reguier and H. Didsbury³ presented a note to the Académie des Sciences of Paris at the meeting of February 10, relative to the results of their experiments in the use of electric currents of high-frequency as a means of anesthesia in dental surgery. By the use of a current regulated to 300,000 alterations per second and with an intensity of 150 to 200 milliamperes they obtained perfect insensibility of teeth not affected with periostitis. [C.S.D.]

A case of acute cholecystitis with gangrene, occurring in a woman of 50, treated by cholecystectomy, and ending in recovery is reported by Donoghue.⁴ [A.O.J.K.]

Suture of the Abdominal Wall.—Davison⁵ considers the method of approximation by layers the ideal one. An ideal suture material is one that can be rendered sterile by boiling and that will remain sterile while in the tissues, and will cease to exist when healing is complete. The sterilization of absorbable sutures is difficult and uncertain. They eventually pulpify and form a good nidus for pyogenic germs. This is one reason for late infections in wounds closed by absorbable sutures. Permanent buried sutures become foreign bodies after healing has taken place and their function has ceased. They usually become encysted, but may be gradually extruded from the tissues months or years after operation. To avoid these disadvantages Davison uses a continuous silk-wormgut suture, the ends of which are left out at the angles of the wound, and are removed by traction when healing is complete. The sutures are tied in such a way that the knots are unlocked by traction and then they are pulled out very readily. For identification of the sutures of different layers they may be colored black with silver nitrate, blue with alcoholic solution of methylene blue, or red with an alcoholic solution of carbol fuchsin. These buried sutures also have the advantage of acting as capillary drains in the deeper parts of the wound. Davison, in summing up the advantages of this method of closure, mentions the certainty of sterilization by boiling, accurate layer approximation, the possibility of ready removal when healing is complete, capillary drainage from each layer, rapidity of application and

¹ Journal de Chirurgie et Annales de la Société, Belge de Chirurgie, January and February, 1902.

² Wiener klinische Wochenschrift, February 27, 1901.

³ La Semaine Médicale, February 19, 1902.

⁴ American Journal of the Medical Sciences, cxliii, 193, 1902.

⁵ Annals of Surgery, March, 1902.

¹ The Scottish Medical and Surgical Journal, November, 1901.

² Lancet, February 22, 1902.

³ Wiener klinische Wochenschrift, February 20, 1902.

⁴ La Semaine Médicale, February 26, 1902.

a slight scar in the skin, there being no perforation by the sutures. This method of suturing has all the advantages of a permanent buried suture or of absorbable sutures without their dangers. [M.B.T.]

A New Method of Dealing with the Peritoneum in Operating for Cure of Umbilical and Inguinal or Femoral Hernia.—W. F. Brook¹ slits the skin transversely over the umbilical hernia, dissects the sac free, continuing the separation of the peritoneum from the abdominal wall far within the ring, especially above. He then slits the peritoneal sac transversely and reduces the hernial contents. Silkwormgut sutures are carried through the edge of the upper peritoneal flap, both ends threaded through a large curved needle, which is carried through the ring and pierces the whole abdominal wall some two inches below the lower margin of the ring. These half dozen or more sutures, forming by their emergence a crescent, are tied over a lead wire suitably shaped. The lower flap is treated in the same way except the needle is passed up between the peritoneum and the abdominal wall and then pierces the latter and the threads are tied. The abdominal wound is then closed. The advantage claimed is that it places a double layer of peritoneum over the weakest point in the abdominal wall. His method of dealing with the peritoneum in inguinal or femoral hernia is as follows: The sac having been isolated, it is severed by a transverse incision at the point which determines the amount to be left in the scrotum. A running silk suture is now passed through lower end of the upper segment, and threaded into an aneurysm needle. The latter is carried into the abdominal cavity through the sac and pressed against the abdominal parietes about 1½ to 2 inches above and internal to the internal ring. This point is cut down upon by a small incision, the peritoneum buttonholed, the thread carried through, the needle withdrawn, and the sac drawn well through the small buttonhole by means of the silk thread; such part as is desired is cut away, but the stump is anchored by buried sutures. The external wound is closed in the usual way. [A.B.C.]

The Surgical Treatment of Splanchnoptosis.—Ingalls² reports the case of a woman who had for some time suffered from distressing symptoms as a result of this condition. The usual palliative means had been tried without success. An operation was performed in which the round and falciform ligaments were sutured to the anterior abdominal wall and the surface of the liver was rubbed with gauze sponges to promote the formation of adhesions. The return of the liver to its normal position influenced the gastrohepatic omentum and also drew the pylorus upward to the right. It was decided that the mobility of the liver was responsible for the displacement of the other organs and hence nothing further was done. The result in this case was quite satisfactory. Ingalls believes that surgery offers the only possible aid to this class of sufferers and that considering the fact that there has been no mortality from such operations patients should be given the benefit of an operation as early as possible. He advises fixation of the liver and kidney by suture, shortening of the gastrohepatic omentum, fixation of the transverse colon and reconstruction of the abdominal wall. [M.B.T.]

Recurrent Scirrhus Treated by Röntgen Rays.—E. A. Peters¹ reports that a woman of 93 years had a scirrhus left breast removed 13 years ago, and that 8 years ago the cancer began to recur. It was a slow growing spheroidal—called carcinoma. The mass was adherent to the ribs and was considered inoperable. On December 5, 1901, when treatment by means of the x-rays was instituted the tumor increased 3 by 2½ inches, with a well-raised margin surrounding an irregular ulcer. Neighboring glands were enlarged, the surrounding veins distended and there was pain in the breast and left arm. Ten applications were made up to January 8, 1902, when the patient developed croupus pneumonia and died. The tumor then measured 1 by ¾ inches, the central ulcer was very small and the skin had resumed a healthy color. Almost all pain had disappeared. [A.B.C.]

Epileptexy for Cirrhosis of the Liver with Ascites.—

Torrance¹ has added another to the numerous tabulations of this operation which have recently appeared. In all he has collected 27 cases, to which he adds one of his own. His patient was a man of 45 and had been a hard drinker, but had no history of syphilis. He had been well until about seven months before the time he came under observation, when his feet, legs and abdomen began to swell. The swelling disappeared, but returned again on several occasions after varying lengths of time. An incision was made through the right rectus muscle above the umbilicus and a large amount of fluid was evacuated. The spleen was much enlarged, the liver small, hard and nodular. The surfaces of the liver, spleen and parietal peritoneum were sponged, causing some oozing. The omentum was sutured to the parietal peritoneum by two chromotized catgut stitches, tied so as not to interfere with omental circulation. The abdomen was then flushed with salt solution and closed without drainage. The patient died 3½ days after the operation. The cause of death is not definitely stated. Torrance sums up the views of various writers on this subject and tabulates the results of the operation. In the cases that have been operated upon 42.3% have died and 57.7% have recovered. The number definitely cured he estimates at 38.47%. [M.B.T.]

Exophthalmic Goiter.—Campbell² reports the case. A housemaid of 27 suffered from nervous excitement, indigestion, and exhaustion. The cardinal symptom, however, was a throbbing of the heart and large bloodvessels, rapid pulse was constant and there was precordial pain. No treatment seemed to have any effect and the patient died in about two months from the onset of the disturbing symptoms. There was exophthalmos, von Graefe's sign and tremor. No necropsy was permitted. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Orthopedics of the Ovaries.—Under this peculiar caption Rosé³ discusses two cases in which the healthy ovary was found in abnormal position, causing severe pain, and was restored by operation to its normal position, entirely relieving the patient. This procedure is another evidence of the advance of conservative surgery. The mere adhesion of the normal ovary to contiguous structures, or its enlargement due to congestion, is no indication for its removal. Ovarian adhesions may vary from slight, web-like and velamentous bands to a dense mass of lymph, imbedding and obscuring the entire organ. If the adhesions are weak, newly-formed and slight, they may be broken up by bimanual manipulation with the patient under an anesthetic; but if the organ is firmly fixed, nothing less than an abdominal incision is wise and safe in the treatment. Primary prolapses of the ovary frequently occurs independently of any displacement of the uterus or any other structure to which it is attached, and the symptoms may be so pronounced as to render the patient's existence almost intolerable. But again such prolapse is no argument in favor of oophorectomy, unless the palliative procedure fail to relieve. Pessaries innumerable have been invented for the relief of ovarian prolapse, but they are of little use as the pressure of the instrument upon the organ renders its employment impossible. The conservative operation of attaching the ovary by firm catgut sutures to the upper margin of the broad ligament, or of shortening the infundibulopelvic ligament by sutures, affords the best result. If the uterus is retrodisplaced in association with ovarian prolapse, very frequently shortening of the round ligaments or ventrosuspension of the uterus will bring about a restoration of the ovaries to their normal position. Ovarian suspension should always be tried before extirpation is practised for this condition and, although we may not adopt the term

¹ British Medical Journal, March 1, 1902.

² Annals of Surgery, March, 1902.

³ Annals of Surgery, March, 1902.

⁴ British Medical Journal, March 15, 1902.

⁵ Deutsche Zeitschrift für Chirurgie, January, 1902.

ovarian orthopedics, yet American gynecologists have employed and will employ the same conservative methods advocated by our German confreres.

Memorial to Semmelweis.—Modern obstetrics owes a deep debt of gratitude to Ludwig Ignaz Semmelweis; for to him belongs the honor of first recognizing the communicability of puerperal disease in a practical sense. His life is a striking illustration of the strife of truth with falsehood, and of the inherent tendency of the presumed leaseholders of science to persecute the innovator and discoverer. Semmelweis (1818–1865) long anticipated the methods of Lister by unwittingly introducing antiseptic methods in Vienna. Noting the infection caused in the lying-in hospital by attendants upon the anatomic course, he recommended the use of lotions of chlorid of lime and the nail brush before admission to the lying-in wards, and succeeded in reducing the mortality among parturient women in two months from 12% to 3%. He immediately met with opposition from almost all physicians of reputation of his time, and galled by the attacks which his doctrine received, poor Semmelweis became insane and died in the asylum at Döbling. To-day the name once scorned, is honored; and the doctrines once ridiculed, are accepted by all; and the profession is ready to pay tardy recognition to the insight and intelligence of this, the misjudged and maltreated victim demanded by truth. Already \$9,000 have been contributed toward a memorial. Of this America has given \$75! This is hardly creditable to the profession of the country which has fostered modern antiseptic obstetrics and been the birthplace of modern gynecology.

Abdominal Total Extirpation in Complete Uterine Rupture.—The worst complication of labor, says J. A. Amann, Jr.,¹ is uterine rupture, and apparently the best results in the treatment of this dangerous condition have been reached in the clinic at Munich. The typical site of uterine rupture is in the lower uterine segment. Amann reports two cases, and quotes the experience of many others, all showing a large mortality. In a series of seven cases treated by primary celiotomy and total extirpation there were two deaths, while in another series of seven cases of secondary abdominal extirpation after vaginal extraction of the child there were five deaths, showing that the former is the most favorable to recovery, as in the latter series death in several cases was due to anemia or to infection resulting from the repeated attempts at delivery. Amann finally concludes that in acute and threatening hemorrhage requiring treatment on the spot, if external conditions are unfavorable, there should be delivery per vias naturales, tamponing of the rupture, compressive bandages and drainage tubes, and eventually Porro's operation; but in favorable external conditions, as in a hospital, primary abdominal celiotomy, extraction of the child, and either suturing of the uterus or total extirpation. When the rupture is either anterior or posterior, delivery may be per vias naturales with vaginal extirpation. If the hemorrhage is moderate, or none, when possible there should be early removal to hospital, normal delivery and drainage. In case of subsequent hemorrhage and lateral rupture, abdominal total extirpation; if only anterior or posterior rupture, then vaginal extirpation. If, however, transportation to hospital is impossible, hemorrhage subsequent to delivery may be treated with compressive bandages. Suturing of the uterine rupture comes into consideration only in simple uninfected wounds. Supravaginal amputation with intraperitoneal treatment of the stump is not recommended, because it requires the same favorable condition and as many assistants as total extirpation, and with the same skill the latter can be executed more quickly than the former. The sooner the operation can be made after the rupture, the more favorable the prognosis. The best chances for nonoperative treatment go with incomplete rupture without much hemorrhage. [W.K.]

Adhesive Straps for Prevention of Laceration of Perineum.—Believing that the frequency of perineal lacerations is

evidence that the methods now employed are insufficient, George H. Noble¹ has made use of adhesive straps to take the strain off of the pelvic floor and direct the shortest diameter of the presenting part in the true axis of the outlet, especially in forceps delivery. These straps should be applied after the occiput has passed the pubic arch and before the period of crowning is reached. The application should begin with straps 1½ inches wide and 18 to 24 inches long, attaching one extremity well upon the side of the labium and deep into the sulcus between it and the thigh, then passing downward and across the median line just behind the posterior commissure it is continued on the opposite side around behind the buttock, and attached to the hip at or about the sacroiliac synchondrosis. The second strap is passed in a similar manner on the other side, and each one applied with as much tension as possible, drawing the labium well downward and the buttock upward. The third strap passes horizontally across the perineum at a level with the posterior commissure, and is fastened on either side to the flexed thighs and hips. Noble has applied these straps in six forceps deliveries with perfect satisfaction, using them in cases in which the perineum appeared to be in imminent danger. [W.K.]

Fibromyomatous Tumors of the Vagina.—The conclusions in this paper are drawn from a study by R. R. Smith¹ of 100 cases reported in literature and one case which came under his own observation in May, 1901. He also gives an abstract of 47 cases which occurred since 1882, Kleinwachter having collected 53 previous to that time. His summary is as follows: Fibroma (myoma and fibromyoma) of the vagina is a rare disease. It occurs most frequently in women between 30 and 40, but has been observed at ages ranging from 20 to 70. The cases observed in infancy are open to some doubt as to diagnosis. Apparently it occurs independently of civil condition. No proof can be deduced to show that it affects fertility. It may obstruct labor when large. When the growth is small it rarely affects coitus, and may not do so even though the growth be large. There is some evidence that in certain cases menstruation may be increased. The tumors, when small, rarely produce symptoms of consequence; when large they may prove to be the source of considerable suffering and even danger. The symptoms, when present, are pain, hemorrhage, discharge, obstruction to bladder and rarely to bowel. No exact division of the case into fibroma, myoma, and fibromyoma can as yet be made. The term fibromyoma will probably cover most of them, but pure fibroids have been observed. Pure myomas may also exist. The tumors grow from anterior and posterior wall in proportions of about two to one. They may be sessile or polypus, vary greatly in size and are single with very rare exceptions. They are, as a rule, very slow in growth, and are prone to edema, necrosis and ulceration. Treatment is essentially surgical. [W.K.]

Stricture of the Rectum in Women Due to Inflammatory Processes in the Pelvis.—J. L. Rothrock² considers that by far the more common pathologic conditions which cause stricture have their origin within the rectum, or in its walls. Of lesser etiologic moment are to be mentioned changes without the rectum, lying in close proximity, among which are tumors filling the small pelvis, and inflammatory processes. Pressure from the gravid uterus or benign tumors, while they may produce constipation, seldom interfere with the passage of the intestinal contents. On the other hand, malignant tumors may infiltrate the perirectal tissue, or even the wall of the rectum, and produce stricture. Large pelvic exudates may so fill the pelvis that by pressure on the rectum free passage of the stools is obstructed, while later the contraction of perimetritic adhesions may also lead to constriction. Three cases due to this cause are reported by Rothrock. One case was that of pelvic inflammation, involving chiefly the parametria. Finally, upon opening the abdomen, the pelvis was found to be filled with an exudate of stone-like hardness, in which the uterus and adnexa were fixed. The wall of the upper portion of the rectum was markedly infiltrated and surrounded by the exudate. An inguinal colotomy was performed, following

¹ American Journal of Obstetrics, February, 1902.

² Northwestern Lancet, March 15, 1902.

¹ Münchener medicinische Wochenschrift, March 18, 1902.

which for several weeks the bowels moved entirely through the artificial anus. Later the exudate and stricture disappeared. The other two cases, while only partial, gave rise to serious inconveniences, one requiring a prolonged course of dilation before the patient was relieved. [C.A.O.]

Effect of Pelvic Lesions Upon Mental Disturbances.—

As a result of the investigations in the Asylum for Insane in London it was found that 253 out of 1,000 females, or 25%, in that institution during the past six years had some pelvic disease or abnormality that needed gynecologic treatment. Medical treatment only temporized with these lesions; success in combating them was obtained only by surgical means. Of the results thus secured Hobbs¹ gives an interesting summary from which it appears that of the 41 undergoing operation for ovarian disease, 20, or 49%, completely recovered, and 10 more, or 25%, showed marked mental improvement. In 66 patients the main lesion was displaced uterus, and the operation in 54 cases was shortening of the round ligaments, in seven ventral suspension and total extirpation in the remainder. The mental health was restored in 28 of these cases, or 42%. Of those affected with tumors only 12% recovered their reason; while of the 60 suffering from injured cervix surgical treatment brought mental restoration in 19 cases, or 31%. There were 52 patients whom it was deemed necessary to curet for subinvolution of the uterus or for endometritis; and there was mental recovery in 25, or 48%; and 39% of those treated surgically for injured perineum also recovered mental health. From these statistics it appears that the greatest effect upon the mental condition was caused by change in ovarian structure and function; next by uterine disease; third, by injuries to the via vaginalis; while newgrowths disturbed the mental stability only in a small percentage of cases. Acute insanity was most amenable to treatment, the recoveries being 61%; in melancholia 58%, and in puerperal insanity 53%. In chronic insanity, melancholia yielded much better results than mania, there being 46% of recoveries in the former to 25% in the latter. In conclusion, Hobbs remarks that there should be no doubt in the minds of physicians, general and special, as to the benefits that would accrue from the introduction and proper observance of aseptic gynecologic surgery in institutions devoted to the care of the insane; also, that the state should see that its wards are properly safeguarded against unnecessary operations, such as the removal of normal ovaries, for their possible effect upon a disturbed mental condition. This has been done occasionally by surgeons and the results have been decidedly harmful, not only to the patients, but to the establishment of gynecology as one of the regular methods that should be employed in institutions where so many women are incarcerated and who, without the aid that gynecology can give, are doomed to suffer untold misery as long as their existence endures. [W.K.]

Significance of Fever During Puerperium.—

J. F. Moran¹ believes that morbidity in the puerperium might be greatly lessened by observing the following points: 1. Careful observance of aseptic technic on the part of physician and nurse, at all times regarding the parturient tract as a surgical wound. 2. Restricting or avoiding internal examinations and cultivating external diagnosis. When internal examinations are made, care should be exercised to separate the labia, so that the examining finger will avoid contact, so far as possible, with the vulva. 3. A thorough knowledge of the mechanism and conduct of labor, with due appreciation of timely interference. 4. Refraining from haste or violence in expulsion of the placenta. 5. Avoiding early rupture of the membranes. Every case of fever during the puerperium should be regarded as septic until positively excluded by a most careful and painstaking examination. The immediate history will give the character and duration of the labor, the quantity and character of the lochia, and should also inform whether the patient has suffered prior to labor from tuberculosis, malaria, or typhoid; influenza, pneumonia, hysteria, exanthemas, diphtheria and other diseases may also be excluded by accompanying symptoms. If the indication points to involvement of the genital tract, a thorough bimanual and specular examination should be made

and if possible supplemented by a bacteriologic and microscopic examination. It is not always easy to determine the precise cause of fever, but by careful exclusion satisfactory diagnosis can usually be reached. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

L. F. APPLEMAN

R. MAX GOEPP

Treatment of Simple Pleural Effusions.—Arnold Chaplin (*Medical Press and Circular*, Vol. 124, No. 8, 1902), before taking up the question of tapping, the subject of his essay, says that among the simpler procedures one or two are worth mentioning. Strapping the chest during the inflammatory stage of the attack gives much comfort, but it must be remembered that when the fluid is ripe for absorption, free movements of the chest are imperative and must not be interfered with at that stage of the disease. The local application of iodine and blisters is efficacious in relieving pain and discomfort, and is said to assist in promoting absorption of the fluid. The diet should be restricted; the quantity of fluid, especially, should be reduced to a minimum. A long list of drugs for allaying inflammation and promoting absorption of the effusion is given. In regard to tapping, Chaplin lays down the following indications: 1. Paracentesis may be required to relieve urgent symptoms, such as dyspnea and syncope. This necessity usually arises during the early or inflammatory stage of pleural effusion, and consequently one must not be surprised if the pleural cavity fills again. 2. Paracentesis is necessary when the fluid shows no sign of disappearing; if properly performed there is no reason why the pleural cavity should fill up again. 3. Paracentesis does not appreciably shorten the duration of the disease, unless performed after the inflammatory stage has passed. Unless performed for the reasons stated in (1) and (2), tapping is useless. In discussing the technic, the danger of pneumothorax is first considered. If the pleura is capable of recovery, Chaplin regards pneumothorax as a trivial condition which usually disappears spontaneously after a few days. It is, of course, when the trocar is used that pneumothorax is most apt to be produced; the mechanism of its production is, however, far from being settled. The aspirator gained general acceptance on account of the ease with which an effusion could be completely removed, thus obviating the difficulties encountered when using a simple trocar, or a trocar with a rubber tube attached, and evacuating the chest by means of siphonage. In most cases, and certainly in the early stages of the effusion, siphonage removes the fluid collected, as well as aspiration. In the later stages, however, when the lung is bound down and cannot expand to drive out the fluid, the aspirator is especially useful. The possibility of exerting too much pressure and withdrawing the fluid too rapidly, not allowing time for the lung to take the place of the fluid withdrawn, must be borne in mind. Suction should be performed directly by means of a hand pump, as in the modern aspirator; the bottle form should be discarded. When fluid is withdrawn to relieve dangerous symptoms, from 2 to 2½ pints usually suffice. When, however, tapping is done to promote cure, a larger quantity may be withdrawn with benefit. [R.M.G.]

Dietotherapy of Insomnia.—N. S. Davis, Jr. ("Cohen's System," Vol. vi), advises that when, in a person who is well nourished, sleep is disturbed and brief, and digestion is slow or poor, it is best to leave a considerable interval between the last hearty meal of the day and bedtime. The hearty meal should come at noon or at least not later than 5 in the afternoon. In the evening a light meal may be eaten—a sandwich with fruit, or a glass of milk, or bread and milk, or other simple foods in small amounts. In such cases all the meals should be of very moderate size, and simple. Both by adjustment of diet and by exercise and relaxation the digestive disorder should be corrected. Late and very large meals must be avoided by those who are inclined to be sleepless, for gastric distention, whether by food and drink, or by gases resulting from indigestion, often causes sleeplessness. Frequently sour stomach will also interfere with sound or prolonged sleep. As

¹ American Journal of Obstetrics, February 1902.

the drinking of wine or beer, as well as the eating of rich food, is likely to cause this condition, the necessity of forbidding alcohol and rich food to such patients is self-evident. Neurosenics often obtain relief from the forced feeding of the rest cure. In mild cases a glass of warm milk or a cup of warm bouillon and a few crackers at bedtime promote drowsiness and, being quickly digested, will not disturb sleep. When there are great inanition and sleeplessness, food should be of the simplest kind and given often, so as to promote strength and increase flesh. A milk diet, supplemented gradually by a variety of nutritious and easily-digested foods, is usually the best. Many persons cannot drink tea and coffee at night without having sleep prevented or broken. This is so generally true that their use at night must be forbidden. Tobacco acts in the same way occasionally, but much less frequently than do tea and coffee. Relief from business or other worry, and diversion from mental work or preoccupying cares, are as essential to the successful cure of insomnia as dietetic changes. Travel, a change of occupation, in mild cases games and reading at night the lightest kind of unexciting literature, will often afford the needed diversion. Regular habits, regular times for work, for relaxation, and for sleep are necessary to prevent insomnia in certain persons.

Nutrients.—"Proteids."—Of the various meats, young lean beef is in most cases the most easily digested. The white meat of fowl enjoys a special reputation, and whilst most clinicians support this, no chemie differences between it and the dark meat have yet been demonstrated. Cooking in any form, while it lessens the digestibility *in vitro*, develops aromatic products which act as stomachics. Raw meat, finely scraped, is very highly nutritious and easily digested. It is usually flavored with a little scraped onion, salt, etc. Care must be taken, of course, that it does not contain parasites. It has been claimed that dogs fed on raw meat resist tuberculous infection better than ordinary animals.

Of the concentrated meat preparations, the ordinary extracts, made after the type of Liebig's, possess no nutritive value, and act only as stimulants. Meat juices prepared without heat are more digestible than the whole meat, because they are devoid of the fiber; however, they are very expensive.

Opinions have varied as to the value of predigested foods, albumoses, etc. It seems certain, however, that if properly prepared they do have a special nutritive value, since they contain a large amount of proteid material and throw less labor on the digestive organs. The principal difficulty in their administration is that the commercial products of "peptones" (which are really albumoses) possess a disagreeable, bitter taste, and patients soon refuse to take them. This taste, which is mainly due to putrefactive changes, can be avoided by having them freshly prepared in the house of the patient. They can then be flavored with the usual condiments, the addition of a little meat extract being especially useful. The so-called "liquid peptone" preparations, etc., as found on the market, contain so small a proportion of proteid that they cannot act as nutrients in the amounts usually taken, but only as stimulants.

The predigested preparations find an important use in rectal alimentation.—Sollmann's "Pharmacology."

Salochinin.—After using salochinin extensively in cases of supraorbital neuralgia, influenza, sciatica, tabes, acute and chronic rheumatism, typhoid fever, etc., Tauszk¹ concludes it to be very valuable as an antineuralgic, and moderately so as an antipyretic. It is not followed by unpleasant after-effects, and may be used in all instances when preparations of quinin and salicylic acid are indicated. It acts quickly and reliably in doses of 15 to 45 grains daily. It is the quininester of salicylic acid, is insoluble in water, slightly so in alcohol and ether, and boils at 130° C. [E.L.]

The treatment of chronic malarial fever with subcutaneous injections of quinin bihydrobromate is urged by Ferguson.² The treatment, now tried in nearly 100 cases, is believed to be of remarkable efficiency and capable of curing malarial joints and malarial rheumatism. It consists in the subcutaneous injection of 3 grains of the salt dissolved in 20

minims of pure warm water. Six injections on alternate days are usually required in serious cases, and it is said that 3 grains under the skin will prove much less distressing and more curative than 30 grains by the mouth. [A.O.J.K.]

The Organotherapy of Pancreatogenic Steatorrhea.—H. Salomon,¹ of Frankfort a.M., after referring to the previous accounts of fatty stools due to disease of the pancreas, gives a tabulated report of the very satisfactory results obtained by the administration of raw pancreas (scraped-up and given with bread) and with various preparations of pancreatin. [C.S.D.]

Therapeutic Use of Grape Juice.—E. Ivanor² has had very favorable results from the use of sterilized grape juice, owing to its intense diuretic action, in the treatment of organic cardiopathy, in aneurysm accompanied by renal congestion and edema of the legs and abdomen. It was also used with success in many cases of bronchitis, chronic nephritis, intestinal atony, in convalescence from typhoid, and in severe cases of grip. [C.S.D.]

Acute Iodism Simulating Mumps.—Fürth (*Wiener klin. Wochenschrift*, November, 1901, p. 1,103; *Medical Review*, Vol. IV, No. 12), cites several cases from the literature and reports one of his own, that of a woman aged 52 who took sodium iodid for chronic choroiditis. She took 7½ grains daily for a period of 21 days, when violent headache and swelling of the right eyelid developed. The iodid was then withdrawn. Two weeks later, after another dose of 7½ grains, articulation suddenly became difficult and there was lingual paresthesia, followed after a few hours by cardiac palpitation and general prostration. The submaxillary glands then became swollen so that the division between the face and neck was completely obliterated, the mouth was kept open and the tongue raised by edematous swelling of the sublingual folds. The parotid glands remained normal, and the swelling disappeared within five days. Two weeks after the attack the patient took another dose of 7½ grains of the iodid. This was again followed by swelling of the glands and slight pyrexia lasting about 24 hours. It is to be noted as a peculiarity of the iodid that these symptoms were produced by a dose which had been taken for weeks with no ill effects. [R.M.G.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

The Native Remedy for Black-water Fever.—E. M. Holmes (*Pharmaceutical Journal*, November 30, *American Druggist*, February 24, 1902) referred a plant used by the natives of the east coast of Africa as a remedy for black-water fever, to *Cassia abbreviata*, Oliv. From an examination of a mature pod of the plant, which has since been handed to him by the discoverer, Dr. O'Sullivan Beare, of Pemba, Mr. Holmes now decides that the plant is a new variety, and he has named it after the discoverer, calling it *Cassia beareana*. The appearance of the pods and seeds is shown by sectional drawings. The root of *Cassia beareana* is used by the natives for hematuria and black-water fever, while the leaves are used as an application to ulcers and in skin diseases. Dr. Beare is anxious that the remedy should receive a fair trial, and offers to supply, at his own expense, material for any medical man in east Africa who will try it in black-water fever and hematuria, and report the results to him.

FORMULAS ORIGINAL AND SELECTED.

Asthma Pastils.—

Gum benzoin	1 part.
Jaborandi leaves	2 parts.
Stramonium leaves	4 parts.
Potassium nitrate	4 parts.
Charcoal	20 parts.

The substances, all in the form of fine powder, are beaten together with sufficient thin mucilage of tragacanth to form a stiff mass, which is then rolled into cylindric pencils, cut into pieces of suitable length, and then given their proper shape. In use, one end of the pastil is ignited and the smoke and vapors inhaled.—*Practical Druggist*.

¹ Klinisch-Therapeutische Wochenschrift, 1902, No. 1.

² British Medical Journal, February 22, 1902.

¹ Berliner klinische Wochenschrift, January 20, 1902.

² La Semaine médicale, February 5, 1902.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended April 18, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles..... Mar. 29-Apr. 5.....	9	
	San Francisco..... Mar. 30-Apr. 6.....	9	
Colorado:	Denver..... Mar. 28-Apr. 4.....	8	
Illinois:	Chicago..... Apr. 5-12.....	14	
	Freeport..... Apr. 5-12.....	1	
Indiana:	Evansville..... Apr. 5-12.....	5	
	Indianapolis..... Apr. 5-12.....	13	
	Terre Haute..... Apr. 5-12.....	2	
Kansas:	Wichita..... Mar. 29-Apr. 12.....	9	One case imported from Oklahoma.
Kentucky:	Covington..... Apr. 6-13.....	7	
Louisiana:	New Orleans..... Apr. 5-12.....	1	One case imported from Mississippi.
Maine:	Shreveport..... Apr. 5-12.....	7	
Maryland:	Portland..... Apr. 5-12.....	9	1
Massachusetts:	Baltimore..... Apr. 5-12.....	1	
	Boston..... Apr. 5-12.....	13	3
	Brockton..... Apr. 5-12.....	2	
	Cambridge..... Apr. 5-12.....	2	
	Everett..... Apr. 5-12.....	1	
	Lawrence..... Apr. 5-12.....	1	1
	Lowell..... Apr. 5-12.....	2	
	Malden..... Apr. 5-12.....	1	
	New Bedford..... Apr. 5-12.....	1	
	Quincy..... Apr. 5-12.....	2	
	Somerville..... Apr. 5-12.....	3	
Michigan:	Detroit..... Apr. 5-12.....	18	
	Ludington..... Apr. 5-12.....	19	
Minnesota:	Winona..... Apr. 5-12.....	2	
Missouri:	St. Louis..... Mar. 30-Apr. 6.....	50	
Montana:	Butte..... Mar. 30-Apr. 13.....	7	
Nebraska:	Omaha..... Apr. 5-12.....	24	
New Jersey:	Camden..... Apr. 5-12.....	4	
	Hudson county, including Jersey City, Mar. 30-Apr. 6.....	30	9
	Jersey City..... Mar. 30-Apr. 6.....	24	
	Newark..... Apr. 5-12.....	42	10
New York:	New York..... Apr. 5-12.....	66	12
Ohio:	Cincinnati..... Apr. 4-11.....	16	
	Dayton..... Apr. 5-12.....	1	
	Hamilton..... Mar. 29-Apr. 5.....	5	
	Toledo..... Apr. 5-12.....	2	
	Youngstown..... Apr. 5-12.....	1	
Pennsylvania:	Altoona..... Apr. 5-12.....	2	
	Johnstown..... Apr. 5-12.....	1	
	Philadelphia..... Apr. 5-12.....	35	4
	Pittsburg..... Mar. 29-Apr. 12.....	10	
	York..... Mar. 5-Apr. 5.....	7	3
	Providence..... Apr. 5-12.....	5	
Rhode Island:	Greenville..... Mar. 29-Apr. 5.....	4	
South Carolina:	Sioux Falls..... Apr. 5-12.....	3	
South Dakota:	Memphis..... Apr. 5-12.....	8	
Tennessee:	Ogden..... Mar. 1-31.....	4	
Utah:	Salt Lake City..... Apr. 5-12.....	1	
Washington:	Tacoma..... Mar. 30-Apr. 6.....	7	
Wisconsin:	Green Bay..... Apr. 5-12.....	7	
	Milwaukee..... Mar. 29-Apr. 5.....	1	

SMALLPOX—INSULAR.

Port Rico:	Arecibo..... Mar. 1-22.....	61	
	Ciales..... Mar. 1-22.....	6	
	Fajardo..... Mar. 1-22.....	1	
	Humacao..... Mar. 1-22.....	1	
	Ponce..... Mar. 1-22.....	12	
	San Juan..... Mar. 1-22.....	6	

SMALLPOX—FOREIGN.

Austria:	Prague..... Mar. 15-29.....	13	
Barbados:	..... Mar. 30.....	10	
Belgium:	Antwerp..... Mar. 22-29.....	10	4
Brazil:	Pernambuco..... Feb. 14-23.....	1	27
Canada:	Belleville..... Mar. 31-Apr. 7.....	1	
	Quebec..... Mar. 29-Apr. 12.....	48	1
France:	Paris..... Mar. 22-29.....	1	
	Rheims..... Mar. 16-30.....	51	4
Great Britain:	Birmingham..... Mar. 22-29.....	1	
	Dundee..... Mar. 22-29.....	1	
	Glasgow..... Mar. 28-Apr. 4.....	13	
	Leeds..... Mar. 22-29.....	4	1
	Liverpool..... Mar. 22-29.....	389	61
	London..... Mar. 22-29.....	7	
	North Shields..... Mar. 15-22.....	1	
	Sheffield..... Mar. 15-22.....	1	
	South Shields..... Mar. 22-29.....	2	
India:	Bombay..... Mar. 4-18.....	19	
	Calcutta..... Mar. 1-15.....	14	
	Karachi..... Mar. 2-16.....	8	
	Madras..... Mar. 8-14.....	4	
Italy:	Caserta..... Mar. 24..... Many cases.		
	Milan..... Feb. 1-28.....	5	3
	Naples..... Mar. 15-22.....	7	1
	Palermo..... Mar. 15-29.....	37	4
	Santa Maria Capua-vetere..... Mar. 24..... Many cases.		
Mexico:	Mexico..... Mar. 23-30.....	2	3
Netherlands:	Rotterdam..... Mar. 22-29.....	2	
Russia:	Moscow..... Mar. 15-22.....	18	3
	Odessa..... Mar. 22-29.....	2	1
	St. Petersburg..... Mar. 15-29.....	14	
Switzerland:	Geneva..... Mar. 8-15.....	1	

YELLOW FEVER.

Dutch Guiana:	Paramaribo..... Feb. 1-28.....	7	
French Guiana:	Mana..... Mar. 31.....	Infected.	
	St. Jean..... Mar. 31.....	"	
	St. Laurent..... Mar. 31.....	"	

CHOLERA.

China:	Hainan..... Apr. 10.....	Epidemic.	
	Hongkong..... Mar. 4.....	1	
India:	Bombay..... Mar. 4-18.....	41	
	Calcutta..... Mar. 1-15.....	258	
Turkey in Asia:	Djiddah..... To Mar. 27.....	38	
	Mecca..... To Mar. 27.....	788	
	Medina..... To Mar. 27.....	381	
	Rebuk..... To Mar. 27.....	1	

PLAGUE—INSULAR.

Philippine Islands:	Manila..... Feb. 1-22.....	2	2
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PLAGUE—FOREIGN.

China:	Shantung..... Feb. 10.....	300	
	Hongkong..... Feb. 10.....	Prevalent.	
India:	Bombay..... Mar. 2-18.....	1,635	
	Calcutta..... Mar. 1-15.....	963	
	Karachi..... Mar. 2-16.....	167	147
	Madras..... Mar. 8-14.....	1	

Changes in the Medical Corps of the U. S. Army for the week ended April 19, 1902:

HOWARD, Captain D. C., assistant surgeon, is relieved from duty at Columbia Barracks, Cuba, upon the abandonment of that post, and will proceed to Cabana Barracks, Cuba, for duty.

BEVANS, First Lieutenant J. L., assistant surgeon, is relieved from duty at Columbia Barracks, Cuba, upon its abandonment, and will proceed to Rowell Barracks, Cienfuegos, Cuba, for duty with the companies of coast artillery to be stationed at that post.

DECKER, GEORGE M., contract dental surgeon, is granted leave for 15 days, to take effect upon his arrival in the United States.

MERCER, GEORGE W., hospital steward, now on furlough at Frampton, Ohio, is relieved from further duty in the division of the Philippines and will report on or before expiration of furlough at Fort Washington for duty, to relieve Hospital Steward Hugh C. Clower. Steward Clower will be sent to Manila, P. I., for assignment to duty.

VOGT, WILLIAM, hospital steward, office of the chief surgeon, headquarters, department of North Philippines, Manila, P. I., is relieved from further duty in the division of the Philippines and will be sent to the Presidio to report by letter to the surgeon-general of the Army.

MEAD, Captain JAMES E., assistant surgeon, is granted leave for one month from April 10.

DUVAL, First Lieutenant DOUGLAS F., is relieved from duty as surgeon on the transport Thomas and from further duty in the division of the Philippines, to take effect upon the arrival of the transport named at San Francisco, Cal., and will then proceed to Fort Williams for duty.

HEIZMANN, Lieutenant-Colonel CHARLES L., D. S. G., is relieved from duty as chief surgeon, division of the Philippines, to take effect about June 1, when he will proceed to San Francisco, Cal., and report by telegraph to the adjutant-general of the Army for further orders.

WINNE, Lieutenant-Colonel CHARLES K., D. S. G., is relieved from duty as chief surgeon, department of the Missouri, to take effect April 30, and will then proceed to his home, where he is authorized to await retirement from active service.

TURRILL, Major HENRY S., surgeon, will upon his arrival at San Francisco, Cal., proceed to Omaha, Neb., and report to the commanding general, department of the Missouri, for assignment to duty as chief surgeon of that department.

TRUBY, First Lieutenant ALBERT E., assistant surgeon, upon his arrival in the United States with troops from Cuba, will report at Fort Wadsworth, N. Y., for duty.

MOSES, H. C., contract surgeon, is granted leave for one month, to take effect when the Army transport Egbert is put out of commission, with the privilege of applying for an extension of one month.

GIBSON, Captain EDWARD T., assistant surgeon, is assigned to duty as transport surgeon of the Crook, to relieve Captain Donald P. McCord, assistant surgeon. Captain McCord will await action on his application for leave of absence.

MCCORD, Captain DONALD P., assistant surgeon, is granted leave for one month, with permission to apply for an extension of one month, upon being relieved from duty on the Army transport Crook.

MAY, JAMES V., contract surgeon, will proceed from Madison Barracks to Fort Strong for temporary duty.

ROBINS, Major ROBERT P., surgeon. Extension of leave granted March 22, is further extended one month.

Changes in the Medical Corps of the U. S. Navy for the week ended April 19, 1902:

BELL, W. L., assistant surgeon, ordered to Pocatello, Idaho, for recruiting duty—April 11.

YOUNG, R. M., assistant surgeon, detached from the Rainbow and ordered to the Cavite Naval Station—April 11.

MUNSON, Dr. F. M., appointed assistant surgeon, April 5, 1902—April 15.

GUEST, M. S., passed assistant surgeon, detached from the Cavite Naval Station and ordered to the New Orleans—April 16.

WILSON, H. D., passed assistant surgeon, ordered to duty with the Marine brigade, Philippine Islands—April 16.

HOLCOMBE, R. C., assistant surgeon, ordered to proceed home via the Manila—April 16.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended April 17, 1902:

BANKS, C. E., surgeon, granted leave of absence for five days from April 14, 1902—April 11, 1902.

WHITE, M. J., assistant surgeon, to proceed to Reno, Nev., for special temporary duty—April 15, 1902.

GOLDSBORO, B. W., acting assistant surgeon, granted leave of absence for seven days—April 16, 1902.

WALKER, R. T., acting assistant surgeon, granted leave of absence for 18 days from May 1, 1902—April 11, 1902.

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The New Professional Quackery.—The poor oculist is catching competition from all sides. The general physician and surgeon have secured some limit to the inroads of the prescribing druggist by laws which prevent the pharmacist from treating typhoid fever and amputating legs, but our wise legislators think that vision should still remain at the mercy of quack opticians. In addition to that, in order to do away with the oculist entirely, the opticians took to hiring the doctors to come to their stores to do the little medical work there might be in connection with the optician's trade. Now, however, comes the last straw: the oculist-physician turns optician, sends out beautiful circulars to his fellow-practitioners that he charges only a moderate fee ("modified even at your request"), treats charity patients at his private dispensary, supplies glasses through the office, "a step in advance of strict professionalism," "manifestly in the interest of the patient," etc. Beautifully engraved cards are enclosed and blank orders for the physician to fill in, sign, and send to the astute doctor-optician. The concluding and conclusive element is the offer of a commission, and the detailed setting forth of the high ethics of commission-giving by the specialist to the general practitioner who sends the patient. "The object of this method is to draw a closer bond between the general practitioner and the specialist." This Siamese-twin bond of gold seemed already close enough. Poor specialist, poor physician, poor patient!

The Association of Medical Librarians.—How common it is that the movements and agencies which are doing the greatest good, or which are preparing to do it, are scarcely noticed, while some unimportant and resultless things command universal attention and interest. If, for instance, a small portion of the energy, time and money that will be spent by members of medical societies during the next year in the scramble and politics of office-seeking could be secured for such an enduring and ennobling object as the formation and completion of medical libraries, what a difference it would make in medical progress! The Association of Medical Librarians is destined to become a means of great professional benefit, and if some philanthropic Carnegie could be induced to look in the direction of medical literature instead of, or in addition to, general literature, the work of the association could instantly become of transcending

value, not only for medical art and science, but for the general community. The association has just issued the first number of its official *Bulletin*, and it is most creditable to the editor and officers. Besides the usual reports of meetings, lists of officers and members, etc., there is an interesting account by Dr. Osler, the President of the Association, of a visit to the Hunterian library at Glasgow, and a paper by Dr. E. F. Cordell, on "The Library of a Colonial Physician" (Dr. Upton Scott, of Annapolis). Both articles give evidence of a most praiseworthy and growing interest in medical history and medical books. All those interested in American medical libraries should read the *Bulletin* of the Association. We note that only nine of the several hundred medical journals published in the United States "in the interests of the medical profession" are sent gratis to the libraries represented by the Association. Medical men who subscribe for these several hundred journals should use their great influence with the publishers to secure gifts of their journals to these struggling libraries.

Fraudulent Diplomas.—Dr. S. D. Van Meter, the Secretary of the Colorado State Board of Medical Examiners, is doing good work for the profession in the prosecution of men claiming the right to practise upon fraudulent diplomas. In Colorado the law requires only the presentation of a diploma from reputable medical schools, and nonresidents of the state do not have to appear in person. The law is, of course, bad and loose enough, but when it is known that many fraudulent diplomas are in existence it makes the need for scrutiny and conscience upon the part of the Board all the more necessary. Such protection of the public and of the profession, it is gratifying to know, is being given by Dr. Van Meter. It seems that the diploma of the University of Kiel is being more forged than others. One well-known impostor with a false diploma is living in Chicago, another in Milwaukee, and Dr. Van Meter has another under bond to answer the criminal charge of presenting forged evidence to the Board. The purported diploma is on poor paper, poorly printed, with plainly forged signatures, in German script instead of Latin, the seal being a common wafer used by the University in sealing its correspondence. The authorities of the University at Kiel support the Colorado Board as to the fact

of the forgeries, etc. If any of our subscribers are able to aid Dr. Van Meter in his admirable work they should do so.

"One Point of View" of Epilepsy.—In the *Transactions*, 1901, of the National Association for the Study of Epilepsy, there is a paper by "an intelligent mother who has watched through many years a beloved son steadily succumbing to the gradual increase of epileptic conditions." From seven different "retreats" or private families he was returned as "undesirable," "unmanageable," or even "dangerous." Finally the bad qualities of the patient disappeared entirely with a proper woman nurse and life in a private family. Mrs. Munro in these years has observed and studied as well as loved, and she tells us the results of her reflections as to the treatment of epileptics. The human, or if one may say so, the soul side is made manifest, and it is one that is or may be too much ignored in all forms of sickness. "The individual personality," she says, "persists uninjured within the hampering limits of brain and body, all appearances to the contrary being due to the impossibility of communicating with others through the imperfect means remaining to the body in which it is imprisoned." Out-of-door life, work, not for work's sake, but to minister to the wants and relieve the needs of others, the care of animals, and especially of pet animals, etc., are urged for the epileptic and chiefly the making of him happy, by congenial surroundings, and persons who will treat him frankly and kindly, without deceit, etc. More than all else, Mrs. Munro pleads for the influence of the parental or maternal instinct in the person of the tactful, sympathetic, trained woman nurse. With few exceptions she believes that even with men such nurses are not only possible, but most advisable. In the case of her son, all nurses of his own sex were failures, and the woman attendant proved "the only possible means of happiness and comfort."

The Children's Seashore House at Atlantic City is a unique institution which should be encouraged by every physician and which should be duplicated many times elsewhere. It was opened in a small cottage in 1872. In its new location on the beach between Annapolis and Richmond avenues it has accommodations for over 325 children and 32 mothers. The object of the corporation is to maintain, at the seashore, an institution in which children of the poorer classes, suffering from noncontagious diseases or debility incident to the hot weather and a crowded city, may have good nursing and medical care, without regard to creed, color, or nationality. Children over three years of age are cared for by competent nurses in the large, airy wards of the main building, and, in order that those too young to be separated from their mothers may also be admitted, little cottages have been erected for the mothers almost upon the beach. One of them is assigned to each mother with a sick infant. She may also have one or more other children with her, and have for herself and them the exclusive use of the cottage, taking care of it and her children, but having her meals provided for her in the main building.

A separate ward located immediately on the beach is used for very serious cases needing closer attention than can be given in the little cottages. In it the mothers still have the care of their sick infants, but their treatment is carried out under the guidance of a trained nurse. A seaside camp for lads between twelve and eighteen years of age was, in 1897, established in connection with the institution, and continues to be an important branch of its work. Since its incorporation the seashore house has taken care of 20,104 children and 4,722 mothers, a total of 24,826 patients. During the summer of 1901 over 1,900 patients were accommodated, and more than 300 applicants remained unprovided for on account of lack of room. Financial help is greatly needed in order to allow possible usefulness and beneficence, and we know of no charity that can bring about better results for the health and good of the community. The president is Mr. Kenneth M. Blakiston, 1012 Walnut street, Philadelphia; the physician-in-charge is Dr. William H. Bennett, Atlantic City, during the summer.

Chaos in Institutional Accounting.—The need for more exact and scientific account-keeping by public and charitable institutions is sharply set forth by the following extract from a paper prepared by W. R. Patterson, Ph.D., on the subject of "County Care of Dependents in Iowa":

"We have for consideration ninety-nine counties, each so richly imbued with the American spirit of independence that exactly ninety-nine separate and distinct systems of bookkeeping obtain. As men's minds, so are the books of the county—no two alike. In some instances their practical side is unique. One auditor reports that he 'don't know' and 'can't tell' what is spent for poor relief.

"When so much in the line of permanence in politics depends on a good financial showing, it would seem that the amount expended for the almshouse would at least be separate from other expenditure, and that it would be known whether the poor farm made a profit or was run at a loss; yet we experience no little difficulty to secure as elementary a classification as this.

"The movement on foot to secure uniformity in municipal accounting should be encouraged and extended to county affairs. It is far less trouble to keep an intelligible than an unintelligible account. It would be a small matter to itemize the almshouse or outdoor relief under the heads of salaries and wages, provisions, household stores, clothing, fuel and light, medical attendance, etc. With as simple a system as this would necessitate we should not be forced to acknowledge, as must be done in this paper, that we cannot say whether an almshouse is a wise investment or no; or if it costs two or four dollars per week to keep an inmate.

"It may be said with little fear of successful contradiction that not one county in the state can give a true statement as to the average cost of keeping a pauper a month or a year. So faulty are their books relating to institutional population that in the majority of instances it is absolutely impossible to secure statements that will correspond as to the number present at a given date."

These statements are founded upon a patient investigation conducted by Dr. Patterson, and are supported by Superintendent Hill, who said in discussing the paper:

"In visiting county institutions in charge of the Board of Control it has been a matter of surprise to find that no two counties keep track of their expenses of running county poor farms alike, and there is not a single county in the state

which can show a model method of keeping accounts. Perhaps not a single county in the state was prepared two years ago to give the figures to the Board of Control, and I doubt if any county can yet make a good financial statement to the Board, such as will enable the Board of Control to learn anything like the exact costs of keeping insane persons in county institutions."

It would be gratifying to believe that Iowa, in dealing with the care of dependents, presents an unfortunate exception to the rule of model accounting practised by the counties of other states. The best authorities on the subject show, however, that this belief cannot be indulged. Dr. Patterson's able paper will serve a useful purpose as a handboard on the road to a more satisfactory condition of management and control. This, like all reforms, is largely a question of educating the public to a knowledge of a better way.

Tobacco and Depopulation.—Many are the reasons given for the lessened birthrate and consequent depopulation of countries. The newest, and at first sight the least worthy of consideration, is one (from France) that, among many other baneful effects ascribed to nicotine, charges it with the production of impotence. The author of this theory is Dr. Le Juge de Sagrais, of Luchon (current number of *Archives Générales de Médecine*), and he cites several cases by others and himself in which impotence clearly resulted from excess in smoking. Abstinence from tobacco was followed by recovery. Experiments upon animals are cited which are said to have produced congestion of the testicles, cell proliferation of the tubuli seminiferi, and epithelial desquamation, atrophic sclerosis of the testes, wasting of the vesiculæ seminales, absence of spermatozoa, or in females shrinking and atrophy of the ovaries. There are so many possible fallacies in the theory, so many facts in human life that seem to contradict it flatly, that the smile of skepticism on the part of the tobacco trusts and all smokers will probably prove contagious. By all means let the theory be tested, but we suspect tobacchanalian restraint will not alone bring up the birthrate of dying nations.

A Legal Decision and the Ohio State Medical Board.—A recent decision of the Ohio Supreme Court declares the stationary engineering law unconstitutional, because any examining board may not create or fix the standard of examination; this must be done by the law creating the board. This power, the Court says, cannot be delegated to an officer or board as an administrative power. The words of the opinion are:

"The examiner is made the exclusive judge whether an applicant is trustworthy and efficient. No standard is furnished by the general assembly as to the qualification, and no specification as to wherein the applicant shall be trustworthy and competent, but all is left to the opinion, finding and caprice of the examiner. He is the autocrat, with unlimited discretion."

It would seem inevitable that this decision annuls the powers of the State Medical Board, the State Dental Board, the State Board of Pharmacy, besides many other boards of schools, the civil service, etc. This almost amounts to nihilism in the administrative departments of the government of Ohio. As it is

utterly impossible for the law to define specifically the standards of qualification for the multitude of examinations that must be made, one wonders what the people of Ohio can do with their constitution or with their Supreme Court. Finally, of course, the examiners must be the "autocrats with unlimited discretion," whatever the Supreme Courts may wish or rule. The constitution cannot be amended quickly, nor can the amendment be made retroactive; in the meantime society and its institutions must be carried on. To ignore the decision until the constitution can be amended seems almost impossible, and it is unlikely that the Court will reverse its own decision. It is a strange and amazing state of affairs.

Opportunities for Investigation in Small Hospitals.—Professor Ernest von Leyden, of Berlin, whose seventieth birthday the medical world honored itself by celebrating recently, is a typical example of what a patient clinical observer can accomplish who takes the ordinary opportunities for medical investigation that even small hospitals furnish. After his student years he was in the German army until the age of thirty-three. As the result of some excellent clinical work in his military position he obtained the professorship in medicine and became the director of the internal medical clinic at the University of Königsberg. This would not seem to promise any special opportunities, but there were at least two men connected with the University, von Recklinghausen and Spiegelberg, who had already accomplished something in scientific medicine. In connection with these two scientists Professor von Leyden began what a German biographer calls a new era in clinical medicine. In 1866 he published a series of articles on the pathology of icterus that attracted widespread attention. Before he became professor a monograph on the "Gray Degeneration of the Posterior Columns of the Cord" had proved the originality and yet thorough conservatism of his views. Further articles showed that he was not a man to stand still. When in 1872 the Germans founded the Kaiser Wilhelm University at Strasburg they resolved to make it worthy of the fame of German scholarship. As a result a determined effort was made to secure as good a faculty as possible, and one that would be sure to reflect honor on the German regime. Among those invited to become members of the faculty were von Leyden and von Recklinghausen from Königsberg. After four years of successful labor in Strasburg, the fame of which made the medical school of that university one of the best known in Europe, von Leyden was asked to succeed Traube in Berlin. Last year he celebrated the twenty-fifth anniversary of his professorship at Germany's greatest university. Not a single year of the quarter of a century has been without its step of clinical advance either from von Leyden himself, or under his inspiration from some of his assistants. Professor von Leyden deserves the honors that have come to him from all over the world, and his career cannot but prove an inspiration to medical men who have even limited opportunities for clinical research open to them. We wish him many years of active service in the profession he has honored.

Dust-borne Disease.—In the discussion at the recent Congress of Surgeons in Berlin, on first aid to the wounded on the battlefield, it was brought out by v. Bruns, Bertelsmann and others, that the danger in modern warfare is not so much from primary infection by the small-caliber projectile of rapid-fire rifles as from secondary infection by contamination of the wound from the clothing or the dust of the battlefield. The effort of the field surgeon is therefore more to exclude septic and tetanus germs than to disinfect the wound. But to come nearer home, the danger of dust is emphasized by the report that New York City has over 400 street-sweepers on the sick-list with diseases due to the inhalation of infectious dust. A number of affections are so commonly conveyed in dust as to merit the designation of "dust diseases"; of these, cerebrospinal meningitis is of frequent occurrence in cities during the spring months. At this season all sorts of noisome rubbish, the accumulation of the winter, in cellars and back yards, is set out on the street to await the coming of the ashman, whose course is marked by clouds of dust, littered streets, and dusty porches. Closed carts well adapted to the removal of garbage have been invented, and the system employed in the business sections of putting the street sweepings in sacks is admirable; but it remains for the sanitary engineer to turn his inventive mind toward devising a wagon capable of conveying domestic rubbish and ashes without dispersing the lighter stuff along the route.

The Kansas City Academy of Medicine and Criminal Advertisements in the Newspapers.—Dr. J. W. Kyger, of Kansas City, recently read a paper on the decadence of the American people, tracing this to the decreasing birthrate. The Academy appointed a committee which has drafted a series of resolutions to be sent to state and national societies and to the Postmaster-General. The purport of these resolutions is that the decreasing birthrate is largely due to the general use of nostrums, etc., to prevent conception or to produce abortion, and that this general use of such criminal drugs and devices is due to the advertisements in the newspapers of "Personal Medical Advertisements," "Guarantees," "Sure Reliefs," "Sure Preventions," etc. It is said that in some "Sunday editions of reputable papers" as many as two columns are occupied by these infamous advertisements. We think the appeal to the Postmaster-General will be of little avail directly, because these "reputable papers" are not distributed to any considerable extent by mail. But the ban and stigma placed on them of exclusion from the mail might indirectly be of service in calling attention to the "reputable" proprietors and editors. The cure lies in the influence of an organized profession and the influence it can exert in legislatures and Congress. As evidence of such growing unity the work of the Kansas City profession is most praiseworthy.

The Dangers of Hypnotism.—For years one has repeatedly noticed in the newspapers accounts of the evil results of hypnotism induced "for fun" or for profit by ignoramuses, traveling showmen and quacks.

In the last week there have been two most pitiful illustrations. In one, a boy was put into a morbid psychic condition by a wandering mountebank and became highly insane, perhaps permanently. In another, if we may trust the daily papers, an entire family in Illinois, a man, his wife and five children, were rendered comatose by an "amateur hypnotist," who had succeeded in awakening only two of the children in four days, the others being still asleep. There should evidently be laws against such criminal folly by ignorant people who know nothing of medicine and less of psychology. No physician doubts the strange reality of hypnotism; indeed, for the little good it has done or useful purpose served it appears to be such a dangerous agency that only the most careful scientists should experiment with it. There is, undoubtedly, a world of mysteries about mental activity that remain to be cleared up, but nothing can be gained by giving them over to ignorance and charlatanry to exploit. Our progress is slow enough when the conscientious expert studies them. By the way, these morbid human vivisection experiments of the careless "amateur scientists" and ignorant peripatetics are without concern for the antivivisectionists. Why? They are cruel and harmful. If they were done in a laboratory, and by scientific men, if the illustrations we have described had been conducted in this way, what a furore there would be!

How to form the plural of some medical words is a puzzle to many physicians. We have been asked especially as to the proper form of the plural of *neuritis*, *nephritis*, etc., and of *iris*, *formula*, etc. It seems to us the general rule must be that if they are English words, *i. e.*, written in Roman and not in italics, they should form their plurals just as other English plurals are formed. If they are still foreign words, of course the plurals must be those commanded by the language whence they come. There is hardly a better proof of acclimatization than the adoption of the English form of plural. If the Latin form is preserved, then we should print the word in italics and use it as little as possible. But in English we are compelled to use *nephritis*, etc., because there are no other English words descriptive of the facts. Such words are as thoroughly anglicized as any can be. If not, we should use the Greek alphabet in printing them. Why, therefore, preserve the Latin or Greek forms of plurals? Who would say *lexica* instead of *lexicons*, *factota* and *ultimata* instead of *factotums* and *ultimatums*? In the same way we think that *chondromas*, *carcinomas*, *fibromas*, etc., *addendums*, *ovums*, *erratums*, *mediums*, *focuses*, *funguses*, *formulas*, *genuses*, *stamens*, *indexes*, *apparatuses*, *appendixes*, *cherubs*, *seraphs*, *bandits*, *criteria*, etc., are the proper plural forms. In words ending in *-is*, the change to *es*, in forming the plural, is so well established and so simple that it should not be interfered with. In this way we have accepted and habitually use *analyses*, *bases*, *crises*, *hypotheses*, *oases*, *parentheses*, *theses*, etc. Why should we not also form the plurals of our words ending in *itis* in the same way, instead of the Greek *itides*? The forms *neurites*, *nephrites*, etc., seem preferable to *neuritides*, *nephritides*, etc. We would prefer *irises* to *irides*,

and *iritides* to *iritides*. The objections to *-itides* are so evident that they need not be discussed, and *-itides* is scarcely likely to be accepted, although it is perfectly proper and preferable to *-itides*.

The Specialist and the General Physician.—There are two phases of the everlasting question as to the rights of and demarcation-line between the general practitioner and the specialist which need emphasis and repetition. The first is that the specialist should keep himself in touch, so far as general principles go, with the results of general medicine, and not sink into a narrowness of view and aim limited to his own specialty. The second, and we suspect more pressing duty, is incumbent upon the general practitioner to learn the results and influence of the diseases of special organs upon the general health. The sins of the specialist, his indifference to general conditions, have been so frequently described and illustrated that he should by this time have learned his lesson and be on his guard. But when it comes to the sins of the family physician they have not been so well exposed in print, although in every specialist's office illustrative examples present themselves every day. How many general physicians entirely neglect advice as to diseases of the teeth? How many suspect the evil influence upon the general health of nasal stenosis and mouth-breathing? There are not a dozen physicians in all Europe or England that know about or care a fig for the alleged systemic effects of eye-strain. A recent book on diseases of the stomach does not even mention the fact that hundreds of good physicians (and a number of them general practitioners also) have testified to their belief that the origin of much functional gastric disease is in eye-strain. This last is an instance of specialist against specialist, and both may consistently appeal to the Cæsar of the generalist for a proper reconciliation of their rival claims. All need to recognize that the body is a unit of highly interdependent parts.

"This is the time for women with nerves to take the rest cure" may soon be the direction in the family almanac of fashionable society. The lay magazines and daily newspapers are beginning to poke fun at the profession for what is thought to be the too common ordering in the spring of the rest cure for women. April is said to be the preferred month, and the reporters hint that those who have forgotten it may still derive benefit from a few days in bed behind silk curtains, etc., even in May. It is not certain that there is not a deal of abuse of the true office of the physician in thus encouraging the delusion of disease instead of overcoming it. Should we not, it is asked, advocate popular "work cures," "walking cures," etc., instead of increasing hysteria, when we are driven to our wits' ends to know what to do about the demands of weak-willed and doless women? As necessary and proper as the rest cure may be, it is urged that in some cases it would be a great professional misfortune if we indulged the follies of the foolish to such a degree as to arouse the gibes of common lay folk, and excite a reaction that implies a more sound and healthy common sense on

their part than in the medical adviser. We should not breed disease either for our own sake or for that of the waiting Eddyites and faith-curists.

"The Bite of the Common House-Fly."—Despite the fact that it is a well-established truth, recognized years and years ago, that the common house-fly (*Musca domestica*) does not bite, and that from the structure of its mouth parts, even if it would like to do so, it cannot possibly bite, the old story of its being able to bite comes to us again, and this time from the Philippines. Our friend, "the common house-fly," under which we are always to understand *Musca domestica*, is now blamed for the transmission of surra, and one of our esteemed contemporaries speaks of the matter editorially as "this latest of the many noteworthy scientific discoveries," etc. As a matter of fact, about 98% of the flies one finds in houses belong to the species *Musca domestica*, known as the common house-fly. The other 2% belong to a number of different species and genera. One of these species is the so-called "stable-fly," *Stomoxys calcitrans* by name. This insect is somewhat like the common house-fly in appearance, and it is prone to enter dwellings, particularly shortly before a rain, hence the common idea that "flies bite before a rain." This is apparently the species in which our colleagues in the Philippines have found surra blood.

A Vaccination Argument from Porto Rico.—While England has her conscience clause to the vaccination law rendering it practically inoperative for a large part of her people, and while America permits its cranks and antis the control of public health laws, we have been able as a government to act more wisely for Porto Rico. For the 10 years prior to American occupation of the island the deaths from smallpox averaged 621 a year. Today, in a population of 960,000, the annual deathrate from the disease does not exceed two. Smallpox is practically nonexistent. The result is due to the carrying out of an order for universal vaccination by Governor Henry in 1899, when we took possession of the island. The fact is of no significance to the antis, but the intelligent American citizen should ask why our own good people are not as worthy as the Porto Ricans of protection against the disease.

A health farm is planned by the Young Men's Christian Association six miles west of Denver for the benefit of those, particularly the tuberculous, who might otherwise be unable to live in this state. A sanitary home, nourishing food, skillful medical attention, and an uplifting environment will be offered to young men. (But why not to young women as well?) The prices to be charged will be within the reach of those of an average financial condition, and whenever possible, medical services are to be offset against such outdoor work as the patients may be able to do. If rightly carried on, this kind of practical philanthropy is highly commendable, as many sick persons are prevented by reason of the expense from living in a climate and under conditions which would ensure them a full term of healthy life.

A Vaccination Argument From Egypt.—The Annual Report on Finances, Administration, etc., of Egypt, by Lord Cromer, has just been issued by the British Government and it contains another instance of the treatment of a subject-people in a better manner than the free and dominating people treat themselves. Vaccination in Egypt is compulsory; there is no conscience clause to render it inoperative. The antis do not control the Egyptian Government, much to the benefit of the Egyptian people. Take as an example Port Said, containing 35,000 natives and 12,500 Europeans, the natives, of course, living in a sad state of insanitation as compared with Europeans. Is the deathrate from smallpox greater among them than among the Europeans? Not at all; it is six times as great. Among the 35,000 natives there were eighteen deaths during the year, while among the 12,500 whites there were thirty-eight deaths. "It is possible," writes Lord Cromer, "to enforce vaccination among the native population, but among the Europeans, though by the laws of the country vaccination is compulsory, it is impossible to enforce it."

EDITORIAL ECHOES

The Sale of Serums by Boards of Health.—It is impossible to resist the conviction that it would be to the best interests of the board if it were to confine its operations to its legitimate sphere of action, and wholly purge itself of any suspicion of commercialism. The city of New York is surely sufficiently rich and public spirited enough to provide the board with ample appropriations for all the work which falls within its province, and, by so doing, will avoid the odium of seeming to allow a most important municipal department to be conducted upon commercial lines. The assertion that by these methods alone the purity of therapeutic serums can be guaranteed will not bear close inspection, for any reputed failure on the part of manufacturers in these respects can be easily remedied by the appointment by government or by state of a proper system of inspection. It is right and fair that both vaccine and antitoxin should be freely distributed to those who cannot afford to buy these safeguards to health, but by selling such products at a cheap rate, the ordinarily understood principles of just trading are overthrown.—[*Medical Record*.]

Bigotry vs. Science.—Vaccination makes one's arm sore. Smallpox makes one sore all over.

Vaccination makes one feel bad for a week. Smallpox makes a man useless to himself or his family for months.

Vaccination results fatally sometimes. It causes one death to 10,000 from smallpox.

Vaccination is a scheme to help certain persons make money. So is life insurance. Vaccination is the cheap-kind of life insurance.

Vaccination is intended only for the very poor who live in unhealthy neighborhoods. Smallpox appears in the best of homes. Infection may be spread in churches, street cars, offices, restaurants.

Vaccination, when compulsory, is an infringement on personal liberty. An unvaccinated person menaces the whole community's right to keep well.

There is no positive cure for smallpox. Complete vaccination has never failed to prevent it.

Ninety-five per cent. of smallpox patients have not been vaccinated within 10 years, or were never vaccinated.

At this highest period in the world's enlightenment it seems that science has harder work convincing than discovering.—[*Newark Evening News*.]

BOOK REVIEWS

History of Medicine.—A Brief Outline of Medical History and Seats of Physicians, from the Earliest Historic Period; with an Extended Account of the New Schools of the Healing Art in the Nineteenth Century, and Especially a History of the American Eclectic Practice of Medicine, never before published. By ALEXANDER WILDER, M.D., New Sharon, Maine. New England Eclectic Publishing Co., 1901; 946 pp., with portrait of the author, and a free bibliography and index.

This handy volume contains a fund of information scarcely to be found in any other single book, and certainly nowhere presented in more readable language, or with less of personal bias. We look in vain for the narrowness expected of the apostle of a medical cult, or the bitterness so apt to characterize the writings of one who records the history of a reform movement which, though successful in the attainment of its chief contention, has been denied of credit by the general profession, and whose followers still attempt to keep up a fight on the field of a battle already won. The book is interesting throughout, and particularly so in its record of a movement toward greater freedom in methods of treatment, a movement most fruitful in its outcome. It is only natural that the author, like others who have borne the brunt of struggle with hyperconservatism, should be oblivious to the fact that the principles for which these reformers fought were long since conceded. It is also comprehensible that recent discoveries in the etiology of infectious diseases should meet indifferent show of appreciation from one who, perhaps like "Keeping Hill, who fit to Bennington," can see little good in new-fangled ways. The platform of principles enunciated at the third annual meeting of the National Eclectic Medical Association, held in Rochester, New York, May, 1852, though at the time regarded by orthodox physicians as an expression of revolt and heresy, would today be approved by every progressive medical man. It is worthy of note that at the sixth annual meeting of the same organization, held in the city of New York on June 5 and 6, 1855, was passed the first act of a general body of physicians to sanction the instruction of women in medicine.

The Office Treatment of Rectal Diseases Explained and Simplified.—Being an exposition of the treatment of all those diseases, both mental and surgical, of the rectum, anus, and sigmoid flexure, the cure of which may be accomplished without surgical anesthesia; illustrated; by RUFUS D. MASON, M.D., Omaha, Nebraska. Professor of Rectal and Pelvic Surgery in the John A. Creighton Medical College; Surgeon to St. John's Hospital; Member of the American Medical Association; of the Medical Society of the Missouri Valley; of the Nebraska State Medical Society; of the Omaha Medical Society; of the American Proctologic Society, etc. 83 pages. Omaha, 1901.

This little monograph, based on the extensive personal experience of a specialist and teacher, will no doubt be found valuable to the general practitioner, although the formulas express adherence to obsolete polypharmacy, and even the title page shows evidence of careless proof reading.

The Physician and His Patient, or The Business and Social Relations Which Should Exist Between Them. A. E. LAWRENCE, Coolville, Ohio. Pamphlet, 44 pp. Press of Jennings & Pye, Cincinnati, 1901. Price, 15 cents.

This pamphlet contains a plain statement of the relation of physician and patient, and may be serviceable in bringing to an appreciative state of mind those who are ready to accept the physician's aid, but dilatory as regards the honorarium. In fact, the object of the author is to supply such medical men as have slow-paying patrons with a simple means of awakening them to the fact that the physician must live.

A Guide to the Microscopic Examination of the Eye.—By PROFESSOR R. GREEF, of Berlin. Translated from the Second German Edition by HUGH WALKER, of Glasgow. Philadelphia: P. Blakiston's Son & Co., 1902. Price, \$1.25.

This little book of 171 pages contains a concise account of the technic in the preservation of specimens interesting to the ophthalmologist, and their preparation for microscopic exami-

nation. It does not include the pathologic histology of the eye, which subject the author has discussed at length in Orth's Text Book of Pathologic Anatomy. The translator has performed his duty well, and has wisely amplified descriptions when necessary. With a few minor exceptions the foregoing manual is quite satisfactory. An important omission is the failure to mention the use of formalin instead of carbolie acid, creasote, or thymol, in the preparation of glycerin jelly for the preservation of macroscopic specimens, as described in *American Medicine*, February 22, 1902.

Morphinism and Narcomanias from Other Drugs. Their Etiology, Treatment and Medicolegal Relations.—By T. D. CROTHERS, M.D. W. B. Saunders & Co., publishers. Pages 344.

The author speaks of the history of drug habits, of the dearth of accurate literature upon the subject, and says that stress is not sufficiently placed upon the fact that drug habits are, in many cases, neuroses. He speaks of the advantage of assuming that they are diseases, and pleads for the more scientific methods of treatment, which are detailed. We do not agree with the writer, however, that medical colleges do not teach the danger of drugs, and the prevention of narcomanias.

The Standard Medical Directory of North America.—Consisting of 12 Parts, including Directory of Physicians of North America, Medical Colleges, Medical Service of the United States, Medical Societies, Medical Practice Acts, Medical Publications (including Books and Periodicals), Mineral Springs, Drugs and Medicines, Medical and Surgical Products, Manufacturers and Life Insurance Companies. Handsomely bound in red buckram, 824 pages, imperial octavo. Price, \$10.00. G. P. Engelhard & Co., Chicago.

This work is a distinct improvement over any similar publication in scope, accuracy, and typography. The book is divided into 12 parts, each complete in itself, this arrangement facilitating the readiest reference, and exhibiting in concise form the extent or importance of the interests represented by the respective parts. The volume contains much material of reference value to the practising physician as well as to the publisher and manufacturing chemist.

First Aid Manual.—Suggestions for Prompt Aid to the Injured in Accidents and Emergencies. Illustrated. Edited by FRED B. KILMER. Published by Johnson & Johnson, New Brunswick, N. J., 1901. Cloth, 50 cents.

This manual contains 113 pages, and is designed to give suggestions that will tend to enable those who follow them to render efficient first aid in an emergency. It is concise and up-to-date. The illustrations are a most important feature.

Compend of General Pathology.—By ALFRED EDWARD THAYER, M.D., Assistant Instructor in Gross Pathology, Cornell Medical College; Pathologist to the City Hospital, etc. P. Blakiston's Son & Co., Philadelphia. Price, 80 cents net.

In preparing this compend an earnest effort has been made to simplify the subject of general pathology. Controversial matter and references have been omitted and the practical needs of the student have been well considered. It is arranged in the most approved form, thorough and concise, and contains many illustrations.

The Drug Habits and Their Treatment.—By T. D. CROTHERS, M.D., Superintendent Walnut Lodge Hospital, Hartford. Publishers, G. P. Engelhard & Co., Chicago, 1902; 94 pages.

The little volume gives succinct facts as to heredity, etiology, symptomatology, and treatment in particular. Those drug habits usually not specified with sufficient accuracy of symptoms by most writers are given with their diagnostic marks. Arsenic, coffee, cologne water, chloroform and ether addictions; also as to tincture of ginger, gelsemium, and paraldehyd. That drug habits become neuroses (diseases) is insisted upon, while the author urges the scientific study along this line if cure is to be attained.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox.—The official report for the United States from December 28, 1901, to April 25, 1902, gives a total of 29,307 cases with 887 deaths, and contrasts it with the total of 26,616 cases with 332 deaths for the preceding year.

Pure Food.—In the discussion of the pure food bill in the Senate recently Mr. McCumber said that the amount of deleterious food products placed upon the market each year was estimated at fully \$1,170,000,000, while the total amount of adulterated food products each year was nearly \$4,000,000,000.

Senator Hoar's Jest.—Senator Hoar received word the other day that a friend who had been supposed to have appendicitis was suffering, not from the ailment, but from acute indigestion. "That is good news," said the Senator. "I rejoice that the trouble lies in the table of contents rather than in the appendix."—*Chicago Journal*.

Rat Extermination in Manila.—Dr. L. M. Maus, U. S. A., Commissioner of Public Health in Manila, reports that between September, 1901, and February, 1902, 33,722 rats were caught. Of these 30,786 were examined in the laboratory and 229 were found infected with bubonic plague. In January, 16,776 rats were examined and only 51 were found so infected, inducing the belief that the disease among rats was gradually disappearing. Every house in which infected rats was found has been remodeled, cleaned and disinfected.

Tribute to the Memory of Drs. Eskridge and Parkhill.—A memorial publication has been issued by the members of the Denver and Arapahoe Medical Society containing the addresses delivered and the resolutions passed at the meeting held January 28, 1902. Dr. Jeremiah T. Eskridge was well known throughout the United States as a neurologist, and contributed many valuable papers to the literature of his specialty. He was a member of the Philadelphia Neurological Society, at a recent meeting of which a tribute was paid to his memory by Drs. C. K. Mills and Francis Xavier Dercum; a similar token of esteem was read before the Northern Medical Association by Dr. Henry Beates. Dr. Clayton Parkhill was a graduate of Jefferson Medical College, and gave early evidence of his ability as an anatomist; after acting for a time as demonstrator of anatomy under Dr. George McClellan, of Philadelphia, he removed to Denver, and soon rose to the chair of surgery in the Gross Medical College and in the University of Colorado. He was the author of numerous articles on surgical topics. The death of these eminent physicians, which occurred on the same day, January 15, is not only a loss to Colorado, but to the medical fraternity of the entire country. The memorial pamphlet referred to above contains a bibliography of their published writings.

Cholera.—A few cases have been reported among the American soldiers in the Camarines provinces of Southern Luzon, but the disease is still mainly confined to natives and Chinamen. In Manila there have been reported 555 cases with 449 deaths, while the provinces report 1,599 cases and 1,169 deaths. The Manila Health Board has had much difficulty in locating cholera cases, for so soon as a case occurs the members of the household send the sick person away or else flee themselves. The natives have also been detected trying to bury the dead at night in order to prevent the detention of the living. Major Maus, the insular Health Commissioner, has written to the Bishop taking exception to the action of the priests, who are informing the people that cases of cholera have occurred but no cholera, and that the sanitary precautions are only taken to annoy the people. The major states that he has made a number of postmortem examinations and found that all the cases were of the malignant type. Owing to the prevalence of cholera, measures have been taken to expedite the return of the troops, and it is calculated that all the troops who have been in the Philippines since 1899 will be back in the United States on their way home by June 1.

Association of American Medical Colleges.—President, Victor C. Vaughan, Ann Arbor, Mich.; Secretary, Bayard Holmes, Chicago, Ill., will meet in Saratoga, June 9, at 10 a.m. The program will consist of two portions, one of which is educational and open to visitors. The following amendments to the constitution have been suggested for consideration:

Each college holding membership in this association shall require of each student before admission to its course of study a certificate of having successfully passed an examination the minimum of which shall be as follows: In German, an examination which shall show the student's ability to read ordinary medical or scientific German with sufficient readiness to use German textbooks. In French, an examination which shall show the student's ability to read ordinary medical or scientific French with sufficient readiness to use French textbooks. In German or French, an examination which shall show the student's ability to read ordinary medical or scientific French or German with sufficient readiness to use textbooks in medicine in one or other of these languages. The by-laws may prescribe in more detail the provisions of the several paragraphs in this section, and the parties by whom the examination shall be held and whose certificate shall be acceptable. No credit for time to be given to graduates in dentistry, pharmacy or veterinary medicine.

EASTERN STATES.

Smallpox.—The official report for the period from December 28, 1901, to April 25, 1902, gives a total in Maine of 66 cases with 4 deaths, as contrasted with 1 case and no death in 1901; in Massachusetts 753 cases with 107 deaths, as contrasted with the 13 cases and 2 deaths of 1901; in Rhode Island 294 cases and 3 deaths. In 1901 there were 10 cases and 1 death.

NEW YORK.

Saratoga Hospital is the recipient of a gift of a full tier of sun parlors from Mrs. Henry B. Hyde, of New York City.

Male Nurses Rebel.—Great dissatisfaction is reported over the action of the Board of Trustees of the Mills Training School for Male Nurses at Bellevue, in appointing female supervisors to the training schools and displacing the men who have held these positions. It is reported that nearly all the students have signed an agreement to resign in a body if the former conditions are not restored. The authorities say the women were appointed in order to reduce expenses.

The tenement-house law during the late session of the New York legislature was in serious danger from vicious amendments introduced in the interests of Brooklyn builders, but through the vigorous protests of the friends of tenement-house reform these failed of adoption and the bill was passed in the form desired by the tenement-house commission except that permission was accorded to use old inside rooms as sleeping rooms which in the interest of health should not be used.

A summary dismissal with costs for the defendants was ordered by Justice Leventritt of the New York Supreme Court on a mere statement of the counsel's case for the plaintiff in a recent claim for \$100,000 damages against Drs. Austin Flint, Allen Fitch and O. J. Wilsey, on the charge that they had conspired to secure the false imprisonment of a lady who had been committed to a private asylum for the insane at Amityville, L. I., on the examination of the two former and who had been received by the latter, all acting in accordance with regular legal proceedings and with their lawful obligations. The defendants made no effort to avoid a trial but prepared for a complete and thorough adjudication.

For providing new hospitals and rehabilitating old ones for the treatment of contagious diseases, Dr. Lederle, president of the New York Department of Health, has asked from the Board of Estimate and Apportionment an appropriation of \$1,025,000. Many of the old hospitals are in such a condition that they are only fit to be torn down, and Bronx, Queens and Richmond boroughs are entirely destitute of such institutions. Dr. Lederle has the hearty support of the Medical Advisory Board of the department and in proof of the need he cites that recently two cases of smallpox were discovered in remote parts of Staten Island, and a department diagnostician had to travel 40 miles and the department steamboat Franklin Edson 60 miles before the patients could be landed at North Brother Island.

Nurses' Movement for Registration.—The New York State Nurses' Association completed its organization at the annual meeting held in Albany on April 15, when Miss Isabel Merritt, of Cherry Valley, was elected president. The society is now ready to consider seriously the question of legislation for registration, which will ultimately place training schools for nurses under the supervision of the regents, establishing thereby a more uniform basis of nursing education in the state and eventually making trained nursing a recognized profession. The practical result of registration will be the protection of the public against impostors and a gradual raising of the standard of admission to training schools, with a more carefully prepared curriculum of both theoretic and practical instruction. The nurses of Illinois and New Jersey are already organized for this purpose, with Colorado, North Carolina, Pennsylvania and Massachusetts agitating. The movement is also strong in England.

PHILADELPHIA, PENNSYLVANIA, ETC.

Smallpox is reported as existing among the inmates of the Delaware State Hospital for the Insane at Farnhurst. Twenty cases, six suspected cases and three deaths are enumerated.

The United Hebrew Charities of Philadelphia have been given \$50,000 by William Guggenheim for an endowment fund. This sum was given unconditionally, but he has also offered an additional \$50,000, provided that friends of the society contribute \$250,000 before the end of the year, thus creating a total endowment of \$350,000.

Vaccination Statistics.—In order to determine the actual effects of vaccination, the University of Pennsylvania has adopted the following plan: Blanks are to be issued for the students to fill out, stating how many times they were vaccinated, how often successfully, how many scars they have from vaccination, and whether they were ever infected. It is thought the information gained from thousands of students will prove of great value in the pursuit of preventive measures for smallpox.

Against Mosquitoes.—At a recent meeting of the Mosquito Exterminating Committee of the South Orange Improvement Society, it was decided to divide the village into four sections, with a subcommittee for each. These committees will endeavor to induce property owners to drain lowlands, and to interest residents in the work of mosquito extermination.

Pennsylvania Society for the Prevention of Tuberculosis, founded April 10, 1892, was the pioneer society of this kind in America and ranks second in all the world, one other, "La Ligne Contra la Tuberculose en France," having been founded by M. Armaingaud in Bordeaux in 1891. At the annual meeting held April 9, 1902, Dr. Howard S. Anders was elected president; Drs. J. Solis-Cohen, Benjamin Lee, S. A. Knopf, Wm. Moss, Samuel G. Dixon, Lawrence F. Flick, Mr. Talcott Williams, Mrs. Wm. F. Jenks, Mr. Samuel Castner and Miss E. W. Redfield were elected vice-presidents; Dr. A. Davisson, secretary; Miss E. W. Redfield, corresponding secretary; Mr. Jas. L. Stanton, solicitor, and the Commonwealth Title Insurance and Trust Company, treasurer. The annual report for the year ended March 1, 1902, shows that six tracts which accompany the report on How to Avoid Contracting Tuberculosis; How Persons Suffering from Tuberculosis Can Avoid Giving the Disease to Others; How Hotelkeepers can Aid in Preventing the Spread of Tuberculosis; How Storekeepers and Manufacturers Can Help to Prevent the Spread of Tuberculosis; Pre-disposing Causes of Tuberculosis and How to Avoid or Overcome Them; Registrations of Tuberculosis, have been published and disseminated gratuitously to the number of 30,000 reprints for the enlightenment of the people and for the object of arousing them to cooperate with the medical profession. The society has extended aid to the Free Hospital for Poor Consumptives, for which land has been bought at White Haven and three buildings projected. The legislature has appropriated \$40,000 for buildings and \$10,000 for the maintenance of the sanitarium; but the aim of the society is to induce the legislature to establish a state hospital such as New Jersey has recently provided for.

WESTERN STATES.

Contaminated Water.—An investigation is being made concerning the purity of the water of some of the 600 wells which form the water supply of San Francisco. Analyses made from samples from 23 wells which range in depth from 12 to 150 feet show a very contaminated condition liable to cause typhoid and diarrhea from its use.

Borax as a Preservative.—At the instigation of the retail dealers of St. Paul, Minn., the wholesale meat dealers have been arraigned on charge of using borax as a meat preservative. They demurred to the charge, and their cases were continued until April 29. In the Supreme Court a similar case is pending in which the decision rests upon the point whether or not this use of borax is detrimental to health.

The Medical Society of the State of California met in annual session April 15 to 17, and elected the following officers for the ensuing year: President, F. B. Carpenter; first vice-president, C. C. Wadsworth; second vice-president, D. A. Hodghead; secretary, George H. Evans; treasurer, E. E. Kelly, all of San Francisco; board of examiners, Dudley Tait, David Powell, D. E. Osborne, W. S. Thorne, R. L. Wilbur. The following resolutions were passed by the body in session:

WHEREAS, The Mayor of the city of San Francisco has seen fit to remove the so-called old Board of Health; and

WHEREAS, The Chief Executive of the city has stated that he has determined after a prolonged personal investigation that bubonic plague has never existed in San Francisco; and

WHEREAS, The position is absolutely unsupported by any competent, unprejudiced physician who has made personal examination of suspects or alleged cases of plague before or after death, or who has examined the bacteriologic evidence presented, and is further in direct conflict with the findings of the Federal Government experts and Special Commission; therefore be it

Resolved, That the Medical Society of the State of California emphatically condemns this action on the part of the Mayor of San Francisco, and at the same time endorse the position always maintained by the old Board of Health in its sanitary defense of the people of the city of San Francisco and of the country at large.

CANADA.

The new free hospital for tuberculous patients, established under the auspices of the National Sanatorium Association, has been opened recently with accommodation for 50 patients, and this capacity will be increased to 100 without delay. Request for admission have come in from all over the Dominion, from Prince Edward Island in the east to the interior of the Northwest territories.

Compulsion of Smallpox Patients.—In Montreal recently some smallpox patients refused to be taken to the isolation hospital, and the Hygienic Committee of that city questioned the right of the municipality to oblige them to submit. The city attorney has given his opinion that if a patient lives in a hotel, boarding house, or tenement containing more than one family, or occupies a seat in a public conveyance, the sanitary officials can oblige him to go into hospital quarters, but if he lives in his own house he cannot be compelled to leave it.

FOREIGN NEWS AND NOTES

GENERAL.

Contagious Diseases in China.—A recent report states that smallpox is devastating the villages on the North River in the vicinity of Shickwanfu, and that Fatshou is suffering from cholera and plague.

Plague in Egypt.—For the week ended March 29 there were reported 9 cases with 2 deaths in the villages of Lower Egypt, and 8 deaths at Dechna, in Upper Egypt. Since the epidemic started a year ago, 369 cases with 215 deaths have been reported for the whole of Egypt.

GREAT BRITAIN.

Galton-Edelmann Whistle.—In a communication to the *Edinburgh Medical Journal* is described Edelmann's modification of the Galton whistle, a device of such nicety for measuring the acuity of hearing that in connection with the tuning fork the aurist can differentiate between simple middle ear deafness and that due to affections of the labyrinth or auditory nerve. Edelmann, by the aid of Kundt's dust figures, was enabled to fix with precision the dimensions of the vibrations so as to ensure the absolute trustworthiness of the instrument when the point of inaudibility in the highest tones is approximated. The instrument shows that some individuals can hear tones of 50,000 vibrations and a very large number, tones of between 37,000 and 40,000 vibrations.

Diagnosis of Blood.—At the meeting of the Paris Academy of Medicine, March 25, M. Linossier and M. Lemoine, in a review of the present methods and difficulties of differentiating the blood of human beings and animals, showed how Uhlenluth's method can be rendered accurate. The Uhlenluth method consists in giving to a rabbit gradually increasing doses of human serum, which is toxic for the rabbit. The rabbit after a time becomes immune and after that the serum of its own blood brought into contact with human blood gives under the microscope a characteristic precipitate. Thus by keeping on hand a number of prepared rabbits it was claimed human blood could at once be differentiated. On trial it was declared that the blood of other mammals gave the same precipitate. MM. Linossier and Lemoine demonstrated that accuracy could be attained by using serum diluted with water. Rabbit's serum in a strength of 1 in 1,000 always gives a precipitate with human blood, but not with that of another animal.

The Water of Public Baths.—In a paper read before the Liverpool Medical Institution Dr. R. G. Glynn gave the result of his study of the organisms present in the water of the public swimming baths. Samples of water taken in sterilized flasks were plated on agar within an hour after leaving the bath, incubated at 37° C., and an estimation made of the number of organisms present in a cc. of the bath water. The bulk of the observations were made at baths which were refilled every morning and in which the water was almost sterile, showing less than three bacteria per cc. One hour after the opening of the baths the water yielded 46 bacteria per cc. derived chiefly from the air and walls of the bath. On five several occasions the water in the plunge bath at 9 p.m. during June and July averaged 4,676 bacteria per cc., the average number of bathers being 292. It was calculated that from the skin of each bather the water removed between 4,000,000,000 and 6,000,000,000 bacteria, excluding moulds and others which did not propagate at 37° C. Streptococci were never found in the water and *Staphylococcus aureus* and *S. citreus* very rarely; *S. albus* was very abundant; *Bacillus coli* was present to the amount of 8 per liter for each bather in first-class baths and 48 for each bather in the second class. Dr. Glynn combated the idea that typhoid was probably contracted in such baths and considered the swallowing of the type of water analyzed as quite innocuous, and also ascribed the lassitude which frequently follows after swimming in a public bath to the lack of ventilation and ill-regulated temperature of the rooms and not to the water.

CONTINENTAL EUROPE.

Pure Water for Soldiers.—A new filter has been introduced into the French army. It consists of a candle of unglazed porcelain enclosed in a metallic tube, which is fastened to the water spigot. It is claimed that it will furnish 24 liters of pure water a day, a quantity sufficient for seven men. An improved arrangement which has also been introduced has 50 candles. This provides enough pure water for a battalion on the war footing.

Federation Against Tuberculosis.—At an assembly convoked in Paris, March 16, the 76 various antituberculosis institutions of France were united into a national federation, with a central bureau of information and council for mutual aid. There is a proposition to establish in connection with the bureau a permanent exhibit of the necessary things for a campaign against tuberculosis and to give prominence to its humanitarian aspect.

Medical students at Swiss universities for the winter term of 1901-1902 numbered 1,493. Of the number enrolled 600 students (580 male and 20 female) were Swiss, and the rest (893) were foreigners. Of these 645 were women. If the progressive increase of foreign female students continues at the same rate as at present, the male students will be in the minority in the course of two or three years.

Public House Reform.—A movement to transfer the ownership of public houses from private individuals to disinterested and public-spirited companies satisfied with moderate profit, is being promulgated in Germany with the sanction of the Emperor. A bill dealing with the reform of the licensing laws has been introduced in the Prussian Diet, by Count Douglas, a personal friend of the Emperor, and it is believed that as soon as the Emperor exerts his influence public interest in the matter will be thoroughly aroused.

Foot and Mouth Disease.—From the Berlin correspondent of the *British Medical Journal* it is learned that in a recent sitting of the Prussian Budget Committee it was announced by Privy Councillor Kirchner that Professor Loeffler's research for a certain immunizing process against foot and mouth disease had been quite successful, and that there was every indication that soon every stockman would be able to protect his herds against the disease by a comparatively small outlay. Kirchner added that Professor Loeffler had tested Bacelli's process, and pronounced it ineffectual and dangerous.

OBITUARIES.

Theodore Walser, assistant sanitary superintendent of the Department of Health on Staten Island, at New Brighton, April 23, aged 78. He was dean of the medical profession on Staten Island and had practised there since 1851. He was born in Gottlieben, Switzerland, and came to America at an early age. He was graduated from the Jefferson Medical School in Philadelphia in 1850. In 1853 he was appointed deputy health officer of the port of New York, and for many years was health officer of the old village of New Brighton. He was an authority on contagious diseases, and during an epidemic of small-pox in New York several years ago, and during the cholera scare of 1892, did good service.

Charles Abner Phelps, of Boston, April 27, aged 81. He was graduated from Harvard Medical School in 1844, and later from Jefferson Medical College, Philadelphia. After practising six years in Boston, he went to Europe to make a special study of diseases of the skin, and returning opened the first hospital specially for the treatment of skin diseases in Boston. He was appointed surveyor of the port of Boston by President Lincoln, and held the position for four years, and from September 1, 1869, to March 31, 1875, was United States pension agent for Boston. President Grant appointed him Consul at Prague, a position which he held eight years.

Frederick A. Castle, a widely-known physician of New York, April 27, aged 60. He was a member of the Medical Cadet Corps sent to the front as a part of the Medical Department of the Army during the Civil War. He served for two years in the Navy after leaving this organization, and toward the close of the war returned to Bellevue, where he had been a student, and was graduated. He held for a time the chair of therapeutics at Bellevue, and later was visiting physician at the Presbyterian Hospital. He was prominent through editorial work in connection with numerous medical journals.

Matthew H. Molloy, of Roxbury, Mass., April 23, aged 62. Dr. Molloy came to this country from Ireland 10 years ago. He was a licentiate of the Royal College of Surgeons of London and of Kings and Queens College of Physicians, and a medalist of the Carmichael School of Midwifery of Dublin. For six years he was a member of the staff of the Rotunda Hospital, Dublin.

Joseph P. Turner, of Trenton, N. J., one of the best-known physicians of that part of the state, April 26, aged 79. He studied medicine at the University of Pennsylvania and Jefferson Medical College, and during the Civil War served as surgeon of the First New Jersey Cavalry, and for a long period was surgeon-in-chief at Washington.

Peter R. Thombs, of Pueblo, Cal., April 28, aged 62. He served with distinction as an army surgeon in the Civil War, and soon afterwards went to Pueblo, and for several years was superintendent of the State Insane Asylum.

George E. Harrison, of New York, April 24, aged 44. He was born in Cleveland, Ohio, and was graduated at the Bennett Medical College, Chicago.

William V. Hazeltine, of Warren, Pa., April 23, aged 62, one of the organizers of the Warren County Medical Society and its former president.

Eliza Grier, a negro, graduated in medicine from Fisk University, and a successful physician in Albany, Ga., April 14, aged 39.

Giovanni Inzani, late Professor of Pathologic Anatomy in the Faculty of Medicine of Parma.

Aldolphe Henrot, of the School of Medicine of Rheims, France.

Joseph H. Doyle, of San Francisco, April 10, aged 25.

SOCIETY REPORTS

XXXI CONGRESS OF THE GERMAN SURGICAL ASSOCIATION.

[Special Report to *American Medicine* by Herr Med. Dr. Heinz Wohlgemuth, Berlin.]

[Continued from page 678.]

New Considerations Regarding Appendicitis and the Treatment of Peritonitis.—Sprengel's (Braunschweig) study of 516 cases led to the adoption of the threefold classification of these affections: (1) Appendicitis serosa; (2) Appendicitis perforativa purulenta; (3) General peritonitis. He saw no special place for Sonnenburg's Appendicitis gangranosa. Sprengel favored early operation before the peritoneum had become involved as correct therapy.

Pulmonary Complications in Appendicitis.—Sonnenburg (Berlin). In some of the lung complications which follow laparotomies patients promptly recover while other complications give rise to pneumonic and pleuritic symptoms. These are attributable to emboli. Ether narcosis and cold are not so frequently to blame as some are inclined to think.

The Perityphilitis Question.—Roux (Lausanne) reported 700 operations with but two deaths; he prefers to leave the major operation to the interval, confining himself during the attack to the emptying of the abscess and leaving the operation "à froid" to come later.

On the Treatment of General Peritonitis.—Doyen (Paris) says the diagnosis of pus formation should be made as early as possible from local conditions, pulse and general symptoms. 1. The incision should go direct to the collection of pus. 2. In cases of peritonitis subumbilicalis, which he handled in the same way as the inflammatory processes arising from the uterus and its adnexa, the incision should be on the right side, parallel with Poupart's ligament and the appendix should be examined first. 3. Sterile compresses should protect the peritoneum. The appendix, when necessary, should be extirpated and the pelvic cavity closed with sterile compresses. The technic of the toilet of the peritoneum with dry sterilized compresses is to be followed step by step in all cases of circumscribed peritonitis as well as in those arising from the appendix. 4. Having completed the clearing out of the septic collection the soundness of the peritoneum must be looked after. The incision is partially closed and drained with gauze, and the insertion of two large glass drainage tubes beneath the compresses is recommended. 5. If the peritoneal effusion reaches above the umbilicus, if it reaches the iliac fossa or goes over to the other side, a medium incision must be made and from this the toilet of the peritoneum is performed. 6. Doyen had never seen a case of acute general peritonitis end in recovery if it had become transformed to a septic peritonitis, and if the pelvic effusion extended into the subphrenic region. Surgical interference stops with the making of a rapid toilet of the peritoneum without dry tampons. The general washing out of the abdominal cavity is dangerous, and only results in lessening the patient's chances by a dissemination of the infection. 7. A final point to be discussed is whether in cases of intestinal paralysis it is necessary to create an anus præternaturalis. According to Doyen, the anus præternaturalis iliacus being sufficient to empty the intestine, he makes it in the first section of the jejunum, which he draws out of a buttonhole in the left groin. In each end of this piece of intestine is fastened a thick rubber drain. The emptying out of the gaseous and fluid matter takes place in a few hours, the antiperistaltic movements of the inflamed intestine assisting. This temporary anus is closed after 10 or 12 days by a lateral enteroanastomosis, the exposed pieces of intestine being eliminated by écrasement, and the too-free intestinal opening drawn together by means of the tobacco-pouch suture. Friedrich (Leipzig) spoke on the same theme in connection with the bacteriologic etiology. His investigations show that the anaerobic bacteria play the chief role. These explain the ichorous purulence and the frequent negative results of investigations, and leads us to picture diffuse peritonitis as a toxemic affection. Surgical treatment should begin with the place of origin of the pus (appendix). Second in order, but not least in importance, is the ventilation (Lüftung) of the abdomen. The speaker showed a drainage-tube that served this purpose. Then comes the combating of the toxemic condition, which the French call "*lavage du sang*," by subcutaneous injections of a large amount of water.

SIXTH SESSION.

Demonstration of a Large Intestinal Appendage Wound About the Axis.—Riedel (Jena). The significance of *Appendices epiploicae* as regards ileus was referred to and a case reported in which a large appendix of the intestine was found wound six times about the axis of the intestine, and adherent to the bladder. Other cases in which ileus had developed in connection with similar appendages were described.

On the Operative Treatment of Voluminous Prolapse of the Rectum.—Eiselberg (Vienna). The ordinary methods of treatment were criticised. Massage often gave favorable

results. The practice of torsion and narrowing according to the method of Gersuny gave favorable immediate results, but there was recurrence. In resection according to the method of Mikulicz, the results obtained did not offset the dangers involved. In 12 cases he had employed simple colopexia with good results. The operation consists of an oblique incision parallel to Poupart's ligament, strong traction on the sigmoid flexure, suture of the same to the anterior abdominal wall; the operation to be followed by five weeks in bed. In one case there was recurrence, but a second fixation gave permanent cure. In another case he had performed resection of the great loop of the flexure with fatal results, after 19 days, due to hemorrhage from a duodenal ulcer. In a similar case good results were obtained by affecting anastomosis by means of the Murphy button. As the result of his experience Eiselberg concludes that in light cases massage by the Thure-Brandt method is advisable, but in severe cases accompanied by strangulation, gangrene or ulceration, resection should be employed, and colopexia in cases of free prolapse.

The Pathology of Circulatory Interruptions in the Mesenteric Vessels.—Sprengel (Braunschweig). Preparations were shown to explain why in one case of obstruction of the mesenteric vessels the symptoms were those of a pure *fondroyante* ileus, while in another case there was intestinal hemorrhage followed by gradual occlusion. In the first case the autopsy showed anemic gangrene, and in the second hemorrhagic infarct of the intestine.

On Talma's Operation.—Bunge (Königsberg). The fixation of the omentum to the anterior abdominal, by the extraperitoneal method described simultaneously by Talma and Drummond, has been successfully accomplished in the Königsberg clinic in eight cases. The operation is indicated in all those cases in which there is a thrombus or a compression of the portal vein in connection with atrophic, syphilitic or alcoholic cirrhosis of the liver. Fixation of the spleen gives as good if not superior results, owing to the anatomic disposition of the splenic vein. Among the drawbacks to the operation, first of all comes fatal ventral hernia following the extraperitoneal implantation of the epiploon, this, however, may be avoided by fixation of the spleen. In other cases there follow delirium and convulsions attributed by Nencky to saturation of the blood with carbamic acid. Experiments on dogs having demonstrated that this only occurs during a flesh diet, it is necessary to interdict all meats in cases where the symptoms occur. Among the counterindications the principal are: icterus, the appearance of leucuria, urobilinuria, diminution in the excretion of urea; they are not, however, to be regarded as absolute counterindications.

On a Danger in Talma's Operation.—Franke (Braunschweig). In a case of cirrhosis of the liver with ascites, symptoms of compression of the duodenum occurring 58 hours after the fixation of the epiploon necessitated a second operation. The compression was found to be due to the transverse colon; gastroenterostomy was performed, but the patient died of pneumonia on the seventh day.

Kocher (Bern) demonstrated an *Ulcus pepticum jejuni* due to pressure of the small intestine; other causes were ascribed to constriction of the intestine due to prolonged action of the gastric juices.

On Intestinal Diverticula.—Payer (Graz). 1. Two cases of Enterocystoma in the sac of serotal hernia were reported. Only one other case has been placed on record. 2. **On the Cause of Torsion of the Pedicle in Intraperitoneal Organs:** Balls of magnesia introduced into the abdominal cavity were in 40 cases uniformly found in the omentum, which enveloped them, together with the gas cysts to which they had given rise.

On Ligation of the Hepatic Vessels.—Ehrhardt (Königsberg). The results of his experiments conform with those obtained by others, in that ligation of the trunk of the portal vein causes death in a few hours; while that of a single branch produces atrophy of the corresponding lobe, with the formation of ascites giving rise to a process analogous to that of cirrhosis, the remaining hepatic tissue undergoing hypertrophy. Ligation of the hepatic artery or of one or more branches of that vessel results in entire necrosis of the organ or of the lobe corresponding to the branch tied. The simultaneous ligation of the hepatic artery and of the portal vein give rise to profound necrosis.

On Permanent Results of Transplantation Into The Stomach.—Reerink (Freiburg). In the transplantation of the intestinal portion of the colon into the stomach it is necessary to maintain connection with the mesocolon to avoid the rapid digestion of the intestinal portion.

Operative Therapy in Cases of Hemorrhage from Gastric Ulcer.—Petersen (Heidelberg). Contrary to former ideas, it has been found in the clinic at Heidelberg that very favorable results follow posterior gastroenterostomy, with good evacuation of stomach contents. The proportion of hydrochloric acid is rapidly reduced. Mortality 3%.

On the Bacteriologic Investigation of Blood.—Bertelsmann (Hamburg). A demonstration was given of the cocci and bacteria found in blood. In 100 cases of urethral fever, cystitis, phlegmons and phlegmonous inflammation of tendon sheaths, 43 gave negative, 47 positive results. In two cases of osteomyelitis the blood examination gave the first clue to the disease. The diagnostic value of blood examination was emphasized.

Roth (Lubeck) made a demonstration of an improved apparatus for oxygen-chloroform narcosis.

SEVENTH SESSION.

The Limits of Nephrectomy and the Diagnosis of Nephritis as the Result of Cryoscopy of the Blood.—Kummel (Hamburg). A determination of the freezing point of blood was made in 265 patients to determine whether the 0.56 C. is the freezing point in cases of sound kidneys. Renal insufficiency begins on the average at 0.561, and from this point on it is best to delay operation. Nephritis was held to be mostly double sided. He recommended the employment of cryoscopy in connection with catheterism of the ureters, in view of the unreliability of hematuria as a diagnostic basis.

Hildebrand (Basle) reported two cases of intermittent hydronephrosis.

Kuster (Marburg) was elected chairman for the year 1903.

The Diagnosis of Renal Activity.—Lowenhardt (Breslau). While cryoscopy is undoubtedly one of the most valuable means of estimating renal insufficiency, it may be supplemented by a test of the electric conductivity of the urine.

Pathologic, Anatomic and Clinical Report on Renal Surgery.—Pels-Leusden (Berlin). A report was made of several cases of renal tumors which were regarded as benign, but where death followed metastasis. In one case extirpation of the tumor was followed by death within three months from numerous hepatic metastases. In general, tumors of the pelvis of the kidney are to be regarded as malignant.

Drs. E. v. Bergman and König, of Berlin; Macewen, of Glasgow; Keen, of Philadelphia; Guyon, of Paris, and Durante, of Rome, were elected to honorary membership in the society.

Nephrotomies and Their Results.—Langemak (Rostock). As the result of experiments on rabbits he has come to regard incisions of the kidney unfavorably, the danger being far greater than is generally supposed.

EIGHTH SESSION.

Kuster (Marburg) emphasized the value of cryoscopy. He regarded villous growths of the pelvis of the kidney and of the bladder as most malignant. He differed from the opinion of Israel as to the advisability of total extirpation of the kidney and ureter under all conditions. A case of villous tumor, regarded by Marchand as benign, had recurred after extirpation in an absolutely inoperable form.

Gunshot Wound of the Head.—Rehn (Frankfurt a/M.). Diagnosis of bullet in the region of the right sinus cavernosus. In the absence of threatening symptoms operative interference was postponed. On the seventh day severe convulsions occurred, and operation revealed a large hole in the temporal lobe; bone splinters were removed, but convulsions continued during the operation. The bullet was found imbedded in the sphenoid bone; free hemorrhage followed its extraction. Recovery ensued.

Thiem (Cottbus) presented a patient from whom a cyst of the left occipital lobe had been removed. The cyst, which was the size of an egg, with walls consisting of dura and arachnoid only, and was due to a circumscribed meningitis serosa between the dura and arachnoid. From the location of the cyst, he regarded the choked disc which was present as due to inflammation.

On Palliative Procedure in Cases of Inoperable Cerebral Tumors.—Alfred Singer (Hamburg). Trephining and incision of the dura should be performed in all cases of inoperable malignant tumors of the brain. Great relief from pain is secured with recedence of choke disc, etc. This view met the concurrence of v. Bramann (Halle) while Hahn (Berlin) referred to a case in which palliative treatment was without result; autopsy showed tumor in the aqueductus sylvii. Bergmann (Berlin) regarded the cyst described by Thiem as very rare, as in most cases such cysts are usually connected with sarcoma. Kummel (Hamburg) exhibited a patient in whom a stereoscopic skiagraph had located a bullet in the brain and made its immediate removal possible.

On the Treatment of Ankylosis of the Maxillary Joint.—Gluck (Berlin). He transplanted a skin flap from the neck into the buccal mucous membrane and interposed a muscle flap between the cut ends of the bone as recommended by Helferich. 2. **On the Present State of Laryngeal Surgery.**—A series of patients were shown and 31 operations reported. He demonstrated the tubes which he employed. In cases of laryngopharyngeal carcinoma he avoided pneumonia due to swallowing by suturing a diaphragm over the transverse resection of the trachea.

Lexer (Berlin) demonstrated a patient on whom he had operated for **Rectal myoma**. The tumor, which was the size of a child's head, had grown fast to the bowel for 15 cm. He performed amputation of the rectum and the formation of a sacral anus. Only four cases of rectal myoma are on record.

On Acute Nonsuppurative Thyroiditis.—De Quervain (Chaux de Fonds). The clinical history of several cases was reviewed, leading to the conclusion that purulent inflammation of the thyroid gland accompanies infection, such as scarlatina, angina, polyarthritis rheumatica. In certain cases a nonsuppurative inflammation occurred without apparent cause. Salicylate of soda had proved effective in these cases, which he believed to be of infectious origin. Bacterial toxins had been

shown in experiments on dogs to give rise to proliferation of thyroid cells. Krönlein (Zürich) had observed affections similar to those described by de Quervain. The disease is very threatening, with severe pain, hard infiltration of the thyroid, simulating a rapidly developing carcinoma.

On a Method of Operating in Hemorrhoids by Suturing the Border of the Anus.—Riedel (Jena). The use of radically arranged sutures at a distance of $\frac{1}{2}$ cm. from each other and carried through the internal sphincter was recommended; 32 cases so operated gave complete recovery.

On the Action of Antistreptococcus Serum.—Tavel (Bern). This is not antitoxic but antibacterial. Improvement or recovery followed the employment of the serum in 76 cases of erysipelas, scleroderma, meningitis, pneumonia, streptomycosis in tuberculosis, phlegmon in perityphlitic abscess, etc. In severe cases where phagocytosis had failed he found no results from antistreptococcus serum.

Intestinal Occlusion and Enterostomy in Peritonitis.—Heidenhain (Worms). A great many cases of peritonitis die, not from peritonitis or sepsis, but from intestinal occlusion. This is due to inflammatory paralysis rather than to adhesion. In the four cases in which he had reached this conclusion, the results following enterostomy had been most satisfactory; only one case died, because he had overlooked an abscess in Douglas' pouch. He believed that a patient might have free defecation with escape of flatus, and still have inflammatory intestinal obstruction. He warned against the making of fistulas of the small intestine as recommended by Doyen. Sprengel (Braunschweig) did not agree with Heidenhain as to the advisability of performing enterostomy. Kocher agreed with the remarks of Sprengel.

Experimental Investigation as to the Peritonitis Due to Stomach Contents.—Brunner (Münsterlingen). Rabbits into the body cavity of which he had brought the contents of the sound stomach after a Ewald's test-breakfast had recovered. When the stomach contents (30-40 ccm.) came from a patient with gastric ulcer the injected rabbits died. In other cases where stomach contents poor in hydrochloric acid was used the rabbits died of acute peritonitis within 24 hours, even where only a small quantity (1 ccm.) had been injected. The clinical inference is that, for example, in cases of carcinoma of the stomach, the entrance of a very small quantity of the stomach contents into the body cavity is very infectious, while that from a case of gastric ulcer is much less so. His investigations also go to show that the contents of the small intestines is much more dangerous than that of the large intestine. He regards surgical intervention at the earliest possible minute as the best therapy. The success which followed washing out the body cavity depends largely upon the amount of hydrochloric acid in the foodstuff which had escaped, as the poisonous properties of the gastric contents are rapidly destroyed by the presence of HCl.

On Ileus in Cases of Carcinoma of the Stomach, and the Local Meteorism of Stenosis of the Large Intestine.—Anschütz (Breslau). An explanation by means of a model was made of the mechanism of the inflation of the cecum which occurs in cases of carcinoma of the *Flexura lienalis* or *sigmoidea*.

On Peroral Tubage.—Kuhn (Kassel). A demonstration of instruments, cannulas for laryngeal intubation and the technic employed.

Hollander (Berlin) demonstrated the third case of non-puerperal osteomalacia in a woman, cured by castration.

Jaffe (Posen).—On a case of isolated paralysis of the *Musculus quadratus menti*, through injury to the *Ramus marginalis mandibulae* or to the *Ramus colli*, the last branch of the *Facialis*, which has a constant anastomosis with the *Ramus marginalis*. This is of importance as regards incisions of the lower jaw.

The Action of Quinin on Animal Tissues.—Marx (Lübeck). Subcutaneous injections of quinin give rise to circumscribed necroses by coagulating the blood in the capillaries. A sponge saturated with a 1% to 3% solution of quinin and placed upon a bleeding surface stops the bleeding almost instantly and leads to a good dry granulation surface. In connection with the recent recommendation to use inoculations with malaria parasites for the cure of carcinoma, Marx believes that the energetic use of quinin in cases of inoperable carcinoma is to be recommended. König (Berlin) thought there was little need for discussion over the quinin treatment of cancer.

On the Plastic Closing of Defects in the Common Bile Duct by Means of Stalked Flaps of the Serosomuscularis of the Stomach or Gallbladder.—Kehr (Halberstadt). The origin of defects of the common bile duct was considered; the speaker had seen incisions of 3 to 4 cm. heal rapidly where the bile remained sterile. If, however, the gall discharge is infected, necrosis of the wound edges sets in at once. He had of late stopped suturing the bile duct and had substituted hepatic drainage. If, however, the defect in the bile duct is due to injury to the same by ligature of arteries, it is better to close the defect with a stalked serosa-muscularis flap from the stomach or gallbladder, since stenosis is pretty sure to follow the closing of the defect by longitudinal sutures, while transverse sutures are impossible.

On the Natural Pain Alleviating Means of the Body.—Ritter (Greifswald). By experiments it had been proved that the edema following inflammation brought relief to the initial pain, while he had observed that pain was lessened in Bier's

engorgement hyperemia. Hyperemia seems to supplant pain and the blood and serum may be regarded as the anodyne substance of the body. Artificial establishment of hyperemia is therefore desirable.

Lessening of Cutaneous Sensibility in Surgical Diseases of the Internal Organs.—R. F. Müller (Berlin). A demonstration was made of the different zones of the skin corresponding to given segments of the spinal cord and the sensibility of which stood in direct relationship with affections of given inner organs. The clinical and diagnostic importance of this fact was illustrated by examples from practice.

NINTH SESSION.

On Humero Scapular Periarthritis (Bursitis subacromialis).—Küster (Marburg). He had seen at least 70 cases, and held that in many cases where we find a traumatic neuritis following a shoulder luxation or contusion, there is really a Bursitis subacromialis. In chronic cases, in which more or less ankylosis was present, good results followed forcible breaking up of the adhesions, which is accompanied by a loud cracking noise; within a few hours the patient is able to raise the arm without pain. In acute cases accompanied by pain he painted the surface with iodine and bandaged until the pain passed and the joint had become stiff, when he resorted to breaking-up process described.

Permanent Results from Stretching Contracted Knee-joint, with Transplantation of Tendons.—Heusner (Barmen). A case was recalled in which he had transplanted the tendons of the semitendinosus and biceps onto the quadriceps, it had been reported last year. In those cases where he had only transplanted the biceps tendon, inward rotation had occurred. He could not recommend this method. He had since then made three operations for transplantation, one in a case of acute rheumatism, here the biceps and semimembranosus had been transplanted. He recommended the semimembranosus on account of its better nourishment.

Demonstration of a Prosthesis of the Upper Thigh.—Engels (Hamburg).

Healing of the Wound in Operations for Hernia.—Samter (Königsberg). The good results secured in 33 cases were due to the absolute rest enforced.

On Exarticulation of the Foot with Circular Incision.—Samter (Königsberg). In the last two years he had operated eight times with this method and could recommend it, in that he could by chiseling improve the bones and provide a good, serviceable stump.

On Paraffin Prosthesis of the Skin.—Eckstein (Berlin). He employs hard paraffin wax with a melting point of 50-60° C., and thereby avoids all unpleasant and dangerous phenomena accompanying the use of vaselin in prosthesis.

On the Recognition of Myositis Ossificans Traumatica.—Vulpus (Heidelberg). Two theories as to the origin of this disease are to be contrasted. The origin from pieces of the periosteum torn off and implanted in the muscle, and the origin in the muscle itself. He had operated on a case in which it was apparent that the origin was in the muscle.

The Operative Treatment of Sprengel's Deformity.—Kölliker (Leipzig). By means of incision he removed the upper border and outer angle of the scapula.

The Theory and Practice of Surgical Steam Disinfection.—Braatz (Königsberg).

On Antiseptics and Antiseptic Salves and Plaster Dressings.—Honsell (Tübingen).

Ladderhose (Strasbourg) reported a case of **interperitoneal rupture of the bladder** with recovery notwithstanding the fact that laparotomy was not performed until the sixteenth day.

Demonstration of a Preparation of Incipient Carcinoma of the Gallbladder.—Wörner (Gmünd).

On a Case of Total Gangrene of the Cecum as a Result of Appendicitis.—The appendix had passed up behind the ileum and completely ensnared the cecum. The child died from toxemia without a sign of peritonitis.

On Sunken Wire Sutures by Mechanic Means.—Siberberg (Odessa). Demonstration of instruments.

Zürich's Water Supply.—At present the town has a double supply. The water for ordinary household purposes, street-cleaning, etc., is obtained from a lake and is properly filtered in double sand filters, while the drinking water is furnished by nearly 200 public fountains fed from springs located in the forests adjacent to the city. The water of the lake is bacteriologically so pure that many of the people use it for drinking purposes, as the fountains do not furnish an adequate supply for the constantly growing population. In order to provide for this extra demand the municipality has purchased a number of springs in the Sihl and Lorze Valleys, a distance of 15 miles from the town, at an elevation of 552 meters. Bacteriologic examination has shown this water to be essentially pure. It will be supplied to the town through a circular system of pipes which will also eventually feed 200 new fountains, to be erected in suitable locations throughout the city. This system was adopted on the advice of expert hygienists, who considered running water essential to purity.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

NOTE ON THE SOCALLED TURKISH BATH.

BY

H. C. WOOD, M.D., LL.D.,

Professor of Materia Medica and Therapeutics, University of Pennsylvania.

All the world is agreed as to the differences of action of moist and dry heat upon the human frame, but there is a diversity of nomenclature which it is perhaps worth while to point out briefly. In America, France, Switzerland, England, and I believe also Germany, the essential part of the ceremony of the so-called "Turkish bath" is exposure in a more or less nude condition to a very highly heated dry air, 175° Fahrenheit being the common limit; although in the l'Hamman, in Paris, I have taken the bath at 200° F., a temperature which makes it possible to cook one's breakfast in the palm of the hand, protected by a piece of felt.

The bath in which moist heat, usually in the form of hot vapor, is used is commonly known as the Russian bath. The practice of the Russian peasants certainly warrants this use of the adjective "Russian" to the vapor bath, but the application of "Turkish" to the dry heat bath is a misnomer. It is probable that no thoroughly civilized nation uses dry heat in bathing, while barbarous and semibarbarous people freely use hot vapor. Among such people must be included the followers of the "true prophet."

In the Turkish bath as given in Egypt, Constantinople, and in Athens, which follows closely the Orient, moist heat is alone used, the hot room having a latticed floor under which hot water gives off heat and vapor.

Another adjunct of our "Turkish bath," as given in civilized countries, which is lacking in the true Oriental bath, at least as administered in Alexandria and Cairo, is massage. There is in these countries some rubbing, a great deal of scrubbing with a camel's-hair mitten, much use of soap, and excruciating twisting and dislocating of all the limbs and joints, but no procedure which can properly be dignified with the title of massage. The habits of the Mahometans in this respect strangely contrast with the Japanese, who while using the water bath daily and in winter the hot water bath, never employ hot vapor, and although practising massage with great freedom, never do so, I believe, in connection with the bath. I have suffered massage personally in Yokohama, Nagoya, Tokio, and Kioto. As might be expected, in Yokohama the treatment was only second class; in Nagoya a woman masseuse was sent, no man apparently being available. In Kioto the massage was simply the best I have ever had, similar in many respects to that of Europe or America, but not altogether so; one very effective movement for reaching deep muscles I have never seen elsewhere: the fist being partially closed, a smart blow was struck with most distal phalangeal joint, followed in an instant by a smarter blow with the middle joint, and then by a third very hard penetrating stroke with the knuckles, the hand during the process being given a sort of rolling movement.

The universality of massage in Japan is shown by a curious sight I have several times seen—an old grandmother or grandfather squatting nearly nude on the floor, and the little child, 5 or 7 years old, standing up behind, working upon the labor-stiffened, rheumatic old trapezius with all the skill and earnestness of a Japanese workman and all the solemnity of a Buddhist priest.

One rite of the Egyptian bath, which most Anglo-Saxons would probably join me in refusing, consists in the use of the razor so as to remove the hair from the armpits and other portions of the body. To us the smooth-shaven bodies of the Arabs have an uncanny look, but the practice of body-shaving is medically sound. To appreciate the value of the razor as an instrument of hygiene it is necessary to travel in the east, with its filth, its crowding, its inevitable personal contact, direct and indirect. The European in his special car and cabin, or more usually train and boat, may indulge in the natural hirsutic

ornament of the body; to the Oriental people the value of the removal of jungles in which foul beasts of prey may lurk, is pronounced.

THE VALUE OF BLOOD EXAMINATIONS.

BY

ROBERT N. WILLSON, JR.,
of Philadelphia.

To the Editor of American Medicine:—In your issue of April 26 you publish an article by Dr. Baldy in reply to one of mine, which I would gladly pass over in silence except for the one misstatement that he was misquoted. I wish to say that in no instance was either the sense of a statement distorted or any portion of the context omitted that would have thrown light upon the quotations made. For proof of this I simply refer once more to the references, all of which were plainly given in my criticism of his original article. I would suggest as having an important bearing upon the question in hand the following admission made by Dr. Baldy in his last article: "When I read that paper at the St. Paul meeting there were but two or three men of all who discussed it that had even understood its drift, and man after man by discussion showed ignorance of what I had in reality been saying." I think these words tend to confirm my own accuracy in a manner hardly intended by Dr. Baldy when he used them. I wish also to say that he has no ground for the belief that I questioned his bloodcounts as inaccurate. I knew, and intimated in my article, that they were made by Dr. Flexner's corps of assistants, and no further assertion is needed to warrant their accuracy. That Dr. Baldy should bring Dr. Longcope's name into the discussion, casting an imputation upon him that could never have originated with me, knowing him as I do, is an unfortunate incident of a discussion that closes now as it began, with the regret that the opponents of advance methods will not allow the latter to work themselves out, now through error, now to some distinct point of advantage; and, by a word of encouragement, help on the work of those who are laboring in a field much less remunerative and far less brilliant than that of the abdominal surgeon.

My object in writing on the subject originally was twofold—first, to tell those who cared to know the fact that the great body of scientific practitioners makes use of and gains great benefit from the study of the blood; and secondly, to direct those who care to learn to the fascinating interest of blood study. As I have accomplished both purposes, I can withdraw from the discussion with regret only that a warmth of feeling has been aroused that seems as unnecessary as it is unfortunate.

THE MEDICAL ASSOCIATION OF ALABAMA.

BY

G. BETTON MASSEY, M.D.,
of Philadelphia.

To the Editor of American Medicine:—Having had the privilege of being present at the recent meeting of the Alabama Medical Association, held at Birmingham, April 15-18, I send you some jottings that are inspired by a quickened appreciation of our medical life as depicted by this excellent example of state societies.

The Alabama association is the subject of special interest to medical men just now by reason of what might be called its political constitution. I understand that its plan of organization is now being studied by a committee of the American Medical Association and by other state societies with a view to its adoption. Briefly, its chief features, I believe, are a federal relation between the county societies and the state organization, rendering all members of the county societies actual members of the greater society, and the government of the latter by two bodies, counselors and delegates, corresponding to a senate and house of representatives. I can testify to the success of this plan in securing the attendance of a large number of members on the scientific sessions of the association. I have rarely seen a more numerously attended state society, and I may say I

have rarely seen a better personnel than the profession of this old state can show.

The Alabama physicians, it may be said, are both good listeners and good talkers. The full benches were most inspiring to a speaker, and when it came to discussion, the members were well able to take their own part, for it may be said that the southern man is a born orator.

A discussion on pneumonia was generally participated in, and it seemed to be the consensus of opinion that this disease was both more frequent and more fatal than formerly, and that it is specially prevalent in the south.

Dr. S. C. Henderson gave a most excellent review of our present knowledge of malaria, and the discussion on this subject brought out some interesting accounts of the cheapness of mosquito destruction about small towns, provided the town supplies an enthusiastic health officer and a negro "boy" with a barrel cart of petroleum.

Dr. F. Goodwin DuBose read a paper on "Cancer of the Breast," which contained a favorable mention of mercuric cataphoresis as employed by himself in this affection, and provoked an interesting discussion.

Two remarkable surgical operations were detailed by Dr. W. H. Blake, one of them being a gastrostomy for stricture of the esophagus, in which the ingenious expedient of having the patient swallow a shot attached to a thread was resorted to, the shot passing a stricture when all else failed. The gastrostomy permitted the attachment of a rubber band to the string from below, when thus inserted, permitting traction-stretching of the stricture from below that finally resulted in a good caliber.

The supply of wholesome milk to town-dwelling children, and the prevalence of the opium habit among farmers, the latter due to careless prescribing by physicians, were two more of the many subjects well discussed by this virile body. It was said that country stores carried opium and other poisons in their regular stock for sale to all comers.

Of the social side of this gathering of medical men in "the new Pittsburg of the South" one need only say that southern hospitality is proverbial, and that this particular instance, with its barbecue and country club entertainments, was most typical of the good fellowship that forms so valuable a feature of these gatherings.

AN EXAMINATION PAPER.

To the Editor of American Medicine:—There is, as is well known, a great monotony in examination papers. By way of variety I send you the following upon Osler's *Practice*, fourth edition, which a correspondent, D. M. S., contributes to the *St. Thomas Hospital Gazette* for March, 1902:

1. Who was Mephibosheth? What parental superstition dates from his time?
2. What is "one of the saddest chapters in the history of human deception?"
3. Give Osler's quotations from the following authors: John Bunyan, Byron, John Cheyne, George Cheyne, Montaigne. Explain the context where necessary.
4. Describe, if necessary, with the aid of diagrams, Kemp's double current rectal tubes. What are the indications for their employment?
5. Give in full the name of "the distinguished old Bath physician." At what period did he flourish, and what is his claim to distinction?
6. As a sequence to what therapeutic procedure did the son of Professor Langerhans die? What was the pathologic and medicolegal interest in the case?
7. What is the chief recorded complication of a lay committee meeting at St. George's Hospital?
8. Who was convinced that more wise men than fools are victims of gout? Is there any reason why he in particular should hold that view?
9. What cases drift to "museums and side-shows?"
10. How did Trousseau's patient make money?
11. What celebrated English physician preferred to die in harness? State the cause of death.
12. What internal evidence is there—

(a) That Osler has had an unhappy experience with cheap bicycles?

(b) That he is interested in the history of Napoleon Bonaparte?

13. What is O. Rosenbach's dictum on the custom of wearing stays?

14. Quote Hunter's famous advice to Jenner.

15. What was the counsel of Rondibilis to Panurge?

16. How did Eryximachus treat the hiccup of Aristophanes?

17. Give the references to Lady Mary Wortley Montagu, President Jefferson, Jerome Cardan, the Elder Scaliger, Captain Catlin, Laurence Sterne, Thomas King Chambers, Robert Druitt and Colonel Townshend.

18. What did Strabo call "the lisping of the gout"?

19. Give the context of the following quotations, and make explanatory remarks if necessary:

(a) Cases are given after nearly every one of the specific diseases.

(b) I saw some years ago one of the most distinguished gynecologists of Germany perform laparotomy in a case of this kind.

(c) The doses given by the late Alonzo Clark, of New York, may be truly termed heroic.

(d) In a somewhat varied postmortem and clinical experience no instance has fallen under my observation.

(e) A history of gorging with peanuts.

(f) I have seen Murchison himself in doubt.

(g) A toad-like caricature of humanity.

(h) From the accurate view of Lænnec and Louis the profession was led away by Graves, and particularly by Niemayer.

(i) One of the most powerful enemies of the American stomach at the present day.

(j) I had a lesson in this matter which I have never forgotten.

20. Who was Van Helmont and when did he live? Give a brief account of his opinion on contemporary medicine.

21. Who made an autopsy on Dean Swift and what did he report?

22. What interest attaches to:

(a) The Pullman car conductor from Chicago.

(b) The Appleton-Swain family.

(c) Yellow cakes at Philadelphia.

(d) Chancellor Ferrier.

(e) Master McGrath.

(f) Renforth, the oarsman.

(g) Shattock's patient.

23. Who had a translucent head? What was the pathology of the condition?

24. On what occasion was a surgeon entrapped by a neurotic physician?

J. K. O.

MECHANICAL VS. NATURAL SHOES.

BY

H. AUGUSTUS WILSON, M.D.,

of Philadelphia.

To the Editor of American Medicine:—The following correspondence may interest your readers, as showing the unfortunate disposition of laymen to force their ideas upon the subject of orthopedic appliances, and the professional stand advisable thereon:

Dear Sir:—Acting upon the advice of Dr. ———, I enclose herewith a list of shoes that we carry in stock for the correction of certain defects in children's feet, based upon our experience. They seemed to appeal to Dr. ———, and he felt that the whereabouts of such shoes would be of service if known to the profession who make a specialty of correcting deformities of children's feet.

I also wish to state that we would be glad to cooperate with any ideas you may have to present in this matter, and have built such shoes as you might find practical for your prescriptions, and carry them in stock ready for application.

Style No. 431 is our arch-supporting shoe; style 413 is a shoe which tends to make the children's toes turn outward; style No. 435 is our weak-ankle shoe—the stiffening can be extracted or inserted at will,

and is the most practical shoe of its kind heretofore made; style 409 is a broad, easy shoe, made especially for children whose toes need to be spread.

We trust that this information will be of use to you in handling your patients, and shall be glad to hear from you at any time regarding same, as we have taken quite an interest in this matter outside of financial considerations. These shoes are sold on the same basis as our regular stock, and are very nice in appearance.

Respectfully submitting the above, we are,

Very truly,

Dear Sir:—I am indeed interested in your circular letter advocating children's shoes which have been found to produce serious deformities and which are used contrary to common sense. My reasons for speaking thus forcefully will be found in an article, a copy of which I enclose, entitled "Misapplied Mechanic Support to Weak Ankles of Children." Could you see the sad results of the use of such crippling appliances as those which your circular appears to advocate, you would better understand my strenuous objections to them, except in rare instances, and then only when specifically prescribed by a competent physician.

My deep interest in the whole subject of the prevention of deformities in childhood must be my excuse for thus writing to you, in answer to your letter, which you say is sent to me "Acting upon the advice of Dr. ———."

Very sincerely yours,

H. AUGUSTUS WILSON.

MEDICAL THOUGHTS OF SHAKESPEARE.

To the Editor of American Medicine:—Having read with great pleasure the very interesting article entitled "Medical Allusions in Shakespeare's Plays," by Dr. Donnellan, in your issue of February 15, and also a reference to the same by Dr. H. S. Anders, in the issue of March 29, calling attention to a work entitled "Shakespeare as a Physician," which was not mentioned by Dr. Donnellan, I take the liberty of referring to another work by B. Rush Field, M.D., entitled "Medical Thoughts of Shakespeare," a revised edition of which was published at Easton, Pa., in 1885.

Its contents are arranged in seven parts, as follows: The Physician; Practice of Medicine; Surgery; Obstetrics; Physiology; Anatomy; Pharmacy.

ARTIFICIAL IMPREGNATION EXPERIMENTS.

BY

ELMER F. GOULD, M.D.,

of Carthage, Mo.

To the Editor of American Medicine:—Concerning the artificial impregnation experiments of Loeb and others, what have we but particular instances of the "unity of protoplasm" since, as stated by Minot some 20 years ago, there is quite unanimous agreement that "all physiologic action is reflex"—the egg protoplasm functioning after the manner of its kind in response to stimuli of varying character, chemie, mechanic, etc.

Huxley wrote for the ninth edition of the Encyclopedia Britannica, "No morphologic distinction can be drawn between those cells which are capable of reproducing the whole organism without impregnation and those which need it, as is observed from what happens in insects, where eggs which ordinarily require impregnation exceptionally, as in many moths, or regularly, as in the case of the drones among bees, develop without impregnation. Even in the higher animals, such as the fowl, the earlier stages of the division of the germ may take place without impregnation. The nature of the influence of the male element upon the female is wholly unknown."

The initiation of development by means of various chemie agents, as magnesium chlorid, strychnin, urea, and mechanically, as practised by Mathews in shaking the egg, appears to demonstrate, at least for these experimental cases, that there is no such thing as a specific agent in impregnation, stimulation simply being effective. The inferences heretofore drawn from such experiments would therefore seem not to be justified.

¹ Annals of Surgery, March, 1902.

ORIGINAL ARTICLES

DIETETIC APHORISMS FOR INFANT LIFE.¹

BY

J. P. CROZER GRIFFITH, M.D.,

of Philadelphia.

Clinical Professor of Diseases of Children, University of Pennsylvania.

According to the dictionary definition an aphorism is "a principle or precept expressed in few words; a maxim." In the very limited time in which I have to talk tonight on a very large subject, I can do no more than express certain homely aphorisms with regard to infant feeding, with brief comments upon them. These aphorisms are seven.

I.—NATURE'S WAY AND NATURE'S FOOD ARE THE BEST.

Modern methods of infant feeding have advanced so far that some physicians of experience believe that as good results can be obtained by bottle feeding as by feeding at the breast. It is certainly possible, in very many instances, when the management of an artificially fed child is in the physician's hands from its birth, so to guide this that the baby will thrive just as well as though it were at the breast. The matter is very different, however, in the case of infants who are already ill when they come under your care. Your own experience makes you, I am sure, feel much easier as to the prognosis in such of these who are being fed at the breast. Even, too, if we take under consideration only those children who have been fed properly from birth, and base our opinions upon sufficiently large numbers, we find always that the average breast-fed child exceeds in weight the average bottle-fed child, and that the chance of living of the latter is distinctly less. Long series of weighings by Camerer and others prove this decidedly.

It is to be understood, of course, that the breast milk must be of correct composition. To recommend it merely because it is breast milk is not justifiable. There is, as we know, great variation shown in the chemie analysis of human milk. This is almost necessarily the case in the product of an animal living in the unnatural way and under the nervous excitement in which mankind lives. On the other hand, it is a great mistake quickly to abandon breast feeding for artificial feeding on the ground that the mother's milk is not of proper composition and does not agree. I have seen far too many instances of the damage which has come from the too hasty recommendation to wean which has been given by the family physician. In numerous cases it is merely "jumping from the frying-pan into the fire." Fortunately, the human infant is so made that in many cases it tolerates and even thrives on a human milk the composition of which departs far from the normal one. I have now under my care a remarkably healthy breast-fed baby whose mother's milk contained on one analysis 11.2% and on another 9% of fat. The woman was practically secreting cream, and yet the baby was digesting it very readily.

Before weaning is recommended, we must be sure, first, that the breast milk really is at fault, and second, that the fault cannot be corrected. It is often very difficult for us, under the pressure brought to bear by the family and friends, who are naturally ready to grasp hastily at anything which suggests the chance of bettering the child's condition, to refuse to recommend weaning until we are sure that it is the best thing to do. Should weaning be really necessary, it should be done gradually if possible. It may need to be done only partially. There is a strange fancy among the laity and among many physicians that mixed feeding is harmful.

There is no foundation for this belief, provided that the difficulty with the mother's milk depends merely upon the deficient quantity, and that its quality is all that can be desired. My practice always is, when rapid weaning is not forced upon me either by the total failure of the breast milk to agree, or by its entire disappearance, to begin with one bottle daily, of a strength distinctly less than that of human milk, and less than the child really needs. The proportions are then raised to those of the mother's milk, determined by analysis if possible; and then the number of bottles is gradually increased and the number of breast feedings diminished.

The determination of the composition of the mother's milk may be made in different ways. I will not stop to consider these, since any of us living in the larger cities may readily have an analysis made, at little expense, at any time. In fact, we can readily do it ourselves, at least approximately, with the help of a little cream gauge and a urinometer, in the manner described by Holt. Still more accurately, it may be estimated by the small inexpensive centrifuges used for urinary sedimentation which are now employed by so many physicians.

The possibility of the improvement of the quality or quantity of the breast milk must never be forgotten before weaning is advised. Though the effort frequently fails, it also frequently succeeds. An alteration in the diet, in the quantity of liquids taken, and in the amount of exercise employed, will often attain the result desired.

II.—DO THE BEST YOU CAN WITH WHAT YOU HAVE.

If Nature's way is the best way, our rule must be to imitate human milk as closely as possible, when this cannot be obtained. The comparison of human and bovine milk shows, as is well known, that each contains about the same amount of fat, namely, 4%; that there is 7% of sugar in woman's milk and about 4.5% in cow's milk; and that the proteids of the latter equal 4% or a little less, while in woman's milk they range from 1% to 1.5%. These comparisons do not, however, express all the difference. There are probably certain ferments present in human milk which are absent from cow's milk, and there is some distinction between the mineral matter of the two; but the greatest distinction rests in the composition of the proteids. There is a difference in this respect which we can detect by chemie analysis, and there are probably others which we have not discovered. The proteid matter of milk is a composite body. It consists principally of caseinogen, and of lactalbumin, which is very analogous to serum-albumin. Caseinogen is coagulated by rennet; lactalbumin is not. The relative proportion of the first to the second is very much greater in cow's milk than it is in woman's milk. Consequently, even though we have the same amount of total proteids in a cow's milk mixture as is present in human milk, the proportions of caseinogen and lactalbumin are by no means the same in each.

Although the rule is good, then, that our artificial food should approach the proportionate composition of woman's milk as closely as possible, it is unscientific and harmful for us to adopt any one fixed formula, because we cannot in any event make the mixture exactly like human milk, even if this latter had an absolutely fixed composition. The mixture must be made to suit the requirements of the child. How often we hear some physician say that he is in the habit of giving his infant patients so much milk, so much water, so much cream, and so on. This is altogether too machine-like. It does not show a proper amount of consideration of the needs of the individual case.

III.—KEEP UP TO THE TIMES.

The times are past when the scientific and practical were separate things. What is unscientific will no longer pass muster. That which is based on the most

¹ Address delivered before the Camden District Medical Society.

solid foundation which science can give us will in the long run be found to be the most practical also. It is not necessary for us, as practical men, to make scientific experiments, neither are we required to know the intricacies of studies of this nature. It is our business, however, to adapt to practical uses what science has discovered. This applies particularly, I think, to the feeding of infants. Experience has certainly shown me that I have been able to feed infants more satisfactorily since I knew better, from a scientific standpoint, what I was doing.

When we gave to a baby so much cream, so much milk, and so on, we got as a result, of course, certain percentages of fat, sugar, proteid matter, and salts. The trouble was that we could not tell just what we had, and in making a change in the volumes in the mixture we were unable to know just what alteration we had made in the real constituents. It is evident, for instance, that in adding cream to a mixture, although we were increasing the proportion of fat, we were also, to some extent, increasing that of proteid matter. Indeed, it was impossible to make any changes in a milk mixture for infants which were not purely empiric and even faulty, because they were not based upon knowledge of the actual percentage values. The modern method of feeding, the only scientific and truly satisfactory one, requires this knowledge of percentages. One determines merely to give a child a certain percentage of fat, for instance, instead of saying that he will add so many teaspoonfuls of cream to the milk mixture. I can assure you that those of you who commence to feed children on this plan will never abandon it, because you will find it so much more satisfactory, as well as less difficult. The method is really extremely easy. All that is required is that we obtain milk and cream of some definite, or approximately definite, percentage strengths, and that these shall remain uniform. This uniformity is required, indeed, for any successful feeding, whatever our method of making our mixtures may be. Several dairies near Philadelphia are now receiving certificates from the Philadelphia Pediatric Society. To obtain these the dairy must furnish milk which contains a certain definite amount of fat, sugar, and proteid matter, and which does not exhibit more than 10,000 germs of any and all kinds to the cubic centimeter. Cream of definite percentage strength in fat may also be obtained from them. Thus we may order cream containing 12%, 16%, 20%, etc. When milk from such dairies is not available, the physician may readily make, or have made, two or three tests for the amount of fat in the cream to be employed, although this, of course, does not ensure uniformity, and may without much risk of variation assume that the percentages of sugar and proteids are normal in amount, since it is the fat which is most variable in the dairy product. Of course the standard milk and cream referred to is greatly to be preferred. Even when it is impossible to have analysis made, we may assume that the average skimmed cream—not from Alderney cattle—contains 16% of fat, and the average centrifugated cream 20% of fat. The latter is that usually furnished by all the large dairies at the present time, and is to be preferred, since the shorter time of exposure and the greater freshness render the prevention of the development of great numbers of germs in it more possible.

Now as to the method of calculation. A very simple one will suffice. Several such have been devised, but I shall refer only to that of Dr. Baner, of New York, because it is the simplest, and is correct enough for practical purposes. It is as follows:

Let Q = the total quantity of mixture the child takes in 24 hours
 C = the total quantity of cream required
 M = " " " " milk " "
 W = " " " " water " "
 S = " " " " milk sugar required

Then let F = the fat percentage desired
 P = " proteid " "
 L = " lactose (milk sugar) percentage desired

We have now only four equations to work with, as follows:

$$C(20\%) = \frac{Q \times (F - P)}{16}$$

$$M = \frac{Q \times P}{4} - C$$

$$W = Q - (C + M)$$

$$S = \frac{Q \times (L - P)}{100}$$

See how simply this works in actual practice. Suppose we wish to give a baby 8 bottles a day, containing 5 oz. each. Q then equals $5 \times 8 = 40$ oz. We determine that we will try the child with fat 3%, proteids 1%, lactose 6%, and will use a 20% cream. If we substitute these figures the equations read as follows:

$$I. \text{—Cream} = \frac{40 \times (3 - 1)}{16} = \frac{40 \times 2}{16} = 5 \text{ oz.}$$

$$II. \text{—Milk} = \frac{40 \times 1}{4} - 5 \text{ (the amount of cream obtained from I)} = 10 - 5 = 5 \text{ oz.}$$

$$III. \text{—Water} = 40 - (5 + 5) = 30 \text{ oz.}$$

$$IV. \text{—Sugar} = \frac{40 \times (6 - 1)}{100} = \frac{40 \times 5}{100} = 2 \text{ oz.}$$

It is customary to render this alkaline by making 5% or 10% of the total volume consist of lime water. In the case above, 5% of 40 = 2 oz., i. e., 2 of the 40 oz. of water consist of lime water.

Our directions for the food then are:

Take	Cream.....	5 oz.
	Milk.....	5 oz.
	Lime water.....	2 oz.
	Water.....	28 oz.
		40 oz.
	Milk sugar.....	2 oz.

The sugar must be dissolved in the water before adding the other ingredients. I have had made a little metal scoop to hold half an ounce of sugar. If the family has one of these, I write "Sugar, 4 measures" instead of "2 ounces." It is much cheaper to measure the sugar in some way than to have packages of the required amount prepared by the druggist.

The denominator in equation I is always four less than the percentage of cream employed. As we used 20% cream in the mixture, i. e., the ordinary centrifugated cream, the denominator is 16. If we used 16% cream the denominator would be 12, and so on.

Certain results from the formula are interesting. For instance, if we use 16% cream and wish to give 40 ounces daily containing fat 4%, sugar 7%, proteids 1%, our equations would read:

$$\text{Cream} = \frac{40 \times (4 - 1)}{12} = 10 \text{ oz.}$$

$$\text{Milk} = \frac{40 \times 1}{4} - 10 = 10 - 10 = 0 \text{ oz.}$$

That is, we use 10 ounces of cream and no milk in our mixture.

Suppose, on the other hand, we employed 12% cream instead, our equations would read:

$$\text{Cream} = \frac{40 \times (4 - 1)}{8} = 15 \text{ oz.}$$

$$\text{Milk} = \frac{40 \times 1}{4} - 15 = 10 - 15 = -5 \text{ oz.}$$

The minus quantity obtained for the milk simply means that to produce the mixture desired we cannot use a 12% cream, but must employ some other percentage strength.

Other methods may be used to construct the milk mixture as, for instance, when we take the top milk from a quart jar after standing a certain time, and mix a certain quantity of this with the milk which was left.

Here the top milk, if it has stood long enough, contains nearly all the fat and the bottom milk but little. It is very easy to make percentage mixtures in this way, but I shall not enter on the subject because we cannot well use the equations I have given you. Again, we may produce milk mixtures in which we not only increase and diminish the total amount of proteid matter, but differentiate between the amount of caseinogen and lactalbumin present, thus approaching much more nearly the true composition of human milk. For this purpose we use whey and cream. The whey contains practically no caseinogen, only lactalbumin—or, better expressed, whey proteids—as its proteid matter. If we take a very small amount of a very strong cream, as, for instance, a 32% cream, and mix it with whey, we can readily raise the fat percentage of the mixture to a normal amount for human milk, while at the same time we are adding only a small amount of casein. The whey, however, supplies the lactalbumin which completes the proteid percentage desired.

IV.—KNOW WHAT YOU WANT.

It does us little good to understand the method of calculating percentage formulas for our milk mixtures unless we also know why we want to give a certain mixture to a certain child. As I have already said, because a milk mixture corresponds to the normal human milk percentages, it by no means follows that it will agree. In the case of every very young infant, or indeed in those older who have been fed only on breast milk, it is best to make the first milk mixture very much weaker than the normal proportions call for. This is particularly true of the proteids, since the infant finds the cow's milk proteids perhaps the hardest element of the food to digest. In giving, for instance, a mixture to a child a few weeks old, we could easily start with a percentage, of fat 2, proteids 0.50, and sugar 5. This is not at all a food on which a child can thrive long. It is a tentative one, and after a few days must be increased, if it has agreed, to perhaps fat 2.50, proteids 0.75, and sugar 6. The next increase may reasonably be to fat 3, proteids 1, and sugar 6 or 7. On such a formula as this latter, or possibly with an increase of fat still further to 3.5, many an infant will thrive for months. I am convinced that it is a radical mistake to change the formula merely because the child is older. Human milk does not change materially during the whole period of lactation after the first few weeks are past. The growing infant merely takes a larger quantity, but the proportions remain the same. It is our business, then, merely to give the child more, but not to make the food stronger. The only way, in the absence of distinct disease, in which we can certainly tell that the food is sufficiently strong to suit the requirements of the child, is by a regular and systematic weighing. This weighing ought to be done every week, and in many cases twice a week. Suppose, now, the child is not gaining weight, and is also distinctly suffering from indigestion, what can guide us in changing the milk formula? It is a safe general rule, open, of course, to exceptions, that bowel movements which are too curdy indicate an excess of proteid matter in the food, while rancid, sour vomiting denotes an excess of fat. There are occasions, it is true, as has been pointed out especially by Biedert, when a child has white, apparently curdy movements, in which the lumps consist really of fat and not of casein. It also happens very often that the excess of proteids is vomited in the shape of hard, curdy masses. Yet the rule I have given will guide us in most cases.

Stools which are too watery, yet without curds, may depend upon an excess of sugar, or sometimes of fat. If the child is growing well, yet has diarrhea, we may conclude that perhaps all the elements are too strong, or that it is getting too large a bulk of nourishment. Vomiting may indicate that the child is getting

too large a quantity, or that it is too hastily given. It may also mean, as I have said, that the fat is too large in amount, and less often that the proteids are in excess. I well remember a child whom I saw in consultation two years ago, in whom there was obstinate vomiting and persistent loss of weight. I was told by the physician that every time the proteids were increased vomiting was renewed. A little experimentation convinced us, however, that as soon as the fat was reduced to 2% or less, the proteids could be increased perfectly well. A little later all the elements could be increased without further trouble.

It sometimes happens that the addition of a small quantity of cereal food, oftenest in the form of barley water, will render a milk mixture digestible which is otherwise not so. Just how it acts has been disputed. The fact, however, remains. I want to express distinctly my feeling that we should not use barley water or any other foreign substance as a routine measure, but only when it is distinctly indicated.

V.—DON'T BE LAZY.

It is easy to follow old ways. It is easy to take some ready-made formula which has been given to us by somebody else and to put every child at once upon it. It is easy to take somebody or other's patented food, the explicit directions for the use of which are printed upon the label by some one who has never seen the infant to whom you give it, and who would have no idea, in any case, what that infant needed.

But our duty to our infant patient makes it imperative that we shall use our best efforts, no matter what the trouble may be, to find the right food and do the very best we can for the child under our care. Percentage feeding may seem difficult to some of you at first sight. But if it really is the best method, it is our duty to learn it and to use it. The experience of the best known pediatricists in this country who have studied the matter at all carefully is practically unanimous, to the effect that this method of feeding is the best. Learn it then, and use it.

A word with regard to the employment of commercial foods. The experience of pediatricists is opposed to them. The longer I live and practise, the less use I have for them. Of course, if I find an infant already taking some commercial food and evidently thriving upon it, as it often will, I would not change it. Under the same circumstances I might not change its food if it were pork and beans. But starting a child upon a new diet I would not use a commercial food. Nearly all of them consist of starch which is entirely untransformed, or of the same substance which has been almost or completely transformed into a sugar which is not the natural sugar of the milk. Some of them run as high as 80% or more of this. If mixed according to directions, they are liable to be deficient in proteids, and especially in fat. When these foods are mixed with milk the method offers no advantage over the making of fresh milk-and-cream mixtures. When they are used without fresh milk, according to the directions accompanying some of them, they are extremely convenient, but can never be made to have the proper proportions between the constituents. There are instances, of course, which perhaps all of us have seen, of infants having succeeded in thriving on some of these foods when ordinary milk mixtures did not agree. This is due to the idiosyncrasy of children, which makes some of them digest what is certainly indigestible and refuse to grow on what they ought to take. I knew of one baby who did very well on cornmeal and water, on which it really ought to have died. All these, however, are the exceptions. The rule holds good, and any one with a large dispensary practice among children has been convinced hundreds of times that the commercial foods do untold harm and are very seldom needed.

We may pass briefly from the consideration of the diet during the nursing period to a brief mention of that

to be employed in later infancy and early childhood. Here I may give you my next aphorism.

VI.—GO SLOW.

As the child is approaching the end of its first year it is commonly best to accustom it to a change in its food. Much damage, however, has often been done by parents, and not infrequently by physicians, through a too rapid increasing of the strength of the milk at the end of the first year, or through feeding with starchy foods of various sorts. The propriety of making a change in the food, and the nature of this change, must be determined by studying the individual child. It must not be done purely because a certain age has been attained. The general condition of the child, and especially its weight, will be the chief guide. Should there be no objection apparent and everything point in its favor, it is well, about the age of ten-and-a-half to eleven months, to begin to increase the amount of proteid matter in the baby's bottle, if this has not been done before, and to diminish the percentage of sugar. That is to say, we approach the mixture toward the composition of undiluted cow's milk. Great care must be taken that indigestion does not result. Should there be no such accident, the gradual change in the food is continued. Meanwhile its digestibility as well as its nutrient power is often distinctly aided by the addition of small amounts of well-cooked cereal jelly. It is my habit in such cases to add one or two teaspoonfuls of arrowroot jelly or barley jelly to each bottle. The baby at this time of life has very decided power to digest starches and can well receive them. As already said, many babies have needed to take starchy food earlier for certain reasons.

When a child has reached the age of a year it is taking cow's milk but little diluted, and with the sugar reduced 4.5% or 5%. It is wrong to insist that the cow's milk, at this age, must be entirely undiluted. Many children do not tolerate it in this form for some months longer. At this age we may commence teaching the child to take food not from the bottle. The first step would be the giving of a little porridge made of arrowroot, farina, or some of the numerous easily digestible breakfast-foods on the market. This should be given preferably for the midday meal, and should be very thoroughly cooked, and well moistened with the milk mixture which the baby is in the habit of using. A little cane sugar upon it is an advantage and makes it more acceptable. Oatmeal, although most nutritious, is not well borne by all children, and should be reserved until the power of digestion of the other starches mentioned has been proven.

From this time the progress is steady. The porridge is gradually shifted to breakfast time, and for dinner there is given bread, not too fresh, well-cooked rice, hominy grits, or similar food which can be moistened with beef juice or beef gravy free from fat. The next step that I am in the habit of taking is the giving of eggs. It must be remembered that many children do not digest eggs, particularly the yolk, at all well. The first attempt to use them must, therefore, be tentative. Should they agree, they can be given occasionally for breakfast or for dinner in place of some of the articles mentioned. I am not in the habit of giving potatoes until after the age of 18 months, as they contain a form of starch which is distinctly more difficult for the child to manage. Fruit in some form, well-cooked, may be given from the age of 18 months, or occasionally before this.

Finally, I wish to take up very briefly the subject of feeding in disease. It is far too large for any but a most cursory review, and I will look at it from one side only, and give you my seventh and last aphorism.

VII.—STARVE.

By this I do not mean necessarily the actual withdrawal of all food, but a judicious temporary reduction

in the amount and strength of that given. There is no doubt that recovery in many different conditions may often be much hastened by a judicious starving in this sense.

For instance, a child is attacked by an acute febrile disturbance of unknown nature. The condition may last but a few days. In the meantime there is little use in giving food of the usual quantity or strength. It would perhaps not be digested if given, and in any case, would put too great a strain on the digestive organs. Starve the older child, in so far that the solid food is withdrawn and liquid nourishment alone given, frequently, but in small quantities which would by no means satisfy if the child were well. In the case of infants the milk mixture should be very decidedly reduced in strength in all its ingredients.

Croupous pneumonia is the disease, perhaps. Again, we must begin by a partial starvation. Writers have repeatedly pointed out that in this affection the digestive power is often much diminished, and that food must be reduced at first. Perhaps we are at the beginning of an attack of scarlet fever. Remember that stimulating food is a strain upon the system, and that the diet should be of the lightest. An infant or older child shows malaise and a total lack of appetite. Do not be anxious to feed it. Nature itself is often trying to effect a cure by giving rest to the disordered stomach. Help, then, by starving in a moderate way.

Acute and repeated vomiting occurs in a previously healthy infant child. Starve, perhaps absolutely, for a day. A digestive disturbance, otherwise possibly prolonged, may often be avoided in this way. Every infant attacked in this manner should have its milk mixture entirely withdrawn, and some bland substance such as thin barley water given. Such food as this is little removed from a diet of water, but it satisfies the maternal mind better than a water diet would. Should the vomiting tend to persist, no haste should be allowed in returning to milk. Egg water may be used for days. Although rich in certain proteids it is a form of starving, so far as the hydrocarbon element of the food is concerned.

The same rule applies to the diarrheas, whether acute or more prolonged. The ordinary diet must be reduced in strength and often changed altogether. In both diarrhea and vomiting, if of a chronic nature, it is a common and most judicious practice to employ whey. It is one of my favorite foods in diseases of the gastro-enteric tract. But this is often only a mild form of starving, for whey, according to the analysis of König, consists of fat 0.32%, sugar 4.79%, and proteids 0.86%, the latter being the more digestible lactalbumin, the caseinogen having been removed by the coagulating with rennet. By comparing this analysis with that of milk, we see what a starvation diet whey really constitutes. Broths, beef-tea, chicken-water, veal-tea, and the like, formerly much used, and now often much neglected, really constitute genteel but effectual methods of starving. The amount of nourishment contained in these articles is very slight, and this is the reason they are often so serviceable.

Sometimes, indeed, we starve in anticipation of disease. For instance, should a number of days of intense heat in summer occur, it is a prudent measure to reduce the food of a child of one or two years to that of a younger infant, and to cut down the strength of the milk mixture of the first year very decidedly.

Of course, when a disease is prolonged we must modify our starving decidedly. It then becomes a question of sustaining strength, and of making good tissue-waste, and starving is no longer indicated. The way in which this shall be done is to be determined according to the nature of the case.

Nor is my aphorism to be taken as a positive rule in all conditions. It is, as I said, only one side of the question of feeding in disease, although so prominent a

one. A physician must use his judgment. My only object is to protest against the undue anxiety often shown in acute cases about the nourishment of the patient, and to suggest that a judicious starving may be what is really needed.

ON THE EFFECT OF THE DIGESTION OF GELATIN ON ITS STYPTIC PROPERTIES.

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Last year I published a paper reviewing the studies which had been made of the extraordinary action of gelatin on the coagulation of the blood, in which I called attention to the fact that I was unable to find any record of the effect of digestion on the coagulating power of gelatin. There are frequently circumstances in which the physician desires to avail himself of the stytic properties of this substance but in which the technic of hypodermoclysis might cause undesirable alarm, and it therefore is a matter of importance to know whether the gelatin exercises its coagulating effect on the blood after digestion.

It is highly improbable that gelatin, as such, can be absorbed from the intestinal tract because it is, like the proteids, a nondialyzable substance. By the action of the gastric juice, however, it is converted into a substance known as gelatose, which I have determined by experiment is able to pass through animal membranes.

Gelatin belongs to a group of foodstuffs known as albuminoids, behaving in many ways, especially as regards the digestive changes, very similarly to the true albumins. As has been shown by Chittenden and Solly and others, gelatin when subjected to artificial digestion with pepsin and hydrochloric acid is converted into bodies allied to the albumoses, which have been called "gelatoses," protogelatose and deutergelatose, and finally into gelatinpeptone; the three being distinguished, like the corresponding albumoses, by the fact that the first is precipitated by sodium chlorid, the deutergelatose by ammonium sulfate, and the peptone by neither.

It is asserted that these bodies do not gelatinize on cooling as does the mother-substance. But in my experience this statement, at least as regards the earlier formed product—protogelatose—is only partially true. It seemed in my observations that the loss of the jellying property takes place gradually; that is, that although the protogelatose jellies with much more difficulty than gelatin, it will solidify at a temperature sufficiently low (about 11° C. instead of the normal 21° C.), whereas deutergelatose is still liquid at 6° C. Dastre has found that other measures besides artificial digestion likewise destroy the jellying power of gelatin, among which may be mentioned heating above 100° C., addition of NaCl in proportions of above 10%, or the addition of large amounts of hydrochloric acid. I have experimented with nearly all the above mentioned non-solidifying forms of gelatin.

The credit of being the first to observe the effects of gelatin on the coagulation of the blood belongs to Dastre and Floresco, although Pickering had observed similar effects on clotting from certain synthetic colloids. The earliest clinical use of this power, as far as my knowledge goes, was made by Carnot in 1896; since then there has been abundant clinical confirmation of Dastre's observation.

There has been some doubt expressed concerning the power of gelatin to act after its hypodermic administration, on the ground that as it is not a dialyzable substance it cannot be absorbed. I do not intend to attempt to explain at this time how it is taken up by the tissues,

but that it does effect the coagulability of the blood when given hypodermically there is abundant evidence. The immense number of cases of all sorts of hemorrhages, especially those of hemophilia, and of aneurysm which have been benefited by the subcutaneous exhibition of gelatin, leaves no room for doubt of its efficacy. Although several observers have reported similar successful results after the administration of the gelatin by the mouth, the cases are not numerous enough, in the absence of any scientific proof, to allow of a positive conclusion.

As stated above, I have not limited my studies entirely to the gelatose produced by artificial digestion, but have made a few observations with gelatin solutions to which had been added large amounts of sodium chlorid or hydrochloric acid. As, however, these products have not been shown to be identical with true gelatose, they seemed to be of minor importance and less worthy of extended study.

The method I have employed is as follows: In moderate sized dogs (6 to 10 kilos), after perfect anesthetization with morphin and with ether, the carotid (or in a few cases the femoral) artery was exposed and a very short glass cannula inserted, the artery being closed by a spring clip. The blood was drawn from time to time, about 3 to 5 cc. at once, into a test-tube, and observations made at varying intervals as to its condition of fluidity, and the time noted at which a firm coagulum was first observed; in every case the consolidation was reckoned only when it was complete. In some experiments the gelatose was added to the blood after it was drawn *in vitro*; in others it was injected into the jugular vein. I chose the intravenous route of introducing the gelatose into the system, because under the conditions of the experiment it was manifestly impossible first to determine the normal clotting time and then exhibit the gelatin by the mouth and wait for natural digestion to take place. And as I showed by my dialysis experiments, that the digested product is capable of being absorbed, the results hold equally true whether the gelatose gets into the blood through the alimentary tract or by ingestion into a vein.

In every experiment performed in this manner I found a distinct lessening of the time required for complete coagulation, whether I employed gelatin digested by artificial gastric juice or a solution in concentrated salt solution or in hydrochloric acid. Thus in one experiment the average time for clotting, of eight observations, before the injection was 3 minutes and 41 seconds, after the administration of deutergelatose the mean of 12 observations was 1 minute and 32 seconds; in another the normal time was 1 minute and 31 seconds—after the injection the blood clotted in 26 seconds. The average time in four separate experiments was: before the exhibition of the gelatose, 3 minutes and 40 seconds—after, 61 seconds.

To illustrate more closely a clinical condition in two experiments I cut, at the close of the experiment, the femoral artery clear across; bleeding from this large vessel ceased entirely in one case in 1 minute and 50 seconds with loss of less than a teaspoonful of blood. In the other bleeding ceased in 3 minutes and 30 seconds with the loss of only a comparatively small quantity of blood. It must be remembered, however, that dogs never bleed as freely as man.

In attempting to demonstrate the antagonism between peptone and gelatin, of which Dastre speaks, I was unsuccessful, at least in experiments during life; perhaps because the dose of gelatose was not large enough. I did succeed, however, in coagulating blood-serum, which was rendered incoagulable by injection of peptone, by adding the gelatose in the test-tube in comparatively large quantities. Thus, in a dog 0.5 gm. of Witte's peptone injected into a vein, destroyed the coagulating power of the blood, which was not restored by 3.0 gm. of gelatose. When, however, to 1 cc. of this peptone

serum 0.25 to 0.5 cc. of a 10% gelatose was added there was a firm coagulum after some hours, the control remaining perfectly fluid for six hours.

CONCLUSIONS.

1. Pepsin digestion of gelatin does not destroy its coagulating effect on the blood.
2. The resulting product is dialyzable, and therefore capable of absorption.
3. The administration of gelatin by the mouth in the treatment of hemorrhage is, therefore, a rational procedure.
4. Gelatose seems to antagonize, if given in sufficient quantity, the anticoagulating action of peptone.

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A SIMPLE METHOD FOR DETERMINING PERCENTAGES OF MILK IN HOME MODIFICATION.¹

BY

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Modification of milk on a percentage basis as introduced by Dr. Rotch, while exclusively used by a few physicians, has never come into general use, owing most likely to the fact that the method of obtaining such percentage modifications has never been made so simple as to be readily understood by busy physicians, only a part of whose practice consists in feeding babies. The many recent efforts to simplify modification have not been such as would appeal to most of this class of physicians. The methods by algebraic formulæ, while good and accurate, involve study and practice, while the decimal method, and all methods involving the use of milk-sugar solutions, are complicated. The advocacy of such methods has carried with it an inference of difficulty in obtaining exact percentages at home. Such inferences I believe to be entirely misleading, so that it has seemed desirable to bring clearly before the profession the simple mathematical method of determining such percentages without formulas, and the advantage of this method.

The physician must, of course, know that good commercial milk ordinarily contains about 4% each of fat,² sugar, and proteid. He should also know something about the percentage of fat in different sorts of cream, and especially that the cream which forms on milk after it has stood in a refrigerator for 12 hours ordinarily contains about 16% of fat.

Having determined upon the chemie composition of the milk he desires to use in any particular case, the number of feedings, and the amount to be given at each feeding, he must first note the relationship that exists between the fat and the proteid. That is, whether the fat should be in equal amount to the proteid or should be in the relation of two to one, or three to one, or four to one; and he should arrange his formula so that one of these four relationships between the fats and the proteids may be present. This will afford sufficient variety in formulas and add considerably to the simplicity in obtaining the modification needed. If he wishes to use the fat in equal proportion to the proteid, it is evident that the relation in ordinary cows' milk would suit his

case (see Table I) when simple dilution of this with water is all that is necessary: dilution with equal part water if he desires 2% of fat and proteid, with three parts water should he desire 1% of fat and proteid. If, on the other hand, he wants a modification containing four times as much fat as proteid, it is evident that 16% cream, properly diluted, will furnish him the required proportions.

On the other hand, if he desires three times as much fat as proteid, he must have a 12% cream, which is easily obtained by taking two parts 16% cream and one part milk; or, if his fat is twice the amount of his proteid, he must have a cream containing 8% fat, easily obtained by combining one part of 16% cream with two parts milk.

TABLE I.—THE CHEMICAL COMPOSITION OF MILK AND CREAM AND THE METHOD OF OBTAINING PERCENTAGE CREAMS FROM GRAVITY CREAM.

	Fat.	Sugar.	Proteid.
Breast milk	3	6	1
Cows' milk	4	7	2
Gravity cream, 16% cream.....	16	4	4
2 parts gravity cream.....	16	4	4
1 part milk.....	4	4	4
	3)36	12	12
12% cream	12	4	4
1 part gravity cream.....	16	4	4
2 parts milk.....	4	4	4
	3)24	12	12
8% cream	8	4	4

Suppose, for example, that we wish to feed a healthy infant of two months and require for each day 10 three-ounce bottles of milk containing 3% fat, 6% sugar and 1% proteid, it is evident here that we need three times as much fat as proteid, and that thus a 12% cream must be diluted with three parts water.

Having thus obtained the desired 12% cream, giving a proportion of three parts fat to one of proteid, we obtain 3—1—1 by simply diluting with three parts water. (See Table II.)

TABLE II.—METHOD OF OBTAINING 10 THREE-OUNCE BOTTLES OR THIRTY OUNCES OF MILK CONTAINING 3% FAT, 6% SUGAR AND 1% PROTEID.

	Fat.	Sugar.	Proteid.	
¼ 12% cream	12	4	4	= 7½ oz. = {16% cream, 5 oz. Milk, 2½ oz.
¾ water.....	0	0	0	= 20½ oz.
	0	0	0	Lime water, 2 oz.
	4)12	4	4	
	3	1	1	
Sugar add 5%		5		5% of 30 = 1½ oz.
	3	6	1	

Thus we have the desired formulas, except in the case of the sugar, which is only 1% instead of 6%. It is evident that 5% sugar must be added. The amount of sugar necessary for a day's food will thus depend upon the amount of milk used. If this child is getting 10 three-ounce bottles a day we will have a total of 30 ounces, to which 5% of sugar must be added; and 5% of 30 ounces being 1½ ounces, it is evident that 1½ ounces of sugar will be required for the whole 30 ounces. The sugar is most conveniently ordered from the druggist in packages, one of which suffices for one day's food. In the example I have just considered, it would be ordered in packages of 1½ ounces each. Our day's feeding of 30 ounces will thus consist of

¼ 12% cream, or 7½ ounces, and ¾ water, or 21½ ounces.
Our 12% cream is composed of two-thirds 16% cream, or 5 ounces, and ¼ milk, or 2½ ounces.

Our formula will thus read:

16% cream.....	5 ounces
milk.....	2½ "
water.....	20½ "
sugar.....	2 "

¹ Read before the New York State Medical Society, January 29, 1902.

² Can-milk of cities may contain only about 3% fat, while the milk of Jersey cows may contain 5% or more.

If we use lime water to neutralize the milk the amount added must be deducted from the amount of water used. Thus, in the above table, if we add one-fifteenth lime water it will be 2 and the water will be only 19½ ounces.

Supposing, on the other hand, that our infant of three months is sick and it seems desirable to reduce the fats without altering the amount of proteids, and we consider that a modification containing 1% fat, 6% sugar, and 1% proteid is desirable. We have here a formula calling for equal parts fat and proteid, the relationship which approximately exists in ordinary cows' milk. The amount of fat and proteid, however, is only one-quarter the amount present in cows' milk. It is evident that we must dilute the cows' milk with three parts water. (See Table III.)

TABLE III.—METHOD OF OBTAINING 10 THREE-OUNCE BOTTLES OR 30 OUNCES OF 1½ FAT, 6% SUGAR AND 1% PROTEID.

	Fat.	Sugar.	Proteid.	
¼ milk.....	4	4	4 =	7½ oz. = { 16% cream, 5 oz. Milk, 2½ oz.
¾ water.....	{ 0 0 0 } =	0	0	20½ oz.
	{ 0 0 0 }	0	0	Lime water, ⅓ 2 oz.
	4) 4	4	4	
	1	1	1	
Sugar add 5%	5	5	5	5% of 30 oz. = 1½ oz.
	1	6	1	

Thus we get 1% fat, 1% sugar, and 1% proteid. We must add 5% sugar and 5% of the total feeding (30 oz.) which is 1½ oz. We will thus give this baby a fourth of 30 ounces of milk or 7½ ounces, three-quarters water or 22½ ounces, sugar of milk 1½ ounces. And again, if lime water is added, the amount of lime water will be deducted from the amount of water used.

Again, in feeding a baby of perhaps six months a larger amount of stronger milk will be required, possibly seven feedings of eight ounces each of a modification containing 4% fat, 7% sugar, and 2% proteid. Here the relationship between the fat and the proteid is as two to one, and the same relationship that existed in an 8% cream. As we have already stated, an 8% cream may be obtained by mixing one part 16% cream with two parts milk, and this mixture diluted with an equal part of water. (See Table IV.)

TABLE IV.—METHOD OF OBTAINING 7 EIGHT-OUNCE BOTTLES OR 56 OUNCES OF MILK CONTAINING 4% FAT, 7% SUGAR AND 2% PROTEID.

	Fat.	Sugar.	Proteid.	
½ 8% cream....	8	4	4 =	28 oz. = { 16% cream, 9½ oz. Milk, 18½ oz.
½ water.....	0	0	0 { =	24 oz.
				Lime water, ⅓ 4 oz.
	2) 8	4	4	
	4	2	2	
Sugar add 5%	5	5	5	5% of 56 oz. = 2.8 oz.
	4	7	2	

Thus for 56 ounces of this modification we will need half 8% cream, which is made up of one part 16% cream, and two parts milk. We will thus require 28 ounces of 8% cream, or 9½ ounces of 16% cream, and 18½ ounces of milk and 28 ounces of water. If lime water is added it must again be deducted from the amount of water used, and 5% of sugar is again required. Five per cent. of 56 is 2.8; thus for this case the milk sugar will be ordered in packages containing 2 oz., 6½ drams each.

For this modification of milk the mother has a graduate, one measuring 32 ounces preferred, into which she pours the required amount of water and stirs in the sugar until it has dissolved. The cream, milk, and lime water are added afterward, and the whole thoroughly mixed. This method is a simple one for the use of the physician, and easily carried out by any intelligent woman.

In the foregoing I have given a bare outline of a method which allows of much amplification, but inas-

much as it is my desire to reduce it to its simplest form such amplification has been avoided. It is evident, however, that by different dilutions of gravity cream with milk, other percentage creams may be obtained, as a 10% cream from equal parts gravity cream and milk; and by diluting these with different proportions of water, a great variety of modifications may be obtained. Neither originality nor absolute accuracy is claimed for this method.

Summary.—This method of obtaining percentages in modifying milk is simple and is applied as follows:

1. After having decided on the number of feedings for the 24 hours, the amount to be given at each feeding, and the formula of the food required, first determine the desired relation between the amount of fats and proteids, and obtain a cream or milk in which these constituents exist in that proportion.

2. Dilute this cream or milk with the required amount of water.

3. Determine the percentage of sugar required for 24 hours' feeding and order the same in packages containing the required amount.

4. If lime water is added, the amount so added must be deducted from the amount of water used.

CYSTS OF THE URETER.

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The main interest attached to the condition known as ureteritis cystica or multiple cysts of the ureter is not clinical, but is anatomico-pathologic. To the anatomist, because of the question of preformed glands in the ureter; to the pathologist, because of the possibility of the affection being of protozoan origin.

Pathologists are still divided in their opinions concerning the etiology of this rare affection, which is partly explainable by the fact that the microscopic anatomy of the ureter has until quite recently (within the last eight years) not been satisfactorily worked out. In fact, even so late as 1893, such a cardinal point as the possession of true glands by the ureter was a matter of dispute. The earlier observers thought that the ureter did possess true glands; Unruh,²³ Egli,⁴ Hamburger.⁸ This was also claimed for the mucous membrane of the bladder; Kölliker,¹¹ Henle,⁹ Virchow.²⁴ Virchow²⁴ found in the female bladder glandular structures which not seldom contained concretions like those of the prostate. He believed them to be, in the female, developmentally misplaced prostatic glands. But later and more extensive studies have shown that in the pelvis of the kidney, in the ureter or in the bladder, no true glands occur; von Brunn² (1893), Lubarsch¹³ (1893), Aschoff¹ (1894). An exception to this may occur at the internal orifice of the urethra, where sometimes abnormally highly placed urethral glands may be found; Lubarsch.¹³ Especially has this view of the absence of glandular structures in these parts been substantiated by the work of Marckwald¹⁵ (1898), who arrives at his conclusions after an examination macroscopically of the ureters in about 700 bodies, with a microscopic examination of 79 ureters.

Although definite glands are not present, there are, nevertheless, certain epithelial structures which have been mistaken for glands and which are most important in their bearing on the etiology of ureteral and bladder cysts. These are the so-called "Brunn's epithelial nests," first described by von Brunn in 1893 in his previously cited article, though these structures had been seen before by Unruh²³ and Hamburger.⁸ Von Brunn described them as bodies formed like acinus

glands, made up of stratified pavement epithelium, 0.4 to 0.8 mm. long, branching irregularly and sparsely. The main part of the structure usually runs at right angles to the internal surface of the pelvis of the kidney or ureter, but soon changes its direction and runs parallel to it. These bodies originate from the deeper layers of the epithelium and extend as plugs down into the sub-epithelial connective tissue. These plugs may be entirely solid, the cells at the periphery being radially arranged, but toward the center becoming polyhedral and closely packed. A definite lumen is not present, though some of the plugs are hollowed out for a short distance, an irregular space existing between the constituent cells rather than a definitely outlined lumen. A membrane propria surrounds the nests (or plugs) and the blood-vessels in the adjacent connective tissue are noticeably dilated. Other evidences of inflammation are entirely absent. Against the assumption that these structures are really glands, the following points may be presented:

1. The absence of secretory activity, such as granulation.
2. The absence of a definite lumen.
3. The cells of the epithelial nests are practically identical in form and staining qualities with those lining the ureteral lumen.

Though most of the nests are joined to the overlying epithelium by a neck of varying size, some, and especially the larger ones, are entirely separated off by connective tissue, as is shown by serial sections.

They occur in the pelvis of the kidney, in the ureter, especially in its upper third, and in the bladder; von Brunn,² Lubarsch,¹³ Aschoff,¹ Marckwald.¹⁵ The last observer finds them to vary in size from a few cells to those macroscopically visible. Usually they occur only sparingly. While demonstrable in nearly all ureters, they are occasionally entirely absent, as in two of his cases.*

Their occurrence appears to bear a direct relation to the age of the individual, being sparsely present in the newborn, much more plentiful in the ureters of those over 50 years old. At midlife their number is variable within wide limits. A satisfactory explanation as to their causation is not given. Von Brunn believes that they are due to extension upward of connective tissue, septums forming mouldlike spaces into which the epithelium grows. Subsequently the connective tissue may entirely nip off the epithelium, forming independent nests.

The epithelium of the ureter is very prone to degeneration. Lying among normal epithelial cells, commonly situated at the edge of the lumen, but occurring also down deeper, are cells twice the normal size, their protoplasm transparent and their nuclei large, vacuolar and irregular. Such degenerated cells may occur in groups, and their presence has been noted even in the newborn. Especially are these changes prone in the epithelial nests. Beginning in them at the center and proceeding peripherally, swollen cells, such as previously described, or complete degeneration with detritus may be found. In most cases coming to autopsy, Aschoff¹ finds the mucous membrane of the pelvis of the kidney, ureter and bladder changed. In their slightest grade these changes are not visible to the naked eye, but are shown microscopically to be due to degeneration in the epithelial nests. If more extensive, dots, granules or tubercles may be seen microscopically; they are likewise due to changes in the nests, in these cases the nests being larger. Finally, one may find even cyst formation, due to cell proliferation and degeneration in the nests, together with serous transudation.

The occurrence of small cysts along the course of the ureter, especially at its upper third, has long been known. The term "ureteritis cystica," as applied to

this condition, has been in use since the excellently described and illustrated case of Litten's¹² was published in 1876. By ureteritis cystica is now meant a condition in which cysts, varying in size from a pinhead to a pea, occur in one or both ureters; in most cases this is associated with other diseased states of the urinary tract; it usually gives no clinical symptoms. Such a condition was first reported by Morgagni,¹⁶ who observed it in two cases. Rayer¹⁸ pictures two cases in his atlas. Rokitsky observed cysts in the pelvis of the kidney, ureter and bladder. No views as to etiology were given.

A survey of the literature shows at least 30 cases of cysts of the ureter. Most of these are reported by German writers. None has been reported in this country. Those mentioned in American textbooks are only the cases reported by English observers.

As before mentioned, the first satisfactorily reported case was presented by Litten¹² in 1876. In a woman, aged 75, he found in the pelvis of the right kidney, and in the right ureter, covering an area 13 cm. long, small cysts so thickly placed that it was impossible to see the mucous membrane; 2.5 cm. below this was a stenosis, due to calculi, about which scars had formed. Hydro-nephrosis and hydronephrosis were present. Where the ureteral mucous membrane was still intact a chronic catarrhal inflammation was seen. The cysts varied in size from a caviar grain to nearly a pea, the color from light yellowish-grey to the darkest brown. Some were set into the mucous membrane, while others were pedunculated, appearing like a berry on its stem. Microscopically, the cyst walls consisted of connective tissue lined by a single layer of flat epithelium. The contents consisted of a mucin-containing fluid, in which were red and white blood-corpuscles, free nuclear bodies and epithelial cells, some much degenerated. Amorphous clumps were also seen, some of which contained fat droplets, others showed refractile centers, still others showed concentrically arranged centers. Finally, masses of protoplasm containing many nuclei were described and pictured. Their nature was not known, but their similarity to giant cells was commented on. Litten believed that the essential process was retention of secretions due to inflammatory closure of either crypts in the mucous membrane or gland ducts. The first cause lay in the irritation due to stone, with consequent catarrhal inflammation.

But little essential has been added to Litten's original description. A lining of cubic instead of flat epithelium may occur, and there may be several layers of cells in place of the single layer which he described. The identity of the multinucleate masses of protoplasm with protozoa has been claimed by some.

Besides the cysts (which may not be so numerous as in Litten's case) one may also find remnants of ruptured cysts projecting as villi even a half centimeter into the ureteral lumen. Pedunculated cysts may also do this, and it has been claimed that such projections by causing a valve-like closure of the ureter might occasion a hydronephrosis. The loss of elasticity in the ureteral wall is believed by Marckwald¹⁵ to account for the coexisting hydronephrosis, the nests and cysts acting in a mechanic way by breaking the continuity of the subepithelial elastic tissue.*

By the loss of elasticity is explained also the presence of venous congestion about the cysts, since defective contraction of the ureter makes the emptying of the veins more difficult.

Cysts in considerable number are rarely found in the ureter or pelvis of the kidney. Lubarsch¹³ in 3,000 autopsies has found cysts of the ureter in only four cases, while cysts in the pelvis of the kidney he found but twice. There are but three cases of cysts in the ureter

*One of these was a newborn infant, the other a 27-year-old man with purulent ureteritis.

*A like result obtains whenever inelastic bodies are interpolated in any elastic membrane, as small gummas in an artery wall.

among the records of 1,720 autopsies at the Johns Hopkins Hospital. Only one of these merits the term "ureteritis cystica," the cysts in the others being too few in number. Ureteritis cystica is more common in the aged, about evenly divided as to sex. It may occur unilaterally or bilaterally, the cases being about the same in number. Of the former, either the right or left ureter may be involved.

Other diseased conditions of the urinary tract usually occur, though in two cases cysts occurred with no other morbid condition in the urinary apparatus.* Of these associated affections, cystic or amyloid degeneration, atrophy or inflammation of the kidney, are common. Hydroureter and hydronephrosis occur nearly always. Cystitis and pyelitis occur in about one-half the cases. The same cystic condition of the bladder, or pelvis of the kidney, obtains in about one-fourth of the cases.

In the great majority of cases there are no clinical signs of ureteritis cystica, although in the two cases previously mentioned, Eve's⁵ and Tuffier's,²² there was persistent hematuria until the fatal termination.

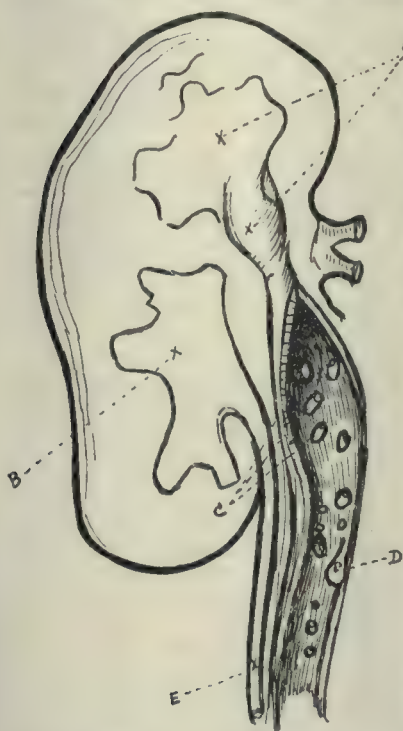
Death may occur through the coexisting urinary disease or through conditions entirely outside the urinary tract, such as pneumonia.

Of the three cases of cysts of the ureter at Johns Hopkins Hospital, one was in a woman, aged 58, death following operation for calculus in the right kidney. To quote the protocol: "The right ureter contains several cysts the size of hemp seeds, filled with clear contents." There was inflammation of the bladder and right ureter, the latter structure was dilated to the size of the little finger.

The second case was that of an old man dying of tuberculosis, with pleural effusion. Three translucent

cystic nodules occurred at about the middle of the left ureter. Microscopic sections showed many epithelial nests in the mucous membrane of the ureter and the absence of any signs of inflammation.

The third case occurred in a man aged 54, on whom the clinical diagnosis of renal calculus was made, Pathologic Number 1,717. The case is of special interest because it was associated with a double ureter. A radiograph showed the calculus in the right kidney, the left kidney was believed to have been normal. Incision of the right kidney for removal of the stone and draining of an abscess was followed by death. The autopsy showed



Cysts of the Ureter: A—Stone in upper pelvis. B—Normal lower pelvis. C—Opaque cysts. D—Pedunculated cysts. E—Normal ureter.

that the left kidney was also diseased. In it a large calculus had escaped detection, the radiograph having been taken rather low on the abdomen. This

kidney had a double ureter, the one supplying the upper diseased half of the kidney was completely plugged by the large stone which lay in a nephritic abscess. The second ureter, draining the lower half, was normal. In the upper part of the former ureter 13 small cysts were found, 1 to 4 mm. in diameter, most of them yellow and translucent, a few opaque and yellowish grey. One was pedunculated, the others were attached to the somewhat thickened ureter by broad bases. With two ureters, one of which was diseased, leading from the same kidney, it is noteworthy that cysts occurred only in the diseased one. For the accompanying sketch I am indebted to Mr. Max Brödel of the Johns Hopkins Hospital.

Of the microscopic characters, nothing new can be added to those already described. The structure is a simple cyst lined by two or four layers of flattened epithelium. The content is serous, many degenerated cells are seen, some of which being multinucleated might be mistaken for protozoa; these lie free in the cyst fluid.

The views as to the etiology of this rare and interesting condition may be divided into three classes:

A. *Due to closure of gland ducts or crypts of the mucous membrane, with consequent retention.* This is the oldest view; Virchow,²³ Litten,¹² J. J. Clark,³ E. Fränkel¹⁶ and others. The objections are evident. Real glands, it may now be safely said, do not exist in the ureter. The crypts in the mucous membrane are believed by more recent workers to be communications between the ureteral lumen and degenerated areas in the Brunn's epithelial nests. If they were due to crypts, one would expect more often to find a communication with the ureteral lumen; instead of this, the whole cyst may be separated off by a connective tissue capsule.

B. *An infectious process due to the invasion of protozoa.* Certain variously shaped, granular bodies found inside the cysts being regarded as such. Pisenti¹⁷ first advanced this idea. Silcock,²⁰ Eve⁵ and Sutton²¹ also regard it as a protozoan infection. The latter writer believed the parasite was the coccidium oviforme. Von Kahliden¹⁰ (1894), in describing two cases, likewise upholds this idea of protozoan infection. Inside the cysts he found bodies, some as small as a red blood-corpuscle, others as large as ten such corpuscles. With the larger bodies, a hyalin membrane and pseudopodia-like processes occurred. Though they varied much in shape, they all had two characters in common, an intense staining reaction with eosin and the inclusion of brown yellow pigment. The smaller bodies, however, contained no pigment. Besides these, there were found round, oval, sickle and spindle-shaped bodies staining with hematoxylin. Finally, small, round structures staining with eosin in the center and with hematoxylin at the periphery were seen.

Blue staining nuclear-like structures, even 10 or 15 of them, were found in the larger red staining bodies. The inclusion of well-preserved epithelial cells in the protoplasm of the larger bodies was noted, and since degenerated cells were never found in the cyst cavity, though desquamated cells in good condition were, the writer made the hypothesis that the larger bodies use the desquamated cells as food. In his second case he found similar large bodies, but they showed neither pigment nor pseudopodia, and the smaller bodies were entirely absent. Von Kahliden believed it was hard to consider these structures anything else than protozoa for the following reasons:

1. The gradual growth which it was possible to trace in the transition between the small and large red staining bodies, though no transitional forms between these bodies and the epithelium occurred.

2. The differentiation into an ectoplasma and endoplasma common to many protozoa.

3. The form and number of their nucleus-like structures.

* Eve's⁵ and Tuffier's²² cases. In neither case was death attributed to the condition of the ureter.

4. Their cell contents, resembling spore formation.

5. The inclusion of brown yellow pigment, which, with the same distribution and color, is found in many rhizopodia, heliozoa and myxosporidia. Von Kahliden thought he was dealing with a myxosporidian, such as has been shown to occur in the bladder of the pike. Cultural or inoculation procedures were not attempted. The parasitic doctrine has been vigorously combated. Lubarsch¹⁴ believes the appearances described are those of degenerated epithelial cells, and that similar pictures occur in carcinomatous skin.* He thinks that the absence of transitional forms between the supposed parasites and epithelial cells is not a good argument. The various intermediates between degenerated products and normal cells are not always found. Such is the case in desquamative pneumonia, in which large swollen alveolar cells occur, very different from normal, and still transitions are not found. That these bodies lie free and not on the cyst wall is to be expected, since they are dead cells thrown off.

The granulation such as occurs in the sporozoa occurs also in degenerated epithelium, though not in normal epithelium. This is seen in degenerated kidney cells stained by Weigert's method. Then also on examination of fresh cyst contents no motile cells are found. Finally, on general grounds, Lubarsch asks why, if due to parasitic invasion, these cysts should be formed in exactly that part of the urinary tract where the urine remains the shortest time, and in the ureter just where glandlike structures are especially abundant—the upper third. Von Kahliden's reply that the infection may occur through the bladder is unsatisfactory. Cystitis occurs in only about one-half, and a similar cystic condition of the bladder in only one-quarter of the cases. The common absence of inflammatory change is also a point against the parasitic mode of origin. In microscopic sections in one case and in several sections in another we failed to find any suggestion of parasites either in the cyst cavity or in the walls.

C. From Brunn's epithelial nests; by degenerative changes more or less physiologic or by injuries to the ureter, mainly inflammatory. Just what part infection and inflammatory changes play in the transformation of nest into cyst is not determined. Marckwald¹⁵ and Fränkel¹⁶ believe they play no part, and thus regard the condition as more or less physiologic. Fränkel¹⁶ prefers to speak of it as "multiple cysts of the ureter," reserving the term "ureteritis cystica" for those cases in which cysts are present in large numbers, as only then does he regard it as pathologic. The proneness of the nests to degenerative change has been previously mentioned. But with the degeneration at the center, the cells at the periphery continue to multiply, and since the degenerative products cannot be thrown out, the whole structure increases in size. The surrounding connective tissue also takes part, since sometimes the cysts and especially the larger ones are entirely separated from the overlying ureteral epithelium by a connective tissue capsule; even pedunculation occurring.

Lubarsch believes two factors are necessary: the presence of Brunn's epithelium nests and injury to the ureter, of which inflammation, due to stone or other causes, plays the main role. Our own cases would rather support this last view.

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INDICATIONS FOR THE MASTOID OPERATION.¹

BY

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The antrum of the mastoid is simply a hole in the temporal bone strongly fortified on all sides. When disease once gets started in it, because of its nearness to many important structures, it is important to make an early diagnosis in order to prevent the spread of the disease into adjacent parts.

By mastoiditis is meant an infection of the antrum of the mastoid, of the mastoid cells involving the lining of these cavities, or of the bony walls, or of both. Whenever there is an acute or chronic suppurative otitis media, there is pus in the antrum of the mastoid. If a patient with suppuration of the middle ear lies down, the pus, simply by the force of gravity, flows into the antrum and comes in contact with its lining membrane. Pus in the antrum does not necessarily mean mastoiditis. We must have in addition to the pus, or in the absence of pus, an involvement of the lining of the mastoid cavities, or of the bone of the mastoid.

Usually mastoiditis is produced by an involvement of the membrane lining of the opening which connects the antrum of the mastoid with the middle ear. This membrane, either by direct spreading of the disease from the middle ear, or as a result of traumatism, becomes swollen and occludes the opening. With more or less closure of this opening, there is stagnation of the secretion in the cavities of the mastoid. If pyogenic microorganisms develop in this secretion, mastoiditis takes place.

The main points in the diagnosis of mastoiditis are familiar to all. There may be an increase in the temperature of the skin on the affected side as compared with the opposite side of the body; there may be a swelling in the region of the mastoid; there may be extreme pain located in the mastoid, or extreme tenderness on pressure. Sometimes there is bulging of the posterior superior wall of the external meatus close to the drum, this is found when there is inflammation of the anterior cells of the mastoid. One must be careful not to confuse acute furunculosis of the external meatus with bulging of the anterior cells of the mastoid.

In most cases of mastoiditis enough of these symptoms are present to make the diagnosis comparatively easy. There are, however, cases of mastoiditis, especially those of tuberculous origin, in which all these symptoms may be absent, and yet there may be very extensive necrosis of the mastoid cells. Complete destruction of the mastoid process, the result of tuberculous affection, may take place without any pain. Many cases of mastoiditis exist for years without being diagnosed. Such cases usually continue until there is an involvement of the lateral sinus, when, in conjunction with the production of the thrombosis, there occurs a

¹ Read before the Iowa State Medical Society, May 15-17, 1901.

sudden elevation of temperature. The temperature curve may resemble the curve of typhoid fever, malaria, or of general tuberculosis. In such cases, I may say, a diagnosis of one of the three diseases named is usually made. If, however, we consider that a patient with a purulent discharge from the middle ear might be compared to a man with a discharge of dynamite at the base of his brain, which is liable to explode at any time, or if one has fixed in his mind the seriousness of suppuration of the middle ear, he is in a position to recognize the symptoms resulting from infection of the antrum or of the cranial cavity, and not diagnose it typhoid fever, tuberculosis, or malaria, as is frequently done.

Almost all of these cases are the result of neglected suppuration in the middle ear. If a patient with such a condition in the middle ear develops a sudden elevation of temperature, it is well to search thoroughly for necrosis in the middle ear before making a diagnosis. If this elevation of temperature continues for several days and if there is free discharge of pus from the middle ear, while it might not be justifiable to make an absolute diagnosis of mastoiditis, one would certainly be justified in performing an exploratory operation upon the mastoid in order to find out for certain whether or not there was an affection of the mastoid cells.

In making a differential diagnosis between systemic diseases and mastoiditis, in addition to the ordinary symptoms of mastoiditis some of the things to which attention should be given are:

1. An examination of the fundus to see if there is a choked disc, the result of an increased intracranial pressure.
2. Examination of the tympanic membrane; for if there is perforation of this membrane, with a constant discharge, it indicates the presence of the most frequent cause of mastoiditis.
3. Partial or complete destruction of the drum with pus in the middle ear.
4. Necrosis in the attic or posterior wall of the middle ear.
5. Cholesteatomatous masses in the middle ear.
6. Sudden elevation of the temperature to 103°-105°.

Leutert says that continuous fever, lasting several days after subsidence of an acute otitis media suppurativa when there is free exit to the purulent discharge, but more particularly in the chronic otitis media suppurativa without retention of pus in the middle ear, is almost always a symptom of involvement of the mastoid.

The presence of no one of these symptoms would make certain the diagnosis of mastoiditis, but would indicate its presence.

The treatment of mastoiditis is mainly prophylactic. In many localities the discharges from the baby's ear are looked upon as of about the same importance as the eruption of the teeth; and it is not unusual to see cases which have been neglected for years until the disagreeable odor of the discharge sends them to a physician, and if the physician recommends simply the cleansing of the ear with warm water he subjects the patient to the dangers of mastoiditis and intracranial complications.

I have in mind a medical student who came to me a year ago with suppuration of the middle ear. Ossiculectomy and scraping of the wall of the middle ear was recommended. This was in April, and the student having finished his work at the University, decided to postpone treatment until the following fall. During the summer he developed mastoiditis, abscess in the brain, and died. I could mention numbers of cases in which simple neglect of a small necrosis in the middle ear has resulted in mastoiditis and death.

Knapp says that a person who has no hereditary tendency to deafness and who guards his hearing organs through all the diseases of childhood is almost immune from trouble in after life. Most cases of chronic otitis

media suppurativa are the result of the exanthems of childhood.

Postmortem examinations in various European hospitals have revealed the remarkable fact that in about 60% to 80% of the cases of the various exanthems there was some affection of the middle ear, and in about 50% to 60% of these cases no affection of the ear was suspected. Inflammation of the middle ear frequently leaves behind it changes which will affect the middle ear and the mastoid of the individual later in life, and it is so frequent during the attacks of scarlet fever, measles, diphtheria, etc., that it might be well for the physician to examine the ears of his patients in any of these diseases. If, however, either through some lack of prophylaxis or for some unavoidable reason mastoiditis develops, it is best in the beginning to give laxatives and apply, by means of Leiter's tubes, cold over the region of the mastoid. If with the application of cold there is a decrease in the intensity of the disease inside of two or three days the treatment should be continued. If, however, the disease remains stationary or becomes worse, or if at any time there are symptoms of meningeal disturbances, the patient should be operated upon immediately.

The danger in mastoiditis lies not in the operation but in not operating. The mastoid operation is of so little danger to the patient that one finds such men as Stäcke, Schwartz, Jansen, Holmes and Densch advocating it in all cases of chronic suppuration of the middle ear because, they say, the antrum being so closely connected with the middle ear, is always affected. Densch says "at the present time the general surgeon does not hesitate to open the abdominal cavity for diagnostic purposes, and in the same way I believe the otologist is perfectly justified in exploring the mastoid cells whenever there is the slightest evidence of inflammatory process." If the mastoid operation is performed under perfectly aseptic conditions the patient will suffer little discomfort beside that which is caused by the anesthesia.

In patients who have large pneumatic cells it is absolutely impossible to make a positive diagnosis. The disease may exist for several weeks, and sometimes for several months, without any severe symptoms. If these cases do not result in involvement of the lateral sinus or in abscess of the brain, the destruction in the mastoid will be so great that after the operation the recovery of the patient will be exceedingly slow. Had the operation been performed when perhaps there was only a suspicion of the affection, or in other words, had an exploratory operation been made, the patient would have been relieved at a much earlier period, and a long and tedious convalescence would have been avoided. In many cases, too, intracranial complications would be prevented which might result in death.

The mastoid operation, if performed with asepsis, entails very little danger. The patient may die as the result of the previous condition, but very few die as the result of the operation. If during the operation the cranial cavity is opened, under perfect asepsis, there is very little danger, or if the sinus is perforated, hemorrhage can be readily controlled and the patient suffers little.

It is not to be wondered at that however true the diagnosis, or however skilfully the operation is done, success does not always attend work along the line of otitic surgery. The localization of the lesion is not always clear. Lesions may exist other than those made apparent through the grouping of symptoms, or the pathologic changes may have progressed so far as to preclude the possibility of successful issue. The mastoid operation I feel sure is perfectly familiar to all. In its performance one must always see that a thorough connection is established between the antrum and the middle ear, and in addition all of the cells of the mastoid must be opened. Quite frequently some of the cells in the tip of the mastoid may be affected, and if neglected they will cause future trouble and the operation will be practically a failure.

A LEIOMYOMA OF THE SKIN ARISING FROM THE ERECTOR MUSCLE OF THE HAIR-BULBS.

BY

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Herzog, in the *Journal of Cutaneous and Genitourinary Diseases*, November, 1897, presents a case of cutaneous myoma, and states that these neoplasms are very rare, he having found but about a dozen cases reported in medical literature. Jadassohn, however (Virchow's *Archiv*, Bd. 121, s. 88), claims that while multiple myomas are exceedingly rare, solitary pure myomas and mixed forms are not so infrequent. In any event, myomas of the skin are not sufficiently common to deprive them of considerable interest, and this is especially true of those leiomyomas whose origin is undoubtedly from the erector muscle of the hair-bulbs.

The tumor here to be described was furnished me by Dr. A. P. Ohlmacher, who obtained it from Dr. C. G. Parker, of Gallipolis, Ohio. Dr. Parker kindly supplied the following notes on the clinical history:

Mr. S., aged 55; his general health is very good, but he is of a nervous disposition. Both his father and mother had supposed malignant growths removed from the face. In July, 1901, Mr. S. complained of burning and sharp pain in the cheek, which in one week was followed by the appearance of a tumor, which bled freely and grew rapidly. September 6, 1901, the growth was removed by Dr. Parker. Before submitting to operation the patient consulted several physicians, who made a diagnosis of epithelioma. After the operation his condition remained good, and there was no evidence of a return of the neoplasm at the time of Dr. Parker's letter in December, 1901.

The gross specimen, preserved in formalin solution, consists of a thickened, oval, disc-like object measuring 2 cm. by 1.5 cm., and 8 mm. in thickness. It is composed mostly of a newgrowth with a rim of ordinary subcutaneous tissue and muscle. Even in the preserved specimen the neoplasm is much firmer than the outlying tissue, and the increased consistency was noticed while the tumor was *in situ*, and in the fresh state after removal. The surface of the disc is covered with skin showing the ordinary pores and a number of stiff, short-cut hairs projecting from it. One particularly thick, reddish hair is at one edge of the tumor mass. The skin is broken and discolored on one side of the disc corresponding to the area from which bleeding occurred. On section the neoplasm is sharply defined from the surrounding tissue by its lighter hue, and it is now seen that the epidermis over the tumor is quite thin and in intimate contact with the white tumor-substance. Close inspection of the cut tumor-surface discloses waving bands traversing it, resembling the appearance in uterine fibromyoma, though in miniature. Beneath the tumor mass is a layer of ordinary voluntary muscle.

Several thin slices across the disc-like gross specimen were embedded in celloidin and paraffin. From a slice including the large hair at the edge of the disc sections were obtained which included the hair with its bulb and surrounding structures. These sections were prepared and stained by the ordinary eosin and hematoxylin method, Weigert's elastin stain, and the orcein stain for elastic tissue. An examination for reticulum was made by the Mallory anilin-blue staining combination.

The most noticeable feature histologically is the fact that the smooth muscle-fibers of the tumor lie between the epidermis and the corium, and have encroached upon the corium with the result that the papillas have almost disappeared. In fact, the corium has been nearly displaced by the growth of the tumor. Many newly-formed bloodvessels are seen, especially near the surface just under the epidermis. This doubtless accounts for the ease with which the growth bled. The cells of the nonstriated muscle are ovoid or elongated, and lie close together in groups which run in various directions. The nuclei are large, oval or round, rich in chromatin, and show two or more nucleoli. Mitosis is present in many of the tumor cells.

Microscopic examination shows the neoplasm to be a leiomyoma, the tumor elements evidently originating from the erector-muscle of the hair-bulbs.

That the tumor arose from a hair muscle seems quite certain. Near the hair-bulbs the muscle-cells all trend in the same direction, viz., that taken by the fibers of the arrectores; and in one section, from the center of the tumor, direct continuity with the erector-muscle of the large reddish hair at the edge of the neoplasm was readily traced. The only other known method of histogenesis in leiomyoma of the face is from the muscularis of bloodvessels, and in our case there is no evidence for such an explanation. There is a sharp line of histologic demarkation between the subcutaneous tissue on one side of the hair-bulb in question and the tumor mass on the other. It is plainly evident that the sweat and sebaceous glands, both of which are present in large numbers, lie outside of the territory of the tumor, and that here the skin appears normal. A considerable amount of inflammatory reaction is demonstrable, round-cells being found in large and small groups near the epidermic surface and also quite deep in the substance of the tumor. In these groups, endothelial, plasma, lymphoid cells, and fibroblasts can be seen.

The presence of elastic tissue was best demonstrated by Unna's orcein stain. There is a very considerable increase in the elastin, distributed pretty generally throughout the tumor in coarse wavy bundles of elastic fibers, but more especially marked in the deep parts. The amount of reticulum is not noticeably increased. It was impossible to determine the presence of nerves in the tumor.

In the case of multiple myoma described by Jadassohn (*loc. cit.*) there was considerable pain occurring in sudden paroxysms, 7 to 15 times a day. Microscopically his tumors showed the skin thinned and the papillas decreased in size but not effaced at any place. Round-cells were present superficially and deep. There was no sharp line of demarkation between the tumor and corium, and no nerves were demonstrated. Elastic tissue was increased. Herzog (*loc. cit.*) has found that the amount of elastic tissue in myomas varies a good deal, and in a myoma of the ovary it even proved to be absent. Skin myomas, however, seem to have the amount increased in every instance.

Jadassohn accounts for the pain and itching accompanying the tumors by the pressure of the newgrowth upon the nerves beneath. All authorities agree that these neoplasms tend to recur at or near the original site. It is perhaps suggestive in our case that a possible hereditary influence may be suspected, from the patient's assertion that both his parents had so-called malignant tumors of the face removed; particularly if it is recalled that a clinical diagnosis of epithelioma had been made in the case of the tumor under consideration. In Herzog's case also the tumor had been pronounced epithelioma of the face.

A hospital and school for nurses is to be established at Zittau, modeled after the Johns Hopkins Hospital. It is designed for the care of Americans living on the Continent. Free beds will be provided for those unable to pay. Dr. Werckmeister, who has lived in the United States, is at the head of the movement.

Child Study.—A report given at the last general meeting of the Society for Child Study in the dukedom of Saxe-Meiningen, shows that the employment of physicians to examine school children has become an established institution. The dukedom has 33 physicians who each attend from 1,200 to 1,500 children. The initial physical examination extended to 40,000 children. From the investigations carried on with the assistance of the teachers it was found that there was a marked difference between town and country children from a hygienic point of view. In several of the cities from 10% to 13% of the pupils had defective eyesight while in the rural districts there were only 2.4% so affected. Scrofula was found to be much more general than tuberculosis. Goiter in certain districts ran as high as 33%. Affections of the heart not uncommon. The teeth of a large number were defective; out of 303 children examined in one village only three had good sets of teeth. Provisions for necessary treatment of these children is being considered, although no definite plan has been adopted as yet.

REPORT OF A CASE BELONGING TO THE ERYTHEMA GROUP OR HENOC'S PURPURA, WITH CHRONIC PARENCHYMATOUS NEPHRITIS—AUTOPSY.¹

BY

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In presenting this case, the effort is made to bring attention to that interesting group of cases about which little has been written, but which is beginning to receive considerable attention:

CASE.—K. S., a female, aged 13 years, gave the following history:

Her mother is living and well. The mother, four years ago, after being overheated, had an attack of hives, which came out in red blotches all over her body. Her face, hands and feet were swollen, and she also had severe abdominal pain. She had no other symptoms. This was the only attack she ever had, but her mother was subject to similar attacks of hives, but nothing further is known, except that severe abdominal pain accompanied one attack.

The father is a hard drinker and has deserted his family. Aside from this nothing is known of his history. The patient is the youngest child. Five sisters are living and well. One brother is dead, owing to an accident.

The patient was a full-term, healthy baby. The labor was normal, and there was nothing about the child at birth to indicate anything unusual. When one week old a fine rash appeared all over the body, and the face became swollen. In a few weeks these symptoms entirely disappeared. When the child was five or six months old the mother noticed that the rash had returned, with swelling of the face and puffy eyelids. This time it appeared in large blotches, and was more irregular. The mother described them as representing half-moons and different letters of the alphabet. This rash has never disappeared. When she was 8 months old she had measles, and at 19 months scarlet fever, and was very sick with it for several weeks. When 2 years old she had swelling of the face, especially about the eyes. Her teeth decayed, and the gums were swollen and painful. No bleeding occurred, except when teeth were extracted, and then only a normal amount.

No other symptoms were noticed till she was about 4 years old, when she first began having pains in her knees. She would cry out with the pain and the legs would draw up. Later, the pain began in the hips, but it would not be continuous and she would frequently be free from it altogether. About this time she began having cramps in the abdomen with vomiting and diarrhea.

Owing to the number of children in the family the mother was obliged to send the child to an asylum.

The patient stated that as long as she could remember she has had attacks of pain in the right ankle and knee, but does not remember ever having had any pain in the left, though her mother states she has had pain in both. This pain usually preceded an attack of pain in the stomach, and was followed by nausea and vomiting. Diarrhea was a constant symptom, and the attacks referred to frequently came as often as two or three times a week.

Bleeding from the nose and gums has occurred at frequent intervals, but was not severe.

The attacks were usually ushered in with cold feet. The abdominal pain was intense, sometimes being located in the stomach and sometimes extending through the abdomen, and only partly relieved by vomiting. Slight rise in temperature and headache were usually present. Urine was usually lessened during an attack and occasionally almost suppressed. Sometimes the urine was almost suppressed when she had no special symptoms. Occasionally she vomited freely after meals, without nausea. These attacks of gastric pain sometimes lasted half an hour and sometimes for several days.

In October, 1900, she was suffering pain in the right ankle, knee and abdomen, with the usual train of symptoms, when her right hip suddenly pained her. The pain was so great that the possibility of hip disease was considered probable, and extension was used. She was kept in bed for two weeks, but her condition did not improve, so she was allowed to get up on crutches.

From October to March her right hip, knee and ankle pained some, but in March she had a severe attack of pain in the abdomen, vomiting, etc., and pain in the right hip became so much worse that she was again put to bed and extension applied till she entered the Women's and Children's Hospital in June, 1901, in the service of Dr. Hotaling. She was put to bed and extension kept up for a few days, but seeing that her condition did not improve she was allowed to get up, and the symptoms of hip trouble disappeared in a few weeks.

According to Dr. Baum, who saw her with Dr. Hotaling, the eruption at this time was purpuric in character.

Shortly after this, however, it became erythematous. During the summer she had several attacks, but not so severe as those she had before entering the hospital. Her urine was scanty and contained albumin, but no casts. Treatment, which consisted of a diet and drugs to assist elimination, resulted in an improvement of her condition.

On October 1 she came under my care. Physical examination showed a child four feet three inches in height, stocky in build and weighing 60 pounds. Her nose was inclined to be flat, the eyelids puffy, and the pupils slightly dilated. There was slight enlargement of the thyroid. She had high, square shoulders, short neck, and a thick chest. The lungs were normal, except for occasional rales posteriorly at the base. Respiration was slightly increased 20-30 per minute. Apex beat was normal. Heart was somewhat enlarged upward to the left. No positive murmur could be made out. Pulse 90 to 100. Radials were slightly stiff and the spleen seemed to be slightly enlarged. Abdomen was somewhat distended, due to ascites and tympanites. Feet were slightly edematous. The fingers were clubbed, also the toes, slightly. The skin at this time was covered with an erythematous rash, papular and irregular in outline, the color varying from light scarlet at beginning to dull purple on fading. There was no itching. By outlining these spots it was found that they changed their location every three or four days, recurring in fresh crops and bearing little or no relation to the gastric crisis. This condition persisted till within a few weeks (two or three) of her death, when the rash faded somewhat. At this time purpuric spots appeared around both ankles, and remained there till death.

The urine showed that from June till her death albumin was always present, varying in amount from a slight trace to 5%, and the specific gravity was generally as low as 1,008-1,012.

Casts were not discovered, though searched for constantly, till November, when both hyalin and granular were found and the urine was of higher specific gravity. No pus was ever found in the urine till 5 days before she died, when she voided a considerable quantity each day. No blood was ever found. Generally just before an attack of gastric crisis the urine would be lessened. Sometimes it was almost suppressed, but even this was not a constant symptom. At other times almost total suppression would occur without any inconvenience. Bleeding from the gums and nose occurred, but was not severe in character. The blood examination showed that on June 14 hemoglobin was 53%, R.B.C., 3,540,000. October 9, hemoglobin, 60%; R.B.C., 4,264,000. Bloodcells were normal in outline, white corpuscles were also normal. The differential count was normal.

Examination of fundus of eye by Dr. Stebbins showed albuminuric retinitis. Headache and rise of temperature almost always preceded an attack of gastric pain, but this was not constant. Usually the arthritis preceded or accompanied the attack, but not always. These attacks were not as frequent or severe during the summer. The last two preceding her death were very severe and long in duration and were not accompanied by arthritis. The vomiting was exceedingly hard to control. Diarrhea was constant, her bowels moving 3 to 6 times a day.

Late in November the nephritis grew worse and the edema progressed and threatened to become general. Uremic convulsions developed, and she died late in December.

A diagnosis was made of one of the erythema group with the visceral complications, or Henoch's purpura with chronic parenchymatous nephritis associated with large white kidney.

The treatment was mainly dietetic and to aid elimination, and tonics, but with the development of the nephritis symptoms, treatment seemed of no avail.

Autopsy.—Body of a well-developed, well-nourished young girl. The body is slightly warm, and rigor mortis slight. Livor mortis of dependent parts slight. Pupils are unequal; left is contracted, and right dilated. Edema is marked about the legs and ankles.

Examination of the peritoneal cavity shows the appendix is normal. Mesenteric lymph nodes are apparently not enlarged. Peritoneum is smooth and glistening. There is a small amount of yellowish fluid in the peritoneal cavity. Lumbar lymph nodes are apparently enlarged and red. On section, the same color presented. The gallbladder is slightly distended. Diaphragm extends to the fifth rib on the left side, and to fourth interspace on the right side.

Examination of the pleural cavities shows that the left cavity is obliterated by fibrous adhesions. The lung is bound to the wall by strong fibrous adhesions. The right cavity contains no fluid. Deposition of fat between the ribs is apparently very marked. The apex of the lung and upper 10 cm. of posterior border is firmly bound down by fibrous adhesions. The pericardial cavity contains 15 cc. of clear, straw-colored fluid.

The size of the heart is apparently normal. The color is pale red and the fat deposition is apparently normal. Coronary vessels are slightly distended and raised above the surface. Large white postmortem clots appear in right auricle and ventricle, intimately woven among the attachments of the valves and papillary muscles. The valves are apparently normal. Foramen ovale is closed.

The lungs are red and downy. The posterior borders of each are deep red, firm, and moist on section.

The spleen tends toward disc shape. The size and color is apparently normal.

¹ Read before the Syracuse Academy of Medicine, January 21, 1902.

The external appearance of the gastrointestinal tract is very pale. There is marked distention by gas through the entire extent of the intestines. The stomach contains about 150 cc. of semifluid, bile-stained material. Mucous membrane is pale and rugae are prominent. Along the lower two-thirds of the greater curvature, over an area about 10 cm. in breadth, the bloodvessels of the submucosa appear distended and prominently elevated. This is more marked in the case of the veins. At various points in the meshes formed by the arbor-like ramifications of the bloodvessels appear fine, petechia-like spots. These average 1 mm. in diameter or less. The intestines contain a small amount of partially digested material. This is especially pronounced in the colon, in the lower part of which the characteristic odor and color of feces is presented. Mucous membrane of the intestines is pale. An injected arbor-like area appears in the duodenum about 15 cm. below the pylorus, 3 cm. by 7 cm. in dimensions. No petechia-like areas are noticed at this point. A similar area appears in the ileum 3 cm. by 4 cm. in dimensions, about 15 cm. above the ileocecal valve. The liver is pale and yellowish-red, smooth, and normal in size. On section the same color is presented. Consistency is apparently normal.

The left kidney is 11.5 cm. by 6.5 cm. by 4 cm. Weight, 195 gms. There is a large deposition of fat on the exterior. Capsule strips readily. On section, cortex apparently is found greatly thickened, and yellowish-white in appearance. This color extends into the pyramids. The ureter is apparently normal.

The right kidney is 15 cm. by 7.5 cm. by 4.5 cm. Weight, 310 gms. There is a large deposition of fat about the external surface. Capsule strips readily. On section the same appearance presented as the left kidney. Two areas, each about 1.5 cm. in diameter, containing a whitish, pus-like material appear in the region of the broadest portion of the upper and lower calyx. The ureter is pale and greatly dilated, being 15 mm. in diameter, measured at a point midway between the kidney and bladder. The suprarenals are apparently enlarged, 3.5 cm. by 5.5 cm., longest dimensions.

The external appearance of the bladder is normal. Mucous membrane is pale. Rugae indistinct. At three points, just above the trigonum, the mucous membrane is markedly infiltrated with blood, presenting three bloodclot-like areas, each about 1 cm. in diameter. The bladder portion of the ureter patent on left side, slightly constricted but patent on right side.

The uterus, tubes and ovaries are normal.

The thoracic and abdominal portion of the aorta is normal. Arch: an opaque, whitish, and slightly elevated, triangular area 5 cm. in diameter appears just above one of the semiluna flaps on the intima.

Anatomic Diagnosis.—Pyelitis; edema of the legs and feet; chronic adhesive pleuritis; arteriosclerosis of the aorta; hypostatic congestion of the lungs; distention of the intestines; petechias in the mucosa of the stomach; enlargement of the kidneys; hemorrhages into the mucous membrane of the bladder.

Microscopic Examination.—The liver shows marked amyloid infiltration; kidney shows amyloid infiltration of the walls of the smaller arteries and glomeruli; ureter shows chronic ureteritis and marked infiltration of all layers with lymphoid and plasma cells; lumbar lymph node presents no marked change.

In the *American Journal of Medical Sciences* for December, 1895, Osler reports a series of cases of "Exudation Erythema, with the Visceral Complications," and refers to cases of other authors. Again, in the *Jacobi Festschrift* he publishes a series of six more cases.

These groups of cases had three distinguishing features:

I. Polymorphous skin lesions: (a) acute circumscribed edema; (b) urticaria; (c) purpura; and (d) ordinary exudative erythema.

II. Polymorphous visceral lesions: (a) local serous or hemorrhagic exudate in walls of stomach or bowels, causing (1) crisis of pain and (2) hemorrhages; (b) acute nephritis, and (c) certain rare pulmonary and other lesions.

III. Infiltration of synovial sheaths. Periarticular tissues and arthritis.

In his textbook Osler describes these cases under the term Henoch's purpura.

In his last report he sums up as follows: "That there is a close affinity between exudation erythema, Henoch's purpura, peliosis rheumatica, urticaria and angioneurotic edema is shown, first, by the similarity of condition under which they occur; secondly, the identity of the visceral manifestation; thirdly, the substitution of these afflictions for each other in one and the same patient at different times."

It would seem from the grouping of the cases and the variety of symptoms that a proper term is difficult.

However, to Osler we owe the fact of the pointing out and grouping of these symptoms. In the foregoing case the history of recurring gastric crises, the varying skin eruptions, the arthritis, and nephritis, justify us in classifying it as one of these cases.

The history of urticaria in the mother and grandmother would point to a hereditary condition. The clubbed fingers are usually associated with a congenital heart lesion.

The result of the autopsy, showing the hemorrhagic condition of the stomach and bladder, and the kidney changes, tends to justify the diagnosis.

The cause of the enlarged ureter was not found. Possibly some substance might have been dislodged while probing the ureter during the autopsy.

To Drs. Shrimpton and Dutcher, of the House Staff of the Syracuse Hospital for Women and Children, I am indebted for the clinical records and great assistance in the management of the case; and to Dr. Stensland, the Hospital Pathologist, and Mr. Palmer for the autopsy report.

SPECIAL ARTICLE

A BRIEF STATEMENT OF THE PRINCIPLES UNDERLYING THE PHYSICIAN'S OBLIGATION TO SECRECY.¹

BY

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"Whatever, in connection with my professional practice or not in connection with it, I see or hear in the life of man which ought not to be spoken abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this oath unviolated may it be granted to me to enjoy life and the practice of the art, respected by all men, in all times. But should I trespass and violate this oath, may the reverse be my lot."

So runs the Hippocratic oath. And so the physician has lived and practised for 2,000 years and more. Simple enough it appears. And simple it may have been centuries ago when the usage of the profession first crystallized into the formal language quoted above. But when we try to find the meaning of this formula as it bears upon present life difficulties arise. What is it that ought not to be spoken abroad? Who shall be the judge in any particular case? And then, too, is there not in some cases a duty of disclosure opposed to this obligation of secrecy?

After all the Hippocratic oath is but a formal recognition of a man's right to his life and his reputation. Even so early in its history our profession was insisting that the sufferer might uncover himself to his medical adviser, body and soul, in his search for aid, without the vestige of right in his neighbor or even in the state to know what had passed between them.

Our study will be easier if we start with the postulate that no information acquired by a physician in his professional capacity can properly be disclosed, and then consider the circumstances which limit this statement and the principles out of which such limitations arise. The duty of secrecy is enjoined to protect the individual in his life, health, and reputation. The duty of disclosure exists in one respect to safeguard the life, health and property of the individual and in another to maintain the rights of the community. The extent to which the duty of disclosure overrides the duty of secrecy has been more or less closely fixed by legislation and judicial decisions, in theory, at least, with due regard both to the needs of the state and to the probable detriment to the individual.

The simplest case which can confront the physician is that in which there are no rights involved except those of the patient. Here, if he is an adult and of sound mind, he must be kept informed of his condition, so far as such information is

¹ Read before the Medical Society of the District of Columbia, November 13, 1901.

consistent with proper treatment. The physician is not bound to communicate to him information liable to act unfavorably on his mental or physical condition. In determining the extent to which information may be given the physician is bound to use his best judgment, and for errors of judgment which cannot be avoided by due diligence and ordinary knowledge and skill he is not liable.

The next case which we have to consider is more difficult. In it there is an apparent conflict between the physician's duty to the patient and his duty to some other person. Such cases arise between patient and nurse, parent and child, guardian and ward, husband and wife, master and servant, an inmate of an institution and the officer in charge thereof, and between members and officers of voluntary organizations. In determining the extent to which, if at all, the physician can or may be bound to communicate information relative to his patient to some third person or persons, bearing to such patient one of the relations set forth above, it is necessary to consider, first, the extent to which such person may be entitled to it by reason of the fact that he is the agent or servant of the patient, and, second, the extent to which he may be entitled to it by reason of any contract existing between the physician and him. So far as such an individual acts as the agent or servant of the patient to facilitate his recovery, as in the case, for instance, of a nurse, he is entitled to whatever information is essential to enable him to discharge his duty to the best interests of the patient. So far, however, as relates to any contractual obligation between the physician and a third party, the physician would be at liberty to communicate information relative to the patient and called for by such contract only so far as the patient himself might be a party to the contract or have consented to it.

The peculiar relation between parent and minor child, and guardian and ward, requires special consideration. It is believed that the father of a minor child, and, in his absence, the mother, has an absolute right to receive promptly whatever information the physician has concerning it, so far as such information can be communicated without retarding or preventing the proper recovery of the child, and, possibly, so far only as it can be communicated without injury to the parent. But this right continues only so long as the parent provides his child with the necessities of life so far as lies within his power. The minor child driven from his parents' domicile, earning his own money, and paying his own expenses, is, in effect, emancipated, and so long as such condition exists the physician is under no obligation to communicate to the parent information concerning him. The relationship between guardian and ward is, generally speaking, analogous to that between that of parent and child. This is true whether the guardianship has been established because of either minority or lunacy. There is, however, this difference: a guardian cannot lose his rights merely by neglecting his duty to provide for his ward, as a parent can with reference to his child; the duties and rights of the former are fixed by law, while those of the latter grow out of the relation itself, and are largely of a moral kind. The guardianship terminates only by judicial decree or by the expiration of the time limited by the decree by which the guardianship was created, and during its continuance the guardian should be fully informed, upon demand, as to his ward's condition.

It is impossible to speak with any degree of accuracy as to the rights of husband and wife. These have now been so generally modified by statutes that no hard and fast rule can be laid down. In the absence of statutes, however, a husband would be entitled to receive full information regarding his wife's condition, but without any corresponding right upon her part to be informed as to his. But here as elsewhere a physician could probably refuse without liability such information as might tend to defeat the very end for which he is employed—the relief or cure of the patient. The consideration of the modifications of a husband's right by reason of abandonment or voluntary separation would lead us too far from the general scope and purpose of this paper. It may be said, however, that there are probably but few physicians, who, if called to attend a woman living apart from her husband, would not refuse to communicate to him without her consent any information liable to prejudice his patient, and assume whatever liability, if any, that might result from so doing.

An accurate knowledge of one's duty as between master and servant may be of importance in cases when the physician is called upon to attend a domestic residing in his master's house. Except in so far as the master may be regarded as the agent of the servant, so to speak, to secure his proper recovery, he is not entitled to any information prejudicial to the patient, and then he can receive only such as may be necessary to enable him to facilitate his cure. The fact that the master pays for the service rendered does not entitle him to know the result of the physician's examination to the detriment of the patient's reputation. The proper thing to do in any doubtful case is to advise the patient as to his condition as fully as can be done safely so as to enable him to answer such inquiries as his master may make and then to refer the master to him for information. Let the master do the rest. A physician, however, may be expressly required to communicate to the master such information as is necessary to enable him to discharge any duty imposed upon him by law; as to report cases of contagious diseases within his household and to isolate patients suffering from such diseases.

Physicians attending patients in any of the public services, the Army, Navy, or Marine-Hospital Service, or in public institutions, as jails and hospitals, are at liberty to communicate to their superior officers and to those in charge of such institutions such information regarding the patient as may be required by law or by the regulations of the institution, without reference to the effect of such communication on the patient's reputation. Persons entering such services or institutions voluntarily, either expressly or by implication from the very act of entering, surrender their personal rights in favor of such service or institution so far as law or the rules of the institution may require. Persons entering institutions, as insane asylums and jails, involuntarily, as the result of judicial orders and decrees, are deprived by the very act of commitment of such personal rights as may be necessary to ensure compliance with the rules of the institution and to enable those in charge of it to discharge whatever duties are imposed upon them by law. The rules governing any of these institutions must, however, be reasonable; otherwise they may give way before the rights of the individual. The superior officer to whom such communications are made has, of course, no right of disclosure further than may be necessary in the discharge of his lawful duty.

The third case which presents itself for consideration is that in which the obligation to secrecy as related to the patient is opposed by a possible need for disclosure in the interest of the state. In any case of this character the patient has a right to absolute secrecy except in so far as the state has by law or judicial decision required disclosure. The law, for instance, requires the physician to disclose information which may be prejudicial to his patient when it requires him to report certain cases of contagious diseases. The facts which the physician is required to disclose in making reports of births and deaths may be detrimental to his patient's interests. So also may the disclosures required on the witness stand. The disclosure of a crime to the police authorities, which may be legally necessary, does not ordinarily favor the welfare of his patient. When, however, a physician in the fulfillment of a legal obligation makes a disclosure he will be protected, no matter what the consequences to the patient may be. In a doubtful case the physician should be sure before making a disclosure that the obligation to do so is not only enforceable but will be enforced. For, as one of the judges remarked in the celebrated Playfair case, "The judge might refuse to commit a medical man for contempt in refusing to reveal confidences. Each case should be governed by the particular circumstances, and the ruling of the judge would be the test." So in reporting births a physician should hesitate long before placing upon the public record the name of the mother who has given birth to an illegitimate child, and when it comes to furnishing the name of the father he is usually able to decline on the ground that he does not know it.

The physician is likely to experience the greatest difficulty in determining his duty when he becomes aware that his patient is suffering from injuries the outcome of the patient's own unlawful act. Injuries of this sort vary from trivial wounds inflicted possibly in some family quarrel to those resulting from crim-

inal abortion or serious affrays and likely to terminate in prosecution for murder. It is not probable that any physician will find difficulty in determining his duty in either of the extreme cases—in the first he will keep his secret, and in the last he will promptly communicate to the proper authorities the information he has acquired. It is the cases occupying the middle ground which will cause perplexity and doubt. Advice can usually be had without difficulty by stating the case hypothetically to the law officer authorized to receive and act upon information of like character without exposing the interested parties to publicity if the physician is advised that he is not bound to make the disclosure. But advice should never be sought unless the physician is ready to state the case fairly and fully and to disclose the facts of the particular case under his care if he is advised that such is his duty.

The law which determines the duty of a physician who in the course of his professional work becomes aware of the existence of a crime otherwise unknown is not always clear, and its application to particular cases may be exceedingly difficult. In the absence of statutes regulating matters of this kind, they are governed by a certain unwritten law known ordinarily as the common law. It is impossible here to undertake an analysis of the statutes regulating such matters, they vary with the jurisdiction in which they are in force, and what is law here is not law across the nearest state line. But where the common law prevails any citizen having knowledge of a felony or of an act of treason which is about to be, or which has been, committed is bound to make the facts known to the proper officers so as to prevent the commission of the crime or to bring the guilty parties to justice. The person, be he physician or not, who disregards this obligation is guilty of the offense of misprison of felony or of treason, as the case may be. Should he go a step further and receive, comfort, or assist the criminal in order to enable him to escape punishment, he makes himself, if the offense be a felony, an accessory after the fact, and if it be treason he himself becomes a traitor. Of minor offenses the law requires no report.

In order to create a legal obligation to report facts pertinent to a crime the citizen must know of such facts beyond a reasonable doubt. No one is legally bound to report for an investigation mere suspicions, or, in drawing his conclusion as to the existence of a crime, to base inferences upon uncertainties. But the physician must act reasonably and in good faith, without bias either toward his patient or toward the state.

The principle upon which it becomes the duty of the physician to report certain cases, even to the detriment of his patient, finds its justification in the fact that the state undertakes to secure to the individual citizen safety of person, property and reputation only so far as may be consistent with the safety of the community at large, and correlates its undertaking to an obligation on the part of the citizen to conduct himself so as not to jeopardize the general welfare. The state has long refused to guarantee safety to those guilty of felonies or treason, and the law of the state is necessarily administered upon the basis that this is known to every sane citizen who has reached years of discretion. The felon has by his crime made himself an outcast. Society owes him nothing further than a fair and impartial trial by a jury of his peers and to this very trial he is entitled only on the presumption of his innocence. He may be lawfully killed by anyone if killing is the only means of preventing the felony, and the private citizen who knows of his crime may arrest him without warrant and maintain the arrest if it becomes necessary, even at the cost of the felon's life. The citizen who, knowing of a felony receives, comforts, and assists a felon in order that he may escape punishment, himself becomes an offender against the law of the land. He who is acquainted with information relevant to the crime and fails to make it available for the use of the state in its efforts to bring the offender to punishment does an act subversive of justice and tending to destroy government itself, and of him the state will demand punishment for his wrong-doing, even though the information which he has wrongfully withheld was communicated to him by the felon in his efforts to secure relief from his sufferings or to save his life. As it is the physician's legal duty to bring such an offender to justice, there can be no lawful obligation by either implied or express contract

authorizing or requiring him not to do so. That the law may work hardship and, in individual cases, appeal to our sympathy, is doubtless true, but law must follow definite rules and cannot be administered on the basis of sympathy except in so far as the sympathy may enter into the determination of the penalty. The law as just laid down is modified to varying extents by statutes and judicial decisions binding only in particular states and territories. It is impossible to consider such variations in detail.

Ordinarily, of course, it is not necessary for the physician to ascertain whether the circumstances under which given injuries were inflicted were or were not such as to constitute a felony, and if he does so, the information acquired is not usually privileged under the statutes governing such matters. Such statutes must be considered, therefore, in determining the duty of the physician in any doubtful case, as if the physician could not lawfully testify to certain facts in court it is not likely that he would be under obligation to report them to the prosecuting officer, even though they might constitute positive proof of crime.

If a physician has communicated to the prosecuting officer information leading to investigation, and possibly even to prosecution for crime, and it turns out that the person upon whom suspicion is thus cast is innocent, or at least that the evidence fails to secure conviction, the physician is not liable if he has acted reasonably, in good faith, and without malice, and has merely reported the information in his possession fairly, in a proper manner, and to the proper officer. Under other conditions he may be liable.

A fact of vital importance to those engaged in writing and in teaching is that liability for damages arises from the fact that a disclosure has been made unlawfully and not from the manner in which it has been made. The latter is of importance only in so far as it may tend to show malice and to determine the extent of the injury. A disclosure may be made by word of mouth, in writing, by the exhibition or publication of pictures, or even by the unwarrantable introduction of a visitor into the sick-room, and in any case if the disclosure is unlawful the physician is liable for whatever injury may result. A patient entering a hospital giving clinical instruction may by implication consent to be used for that purpose, but any unnecessary act tending to injure the reputation or the health of the patient could not be justified under the guise of clinical instruction.

The consequences of unlawful concealment of information or of its unlawful disclosure will vary with the circumstances. In some cases in which from an ethical standpoint we may say safely that information has been disclosed or withheld in an improper manner the law has apparently provided no remedy, or at least the remedy has not yet been pointed out. It is possible that in some such cases when the issue is fairly made the unlawful disclosure or concealment will be regarded as malpractice and the consequences determined accordingly. In a Scotch case, decided in 1851, it was held that breach of secrecy constituted a breach of the physician's contract and rendered him liable in damages. Disclosures may, of course, constitute slanders or libels and damages be duly awarded for the resulting injury to reputation. A failure to disclose information would in some cases certainly render the physician liable in an action of malpractice, as when disclosure was necessary in order to enable the patient to care for himself properly. A failure to disclose might amount to a breach of contract and the physician called upon to respond in damages. Under other circumstances failure to disclose information will constitute misprison of felony or of treason, a statutory misdemeanor, or possibly contempt of court, and the offender be subjected to fine or imprisonment accordingly. On the other hand, contempt may arise from the wilful disclosure on the witness stand in violation of law of matter properly regarded as privileged.

The physician's position will, in many cases, be uncertain and full of difficulty. There is no hard and fast rule to follow under all circumstances. He must know what is required of him, apply his knowledge to the facts of particular cases to the best of his ability, and calmly await the consequences. After all it is impossible to escape responsibility this side of the grave, and it is best that we should not try to do so.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

April 26, 1902. [Vol. XXXVIII, No. 17.]

1. The Nature of Prostatic Hypertrophy. ROBERT HOLMES GREENE and HARLOW BROOKS.
2. Sarcoma of the Uterus. D. S. FAIRCHILD.
3. The Relationship of Antistreptococcus Serum to the Treatment of Puerperal Sepsis. GEORGE E. RANNEY.
4. Surgery of the Liver. CARL BECK.
5. A Case of Infantile Cerebral Palsy with Autopsy Findings. L. PIERCE CLARK and T. P. PROUT.
6. Management of the Umbilical Cord. C. S. BACON.
7. Some Observations on Resection of the Ribs in Empyema. ANDREW STEWART LORINGIER.
8. Case of Right Cecal Hernia, Complicated by Hydrocele and Suppurative Appendicitis. RAYMOND CUSTER TURCK.
9. A New Method for Removal of Internal Hemorrhoids Under Local Anesthesia. THOS. CHAS. MARTIN.
10. Method of Suturing the Gallbladder to the Parietes in Gallbladder Operations. WILLIAM WOTKINS SEYMOUR.
11. Glimpses of the Practice of Medicine and Surgery in British and Spanish Honduras. N. SENN. (Continued).

1.—The Nature of Prostatic Hypertrophy.—The writers review the theories of other observers presented in the last five years. As a result of original investigation they confess a complete conversion to the views of Cienecanowski. Prostatic hypertrophy of the aged is the result of chronic prostatitis. It most frequently arises from chronic posterior urethritis of whatever cause. True neoplasms are rare and are not concerned in producing hypertrophy. Carcinoma is apt to occur as the result of the chronic inflammation. The authors present the microscopic findings in 58 cases with illustrative cuts. There were evidences of inflammation in every gland, some glands showing several types. Interstitial hyperplasia was most common accompanied by resultant muscular atrophy; 36 cases showed inflammatory infiltration; in 5 pus was present; 19 were cystic; 2 carcinomas and 3 fibromas were found. In the young with normal reaction cessation of acute inflammation is followed by retraction and atrophy from sclerosis of the fibers, but in the middle-aged especially with arterial disease the hyperplasia becomes chronic. Thickening of the walls of veins and lymphatics follows, adding chronic congestion, thus prolonging and increasing the hyperplasia and exudation. Fibrosis in the periphery causes thickening of the walls of the alveoli and obliteration. Hyperplasia in the central portions results in occlusion of the ducts and cystic adenoma. The cause of inflammation should be ascertained. Prostatitis most frequently follows posterior urethritis and this is usually of gonococcal origin. [H.M.]

2.—Sarcoma of the Uterus.—Operative procedures are not warranted when the disease is so advanced as to make diagnosis easy. When tying off can be accomplished without leaving any part, better results may be expected. Sarcoma after the menopause is rare, but occurs from degenerative changes in fibromyomas. When these suddenly begin to take on newgrowth with pain, loss of weight and anemia, they should be looked on with great suspicion. Fairchild reports a case. [H.M.]

3.—Surgery of the Liver.—Beck sums up the methods advocated by other authors for removing liver tissue without hemorrhage and presents a series of animal experiments favoring the conclusions that liver tissue of considerable size may be safely removed by previous anemization of the part, and that for the support of the ligatures, living tissue from the same animal, preferably fascia and peritoneum from the abdominal wall, is best suited. From each border of the incision into the abdomen a broad band is slit up and left attached at one end. The liver is encircled by these bands where the sutures are to be placed and the catgut passed through and tightly drawn the same as when decalcified bone-plates are used. The latter were found to cause local abscesses and adhesions. The author reports a case of angiodenoma treated extraperitoneally with success, but he condemns that this method subjects the patient to too much danger of infection. [H.M.]

5.—Infantile Cerebral Palsy.—The autopsy findings are generally porencephaly, small and indurated convolutions, cysts, and microgyria. There may be no evidence of the initial lesion. There is usually some nondevelopment of the convolu-

tions of the whole hemisphere of the side involved. The cerebellum of the same or opposite side may enter into the nondevelopment. There are many varied changes present in individual cases. One case is presented at length, in which there was more or less complete atrophy of the left hemisphere, maldevelopment of the right cerebellar lobe and extreme atrophy of the left thalamus and inferior olive. The palsy began at 2, resulted in epilepsy at 6, and the patient died of the status equivalent at 29. Mental impairment was not marked and the special senses were normal. [H.M.]

6.—The Umbilical Cord.—If the infant's temperature was taken regularly fever would be oftener found, due in 90% of cases to navel infection. Necropsies two or three weeks after birth generally show, beside inflammation around the navel, arteritis, phlebitis or lymphangitis of the umbilical vessels. If any of the cord is left attached to the child it should be freely exposed to desiccation. While bacterial growth favors early separation, epidermization of the denuded surface will go on better when the part is sterile. The cord should be managed according to surgical principles. Mass ligature 2 cm. from the body is advised for nurses and physicians without surgical experience. The best place for tying, however, is at the junction of the skin and the amniotic sheath, cutting the cord 2 mm. or 3 mm. beyond. Later hemorrhage, if it occurs, can be controlled by pressure until surgical help is secured. After cutting, a large sponge of cotton saturated with alcohol is placed on the navel. Tub bathing is not condemned, but careful cleansing from all feces should precede, and alcohol should be poured afterward into the navel funnel until the little button of jelly separates. Dickinson's method of cutting away the jelly and ligating the vessels is commended. [H.M.]

7.—Resection of the Ribs in Empyema.—Cases must be selected with judgment, and without delay for too frequent aspiration. Progressive tuberculous involvement in young subjects contraindicates anything more radical than simple thoracotomy and drainage. Cases delayed until the organic pleura is dense and contracted require free resection, and are attended by more deformity than those resected earlier. The periosteum must be removed completely, and the U-shaped flap affords the best covering for this, as it does for the lung in the true Scheede technic. Irrigation is condemned. The cavity may be wiped with sterile gauze sponges and a light drain of iodoform gauze inserted, and abandoned as early as possible. Firm pressure over the collapsed area should be maintained until coaptation of the flaps has been established and the sinus closed. The scaphoid depression following can be corrected by proper muscular and respiratory exercises. [H.M.]

9.—See *American Medicine*, Vol. II, No. 1, p. 11.

10.—Suturing the Gallbladder to the Parietes.—Seymour has used this method in 20 cases. A curved Hagedorn needle with silkwormgut is passed, mattress-stitch fashion, from within the gallbladder through the peritoneum, overlying muscle and fascia; then it is brought out and reintroduced and carried out through the skin a short distance from the wound. The opposite end of the silkwormgut is introduced in the same manner, and the ends fastened by two or three shot, the uppermost of which is crushed. Three sutures are generally used, and removed on the tenth day or earlier. The advantage of this suture is that there is no danger of its falling into the gallbladder to become a nidus of new concretions, and the early removal relieves the patient of the annoyance of extrusion of unabsorbable sutures weeks after operation.

Boston Medical and Surgical Journal.

April 24, 1902. [Vol. CXLVI, No. 17.]

1. The Serum Test for Blood. E. S. WOOD.
2. Notes on the Production of the Test Serum in Rabbits. W. F. WHITNEY.
3. Notes on X-Light. WILLIAM ROLLINS.

1.—The Serum Test for Blood.—Wood reviews the history of the discovery of precipitins in the blood, and investigations into their reactions, especially considering the antiserum from the rabbit previously treated with human serum. He describes the method of humanizing the rabbit and of preparing the fresh blood or blood stains to be tested; also a method

for preserving the antiserum in dried form by means of bibulous paper. The medicolegal application of the test is illustrated by the report of a case. [H.M.]

2.—The Production of Test Serum in Rabbits.—Any aseptic syringe holding 10 cc. is all that is required. Hydrocele fluid can be most readily procured. Ascitic and pleuritic fluid are not quite so common. Serum can be kept a long time if collected aseptically and if a little chloroform is poured in the flask. Blood serum is most readily obtained by squeezing a fresh placenta and allowing the serum to separate by clotting. When there is a possibility of a blood stain having to be examined, a strip of filter paper should be soaked in the blood of the individual at the autopsy. [H.M.]

3.—Notes on X-light.—Rollins describes two regulators. A chemical capable of vaporizing and condensing is placed in a glass cylinder. A wire is laid from each pole of the generator to a coil surrounding the cylinder, the secondary being a few turns of coarser wire within or without the cylinder. When the resistance of the x-light tube is higher than that of the regulator circuit, a current passes through the fine wire heating the coarse wire, liberating the gas, which, going into the tube, lowers its resistance until the current no longer passes through the transformer till the resistance of the tube has again risen. Thus the vacuum is maintained at any desired point. The second regulator contains, beside the chemical, platinum wire connected with terminals sealed into the glass and attached to wires from a source of current of low voltage. This may be obtained from four cells of a Mescro dry battery. This circuit contains a minute spark gap which prevents the current from the battery from heating the wire. The high potential current is used as an automatic drawbridge on which the low-voltage current can cross, enabling it to heat the wire of the regulator and thus lower the vacuum. To compel the high-voltage current to bridge the gap instead of going through the battery, a choking coil is used. The importance of a tube of low resistance for superficial diseases, and of high resistance for internal diseases, and the need of an actinometer are discussed. [H.M.]

Medical Record.

April 26, 1902. [Vol. 61, No. 17.]

1. Abdominal Echinococcus Cysts. FRANK HARTLEY.
2. Treatment of Pneumonia. STEPHEN SMITH BURT.
3. Questions of Priority in the Surgical Treatment of Chronic Bright's Disease. GEORGE M. EDEBOHLS.
4. The Modification of Breast Milk by Maternal Diet and Hygiene. THOMAS S. SOUTHWORTH.

1.—Echinococcus Cysts.—Hartley reports four cases, three involving the liver and one situated in the rectovesical culdesac. Case 1 was in an exceptionally healthy Italian who began to have a dull, aching pain in the right hypochondrium 18 months before. There was bulging and there had been one attack of jaundice. Operation revealed an echinococcus cyst in the right lobe of the liver. Case 2 was in an Austrian of 32. The symptoms pointed to a right subphrenic growth. Aspiration brought away fluid containing hooklets. Operation, removing portions of the seventh, eighth and ninth ribs, drained the cavity. Case 3 was in a German of 28. A diagnosis of sarcoma or echinococcus cyst of the left lobe of the liver was made. Operation showed it to be the latter. Case 4 was in an Italian of 34. Symptoms pointed to a tumor in the lower abdomen. Operation revealed a very large cyst. It was accidentally ruptured and evisceration and thorough irrigation became necessary. Its attachment was in the rectovesical space. All the patients recovered. [A.B.C.]

2.—Treatment of Pneumonia.—Pneumonia is self limited because of the perishability of its parasite; the type depends on the condition of the individual. Diplococci thrive best at normal temperature, fever inhibits growth; high fever indicates extensive infection, meantime varying degrees of reactive ability; low fever either inability to react or moderate infection. Specific medication is unnecessary if not pernicious. It is imperative to disinfect dejecta and expectoration. Aconite and its congeners are injurious. Opium in large doses, checking renal secretion, is contraindicated, and in old persons is very dangerous. Oxygen is useful, but not indispensable. Alcohol is

valuable as a food, and conserves energy. Strychnin, ammonia, and nitroglycerin should be reserved for emergencies. Subcutaneous infusion of salt solution is invaluable for renal elimination of poisonous accumulations. Specific remedies are but makeshifts, prevention of infection is the desideratum. [H.M.]

3.—Surgical Treatment of Bright's Disease.—In the *Medical Record* of March 22, 1902, appeared an article by Rose, questioning the priority of Edebohls in the surgical treatment of chronic nephritis. The present article by Edebohls opposes the position taken by Rose, and apparently the former substantiates the following: That he (Edebohls) was the first to observe and to publish the curative effects of nephropexy upon kidneys affected with chronic Bright's disease. He was the first to undertake an operation upon the kidneys with the deliberate object in view of bringing about a cure of a previously diagnosed chronic Bright's disease. He was the first to propose to treat chronic Bright's disease *as such* by operation upon the kidneys. He was the first to propose, the first to perform and the first to report renal decapsulation for chronic Bright's disease. He was the first to publish a larger number of operations upon kidneys undertaken for the purpose of bringing about a cure of chronic Bright's disease. [A.B.C.]

4.—Breast Milk and Maternal Hygiene.—Southworth protests against artificial feeding of infants as the diseases of infancy are more fatal in bottle-fed children. In 8 out of 10 cases rational treatment of the mother makes artificial foods unnecessary. He reports a case in which slight modifications of diet with iron, fresh air and exercise on the mother's part cured persistent green stools in an infant. Full cooperation of the mother is essential to success. [H.M.]

New York Medical Journal.

April 19, 1902. [Vol. LXXV, No. 16.]

1. Cholelithiasis, Cholecystitis and Cholangitis. WILLIAM H. THOMSON.
2. Hematuria. WILLIAM K. OTIS.
3. Some Reasons Against the Public Registration or Notification of Cases of Tuberculosis Pulmonalis. E. L. SHURLY.
4. The Effect of Ostetitis of the Knee on the Growth of the Limb. HENRY LING TAYLOR.
5. Gunshot Wounds on the Isthmus of Panama. RAYMOND SPEAR.

1.—Cholelithiasis.—Thomson, in this article, takes up mainly the medical treatment of cholelithiasis, for in his experience but one out of thirty of those who suffer from gallstones ever need to undergo an operation. The first indication in treatment is to prevent bacterial invasion from the intestines. A serviceable procedure for this purpose is to prescribe alternating doses of two drams of sodium sulfate or sodium phosphate, or Carlsbad salts dissolved in a tumbler of hot water with 10 grains of sodium salicylate every morning on rising, the water to be sipped slowly. The author considers olive oil the most efficient agent against gallstones. One or two ounces should be given in a cup of hot milk at night. This dose is taken for 10 consecutive nights, then intermitted for about a week to avoid gastric disturbance, and then resumed again for 10 more nights. The record is not that of immediate relief in any case, but instead a progressive amelioration of symptoms with the paroxysmal attacks becoming lighter and fewer until they cease permanently. A continued fever calls for surgical interference as does also impaction by one or more calculi in the common duct. [C.A.O.]

2.—Hematuria.—Otis gives several methods for detecting the presence of blood in the urine. The microscope affords the best and most positive indication. He divides the urinary tract into four portions and discusses the different methods used to locate the situation of the lesion from which the hemorrhage emanates. The author has used potassium iodid injections to test for the presence of the lesion in the bladder. Absorption takes place rapidly through the unprotected surfaces of the organ and the presence of iodine may be detected in the saliva within a very few (10) minutes, while if the bladder remains intact this will not occur for a much longer period (over an hour). The ocular examination of the bladder by means of the electrocystoscope will usually locate definitely the lesion. The character of the hemorrhage is frequently indicative of its source, blood from the kidney being intimately

mixed with the urine and the first portion equally colored with the last, while vesical hemorrhages are apt to be terminal, the last portion containing the most blood. [C.A.O.]

3.—Public Registration of Tuberculosis Pulmonalis.—Shurly combats the public registration or notification of cases of pulmonary tuberculosis. Granting that this disease is only feebly communicable directly or indirectly from individual to individual, and that each successive individual must be "out of health" or possess "a tendency" in order to acquire the malady, he does not believe that it should be classed with and publicly treated the same as smallpox, scarlet fever, cholera, etc. As to secrecy, he says the idea is fallacious. The subject of the disease would be practically quarantined without any special action by the board of health, for the associates of the victim would promptly do that after registration. Another objection is that it would cost the state an immense sum of money to support and pay damages to these sequestered people, whether they were rightly reported or not. The author believes that if our health authorities would take an unbiased attitude in investigating the many aspects of this complex disease in its social and political, as well as its hygienic and pathologic, aspects, and at the same time enlist the cooperation of the medical profession in the work, some substantial data might be evolved upon which to establish rational conclusions regarding the real origin, the communicability, and possibly the prophylaxis of pulmonary tuberculosis. He believes that at present our statistics are far from being accurate; that tuberculous pulmonalis is not so fatal as cancer, pneumonia, or infantile diarrhea, not so prevalent as influenza or typhoid fever, and not so dangerous to the public health as smallpox, scarlet fever, diphtheria and syphilis. [C.A.O.]

4.—Effect of Osteitis of the Knee on Growth of Limb.—Taylor, after a thorough review of the literature of this subject, concludes that gonitis in childhood usually causes lengthening of the affected limb when approximately straight, and this may persist for eight years or more. The lengthening is mainly due to overgrowth of the femur, and may often be detected within six months of the onset. In adolescents and adults, after cessation of active disease begun in childhood, the femur and limb may be considerably shortened. The tibias are usually equal in length in the early stages; afterward the affected tibia may be slightly longer for a time, but is more often shorter, even in the first two years; this shortening increases in the older cases, and after subsidence of inflammation. With limbs of equal length and a duration of disease of several years, the femur of the affected side will be found longer, the tibia shorter than its mate. The feet and patellas show a difference in favor of the sound side after a year's duration, and often before. Stimulation of growth at the lower end of the affected femur, and more rarely and in less degree at the upper end of the tibia, is usually accompanied by retarded growth in other parts of the limb; growth in the femur itself is finally retarded, and the result after many years may be considerable shortening of the femur, tibia and limb. [C.A.O.]

5.—Gunshot Wounds on the Isthmus of Panama.—Spear reports several cases to illustrate the differences in the wounds made by the old 45-caliber lead bullets used in Remington and Springfield rifles and those made by the 7 mm. Mauser bullets in the recent revolution on the Isthmus of Panama. Most of the wounds made by the large lead bullets were infected. Where the wound only involved the soft tissues and had been received at short range and the bullet had penetrated without deformity, the exit wound was only slightly larger than the entrance wound. Where the soft lead had been mushroomed out by contact with bone substance, the exit wound was large and ragged. Several cases of grooving of the spongy portions of the long bones without fracture were observed in wounds produced by the large lead bullets; these wounds were received at close range. The lead bullet, going at a comparatively high velocity, was noticed in several cases to have been deflected; the Mauser bullet at close range, on the other hand, usually kept a straight course when it perforated. The Mauser wounds, when they were received at short range, except in those cases in which the bullet had struck the compact substance of a long bone or the skull or abdomen, were nice, clean

wounds, and presented the ordinary small wound of entrance and the small wound of exit. [C.A.O.]

Medical News.

April 26, 1902. [Vol. 80, No. 17.]

1. Prostatectomy. C. H. MAYO.
2. The Diagnosis and Operative Treatment of Prostatic Hypertrophy, with Remarks on the Complications Before and After Operation. RAMON GUITERAS.
3. The Indications for and Limitations of the Bottini Operation. E. SCHMIDT.
4. Gonorrhea of the Prostate. ERNST R. W. FRANK.
5. Prostatic Hypertrophy. LEWIS SCHOLLER.

1, 3, 5.—See *American Medicine*, Vol. III, No. 2, p. 53.

2.—Prostatic Hypertrophy.—Guiteras concludes that the general practitioner should educate his sense of touch for prostatic diagnosis. He believes that the examination of the prostate is equally as important as uterine examination. Care of the bladder before operation for prostatic disease is very important, and equally so is the minutiae pertaining to catheter life where necessary. Statistics show that those cases having a small amount of residual urine respond best to operation, hence the importance of early diagnosis. The choice of operations depends on the age and resisting power of the patient, the size and shape of the prostate, and the conditions of the heart, kidneys and bladder. During and after operation upon the prostate, the avoidance of shock and the prevention of congestion of the kidneys are essential. [A.B.C.]

4.—Gonorrhea of the Prostate.—Frank asserts that gonorrhea of the prostate is of much more frequent occurrence than is commonly supposed. Sometimes despite a clear second urine the prostate is found diseased within eight days after the appearance of the first symptom. If gonococci persist from the third to the fifth day after beginning treatment in acute gonorrhea, he suspects that the prostate is involved. The author studied 651 cases of gonorrhea, and found that 210 (32%) showed posterior urethritis—all having disease of the prostate. The disease may remain latent in the prostate many years, and may thus account for sterility. [A.B.C.]

Philadelphia Medical Journal.

April 26, 1902. [Vol. ix, No. 17.]

1. The Danger to the Public from the Ambulant Consumptive. J. O. COBB.
2. A Branchial Cyst, the Wall of Which Contained a Small Hemangioma. W. M. L. COPLIN and J. COLES BRICK.
3. A Case of Adiposis Dolorosa. JOHN B. ROBERTS.
4. Diseases of the Lachrymal Apparatus. WM. CAMPBELL POSEY.
5. Report of Several Cases of Corneal Complications in Conjunctivitis Due to the Koch-Weeks Bacillus. EDWARD A. SHUMWAY.
6. A Case of Diaphragmatic Hernia. W. MOSER.

1.—The Danger to the Public from the Ambulant Consumptive.—Cobb discusses the care of the sputum of the consumptive, from the time it is expectorated until its disposal, which should be by incineration. The principal point of the paper is to show that to the present date much, if not all the blame for the ignorance and noncompliance with proper precautions is attributable to the physician. Few doctors really know how to deal with the consumptive from this point of view, and it is not the fault of the patient that he uses little or no precaution. They have been given spit cups, which are filthy, sputum bottles that attract attention to their misfortune, spittoons that are dangerous, and disinfectants that do not disinfect. A pocket sputum flask to meet all the esthetic and scientific requirements must be absolutely concealed by the handkerchief. The patient must be able to use it with one hand, and in such a way that no one will know that anything more than a handkerchief is being used; it must not have a top to get out of order; must not leak a drop; must be simple and indestructible in all its parts; easily cleaned without getting the sputum over one's hand and disgusting the patient; must fit the pocket snugly; and last of all, and most important, must be easy of thorough, quick and effective sterilization. He describes a flask which meets all of these requirements, which has been named the Marine-Hospital Service pattern. [F.C.H.]

2.—A Branchial Cyst, the Wall of which Contained a Small Hemangioma.—Brick gives the clinical history and Coplin the pathologic report. The cyst was clearly of branchial

or thyroglossal origin, and possessed the histologic elements in its wall to justify its being designated a branchial dermoid; the only unique feature was the presence of an angioma in its wall. They claim this to be the first recorded case of the kind. [F.C.H.]

4.—**Diseases of the Lacrimal Apparatus.**—Posey gives a review of the various diseases of the lacrimal apparatus and the treatment incident to each. [F.C.H.]

5.—**Corneal Complications in Conjunctivitis Due to the Koch-Weeks Bacillus.**—Shumway details several cases applicable to the above, and concludes as follows: The Koch-Weeks bacillus conjunctivitis is apparently becoming more common in Philadelphia than has been hitherto observed; it may present itself in a particularly severe form, and be complicated by phlyctenules and even by corneal ulceration; these cases are especially contagious, and extra precautions should be taken to prevent their spreading, particularly among the school children; as a rule, they are controlled by the use of mild astringent lotions and applications of 2% solutions of silver nitrate. He has not tried protargol, but equally good results have been obtained by other observers when the solutions have been of sufficient strength, viz., 10% to 20%. [F.C.H.]

6.—**Diaphragmatic Hernia.**—Moser reports a case of diaphragmatic hernia, which was proved by the fact that upon replacing the protruded mass several fingers could be easily passed through a large opening in the diaphragm, and the apex of the heart could be easily grasped with the fingers. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The broadening of therapeutics is, perhaps, as important a change in modern medical science and art as any that has taken place. It was but a very few years ago that the directions for treatment were so few and simple that practice then and now seems a very different thing. There are, it is true, many physicians who have not caught the new view and possibly in many medical colleges there are professors who are scarcely aware of it. The revolution has taken place so quietly that only the alert minded have observed and profited by it, and possibly these are so busy with increased practice and in experimentation with the new methods that they have not had time and opportunity to "spread the word" among their slower-minded colleagues and students. Then, too, progress in such matters is slow, and the weight of tradition and habit is enslaving. The change to which we allude is the broadening of therapeutics in many directions, heretofore unrecognized or ignored, but especially in the manner of treatment by physiologic and hygienic methods rather than simply by drugs. Therapeutic nihilism, whether partial or extreme, is indeed without reason for existence except as the "nihilist" comes to know the tremendous possibilities of cure by other means than drugs. With hundreds of oculists testifying that the vast majority of headaches, sick headaches, and many other disorders of digestion, etc., are due to eye strain, the practitioner who longer neglects the testimony takes hazardous risks. The same is true of other specialties. Questions of diet must be carefully considered, and in explicit detailed fashion with nearly every patient, and often the secret of the case is learned only by scrutiny as to habits of sleeping, clothing, work, smoking, etc. Nasal stenosis, bad teeth, imperfect mastication, etc., may account for failure in health. Whoever neglects hydrotherapy and massage will not succeed as well as he might, and cure by resistance gymnastics, or some other carefully selected method of exercise, is sometimes frequently the only or most happy way. What good physician, moreover, has not learned that disease is at times psychic in origin, and that until the concealed source of trouble, the worry, or the sin, is done away with, there can be no real recovery. A multitude of such hints as these must be gathered and kept in mind by the successful practitioner

of the future, and no progress in prevention or curative medicine will ever do away with the need of that high order of mind required to act upon them. For every case differs from every other and the consummate intelligence is to find the one best method of treatment in each. Rule and routine are no longer of much service to the modern physician.

Atropin as a Safeguard in Chloroformization.

In the course of a series of experiments on blood pressure, conducted by Dr. R. D. Rudolf at the University of Toronto,¹ a special study was made of the action of atropin in conjunction with chloroform: First, as to the effect of atropin when administered previously to the giving of the anesthetic, and, secondly, the antidotal action of atropin when given after poisoning from chloroform has occurred. Dr. Rudolf's experiments led to the conclusion: "First, that the previous use of atropin lessens the tendency to death from chloroform poisoning in dogs. Theoretically, also, one might assume that from its powerful stimulating effect on the circulation it would, especially if combined with morphia, tend to lessen the chance of syncope occurring during, but not necessarily due to, chloroform administration. Second, that when, during the administration of chloroform, danger has occurred, either in the form of syncope or of respiratory failure, atropin in moderate doses (say $\frac{1}{100}$ grain) would tend to stimulate both the circulation and the respiration, and hence would be a valuable adjunct to other means of saving life in such emergencies."

The Decomposition of Proteids in the Liver.—In a preliminary communication Töpfer² describes the results of his studies of the decomposition of albumins in the liver, the studies being made with the aid of the perfusion experiment. The method was as follows: After tracheotomy and artificial respiration of the narcotized animal, the upper part of the sternum was resected, and all the vessels arising from the arch of the aorta, except one, and all veins were ligated. Then the abdomen was opened, all branches of the abdominal aorta except the hepatic artery were tied, and the stomach and intestines were removed. The aorta was then dissected out, passed through a cannula, and reflected so that the intima was turned outward. The cannula, so armed, was then introduced into the portal vein. By this means intima came into contact with intima, and coagulation was prevented. These experiments were made upon dogs that had been starved for two or three days. The results were as follows: (1) When the liver was perfused with its own blood, there was no accumulation of decomposition products in the blood; (2) after perfusion of blood to which heterologous globulin had been added, there was also no decomposition; (3) after the addition of Witte's peptone, there was likewise no accumulation of decomposition products, but there was a slight increase in the coagulable albumins, with diminution in the albumoses; (4) after simultaneous perfusion of the liver and intestine, an increase in decomposition products was noticed; (5) an increase in decomposition products also occurred after extirpation of the kidneys. It would seem, therefore, that the liver can decompose albumins in any considerable quantity only by the aid of the intestinal canal. [D.R.]

Observations of the Isoagglutinating Action of Human Serum.—C. A. Herter³ discusses isoagglutination, i. e., the close clumping or agglutination of human red blood cells by serum from another human being. The test may be made as follows: 2 cc. of the serum to be tested is mixed with 1 cc. of red cells, separated by means of the centrifuge. When the serum of a normal or pathologic individual is mixed with the cells of the same individual in the proportion named, or in other proportions, the cells show no peculiarities, but lie in rouleaux or as separated individual cells. When the phenomenon of isoagglutination takes place the serum is brought in contact with cells of another human individual. The reaction

¹ University of Toronto Studies, Physiologic Series, No. 3, 1901.

² Wiener klin. Woch., March 13, 1902.

³ Proceedings of the New York Pathologic Society, December, 1901, and January, 1902.

may be noticed in from two to five minutes. The serum and cells, after being well stirred in a watch-glass with a glass rod, soon show evidence of the beginning of the characteristic reaction when the mixture runs from side to side. Instead of appearing homogeneous, the mixture shows many light spots in which there is serum, but no cells. These spots increase in number and size, and it is soon evident that the cells are becoming separated from the serum in the form of a comparatively close-meshed network. The red cells are found closely packed together in large masses, and no longer have the rouleaux distribution. They have undergone a change in consistency, rendering them more plastic than normal, as shown by the distortion resulting from pressure of the cover-glass. The reaction may be observed with the unaided eye when the test is made on a watch-glass or cover-glass. Herter found the reaction in nearly one-third of all the cases in which the blood was subjected to this test. [C.A.O.]

Cancer of the Stomach.—H. de Unge,¹ Norrköping, reports six cases in only one of which there was absence of free hydrochloric acid in stomach-contents, the same case showing presence of lactic acid. In the remaining cases hydrochloric acid was not only present, but present in an unusually high percentage. Lactic acid is mentioned as not having been found in one case, no mention of lactic acid being made in the remainder. [A.E.E.]

Scarlatinal Serum.—In 1897 Dr. Weisbecker,² of Geden, demonstrated that the hypodermic injection in cases of scarlatina of serum obtained from convalescents from that affection produced an amelioration of the symptoms. The same line of experimentation has been taken up by Dr. E. v. Leyden, O. Huber, and F. Blumenthal, of Berlin, who have secured such satisfactory results as to warrant them in presenting this phase of progressive immunization to the attention of the profession. [C.S.D.]

Splenic Anemia or Primary Splenomegaly.—M. L. Harris and M. Herzog³ report two cases in which complete recovery followed. The changes which take place in the blood, so far as known, consist in a diminution in the number of erythrocytes, with a reduction in the percentage of hemoglobin, thus giving a lowered color index. So far as the leukocytes are concerned there may be a leukocytosis (23,200, case II), or a leukopenia (2,600, case I); usually the number is below normal. The differential count shows no characteristic changes. After the removal of the spleen a marked change is noted in the relative proportion of the different leukocytes, although the total number remains about normal. This change consists in a large increase in the percentage of eosinophiles. It requires some months for this to become marked. There is also an increase in the percentage of the large mononuclear cells. The authors say it is probable that the splenic enlargement is primary, whatever its cause may be, and that the anemia is dependent thereon. The process appears to them similar to a diffuse lymphangioma. [C.A.O.]

Snake Venom in Relation to Hemolysis.—The conclusions reached by Simon Flexner and Hidego Noguchi⁴ in their study of the lytic action of venoms, are as follows: 1. Venom contains principles which are agglutinating and dissolving for white blood-corpuscles. 2. The agglutinating principles may be identical for both white and red cells. 3. The dissolving principle for leukocytes is distinct from that for red cells. 4. In order that solution of venomized leukocytes shall occur, a complement-containing (alexin-containing) fluid is required. 5. The several varieties of rabbits' blood show different susceptibilities to the action of venom. 6. The neurotoxic and hemolytic principles are physiologically distinct. 7. While the chief toxic constituent unites with the nerve cells, in multiple, minimal, lethal dose, from which the neurotoxic principle has been removed, a quantity of hemolysin may be contained sufficient to bring about fatal intoxication. 8. All venoms, when used in suitable quantities, destroy the bactericidal properties of many normal blood serums. 9. The manner of this destruc-

tion consists in the fixation of the serum-complements by the venoms. 10. Venoms have no action upon the intermediary bodies of serum. 11. If the venom is incapable of uniting with the serum-complements (*Necturus*), then the original bactericidal properties remain unaffected by the presence of the venom. 12. Antivenin neutralizes venom and removes both the hemolytic and the antibacteriolytic actions. [C.S.D.]

Concerning Bacillus Danysz.—A few years ago Danysz isolated a bacillus from field mice which, by a special method, he endowed with a virulence toward the gray rat. He believed that it was possible, by means of it, to end the plague of rats anywhere. The organism resembles the colon bacillus, and quickly loses its virulence. When this is once lost, it is difficult to restore it; but Wiener¹ has found a method of doing so. This consists in cultivating the organism in eggs, after the method of Hueppe. By blowing into the egg to be inoculated eight to ten drops of a 1% sterilized solution of caustic soda, the virulence can be still more enhanced. Rats fed with the organism died in from five to seven days; death was still more rapid in those that were fed upon the entrails of rats that had succumbed to feeding with the bacillus. [D.R.]

Acute Myasthenia Gravis.—Hingston and Stoddart² report a case of grave myasthenia occurring in a man of 71, associated with diabetes, and running a fatal course in seven weeks. The association with diabetes in the case is believed to have been somewhat intimate, since the myasthenia set in almost as soon as the patient relaxed his diabetic diet. So far as this observation goes it is thought to favor the prevalent view that myasthenic gravis is due to the effect of some toxic agent upon the peripheral neurons. [A.O.J.K.]

The Presence of Decomposition Products of Proteids in Degenerated Liver Tissue.—A. E. Taylor³ made a careful chemic analysis of the liver from a case of acute yellow atrophy and obtained a considerable quantity of leucin and asparagin, but the other great decomposition products of protein, the hexon bases, were not present. While Taylor's findings hold good, of course, only for the dead liver, it is reasonable to suppose that, as the autopsy was made shortly after death, the amidoacids found had existed during life. Both chemically and biologically the decomposition products of protein are of great importance, and anything that adds to our knowledge of these bodies is of value. [D.R.]

Bubonic Plague in La Plata.—According to Voges,⁴ there has been an attempt to identify the cases of plague reported from Buenos Ayres, Asuncion, Rosario, San Nicola and other South America towns where it has been heretofore unknown, with some of the pests peculiar to horses or to the *Paleta-Rurá*, a disease of cattle. [C.S.D.]

Posture and Heart Murmurs.—Gordon,⁵ after an exhaustive study of the subject, concludes that recumbency tends to increase the intensity of all "hemic" murmurs except the venous hum, which it tends to obliterate; to increase the murmurs of mitral regurgitation, tricuspid regurgitation, and aortic stenosis; to decrease the murmur of mitral stenosis, and to affect little, if at all, the murmur of aortic regurgitation. He believes that the effects of gravity and of change in chest-depth seem to account for the influence of recumbency, and that in describing and discussing murmurs which posture modifies the patient's position at the time of observation should be stated. [A.O.J.K.]

A Report of 18 Cases of Various Eruptions Associated with Malarial Infection.—Engman⁶ reports 18 cases of various skin affections associated with or dependent upon malaria, and draws the following conclusions: (1) That it is highly probable that certain affections of the skin, as pruritus, urticaria, angioneurotic edema, erythema multiforme, pompholyx, zoster, eczematoid eruptions and gangrene, may be due to malarial poisoning; (2) that in such cases there is generally a periodicity in the intensity of the eruptive symptoms; (3) that there may be marked or slight constitutional disturb-

¹ Hygieia, February, 1902.

² La Semaine Médicale, March 28, 1902.

³ The Chicago Medical Recorder, March, 1902.

⁴ The Journal of Experimental Medicine, March 7, 1902.

¹ Münchener medizinische Wochenschrift, March 11, 1902.

² Lancet, March 15, 1902.

³ Hoppe-Seyler, Zeltschr. f. phys. Chem., xxxiv, 1902, Hfte. 5 u. 6.

⁴ Zeitschrift für Hygiene und Infektionskrankheiten, 1902, Bd. 39, Hft. 2.

⁵ British Medical Journal, March 15, 1902.

⁶ Medical Bulletin of Washington University, January, 1902.

ances, or the eruption may occur without any other symptom of paludism; (4) that nephritis may complicate the picture in severe cases, and seem to be the apparent cause of the dermal manifestations, whereas the malarial infection is the sole etiologic factor; (5) that when an eruption is associated with malarial infection it quickly recovers under the specific treatment. In the same number Creveling reports a case of erythema multiforme in one of tertian intermittent fever. The eruption appeared on the fourth, sixth and eighth days, and on the tenth was replaced by an intense itching. [D.R.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

When to operate in appendicitis has been a question which has given rise to much discussion in the past and is still an unsettled question in practically all Europe. In America the question is quite definitely settled in favor of early operation. Not only general practitioners but the laity are now educated to the importance of such treatment. There is no doubt still a very good sized minority (especially among medical men) who advocate medical treatment for the majority of cases, and abroad this is the generally accepted treatment. Statistics are so unreliable and the difference in the severity of attacks is so great that it is almost impossible to come to any definite conclusion in comparing the results in cases treated by internal methods as compared with those treated by surgical intervention, but it seems clear that the mortality is greater in any given number of similar cases treated by internal methods than if treated surgically, provided the statistics of competent surgeons only are considered. Ochsner, of Chicago, has been such an enthusiastic advocate of certain nonoperative measures of treatment that his position with regard to the best treatment of appendicitis has been misjudged and misquoted by some who have not read his papers on the subject carefully. His ideas on the subject, as stated in an interesting monograph ("A Handbook of Appendicitis," G. P. Engelhard & Co., Chicago) are well worth reading, and while we are emphatic advocates of early operation in most cases we believe that there is a great deal of good sense in many of his suggestions. He states that "No case of appendicitis should be operated upon unless a competent surgeon is available. This does not apply to cases in which a circumscribed abscess has formed which any one can open with safety, provided he has sufficient good judgment not to do anything further. If there is no such competent surgeon available the patient's chances of recovery are many times greater with proper nonsurgical treatment than with operation." The nonoperative treatment which he advocates in such cases consists in withholding all forms of food and drink by the mouth absolutely, perfect rest of the patient in bed, washing out the stomach and rectal alimentation for some days until the acute symptoms subside. He states that very frequently the patient's temperature falls two or three degrees within a few hours after such treatment had been instituted, and there is a corresponding improvement in the general condition. While advocating this form of treatment in case competent surgical aid is not available, Ochsner states very clearly that in acute appendicitis operation should be performed if the appendix can be safely removed. "There is always a time during which all of the infectious material is still within the walls of the appendix and can consequently be removed without coming in contact with any other portion of the peritoneal cavity. This is practically always the case within the first 24 hours, almost always within the first 36 hours, and usually even within the first 48 hours after the beginning of an attack. If a competent surgeon is available and other conditions which are necessary to secure success are at hand, then it is always wise to

remove a diseased appendix during an acute attack, so long as one can be fairly certain that the infectious material is still within the walls of the appendix."

Even those most inclined to criticize Ochsner's methods of handling cases of more advanced appendicitis will find no fault with this statement, and we believe that if the nonoperative treatment which he outlines were adopted in many cases of appendicitis in which the symptoms are subsiding it would be of the greatest advantage to the patient. Of course, if perforation has occurred, most surgeons believe that evacuation of the pus and removal of the infectious material can hardly be undertaken too early. However, in the milder forms of the disease there are many cases of appendicitis which undoubtedly subside even if perforation has occurred and in which operation in the interval with complete closure of the abdominal wall can be undertaken. The advantages of operation in the interval are so evident as to scarcely need emphasis; the lessened danger to life when operating upon a patient in health instead of one weakened by pain and with the tissues inflamed and in a condition unfavorable to repair or resistance of infection; the possibility of devoting ample time to the preparation of the patient and operating-room and selecting a favorable time for operation; the lessened danger of ventral hernia and fecal fistula when McBurney's muscle-splitting operation can be performed and the stump of the appendix securely buried, are all of much importance. For those who prefer not to operate at once in subsiding cases, the adoption of Ochsner's method of treatment will prove of great value, and it may be used with advantage not only in the cases of appendicitis, but in almost all acute inflammatory intra-abdominal conditions. Keeping the intestines at perfect rest by withholding all food and drink by the mouth puts the entire intestinal tract at rest and in a condition most favorable to repair, and this method of treatment is fully as valuable in the management of cases after operation as before operation. Beside consideration of this important topic, Ochsner's little book gives a very satisfactory discussion of the entire subject of appendicitis well worth a careful reading by every one interested in this important subject.

Rupture of the Mesenteric Arteries.—Aldrich.¹ A man weighing about 250 pounds fell, fracturing both bones of his right leg. There was some shock, considerable pain at the seat of fracture but no pain in any other part of the body. For the first four days the patient was in fairly good condition and did not complain of pain; his bowels moved with enemas. On the fourth day he vomited, complained of faintness and seemed very weak. The possibility of internal hemorrhage, cerebral embolism and shock as the cause of this condition were considered. On the seventh day after the injury the patient had become extremely pallid and was but semiconscious. There was slight distention of the abdomen, but no localized dullness. The patient seemed to be dying from internal hemorrhage, the location of which could not be determined. Death occurred the same evening. At the necropsy several of the mesenteric arteries were found to have been ruptured, giving rise to the fatal hemorrhage. [M.B.T.]

The Röntgen Rays and Intrathoracic Growths.—Finny and Watson² report three cases illustrating the value of the x-rays in detecting intrathoracic growths. By this means they were able to locate a sarcoma of the right lung in one case, an aneurysm of the arch of the aorta in another, and an aneurysm of the descending aorta in still another. [A.B.C.]

Alcohol in Disinfection of the Hands.—Schaeffer³ reports a series of experiments with different methods of disinfecting the hands with the special object of determining their value as compared with the hot water and alcohol method. He tested bacteriologically simple mechanic cleansing of the hands with Schleich's marble dust soap, cleansing the hands with hot

¹ Annals of Surgery, March, 1902.

² British Medical Journal, March 15, 1902.

³ Berliner klinische Wochenschrift, March 10, 1902.

water and soap alone, the use of spirits of green soap and the combination of mechanic methods with various disinfectants, including mercuric chlorid 1:1,000, lysol 1.75% solution, lysoform 3.33% solution, and chinisol 6:1,000. He found that the hot water and alcohol method gave by far the best results of any of the methods tried. The use of spirits of green soap as used by Mikulicz is next most valuable. The use of various antiseptics proved unsatisfactory in freeing the hands from germs. Lysoform and chinisol were especially unsatisfactory. He found that Schleich's marble dust soap gave exactly the same results as the use of ordinary soap and hot water. As regards the action of alcohol he does not think that it has any special value as a bactericide. A valuable effect is the hardening action which makes it difficult for germs to work through the superficial layers of the skin. Another important effect of the alcohol is in dissolving fatty substances from the skin. This he considers its most valuable property in disinfection of the hands. [M.B.T.]

Congenital Cysts of the Tongue.—J. W. Cousins¹ states that congenital cysts of the tongue generally occur in the middle line between the geniohyoglossus muscles, or between the geniohyoglossus and the myohyoid. The cyst wall is usually thin and lined with squamous epithelium. They may lie dormant for many years. The contents consist of soft sebaceous matter and occasionally of the elements of a true dermoid cyst. They are not fluctuating, and may at times attain considerable size without causing the patient serious annoyance. Either end or the whole length of the embryonic tubular passage, known as the ductus thyreoglossus may remain open and give rise to one or more cysts. Central sublingual cysts are sometimes intimately connected with cystic swellings occurring near the hyoid bone, on the thyroid cartilage, and even lower down the neck. The author reports two cases in which he did operation for removal of cysts of the tongue—both in women—aged respectively 35 and 40. [A.B.C.]

Unusual Results of Inflammation of the Gallbladder.—Niles² reports four cases of great interest. A patient of 59 had suffered for years from distention of the stomach and intestines. Most physicians whom he had consulted thought that he was suffering from atonic dilation of the stomach. On very careful examination, the possibility of the origin of the trouble from adhesions caused by inflammation of the gallbladder was suspected. An operation was advised. On opening the abdomen adhesions to the hepatic flexure of the colon were found nearly occluding the intestines. These adhesions were broken up as far as seemed safe, 60 small stones removed from the gallbladder, and it was drained. The patient made a good recovery and has been much relieved of his symptoms. In a second case a man of 36 had been suffering for several months from constant headache, weakness, giddiness, nausea, flushings and mental dulness. There was no jaundice. He had occasional attacks of abdominal pain which were thought to be due to indigestion. The possibility of an inflammatory condition of the gallbladder was suspected and operation was undertaken. Seventy-five gallstones, one of them of great size, were removed. The patient made a good recovery and has been well since. In a third case a man of 60 had suffered from indigestion, gastric distress, nausea, and had vomited coffee-ground material. Carcinoma of the stomach had been suspected, but examination of stomach-contents after a test breakfast yielded negative results. On opening the abdomen the pylorus was found to be constricted by bands of adhesions, which were drawing it up against the gallbladder and the liver. The adhesions were separated and the patient made a good recovery from the operation. He still suffers from some symptoms of dilation of the stomach. In a fourth case a patient of 33 had severe gastric pain, accompanied by nausea and vomiting of small amounts of blood. Ulcer of the stomach was suspected. The abdomen was opened and the gallbladder was found completely surrounded by adherent omentum. The dense adhesions were separated and the gallbladder was drained. The other abdominal organs were explored. Since the operation the patient has been entirely free from distressing symptoms. [M.B.T.]

Subcutaneous Injections of Carbohydrates in Exhausting Diseases.—Barker,¹ after repeated experiments, now believes, according to the suggestion of Lennander, that glucose can be injected subcutaneously, with benefit to the patient, in exhausting diseases. A 5% glucose solution made with normal salt solution, *i. e.*, a saccharosaline solution, is used. He administers $\frac{1}{2}$ liter of it twice daily by the ordinary method of hypodermoclysis for several days before and after operation on exhausted patients. He recommends this plan highly and believes it should be more generally adopted. His fear of causing great pain to the patient was banished on finding that a 5% glucose solution freezes at the same point as blood-serum or normal salt solution, and hence is isotonic or isosmotic with these fluids. [A.B.C.]

Contracted Bladder Treated by Graduated Fluid Dilation.—Mayo Robson² urges this method of treatment, as suggested by Matthews Duncan, in all cases which are considered incurable, as this method, frequently so efficacious, is not employed as often as it should be. He advocates salol and boric acid, five grains each three times daily, in all operations on the urinary passages, and believes this practice has done much to abolish postoperative urinary fever. [F.C.H.]

Intestinal Anastomosis.—Allis³ describes a method of anastomosis by the aid of tenaculum forceps which picks up the ends of the intestine and fixes them while the stitches are being taken. He takes the stitches within the lumen of the intestine and is enabled to suture rapidly and safely. The illustrations accompanying the original article should be consulted by those specially interested in mechanic means of intestinal anastomosis. [M.B.T.]

A Case of Perforation of the Bowel in Typhoid, Followed by Subphrenic Abscess.—Bruce⁴ reports a case in which the patient was operated upon, presumably about 18½ hours after the perforation occurred. The perforation was very small, and situated about ten inches from the cecum; there was marked general peritonitis, with about a pint of seropurulent fluid in the peritoneal cavity. On the sixteenth day subsequent to the operation as pus was still escaping from the original opening left for drainage, the patient was chloroformed and the sinus enlarged. It led to a cavity about the size of a hen's egg, which extended from the middle line outward to the outer edge of the rectus muscle, the floor being formed of loops of bowel. Four days subsequently the patient complained of pain on the right side, in the region of the liver, and about six weeks after the first operation, it was deemed advisable to explore the hepatic region, owing to the symptoms which had become manifest. A large subphrenic abscess was found, which had secondarily invaded the liver. The patient eventually made a complete recovery, and in two months after recovery had gained 30 pounds. [F.C.H.]

Extirpation of Enlarged Prostate.—Roberts¹ attempted enucleation of an enlarged prostate on the cadaver, according to the method suggested by Freyer. The main point was whether at the time of nucleation the urethra can be left intact and uninjured. The lateral lobes were separated from the surrounding tissues, and concerning the urethra the author says: The urethra was unaffected to the level of the openings of the ejaculatory ducts. From this level to the internal orifice where it was torn across the wall of the urethra was separated from the prostatic sheath, and lay quite free in the fossa left after removal of the gland. The ejaculatory ducts could be traced into this fossa where they had been torn. The cavity from which the prostate was removed was quite smooth, except at one very small area, where an adenomatous nodule had been left behind. It was completely lined by a fibrous layer, outside which lay the prostatic venous plexus which separated it from the thin fibrous sheath derived from the pelvic fascia. The space containing the prostatic venous plexus was nowhere opened up, and no extravasation of urine could have taken place. The preparation, I think, demonstrates that the whole of the enlarged prostate can be extirpated, leaving the urethra intact and without danger of extravasation of urine. I

¹ British Medical Journal, March 29, 1902.

² Edinburgh Medical Journal, April, 1902.

³ Annals of Surgery, March, 1902.

⁴ Canada Lancet, March, 1902.

¹ British Medical Journal, March 1, 1902.

² Annals of Surgery, March, 1902.

attempted to remove the normal prostate in the same way, but found it quite impossible to do so. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Gynecology as a Specialty.—We learn from a recent number of the *Lancet* that a controversy is now going on at the Lincoln County Hospital, England, bearing upon the old question as to how far an obstetrician is justified in doing major surgical operations in a hospital. This suggests the relationship of gynecology and obstetrics, which are so correlated and blended that absolute divorcement is impossible. The obstetrician must be thoroughly trained in surgical technic and prepared, if the emergency arises, to perform even an abdominal operation, if necessary to save the life of mother or child. The gynecologist is frequently occupied in repairing damages or correcting difficulties that have arisen because of faulty obstetrics, or which are the result of the unavoidable accidents of parturition. The surgery of the organs of generation is a distinct specialty in comparison with so-called general surgery, and the field of gynecic surgery seems to have broadened to such an extent as to include a great deal of abdominal surgery. One has only to watch the general surgeon as he deals with the pelvic organs and to compare his work with that of the trained gynecologist, to realize fully that the latter has a definite field and will continue to hold a definite place in the confidence of the general profession. There was a period in medical history when the general surgeon operated for strabismus and cataract, or removed tonsils or turbinates with the same comparative skill and celerity with which he amputated limbs or trephined skulls; but at the present time the domain of the ophthalmic surgeon or the laryngologist is so well defined that we would no more think of referring our strabismic patient to the general surgeon than we would of inviting a laryngologist to perform a circumcision. We have heard some whisperings in regard to the "passing of the specialty," but we are more inclined to believe that as knowledge increases we shall have instead a specialization within the specialty, necessitated by the refinements in our art and science which time will achieve. "Art is long and time is fleeting" and it is beyond individual ability to comprehend and utilize all the knowledge which has accumulated in medical science during the past few decades. There are a few hospitals left—and fortunately for the patients treated their number is limited—in which the gynecic surgery is left to the general surgical staff. Nearly all the boards of trustees or directors of these institutions who can weigh evidence and compute results have recognized that specially trained gynecologists can conserve tissues, preserve function, and secure better results in the treatment of those diseases peculiar to women than the general surgeon whose versatility and fertility of resources would be too much taxed by the effort to assimilate and utilize all that is new in so many special lines of surgical work. The first consideration is the care of the patient, and if she can receive more skilled attention and will suffer less sacrificial and mutilating operations at the hands of the specialist, then it should be her right and privilege in all great hospitals to have such treatment, if attainable. In the hospitals scattered throughout the country in smaller cities and towns, it may be necessary that the general surgeon should do all of the abdominal and gynecic surgery because of the absence of specialists, but in our larger cities such an argument loses its force.

Sarcoma of the Cervix Uteri.—Bache McE. Emmet¹ regards sarcoma of the endometrium as the most frequent form of uterine sarcoma. That which invades the cervical endometrium has a type of its own which has given it the name

of grapelike sarcoma. Emmet gives the history of such an one occurring in a young woman of 19½. When she first entered the hospital he found a darkened, polypoid, channeled mass hanging out of the vulva. It sprang from the posterior lip of the cervix, and was removed with the scissors. A deep wedge-shaped piece was cut from the cervix, as the mass was thought to grow from lymphatics. The patient made a seemingly good recovery, and the pathologist reported a "simple fibrous polypus." In five months she returned, having had a profuse vaginal discharge for several months. Examination revealed a mass filling the vagina, with pendulous bodies, the size of Niagara grapes, hanging from all points and dropping off when touched. The mass seemed to be growing from the entire circumference of the os. Guided by the former pathologic examination, he performed high amputation of the cervix. The pathologic examination of this specimen proved it to be a spindle-celled sarcoma, and Emmet realized that the operation should have been hysterectomy with ablation of the upper part of the vagina. The patient recovered well at the time, but the discharge soon recurred, and she died in a few months. [w.k.]

Emmenagogs, Their Indications and Uses.—J. Wesley Bovée,¹ in a valuable review of the subject of emmenagogs, states that menstruation is controlled by a nerve center located in the lumbar portion of the spinal cord; and removal of the uterine appendages usually arrests menstruation by severing the menstrual nerves, though it may sometimes continue owing to diseased condition of the uterine mucosa or muscle, or the development of uterine fibroids. There are two distinct varieties of amenorrhea, emansio mensium and suppressio mensium. In the former, or menstruation delayed beyond the usual age of puberty, it is only in those who have reached the age of 18 that any treatment should be attempted, unless the general condition of the patient or her environments is bad, when a tonic course of treatment should be instituted. If, however, the molimina are present, a direct emmenagog may be employed preceding or during their existence. Suppression of the menses may result from a great variety of causes, the treatment varying accordingly. In such general conditions as tuberculosis, carcinoma and syphilis, amenorrhea is probably a conservative feature, and should receive no treatment except tonics for general anemia, and except in special cases it is only by treating the underlying condition that success can be expected. After the continued use of general tonics, however, direct emmenagogs are often indicated, and if administered a few days before the expected flow, usually have a marked tendency to restore the menstrual function by stimulating the menstrual nerve centers. The rule, "If we do no good, be sure we do no harm," is particularly necessary in the use of these remedies. The simplest direct emmenagogs consist of the sitz bath, pediluvia and external friction, hot drinks of infusions of cinnamon, chamomile, tansy, pennyroyal, etc., which act as relaxants or diaphoretics. Bovée has found a sheet anchor in the compound sumbul pill made from the formula of the late Prof. Wm. Goodell. The formula is: Arsenious acid, $\frac{1}{10}$ of a grain; dried sulfate of iron and sumbul, each 1 grain, and asafetida, 2 grains. It is especially valuable when nervous manifestations and anemia accompany amenorrhea. When heavy nerve strain has produced irregular or delayed menstruation, a combination of strychnia, aloin, and atropia is of signal benefit, and the spinal icebag is useful. In nerve tension the use of the bromids is generally essential. Ergot acts best with iron. Guaiac should not be given alone, but may be used in combination. Apiol is excellent when administered a few days before the expected flow. Oxalic acid and santalin should be used very cautiously. Turpentine and cantharides are dangerous because of the tendency to irritate the urinary organs; and pennyroyal, rue, savin and tansy are objectionable from their liability to cause gastrointestinal irritation. Physical and mental shock have been known to cause persistent amenorrhea, also to restore menses when other remedies have failed. [w.k.]

Treatment for Chronic Pyelitis and Stone in the Female Bladder.—Graefe² remarks that stones are much more rarely observed in the female than in the male bladder. Out of

¹ American Journal of Obstetrics, March, 1902.

¹ The Virginia Medical Semi-Monthly, February 21, 1902.

² Centralblatt für Gynäkologie, March 29, 1902.

165 operations for this condition collected by Kreutzmann, only three were in women. Graefe thinks this is partly due to the fact that small stones frequently pass the shorter and wider urethra of women without pain or without attracting attention. If the stones become larger, he advises their removal by vesicovaginal incision rather than by crushing. For chronic pyelitis he recommends methylene blue, administered in gelatin capsules. He gives the history of two cases in which, after the failure of other remedies, methylene blue was used with remarkable success. In both instances the urine soon became normal and the patients regained good health. [W.K.]

Ovarian Cyst Obstructing Delivery.—Jordan¹ reports a case of labor in which delivery was prevented by a pelvic tumor or cyst, the existence of which was not suspected until the patient had been in labor several hours and the head failed to descend. As he found it impossible to pull down the cervix so as to incise the vaginal fornix, he decided to deliver by cesarean section, as neither child nor tumor could be extracted by the pelvic route. Unfortunately he was just too late to save the child's life, but, after its delivery, removed a densely adherent dermoid cyst, and the mother made an uneventful recovery. Jordan also reports the successful removal of a multinodular myoma of the uterus by supravaginal hysterectomy. The tumor had so invaded the broad ligaments that their removal was also necessary. [W.K.]

Nonsurgical Premature Menopause.—Josephine Walter² reports a case of menopause occurring at the age of 23. The menses began at the age of 11, and the individual always enjoyed good health until she was 23, when the shock of her mother's sudden death was followed by a severe illness of three months' duration, after which she never menstruated. The chief points of interest in this case were the very early age of the menopause, its sudden onset and the absence of any previous or subsequent local or constitutional disease. From a study of many authorities in connection with the case reported, the writer points out that: 1. Premature menopause can occur without any previous or subsequent disease. 2. Premature menopause is not necessarily preceded by any change in generative organs. 3. Any changes found in these organs occur probably after the menopause, or are due to disease not all related to the menopause. 4. Premature as well as normal menopause is due chiefly to atrophy, inhibition, or disease of a local menstrual ganglion and nerve plexus, rather than disease or atrophy of generative organs. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

Potatoes in Diabetes.—Mossé (*La Médecine Moderne*, Vol. 12, No. 50, 1901, page 404) has noted a reduction in the glycosuria after the administration of from 16 to 100 ounces of potatoes daily in the treatment of diabetes. He believes that this result is due to the large amount of alkaline potassium salts which are thus ingested. [L.F.A.] [Each case of diabetes is an individual study. No general rule can be drawn from isolated or limited experiences. One of my patients can assimilate small quantities of glucose or levulose, but not lactose. S.S.C.]

Diet in Neurasthenia and Hysteria.—When the rest cure must be enforced, the patient should be removed from home, and no friends and relatives, nor any but agreeable news, allowed for several weeks to come to her. As she must be in the company of her nurse for a considerable time, one should be selected who will be agreeable to her. The patient should keep her bed for six weeks at least, leaving it only to use the vessel. It is best to begin the milk diet gradually. If a patient does not like milk, it should be given in doses of one or two ounces every two hours. Sometimes it is best to begin with skimmed milk, to use even smaller doses, and to permit the use of a little other food at meal-times. In two or three days larger amounts can readily be taken. As much as 2 quarts of milk ought to be drunk in 24 hours. In some cases food should be given even at night, as often as every three or four hours. As

a rule, an exclusive milk diet quickly causes dyspeptic symptoms to disappear, but constipation persists or develops. It must be corrected by the administration of a mild laxative at night. A cup of coffee without sugar, in the morning, sometimes helps to move the bowels. Massage should be practised each day, usually at noon, and should be given so as to help in preventing constipation. At first it must be applied gently for only 15 or 20 minutes, the abdomen being rubbed carefully, especially along the course of the colon. By degrees a longer time, and ultimately an hour a day, may be devoted to massage. A hot sponge bath may be given in the early morning, and the clothing of the patient be changed. At the end of 10 days an egg or a chop should be eaten at noon, in addition to the usual allowance of milk. Weir Mitchell often prescribes earlier than this, meat-juice once or twice in the day. In another day or two bread and butter are given, and an egg or some meat at breakfast as well as at dinner. Some simple vegetable, and stewed fruit, may soon be added to the diet. By degrees the patient is thus gotten upon a diet of three simple but generous meals daily, besides three or four pints of milk. The latter is administered partly with the meals and partly between them. While the patient is upon milk only, she is not permitted even to sit up in bed. But when three meals a day are taken, she may sit up while eating. At first solid foods are cut fine, and at all times they must be eaten slowly and well masticated before swallowing. Weir Mitchell recommends the generous use of butter, and in those cases in which flesh is not rapidly gained, the administration of codliver oil. If swallowing the oil lessens appetite or creates nausea, an emulsion may be injected by the rectum. When patients are first permitted to sit up, it is for a short time only. By degrees they are allowed to be up more hours in the day, but for some time after their morning bath, and again after massage, they ought to rest. During treatment the stools should be watched. If food is voided undigested, the amount should be lessened. A urine loaded with urates also indicates overfeeding. When, at the end of 8 or 10 weeks, the patient is permitted to return home, her gain in flesh, in color, in vigor, and mental poise, is so great that convalescence appears fully established, yet recovery is not complete. The diet should still continue to be generous and simple; excitement should be avoided, and outdoor exercise encouraged. Patients requiring this treatment easily become addicted to the use of alcoholic beverages, wherefore it is often desirable to forbid them entirely.—N. S. Davis, Jr., "System of Physiologic Therapeutics," Vol. VI.

Antidiphtheric Serum in Pneumonia.—Landrieux and Legros (*Journal des Praticiens*, Vol. 15, No. 50, 1901, page 785) have employed injections of antidiphtheric serum in ten cases of pneumonia, of which two severe cases were fatal. In eight cases in which the injections were begun from the third to the fifth day from the beginning of the disease, a sudden fall of temperature was observed 24 hours after the second injection, but the same fall was observed in cases treated by cold applications without serum. Sometimes after five injections of five drams each, a fall occurred by lysis. In one patient who had received 20 drams of serum from the fourth to the eighth day, the temperature fell to 100°; six days later it rose to 102.2°. Talamon employed these injections in 50 cases of pneumonia with negative results. The treatment is based on the hypothesis of an increase in phagocytic action, aside from its specific antitoxic property. [L.F.A.]

Adenoid Vegetations.—The pharynx of children contains adenoid tissue normally; in the course of infectious diseases and nasopharyngeal catarrhs, this tissue undergoes hypertrophy, this, however, rarely being extensive. The causation of "truly pathologic" adenoids is more difficult to determine. Exceptionally they are attributed to heredity, but usually are but one symptom of a general dyscrasia, the causes of which are manifold, and among which weakness and nervousness on the part of the parents play an important role. The symptomatology of adenoids is well known, but the nutrition of the patient, the climate in which he lives or the size of the adenoids do not of necessity influence the symptoms. Very large adenoids exist with but few symptoms and vice versa. Usually, however, such patients do much better in the country

¹ Medical Press, March 26, 1902.

² Amer. Jour. of Obstetrics, February, 1902.

than in the city, due probably to the quiet life they lead and pure air they inhale. Runsscha¹ claims that the diagnosis should be made by anterhinoscopic and postrhinoscopic examination, and never digitally, excepting in young children. Their removal is made necessary, no matter what the symptoms, if the adenoids are large; if the symptoms are affecting the patient seriously, and we are certain that adenoids produce them. Operations should always be associated with dietetic, roborant and local treatment. Adenoids should not be removed during acute catarrhal affections, as it is impossible then to judge of their actual size; never as a preventive against tuberculosis, since the operation does not prevent the disease; and never in hemophilia. The chances of success in the removal of the symptoms are greater during childhood than after puberty, and, inasmuch as the vegetations tend to disappear spontaneously at that time, operation should no longer be resorted to. Regarding narcosis, each case should be treated upon its own merits. Recurrence he considers rare. [E.L.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

The Treatment of Chorea.—According to Professor Raymond (*Medical Press and Circular*, Vol. cxiv, No. 8, 1902, p. 194), the best treatment consists in producing sleep by means of progressive doses of chloral, with which potassium bromid may be associated. During the daytime antipyrin in divided doses, from 30 grains to 1 dram daily, gives very good results. Dr. Paulesco considers aspirin superior to antipyrin, given in the same doses, 10 to 20 grains, three times a day. [R.M.G.]

LARYNGOLOGY, RHINOLOGY, and OTOTOLOGY

D. BRADEN KYLE.

GEORGE FETTEROLF.

Hemorrhage Attending Rhinologic Operations.

—The rhinologist is always confronted by a possible hardship from which his confreres in other lines of surgery are usually free. This is the hemorrhage which attends operative procedures and in all of its forms it is very annoying. When it occurs at the time of operation it handicaps the surgeon by obscuring the field, and when general anesthesia is employed respiration is interfered with by the mechanic presence of the blood. When local anesthesia is used the gush of blood that follows an incision into the septum or one of the turbinates is likely to frighten the patient, make him difficult to control or even cause him to faint. The surgeon operating in soft tissues cuts a vessel and promptly secures it with forceps and ties it off, but the field of operation in the upper air passages is so constituted that when an incision is made the operator has to wait for the occurrence of the natural processes of contraction and retraction of the vessels, with the formation of clot, before the hemorrhage ceases. This fact has undoubtedly been responsible for a number of failures to secure the desired result, since the nervousness of the patient or the amount of the hemorrhage, or both combined, have naturally a tendency to fluster and hurry the surgeon, with the result that the operation is sometimes incompletely performed.

If primary hemorrhage has caused annoyance, secondary has been responsible for a great deal more. The former occurs at a time when the surgeon is both mentally and instrumentally prepared to meet it, while the latter often occurs under peculiarly harassing circumstances. With these possibilities in mind the rhinologist can hardly be blamed for adopting measures that will tend to lessen the frequency of these untoward events.

In the widespread use of the suprarenal gland, particularly since the introduction of a stable preparation, much that is over-laudatory has been written. A note of warning as regards its use was sounded in a recent editorial in *Pediatrics* (February 15, 1902), and a text

for additional conservatism is afforded by an article (see abstract) by Dunbar Roy in the *Laryngoscope* for March, 1902. Roy performed an adenectomy in a girl of 15 under cocain and suprarenal extract and three hours later a troublesome hemorrhage set in. Numerous methods were tried in order to arrest it and it was not until the patient fainted after the introduction of the third postnasal plug that the hemorrhage ceased. That bleeding occurred in this case is hardly remarkable. Two powerful vasoconstrictors were used. Cocain is known to produce a vasorelaxation following the constriction and there is a growing conviction that suprarenal gland does the same thing.

It would seem, therefore, that the lessons to be learned and the procedures to be adopted are these: Suprarenal preparations should be used only (1) when the site of operation can be immediately packed, (2) when it is advisable to conserve as much blood as possible even at the risk of secondary hemorrhage, (3) when the presence of the blood obscures the field of operation and prevents accuracy, (4) when it is necessary to open the mouths of some of the accessory sinuses, or (5) when the tissues need to be shrunken to afford additional room for manipulation. In other instances, such as adenectomy, tonsillec-tomy, etc., whatever hemorrhage there is to be should occur at the time of operation and such a powerful ischemia producer as suprarenal should not be used. [G. F.]

NOSE.

Septal Spurs, Operation for Removal.—Melville Black,¹ of Denver, draws attention to the advantages of his electromotor nasal saw and refers the reader to articles in the *Laryngoscope* for July, 1896, and November, 1897, for descriptions of the instrument. He makes the following points: 1. The Detroit shaft and handpiece are preferable to the flexible form on account of the great smoothness with which it runs. 2. The universality of its application. The stroke can be reduced to a quarter-inch, so that no matter how high up the spur may be or how deviated the septum, the protrusion can be safely attacked. 3. A smooth and even surface is left. 4. Rapidity in operating is attained, only one-fourth the time being required that would be consumed by a hand operation. 5. No matter how slanting the surface is the saw takes hold without slipping.

Nose, Throat and Ear, the Topical Application of Mucin in Certain Affections of the.—William Stuart Low² found that in cases of painful digestion, gastritis, and gastric ulcer the internal administration of mucin gave great relief. Associated with these conditions was found a pale and dry condition of the nasopharyngeal mucosa which was often antecedent and bore a distinct causal relation to the gastric condition. Laboratory investigation showed that mucin has a decided bactericidal action and that it is distinctly hygroscopic. When applied locally to the nose and pharynx in cases of dryness of the mucosa it has an emollient action. It softens crusts, facilitates their removal and moistens the surface, thus preventing the formation of crusts and helping to obviate the fetor. It aids in restoring the sense of smell, and the warming and moistening of the air are promoted by the improved condition of the membrane. It is used in a solution prepared by dissolving a solid consisting of five grains of mucin, five grains of sodium bicarbonate and one grain of menthol in an ounce of sterilized warm water, or, to more thoroughly dissolve the mucin, in equal parts of water and lime water. This should be used twice a day and if sprayed the atomizer should be a coarse one to prevent its blocking by particles of mucin. If there is much crust formation it can be rubbed off by means of a cotton tipped probe saturated with the mucin solution. In long standing atrophic trouble tablets of five grains each of mucin and sodium bicarbonate are given before and after meals to relieve the gastric irritation and constipation. Good results have been obtained in cases of dry laryngitis and a similar condition of the eustachian tube. In the latter the solution is injected twice a week with marked improvement of the tinnitus and hearing.

¹St. Petersburg. med. Woch., December 22, 1901.

¹Laryngoscope, March, 1902.

²Lancet, April 5, 1902.

Nasal Septum, Deviation of the. Why do Corrective Operations Often Fail?—Chevalier Jackson,¹ of Pittsburg, insists very strongly that the cause of failure in these operations is that the inferior turbinal on the concave side enlarges during the night and pushes the septum back to its original position. He examined a number of patients with hypertrophic rhinitis, after they had been asleep for some time, and found that the inferior turbinal of the "pillow" side was practically always very large. If the patient was accustomed to sleeping on only one side, the enlargement was so constant and so frequently repeated that it was a strong etiologic factor in the development of septal deviation. If one turbinal be larger than the other, and the patient turn during sleep, the larger turbinal will push the septum over farther than the smaller one will push it back, and a deviated condition will result. In 20 persons examined, who habitually sleep on one side, 18 (90%) had deviations to the opposite side. Sixteen had hypertrophic rhinitis, and four were normal, but all showed an imprint on the septum where the turbinal had pressed. That there is sufficient force exerted by an enlarged turbinal to influence the position of the septum is evidenced by the pressure required to indent a turbinal swollen by acute coryza or hay fever. The practical lesson Jackson draws from these observations is that every septum operation, of a straightening character, should be preceded by a complete or partial removal of the inferior (and rarely the middle) turbinal of the concave side. A portion of the bone should be included in the removal. If there be sufficient turbinal tissue removed, no retentive apparatus will be needed to keep the septum in its new median position. The last 30 consecutive cases operated upon were perfectly successful without any support whatever. [This is certainly a novel and radical view, but in spite of the dogmatic assertions of the author, it is probable that comparatively few will follow his procedure. The article practically states, "Remove the inferior turbinal on the concave side, push the septum over and it will stay there." This ascribes all cases of return of the septum to its original position to cause extraneous to the septum, and ignores the possibility of the success of operations unaccompanied by turbinectomy, except in cases of advanced sclerosis or atrophy. It is hard to believe that the septum is so weak that, after it has been restored to the median plane, and held there until it has healed, turbinal pressure will send it back again. A very important factor ignored by the writer is that a septum, which is too large for the nose, is crowded over the mid-line and expected to stay there without any of the tissue excess having been removed. The article, however, is interesting and suggestive, and opens up a line of thought and observation that may prove instructive.]

PHARYNX.

Hemorrhage Following Adenotomy and Tonsillotomy, Two Unusual Cases of.—Dunbar Roy,² of Atlanta. Under cocaine and suprarenal extract adenectomy, by means of the cutting forceps, was performed on a girl of 15. Three hours later hemorrhage set in and proved very troublesome. Various means were tried to arrest it, including suprarenal extract through the nose, a soft catheter in the nose and nasopharynx to form the nidus for a clot, and finally plugging the posterior nares. It was not until the patient fainted, shortly after the introduction of the third postnasal plug, that the bleeding finally stopped. The patient's menses were due at the time of the operation, but did not appear until a few hours after the hemorrhage had ceased. It is suggested that the hemorrhage was possibly a form of vicarious menstruation. From a child of four one tonsil was removed with a McKenzie tonsillotome, the usual amount of bleeding taking place. For five days all went well, at the end of which time the patient vomited about a pint of bright-red clotted blood. On account of the good general condition of the child nothing was done beyond ordering cracked ice and ice cream to be fed to her. About 18 hours later she again vomited blood. She was then ordered one grain of suprarenal extract every two hours, given in the second teaspoonful of ice cream. This was done for 12 hours, and no

further trouble was experienced. The case is unusual because of the lapse of five days before hemorrhage occurred and on account of the youth of the patient.

Uvula, a Case of Malignant Growth of the.—F. C. Raynor,¹ of Brooklyn. The patient was a man of 66, whose uvula had been amputated 35 years before. Examination revealed a long and edematous uvula, attached to the posterior surface of which was a flattened cylindric growth resembling a pharyngeal adenoid. It was eroded at the lower end and measured one inch in length, was $\frac{3}{4}$ of an inch broad and $\frac{1}{2}$ inch in thickness. There was no difficulty in phonation or deglutition. Antisyphilitic treatment producing no result, the uvula, along with the growth, was removed with the cold wire snare. The specimen was lost, and therefore no microscopic diagnosis made. About six months later there were seen a small fungous growth at the margin of the soft palate on the left side and a localized swelling on the right side of the hard palate, together with a linear erosion extending upward from the fungous growth above mentioned. The case was then lost sight of. This is the only case of malignant growth of the uvula which the author has seen in a series of about 14,000 cases.

Adenoids, a Case of Removal of, in a Very Young Child.—O. Stewart,¹ of Port Huron, Mich., reports the removal of an adenoid mass from a child 11 days old. The baby snored and could not nurse and breathe at the same time. Under chloroform a Myles' ring-curet was passed into the nasopharynx and an adenoid mass measuring three-eighths of an inch in length by one-fourth inch in depth was removed. Relief of the obstructive symptoms was immediate. [Stewart certainly deserves credit for grasping the situation and acting so promptly. A certain risk might have been avoided by not administering chloroform to so young a child, as the operation would have been practically painless on account of the softness of the growth.]

LARYNX.

Laryngeal Tuberculosis, the Treatment of.—J. Price-Brown,² of Toronto, says that the voice should be spared, sudden changes of temperature avoided, the use of tobacco regulated and alcohol, when used, should be freely diluted. The food should be demulcent and of suitable temperature. When ulceration exists and liquids tend to enter the larynx, semi-solids or thick foods should be taken, and their swallowing is rendered easier by free administration of large doses of olive oil. To avoid the laryngeal difficulty Wolfenden recommends that the patient lie on a couch with the face downward and projecting over the edge and the hips elevated by the patient resting on his knees. The food is then sucked from a tumbler through a rubber tube. When change of climate is advisable, should the laryngeal condition be purely secondary to a pulmonary lesion, an elevation of several thousand feet is recommended. When laryngeal catarrh has preceded the tuberculous disease, atrophy is often present and for this condition sea air is preferable. There are six different manifestations of laryngeal tuberculosis: anemia, hyperemia, infiltration, ulceration, necrosis and new growths. For anemia and hyperemia a cleansing alkaline spray followed by a spray of menthol in albolene is recommended. Other suitable substances for similar use are thymol, creasote and guaiacol. Steam inhalations of oil of pine, eucalyptus, benzoin, etc., with the addition of chloroform, are also useful. For the condition of infiltration various procedures are recommended. Among them are linear incisions, removal of the interarytenoid thickenings, extirpation of the arytenoids, submucous injections of creasote, of menthol and oil of wintergreen in castor oil or of pure guaiacol. For the ulcerations Price-Brown recommends lactic acid, starting with a 25% or sometimes a 50% solution and increasing to full strength. Other useful solutions are 20% menthol in olive oil, Freundenthal's menthol-orthoform emulsion preceded by a powder of suprarenal gland, and menthol solutions from 1% to 10%, using several of increasing strength at the same sitting. The insufflation of powders is not recommended. More radical measures are curettage followed by the application of lactic acid, the use of the galvanocautery and cupric cataphoresis. When

¹ Laryngoscope, March, 1902.

² Laryngoscope, February, 1902.

¹ Laryngoscope, February, 1902.

² Canadian Journal of Medicine and Surgery, February, 1902.

necrosis exists the dead tissue should be scraped away, the circulation stimulated and local anesthetics used for the pain. Papillomatous growths should be removed, especially when they interfere with respiration or phonation. Intubation and tracheotomy are not recommended. Intratracheal injections are highly commended, both for the pulmonary as well as the laryngeal condition. The most useful preparations are the purified hydrocarbon oils, warmed to blood-heat, with the addition of camphor, chlorophenol, menthol, thymol, creasote or guaiacol to the strength of about 1%.

NEUROSES.

Hay Fever, the Treatment of.—Following Aschenbrandt's theory that secretion from the mucosa of the nose and associated cavities is controlled by special fibers in the trigeminus which are affected by stimulation of their distal extremities, Fink¹ believes that the irritants which start these fibers into action also stimulate the other fibers of the trigeminus and by reflex action cause sneezing, etc. The excessive secretion may by prolonged irritation give rise to hypertrophy of the inferior turbinal and even polyps, these, however, being secondary. In investigating the source of the discharge Fink found that it came mainly from the antrum of Highmore and experiment showed that insufflation of aristol into the antrum checks the symptoms. Eleven cases were treated with from one to six insufflations and in each case the result was apparently a cure. The aristol was introduced through a tube passed into the antrum. Further investigation is needed before the value of this method can be definitely passed upon.

Speech, Some Defects of, of Peripheral Origin.—William Lincoln Ballenger,² of Chicago, calls attention to the important bearing which proper development of the organs and function of speech has on the cerebral centers of intelligence. He then takes up the nasal conditions which cause defects of speech and gives a list of practically all the obstructive lesions of the nose. These interfere with vocal resonance and not with voice production, although such troubles often produce a self-consciousness which results in timidity and backwardness and, through mechanical obstruction, in changes in the local circulation which affect the brain and system at large. Then follows a list of nasopharyngeal, faucial and lingual conditions which have a deleterious effect on speech. These affect the actual muscular mechanism involved in voice production, especially as regards articulate speech. The article closes with lists of laryngeal and thoracic and abdominal conditions which may interfere with normal articulate speech.

EAR.

Progressive Hardness of Hearing, Tinnitus and Aural Vertigo, Incudectomy in the Treatment of.—Charles H. Burnett,³ of Philadelphia, regards chronic progressive hardness of hearing as the result usually of a trophoneurosis of the musculature of the nasopharynx, eustachian tube and tympanic cavity. Deafness, accompanied by catarrhal symptoms and improved by amelioration of these symptoms, does occur, but the condition by many is considered to be the result of the trophoneurotic process. The process induces sclerosis of the tympanic mucoperiosteum, contraction of the tensor tympani, retraction of the tympanic membrane and ossicles, impaction of the stapes, ankylosis of the ossicles and stiffening of Scarpa's membrane. As a result of these changes there is a greater degree of retraction of the tympanic membrane than in a case of purely catarrhal disease. As a result of the retraction of the ossicles and impaction of the stapes in the oval window there is a diminution of the labyrinthine space and consequent compression of the endolymph and perilymph, with pressure on the terminals of the cochlear and vestibular nerves. Normally excess of pressure at the oval window is relieved by bulging of Scarpa's membrane at the round window, but if the latter be sclerosed, this compensating recession is either diminished or absent. There is no relief to the increased intralabyrinthine pressure, and progressive deafness, tinnitus and ear vertigo are the result. A characteristic of this aural trophoneurosis is its appearance first in one ear and later in the other. This may be

an example of the cross influence of the organ of one side upon its fellow of the other, and this influence may be for good as well as for ill. The majority of cases of ear vertigo occur in chronic sclerotic otitis media, and it is usually dependent on but one ear. The more extensively affected ear is usually quite deaf, may be the seat of severe tinnitus, and may subsequently become the seat of chronic vertigo. The first attack is usually light, and may not be followed by another for months. Then comes a more severe attack, to be followed in a week or two by another. The interval gradually decreases until the seizures may occur weekly or even daily and the sufferer become afraid to leave the house without attendance. The seizures may become so severe that the patient if abroad may have to be carried home, or he may have to remain in bed for weeks at a time. The first attack usually consists of sudden vertigo, attended with an increase of tinnitus in the affected ear, which may last from a few minutes to half an hour, and may be severe enough to prevent the patient from standing or even sitting unsupported. If the vertigo continue sufficiently long nausea and vomiting may occur, but not as a rule in the earlier attacks. When the seizures become more frequent, more severe and longer in duration the nausea and vomiting may be very intense, but there is *no loss of consciousness*, a point which serves to differentiate the condition from apoplexy and epilepsy. The apparent motion during the vertiginous seizures is usually toward the affected side, in which direction the patient tends to fall. When both ears are affected there is total inability to walk. This syndrome is now termed by aurists Ménière's symptoms, and not Ménière's disease.

Treatment.—The dominant physical change in the ear is the contraction of the tensor tympani muscle. By cross influence this is soon followed by a similar contraction on the other side. When relief is afforded to the originally diseased ear, the side secondarily affected likewise improves. The aim of the aurist should therefore be to overcome the retractive tendency of the tensor tympani and ossicles. Should this be done in the worse ear tinnitus, vertigo and the progress of deafness are stopped and prophylaxis is afforded to the opposite side. The methods of accomplishing this are tenotomy of the tensor tympani, which is uncertain, excision of the membrana tympani and malleus, which is followed by inflammatory reaction, and incudectomy, which is difficult of performance, but harmless and effective.

Operation of Incudectomy.—The patient is under general anesthesia, the canal is sterilized and illuminated by an electric head lamp. The incision through the membrana tympani should begin behind the short process of the malleus and follow the periphery downward and backward until a point is reached that would lie below a line drawn horizontally through the umbo. There is little or no bleeding as a rule. The flap thus made should be pushed inward toward the promontory by a cotton-tipped probe. The incudostapedial joint now comes into view, and the incus should be disarticulated by drawing it outward and downward by means of an incus-hook knife passed behind its long process. The bone should then be grasped by this process and carefully withdrawn from the middle ear and canal. All that remains is the dressing, which consists of sterilized gauze, which should be changed if it becomes moist. Usually there is no postoperative reaction, and when there is, it is slight and has no influence on the favorable result of the operation.

Influenza, Ear Complications and Sequels of.—M. A. Goldstein,¹ of St. Louis. The characteristics of the "grip ear" are the sudden, intense, deep-seated pain, involving much of the temporal region, with rapid tenderness over the mastoid area, and profuse serous effusion into the tympanic cavity, vertigo and persistent hemicrania. The usual relief which follows paracentesis in ordinary otitis media is not so constant in the influenzal form of disease, due probably to the general involvement of the adnexa of the middle ear. This will also account for the rapid development of mastoiditis in influenza. Incision of the tympanic membrane should be performed without waiting for bulging. The local use of cold is recommended in the early stages, and heat in the later. A gauze-drain is

¹ Deutsche medicinische Wochenschrift, November 14, 1901.

² Chicago Medical Recorder, March, 1902.

³ Penna. Med. Journal, October, 1901.

¹ St. Louis Medical Review, March 22, 1902.

passed down to the drum membrane after incision, and the use of powders and the Politzer bag are interdicted. The middle ear is evacuated by gentle suction with the Siegle otoscope. Proper treatment of the nose and throat, and of the general system should be carried out. The marked deafness which accompanies the middle ear disease is not all due to the involvement of the conducting apparatus, and it is probable that the labyrinth is involved in the inflammatory process. A guarded prognosis as regards recovery of hearing should be given. Rarely sudden deafness comes on, and seems to be a grip neurosis affecting the labyrinth. Goldstein regards the severe symptoms of mastoid involvement in grip not as indicative of violent mastoid disease, but more as a neuralgia, which is so constant in all types of influenza.

Influenza, Some Aural Complications.—S. MacCuen Smith,¹ of Philadelphia. With a single possible exception, it is impossible to draw a clinical picture which would be characteristic of the changes in the upper air passages in influenza. These inflammatory changes are, however, marked by their intensity, rapidity, virulence of action, and by the frequency with which they involve the tympanic and adjacent cavities. The exception noted is hemorrhagic otitis, which is believed by many to be the distinguishing feature of influenzal otitis. It begins as a "severe hemorrhagic myringitis, with the formation of bluish-red extravasations, at times coalescing, forming large, dark-colored bullæ which, as Politzer has pointed out, usually collapse and discharge a bloody serous fluid before rupture of the membrana tympani occurs. Areas of ecchymosis are also seen in the walls of the external canal." The discharge is at first bloody, but later becomes purulent. The mastoid is affected in all severe cases, and the percentage of cases requiring operation is high. Sometimes the mastoid becomes implicated simultaneously with the middle ear. The writer has operated on two cases of primary mastoid abscess resulting from influenza, the middle ear involvement being no more than a transient mild hyperemia. Pain is apt to persist longer, even after spontaneous or instrumental perforation of the tympanic membrane, in influenzal otitis than in other forms; other characteristics are meningitis, lateral sinus thrombosis, intracranial and extracranial abscess, all of which are encountered more frequently with each succeeding epidemic. Bacteriologic examination of the discharge should always be made, as the physical characteristics of the pus cannot be depended upon as a safe index of its virulence. In a series of 23 cases, nine were distinctly hemorrhagic, and in 14 the membrane ruptured spontaneously within 42 hours, the pain, mastoid symptoms and fever continuing for 24 to 60 hours after free drainage had apparently been established. In six cases the membrane was incised, and prompt relief of all symptoms followed. All the 23 cases presented mastoid symptoms to some extent, and in nine, operations on the mastoid were required, in all of which spontaneous rupture had taken place. Meningitis developed in two cases before an operation could be performed. The treatment should include rest in bed, attention to diet, bowels, urine, etc.; absolute fasting for two or three days is recommended. For the aural condition, the writer advises hot instillations, early blood-letting in front of the tragus, and free incision of the membrane on the slightest appearance of distention. Evacuation of the tympanic fluid should be followed by antiseptic daily irrigations, after which strips of iodoform gauze should be inserted in order to facilitate drainage. Before introducing the gauze, the canal should be dried with sterilized cotton and hot air, and a small amount of some impalpable powder insufflated. For the mastoid involvement, prompt and energetic measures should be adopted.

Mastoiditis.—Edward J. Bernstein,² of Baltimore, takes up first the pathology and diagnosis of mastoid disease and quotes Jurgens' statement as to the absolute unreliability of mastoid percussion as an aid to diagnosis. As palliative treatment, Leiter's coil is highly recommended for the early stages on account of its influence in reducing the swelling and congestion of the mucosa of the attic and thus furthering drainage of the mastoid. He then takes up the various operative indications.

The Schwartze operation is indicated in the following conditions: 1. Chronic inflammation of the mastoid with repeated swelling of the superimposed tissue, which may occasionally disappear in those complicated by abscess over the process, especially if a fistulous tract exist to the skin in the side of the neck, the external auditory canal or toward the pharynx. 2. If the otoscope shows implication of the attic; especially urgent are those cases of cholesteatomous formation. 3. All cases of chronic suppuration of the middle ear without any external indications of mastoid complication as soon as symptoms seem possible which threaten life through the retention of pus or the production of cholesteatoma. 4. As a prophylactic measure to prevent fatal complications in all intractable middle ear suppurations, as soon as examination shows that the excessive flow of pus comes mainly from beyond the tympanic cavity.

The indications for the radical operation are as follows: 1. The establishing of the diagnosis of chronic bone disease (Körner). 2. As soon as symptoms of pus-retention appear, consecutive to chronic middle ear suppuration, which do not yield promptly to treatment. 3. In hyperostosis of the auditory canal, because it prevents a full view of the deeper parts and interferes with the treatment of the suppuration. 4. The beginning of conditions which favor intracranial complications, such as the involvement of the labyrinth or facial canal in the necrotic process. 5. The first sign of intracranial involvement.

As a radical operation the writer prefers Körner's and concludes as follows: 1. That in acute middle ear inflammation the pathologic changes are nearly always spread over the entire mucosa. 2. That with this knowledge and the recognition of the normal histology, it seems incredible to even talk of aborting a mastoiditis, or that there is not a decided place for the application of the cold coil. 3. That the radical operation of Körner is a conservative measure both as to life and to hearing. 4. That the closing up of the external wound after the simple (Schwartze) method by blood-clot is unwise and unscientific and therefore unwarranted.

Hemophilia, Hemorrhages from the Ear in.—Tomka Samu,¹ of Budapest, alludes to the three other cases of aural hemorrhage in hemophilia reported by Rohrer in 1899, Haug in 1893, and Ziem in 1855, and then describes his own case. The patient was a boy of 2½ months, in whom incision of the tympanic membrane was performed for acute otitis media. All went well for six days, when an obstinate hemorrhage set in and in spite of all forms of treatment continued for eight days, ceasing spontaneously at the end of that time. The family history pointed clearly to the hemorrhagic diathesis.

A Case of the Parasite "Argas (or Ornithodoros) Meguini" (Dujes) in Each Ear.—J. C. Simpson.² A patient brought Simpson a living specimen of this insect which had crawled out of his right ear on the previous day. A similar one, after being killed by chloroform, was removed from the left ear. The subjective symptoms were pain above and a rattling sound in the ear. Neither tympanic membrane was injured.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended April 26, 1902:

SMALLPOX—UNITED STATES.			Cases	Deaths
California:	Los Angeles.....	Apr. 5-12.....	4	
	San Francisco.....	Apr. 6-13.....	15	
	Denver.....	Apr. 5-12.....	9	
Colorado:	Washington.....	Apr. 12-19.....	1	
District of Columbia:	Jacksonville.....	Apr. 12-19.....	9	
Florida:	Belleville.....	Apr. 12-19.....	1	
Illinois:	Chicago.....	Apr. 12-19.....	14	
	Ga esburg.....	Apr. 12-19.....	1	
	Evansville.....	Apr. 12-19.....	2	
Indiana:	Indianapolis.....	Apr. 12-19.....	22	1
Kansas:	Wichita.....	Apr. 12-19.....	2	
Kentucky:	Covington.....	Apr. 13-20.....	10	
Louisiana:	Shreveport.....	Apr. 12-19.....	7	
Maine:	Portland.....	Apr. 12-19.....	1	

¹ Penna. Med. Jour., October, 1901.

² Journal of Ophthalmology, Otolaryngology and Laryngology.

¹ Medical Press, February 26, 1902.

² Lancet, April 27, 1901.

Massachusetts:	Boston.....	Apr. 12-19.....	9	4
	Chelsea.....	Apr. 12-19.....	1	
	Malden.....	Apr. 12-19.....	2	
	Somerville.....	Apr. 12-19.....	1	
Michigan:	Detroit.....	Apr. 12-19.....	10	
	Grand Rapids.....	Mar. 29-Apr. 19.....	4	
	Ludington.....	Apr. 12-19.....	5	
Nebraska:	Omaha.....	Apr. 12-19.....	33	
New Jersey:	Camden.....	Apr. 12-19.....	1	
	Newark.....	Apr. 12-19.....	29	4
New York:	New York.....	Apr. 12-19.....	58	8
Ohio:	Cincinnati.....	Apr. 11-18.....	17	
	Cleveland.....	Apr. 12-19.....	2	
	Dayton.....	Apr. 12-19.....	1	
	Toledo.....	Apr. 12-19.....	2	
Pennsylvania:	Altoona.....	Apr. 12-19.....	4	
	Columbia.....	Apr. 14-21.....	6	
	Erie.....	Apr. 12-19.....	8	
	Johnstown.....	Apr. 12-19.....	2	
	Philadelphia.....	Apr. 12-19.....	26	1
	Pittsburg.....	Apr. 12-19.....	5	
Rhode Island:	Providence.....	Apr. 12-19.....	2	
South Carolina:	Greenville.....	Apr. 5-12.....	2	
South Dakota:	Sioux Falls.....	Apr. 12-19.....	1	
Tennessee:	Memphis.....	Apr. 12-19.....	13	
	Nashville.....	Apr. 12-19.....	1	
Vermont:	Burlington.....	Apr. 5-12.....	1	
Washington:	Tacoma.....	Apr. 6-13.....	5	
West Virginia:	Wheeling.....	Apr. 5-12.....	1	
Wisconsin:	Green Bay.....	Apr. 13-20.....	10	
	Jamesville.....	Apr. 6-13.....	2	
	Milwaukee.....	Apr. 12-19.....	3	

SMALLPOX—FOREIGN.

Austria:	Prague.....	Mar. 29-Apr. 5.....	5	1
Belgium:	Antwerp.....	Mar. 29-Apr. 5.....	9	3
Canada:	Winnipeg.....	Apr. 5-12.....	6	
China:	Hongkong.....	Mar. 1-8.....	4	2
Colombia:	Cartagena.....	Mar. 29-Apr. 6.....	1	
France:	Marseilles.....	Mar. 1-31.....	2	
	Paris.....	Mar. 21-Apr. 5.....	3	
Great Britain:	Birmingham.....	Apr. 5-12.....	1	
	Dundee.....	Mar. 29-Apr. 5.....	4	
	Glasgow.....	Apr. 4-11.....	18	2
	Leeds.....	Mar. 29-Apr. 5.....	7	2
	Liverpool.....	Mar. 29-Apr. 12.....	7	
	London.....	Mar. 29-Apr. 5.....	376	54
	Plymouth.....	Apr. 5-12.....	1	
India:	Bombay.....	Mar. 18-25.....	8	
	Calcutta.....	Mar. 15-22.....	11	
	Karachi.....	Mar. 16-23.....	13	4
Italy:	Naples.....	Mar. 22-Apr. 5.....	20	2
	Palermo.....	Mar. 29-Apr. 5.....	6	
Mexico:	Mexico.....	Mar. 31-Apr. 6.....	1	1
	Vera Cruz.....	Mar. 29-Apr. 12.....	4	3
Russia:	Moscow.....	Mar. 22-29.....	21	3
	Odessa.....	Mar. 29-Apr. 5.....	5	1
	St. Petersburg.....	Mar. 29-Apr. 5.....	8	2
Turkey:	Smyrna.....	Mar. 2-30.....	1	

YELLOW FEVER.

Dutch Guiana:	Paramaribo.....	To Mar. 1.....	31	21
French Guiana:	Cayenne.....	Mar. 27.....	1	1
	Mana.....	Mar. 27.....	1	1
	St. Laurent.....	Mar. 27.....	32	21
Mexico:	Vera Cruz.....	Mar. 29-Apr. 12.....	6	5

PLAGUE.

India:	Bombay.....	Mar. 18-25.....	751	
	Calcutta.....	Mar. 15-22.....	420	
	Karachi.....	Mar. 16-22.....	90	79

CHOLERA.

China:	Hongkong.....	Mar. 1-8.....	1	1
India:	Bombay.....	Mar. 18-25.....	9	
	Calcutta.....	Mar. 15-22.....	86	
Straits Settlements:	Singapore.....	Mar. 1-8.....	2	

Changes in the Medical Corps of the U. S. Army for the week ended April 26, 1902:

HALLWOOD, JAMES B., contract surgeon, is granted leave for one month.

LAINE, Major D. T., surgeon, is granted leave for 14 days, with permission to go beyond the limits of the department of Cuba.

AMADOR, R. A., contract surgeon, is relieved from further duty at Columbia Barracks, and will accompany the troops of the Seventh Cavalry en route to Chickamauga National Park, Ga.

OWEN, Major WILLIAM O., surgeon, is assigned to duty in charge of the medical supply depot of the division of the Philippines, relieving Captain Merritt W. Ireland, assistant surgeon.

SUMMERALL, Captain WILLIAM B., assistant surgeon, will proceed to Sassi, Sassi Island, for duty, relieving Contract Surgeon Edwin R. Tenney, who will proceed to Zamboanga, Mindanao, for duty.

STRONG, THOMAS J., contract surgeon, is relieved from further duty at the brigade hospital, Nueva Caceres, South Camarines, and will proceed to Manila, reporting to the commanding officer, Post of Manila, for duty.

LEWIS, FREDERICK A., contract surgeon, will proceed to Silang, Cavite, for duty, relieving First Lieutenant R. Boyd Miller, assistant surgeon, who will proceed to Manila and report at the Post of Manila for duty.

SANDALL, Captain LAUREL B., assistant surgeon, will proceed to Batangas, Batangas, and report to the commanding general, third separate brigade, for assignment to station in that brigade.

KEAN, Major JEFFERSON R., surgeon, is granted leave for three months, to take effect upon his being relieved from duty on the staff of the military governor of Cuba.

WOOD, HALSEY L., contract surgeon, is granted leave for 1 month and 15 days.

The following assignments of medical officers for duty with the companies of coast artillery remaining in the Island of Cuba upon the discontinuance of the department are hereby made: Headquarters Artillery Defenses of Havana, First Lieutenant J. R. Devereux, assistant surgeon; Hospital Steward Henry J. Walls; Cabana Barracks, Havana, Captain D. C. Howard, assistant surgeon; Hospital Steward Patrick O'Reilly; Rowell Barracks, Pasa Caballos, First Lieutenant J. L. Bevans, assistant surgeon; Hospital Steward, Henry C. Krause; Morro Castle, Santiago, First Lieutenant E. F. Geddings, assistant surgeon; Hospital Steward Thomas P. Davison.

CORBUSIER, Major WILLIAM H., surgeon, is granted leave for 15 days.

AMADOR, RAOUL A., contract surgeon, now at Chattanooga, Tenn., is relieved from further duty in the department of Cuba, and will report to the commanding officer of the Seventh Cavalry at Chickamauga Park, Ga., for duty.

JOHNSON, Major R. W., surgeon, is granted leave for one month with permission to apply for an extension of three months.

MANLEY, First Lieutenant CLARENCE J., assistant surgeon, is granted leave for one month.

BAUR, ALFRED, hospital steward, now at Washington, D. C., having relinquished the unexpired portion of furlough granted him, will be sent to Fort Logan April 23 for duty at that post.

HOYT, Major HENRY F., surgeon, now at San Francisco, Cal., is relieved from further duty in the division of the Philippines, and will proceed to Fort Douglas for temporary duty.

SNYDER, Captain HENRY D., assistant surgeon, is detailed to represent the medical department of the army at the American Congress of Tuberculosis, to be held in New York city May 14-16, 1902.

PEDDICORD, HARPER, contract surgeon, will proceed to his home, Baltimore, Md., for annulment of contract.

MERRICK, JOHN N., contract surgeon, now at Columbus, Ohio, is relieved from further duty in the division of the Philippines, and will proceed to Fort Missoula for duty.

KELLOGG, PRESTON S., contract surgeon, is relieved from further duty at Fort Missoula, and will report for assignment to duty with troops destined for service in Alaska.

Changes in the Medical Corps of the U. S. Navy for the week ended April 26, 1902:

MUNSON, F. M., assistant surgeon, ordered to duty at the Naval Hospital, Norfolk, Va.—April 18.

CARPENTER, D. N., past assistant surgeon, detached from Naval Hospital, Newport, R. I., and ordered to the Illinois—April 19.

FAUNTLEROY, A. M., assistant surgeon, detached from the Illinois, and ordered to the Naval Hospital, Newport, R. I.—April 19.

PLUMMER, R. W., assistant surgeon, detached from the New Orleans, and ordered home to wait orders—April 19.

O'LEARY, C., pharmacist, detached from the Torpedo Station, Newport, R. I., and ordered home to wait orders—April 23.

HUNTINGTON, W. H., pharmacist, detached from the Constellation, and ordered to the Torpedo Station, Newport, R. I.—April 23.

The following order was issued from headquarters department of Cuba, April 14, 1902: Surgeon John W. Ross, U. S. Navy (retired), will be relieved from further duty in the Sanitary Department of the city of Havana, May 20, 1902, and will accompany the department commander to Washington.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended April 24, 1902:

BANKS, C. E., surgeon, granted extension of leave of absence for two days—April 18, 1902.

STIMPSON, W. G., passed assistant surgeon, to proceed to Mendocino and Napa, Cal., for special temporary duty—April 23, 1902.

GRUBBS, S. B., assistant surgeon, relieved from duty in the Hygienic Laboratory, and directed to report to Surgeon J. H. White for special temporary duty; then proceed to Gulf quarantine station, relieving Assistant Surgeon J. T. Burkhalter—April 18, 1902. Granted leave of absence for 10 days from April 23—April 18, 1902.

HOBBS, W. C., assistant surgeon, to proceed to Brunswick Quarantine and assume temporary command of the service during the absence on leave of Acting Assistant Surgeon R. E. L. Burford—April 18, 1902.

GOLDBERGER, J., assistant surgeon, upon being relieved at Reedy Island Quarantine, to proceed to Tampico, Mexico, for duty in the office of the U. S. Consul—April 18, 1902.

VOGEL, C. W., assistant surgeon, granted leave of absence for 15 days from May 12—April 18, 1902.

LORD, C. E. D., assistant surgeon, detailed to represent the service at the annual session of the State Medical Association of Texas at Dallas, May 6-9—April 21, 1902.

BURKHALTER, J. T., assistant surgeon, upon being relieved by Assistant Surgeon S. B. Grubbs, to report to him for duty and assignment to quarters—April 18, 1902.

BOGGERSS, J. S., assistant surgeon, relieved from duty at Philadelphia, Pa., and directed to proceed to Reedy Island quarantine station and report to medical officer in command for duty and assignment to quarters, relieving Assistant Surgeon J. Goldberger—April 18, 1902.

CLARKE, F. M., acting assistant surgeon, granted leave of absence for 20 days from April 14—April 17, 1902.

MCCORMAC, J. T., acting assistant surgeon. Department letter of March 15, 1902, granting Assistant Surgeon McCormac 15 days' leave of absence amended so that said leave shall be for six days from March 30—April 19, 1902.

WALKER, R. T., acting assistant surgeon, granted leave of absence for 18 days from May 1—April 1, 1902.

STIER, CARL, junior pharmacist, to proceed to Memphis, Tenn., and report to the medical officer in command for temporary duty and assignment to quarters—April 24, 1902.

Appointment.

STIER, CARL, of Alabama, appointed junior pharmacist—April 23, 1902.

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The free lecture movement in New York established by the Board of Education should be imitated in every city and town of the United States. The use of the school houses is given gratis and it is not difficult to secure lecturers at little or no expense. The movement in New York began quietly 13 years ago, and so popular have these lectures become that over 900,000 is estimated as the total attendance in Greater New York during the past winter. At the present time the lectures are given in more than 100 places. It is even proposed to utilize the school houses in this way Sunday afternoons. The principal aim is to help in the more liberal education of the 94% of citizens who obtain no further education after leaving the common schools. Our object in alluding to the matter in a medical journal is to suggest to members of the medical profession that the system should be used to instruct the people, not alone in literature, history and general science, but also in hygiene and all matters pertaining to personal and public health. We have not noticed that this duty has been appreciated. And yet nothing is so important to the great mass of the people. In no better way can they be reached and taught as to this their most primary need. The quacks seize every such an opportunity to deceive and to profit by popular ignorance, while such an agency as that of free lectures is neglected by those fitted to instruct in medical matters. At least half of the people's evils and suffering come from disease and unhygienic living.

Behring on Tuberculosis.—The announcement has come by cable that Professor Behring in his new book on tuberculosis, which has just made its appearance in Berlin, declares that the disease in men and cattle is due to the same bacillus somewhat modified by the environment in which it grows. Professor Behring's announcements have so far been followed by the verification of his statements. As the subject is an extremely interesting and practical one, there is no doubt that the new book will attract widespread attention. It represents the fruit of nearly ten years of work, for it has been well known that almost since his appointment to the University of Marburg, Professor Behring has been working on tuberculosis with special reference to the toxins of the disease and the possible development of an antitoxin. The principal reason given for his declaration

of the identity of the bacilli of human and bovine tuberculosis is said to be the chemic and physiologic identity of the products of the two microorganisms. Professor Behring also announces that he has discovered a method of inoculating very young cattle with tuberculosis and so rendering them immune to the disease later in life. It is said that this method has been used on the farms around Marburg for several years and has thus had a thorough practical trial. This latter part of the preliminary declaration of contents is sure to add greatly to the interest of the new publication. We sincerely hope that the announcement will not prove premature. Of late years the medical world has been deservedly wary of European declarations with regard to tuberculosis. Professor Behring merits credit, however, for thus far not having held out any fallacious prospects.

The institutional newspaper and printing office does the highest good to them that give and to them that receive, think the superintendents of the Iowa State Hospitals. An editor who (naturally) became an inmate of an Iowa hospital for the insane succeeded in getting a small printing office established in the institution. Soon a journal was issued, the *Independence Hospital Press*, which has acquired a position of influence and honor, and has been the model for many other similar periodicals. How many such institutional magazines or papers there are we do not know. One is said to be issued at the Royal Edinburgh Asylum, Scotland; others are the *St. Lawrence Hospital News*, Ogdensburg, N. Y.; the *Maryland Hospital News*, Catonsville, Md.; the *Michigan Asylum News*, Kalamazoo, Mich.; the *Deaf Hawkeye*, Council Bluffs, Ia.; the *Hospital News*, Clarinda, Ia.; the *Anamosa Prison Press*, Anamosa, Ia. The benefit to the patients is, of course, that they do the typesetting and printing, acquire a trade in fact, and that they are stimulated to interest in their work. To the public and to criminology there is also good done. As Warden Hunter says (*Bulletin Iowa State Institutions*, January, 1902) of the prisoners, "These men are students of their condition; their grievous experience, coined into golden counsel, may yet pass current with the intellectual wealth of the reformer and philanthropist."

"There is no vehicle for the conveyance of this knowledge equal to the institutional newspaper, and the time is coming

when the press of the outside world will pay as close attention to the prisoner and his experience to diagnose that disorder we call 'crime' as is now bestowed upon the bacterium of consumption, finance, or expansion—subjects not a whit more important."

Advance in interstate reciprocity is illustrated by the endorsement of other state licenses by the New Jersey board under the four following conditions:

(a) The candidate for endorsement must present with the application a duly attested certificate of academic education; (b) the candidate must have studied medicine at least four years, including three courses of medical lectures in different calendar years in a legally incorporated medical college or colleges prior to receiving the degree of Doctor of Medicine; (c) the candidate must have passed a state examination of substantially the same kind and grade as that required by this board and must have received a state license; (d) the candidate must have obtained a total average marking of at least 75% prior to receiving a state license. Candidates must designate the state license to be endorsed, and the acceptance of an application for endorsement cannot be determined until the forms provided by this board have been properly filled out and submitted for approval.

Questions as to methods of applying for license and endorsement should be directed to the secretary, Dr. E. L. B. Godfrey, Camden, N. J. Temporary licenses are granted to a legally qualified physician of another state upon application by one of New Jersey, to take charge of his practice during the resident's absence, and good for from two weeks to four months. We think this action of the New Jersey board is a safe and most commendable step toward the solution of the vexed question, and we trust other states may take similar action.

Decline in Birthrate.—Of recent years attention has been repeatedly called to the fact that the population of France remains stationary, because of the decline in the birthrate, so that at present the number of children born does not exceed the number of deaths. The French people have become so alarmed over this state of affairs that active measures have been taken to try to remedy it. Since the attention of the world has been called to a decline in French natality, a number of investigators of the state of affairs in other countries of the world have discovered that there is a similar tendency shown by the statistics in England, the United States, and even of Germany. Edwin Cannan (*Fortnightly Review*, March, 1902) states that in the last quarter of the nineteenth century the birthrate in England has fallen from nearly 36 per 1,000 to a little over 29 per 1,000 of the total population in Great Britain. The decline in England seems to be more noticeable than in Scotland, but during the past 16 years it has been observable also in this country. Of course the statistics are somewhat influenced by emigration, but of late years this has not been a factor of great importance, except the Irish emigration, which has added more millions to the population of the United States than ever lived in Ireland. The increase of population in the British colonies is also unsatisfactory to Mr. Cannan. He states that the total increase of population in Canada has fallen off in recent years. While from 1871 to 1880 the increase was 839,000, it was only 508,000 in 1881-1891, and only 506,000 in 1891-1901. When we reflect that this 506,000 includes

gain by emigration as well as natural increase, and remember that Scotland, with a population of 800,000 less to start with, had a natural increase of 500,000 in the same decade, we cannot fail to admit that the natality of the Canadian population must be low. If the natality of the French portion of Canada is high, as is often alleged, the natality of the British portion must be that much lower. Cannan states that a similar state of affairs holds as regards the population of Australasia. Thus there seems to be little hope of the British colonies peopling their lands unless the British race within the empire can succeed, as it has done outside the empire, in engrafting into itself foreign elements. A continuance of the decline in natality at home will cause Great Britain to become one of the little nations, or at any rate to fall with the French into the second class. Great Britain is already immensely outnumbered by the Russians and by the white citizens of the United States, and it is very considerably outnumbered by the Germans. Cannan remarks that while the natality of the English element in the United States is believed to be failing, immigration and the higher birthrate of the non-English elements will probably long suffice to increase the population of the United States at a rapid rate.

We are very glad that Cannan takes so hopeful a view of the prospects for increase of the population of the United States, but regret to believe that his statement as to the falling off of the birthrate of the old English elements is correct. The tendency is always for the greater increase of the lower stratum of the population, that which is least valuable in promoting the world's progress. While in the past history has shown the decline and fall of all the great nations which have attained a high degree of civilization when a certain stage of development was reached, we hope that the civilization of the present may be more permanent. We believe it not impossible that much may be accomplished by a careful study of the conditions which lead to increased vigor and vitality and which tend to increase the birthrate. No study could be of greater significance than this for the advancement and permanent civilization of the world.

Hospitals for Crippled Children.—There is no better proof of the growing union of true religion and true medical science than the attention and care bestowed upon children. Sociologically it is recognized that the child is father to the man, and medically it is increasingly felt that disease may be eradicated in the child, when in the adult it is impossible. Of all the movements to "save the children" none is more calculated to arouse sympathy than that to help and save those crippled and deformed. Instead of but two state hospitals for this purpose there should be one in every state in the Union. That we have not so many is one of the penalties of allowing our state governments to be conducted by ignorance and greed. The first report of the New York State Hospital for crippled and deformed children shows, as Bishop Potter says, an altogether creditable and encouraging beginning. The institution is located at Tarrytown, N. Y. The report covers a period of only 10 months. The hospital will accommo-

date 25 patients, with officers, etc., and 24 have been treated, 5 discharged, leaving 19 under treatment. Of the 24, 13 had hipjoint disease, 5 spinal disease, 3 infantile paralysis, etc. Many more applications were received than could be accepted, and over 100 eligible children are in public institutions of the state. The institution is not a home or asylum, but a hospital. It was the intention of the founder that the hospital should be also educational, but no provision in the law was made, and private gifts for this purpose have been required to supplement the \$15,000 appropriation for carrying on a school. The children were from the very poor class; many, too, had been in other hospitals, discharged before permanently cured, and often too poor to buy orthopedic apparatus. The hospital needs 50 acres instead of four, and a more liberal appropriation from the state. To Minnesota belongs the credit of the establishment in 1897 of the first hospital of the kind, through the instrumentality of Dr. Arthur J. Gillette, of St. Paul. Dr. Newton M. Shaffer is surgeon-in-chief and superintendent of the New York institution, and in May, 1898, he advocated the establishment of the present hospital, not knowing of the work of Dr. Gillette in St. Paul. We are proud of the noble labors of these two true physicians. In 1898 Dr. Shaffer wrote:

"And why should not the state aid in such an effort? A strictly dependent, and even today a much neglected class is being only half cared for by the excellent medical institutions established for its relief. The educational and charitable systems of the state should be adapted to meet the demands of this class of crippled and deformed as fully as are those for the deaf, the dumb, the blind, or the insane. A child with a curable deformity demanding prolonged treatment should be treated as well as taught until he is fully recovered, and not, when convalescence is fairly established, and he is sure with proper care to recover, be sent out of the hospital to relapse after a few weeks or months, and to become ultimately a more or less useless member of society, perhaps a permanent burden upon the state."

The Indictment Against English Nurses.—It seems strange to us that upon the English nursing profession should be showered such a degree of English scorn and dislike. Something, one must say, is certainly most radically wrong whether this bitterness is justified or not. Justified it surely must be to some extent when so many of the medical profession exhibit it so heartily. The physician and the nurse must cooperate to a single good end, and when they do not, that end, the health of the patient, must suffer. It therefore behooves both professions and also the public to find out where lies the fault and to remedy it with strong wills and hands. In the April number of the *Nineteenth Century and After* there is an article by Miss M. F. Johnston, in which "the case against the hospital nurses" is plainly stated. According to this writer the names of their accusers is legion, and they have little to say in favor and much to lay to the charge of the nurses. The talk of the nurse is shoppy, they say, of hospital cases and scandals; her patients suffer tortures; the families detest her because of her inconsiderate demands and callousness to suffering, and especially because she gains undue influence over the patient. The absurdity of tortured patients and of undue influence over them seems grotesquely con-

tradictory. Moreover, these faults, it is said, are not in the black sheep alone but are characteristic of the whole profession. But Miss Johnston also seeks for the cause of these and other evils, and finds it in the fact that the nurses are overworked. Many are ruined in health by the harsh system before they complete their courses, and those that are able to get through come out with all womanliness gone, logical products of the slavery of mind and body they have endured. The sisters, matrons, or head nurses also receive a deserved scoring at Miss Johnston's hands for their complicity in the brutal system, and for their cruelty to the girls under them. It is a proverbial truth that to women no man will be as unjust and tyrannical as women. So far as the indictment and defense are true the utter pity of it will strike every one, and in so far as like conditions to any degree prevail in our country—do they?—we should hasten to remedy them with thoroughgoing therapeutics.

Medical Departments in State Libraries.—In the March number of *Medical Libraries* Dr. Spivak has brought together the opinions of a number of state librarians concerning the establishing and maintenance of medical departments in state libraries. All are heartily in favor of the movement. Mr. Melvil Dewey, of New York, is certain that in all departments of literature the traveling library will soon become a great factor in our social life, the supply of books from a central plant being as inevitable as of electricity. Medical books, he says, should be furnished in this way to every licensed physician. Mr. Chase, of New Hampshire, is building up a great reference library at Concord for all professions. Six years ago there were no medical books in the library. There are now 5,000 volumes. Mr. Fairchild, of Albany, New York, shows how the community suffers unless physicians are equipped with the best books, and quotes the approval of the plan of support of medical departments in public libraries by Dr. J. S. Billings. The librarians of Pennsylvania, Ohio, Maine, Michigan, Maryland, and New Jersey also approve and are doing all they can for this cause. The great and the astonishingly strange fact is that physicians seem utterly indifferent. The lawyers are awake and united, and they everywhere secure their great special libraries at the public expense. Physicians, except in Colorado and a few other states, seem to prefer to buy and care for their own books. The public medical reference library would not, however, lessen the necessity of the purchase of books by the private physician. It would only enable him to have access to medical works he could not otherwise consult. Mr. Buchanan, of Trenton, N. J., says:

"An attempt was made several years ago to organize a basis for a medical library in connection with the state library, but the physicians, I am told, took little interest in the movement. It seems to me that before any progress can be made they must show some interest, particularly as the present appropriation for the purchase of books is comparatively small, and at least two-thirds of it is required to keep up the law library. It may be that the New Jersey State Medical Society will become interested after a time, as it is now sending to the State Library (for safe keeping only) the proceedings of the various state

medical societies received in exchange. Of course we already have a collection of medical reference books, and there is no doubt that more attention would be given to that department if there was any demand or interest on the part of those who should take the initiative. Personally, I think there should be a good medical library here just as there is a fine law library, but the lawyers are, or seem to be, more progressive in the way of making their wants known. If you can do anything to stir up the New Jersey doctors you will be doing them a service."

Whisky and Snake Bite and Neurology.—In an editorial in the *New York Times* the following passage occurs:

"The fact remains that the popular antidote for snake poison has never failed when taken in time. It is no longer to be regarded as an accidental and unscientific cure. Professor Loeb (the experimental physiologist who has traced the very spark of life to its lair) (*sic*) has discovered that death from snake bite is due to the rapid liquefaction of the nerve substance, and that it is the effect of whisky to retard or prevent this process. It is in favor of this popular remedy that usually it is more easy to get than any other. In no part of the country is it the habit of men to carry about in their pockets flasks of permanganate of potash, for example, beside there are farsighted men who keep their nerve substance solidified to a degree which must render them virtually immune should they happen to meet any snakes."

Perhaps the editor meant to be altogether facetious, yet this passage is almost sure to add to the fallacious impression already fixed in many minds that whisky is in truth an antidote for snake poison. The discussion of Professor Matthews' (not Loeb's) new theory of nerve transmission at the beginning of the year recalled popular attention to this exploded tradition. It was stated that the explanation of the saving action of alcohol in cases of snake bite was another proof of the truth of the new theory. There was a display of scientific terms in the explanation that showed it was no mere reportorial addition for sensation's sake. It therefore seems wise to repeat that there is not on record an authenticated case of snake bite cured by whisky. Plenty of individuals bitten while under the influence of liquor have died and large amounts of alcohol have failed to save life in many cases. Only about one in six of those bitten by venomous snakes die. The remaining five are cured by anything they happen to have taken. Stimulation is excellent, but the giving of whisky to drunkenness by lowering the resistive vitality has undoubtedly been a causative factor in many deaths supposedly from snake bite that would otherwise not have occurred. We are beginning to have the aftermath of the pseudoscience of the newspapers of which we spoke some time ago as a probable consequence of the premature scientific announcements from Chicago.

The mystery of the increase of cancer continues rather than diminishes, and serves to heighten the zeal of the medical world to learn the cause of a disease so strangely malevolent. It is now generally admitted that the increase is real and is not a consequence of better diagnosis and medical attendance. In 1892, according to Dr. Wutzdorff, of the Imperial Health Office in Berlin, there were 59.6 deaths from cancer per 100,000 inhabitants of the German Empire, while in 1898 the rate was 70.6, an increase of 18.5%. During

this time medical science and attendance had not materially changed nor population so much increased. Neither should it be forgotten that greater accuracy of surgical technic and asepsis, together with the lessened mortality from early operation, must have saved many lives, facts which would perhaps more than offset the increased number of deaths due to better statistics, etc. A similar increase in the cancer mortality is everywhere manifest: In England during the decade from 1861-1870, there died among each 1,000,000 inhabitants 384 persons; in the following decade, 468; from 1881-1890, on an average 589, and in the year 1899, 829. The increase amounted to 56.3% (1881 to 1899) among males, and 32% among females. In the Netherlands, too, cancer has considerably increased. In the year 1874 there died among each 100,000 inhabitants 49 from this disease; in the year 1897, 91—that is to say, more than 80% more. In Switzerland the increase of cancerous disease has been terrible and continues to advance; among each 100,000 of the population there died from cancer in the year 1889, 114.4, and in the year 1898 as many as 132.4. In the United States similar conditions exist. In the State of New York, for example, the cases of cancer increased from 2,478 in the year 1888 to 4,117 in the year 1897. In Massachusetts there died of cancer in the year 1856, per 100,000 inhabitants, males, 12.9; females, 24.5; in the year 1895, however, 44 and 94.4.

Fevers Upon Application and While You Wait.—The *Journal of Osteopathy* has the following editorial upon a new plan in regard to the treatment or prophylaxis of "fevers":

"The time may come when fevers may be artificially produced. And why? Because fevers are the agencies for the converting of dead substances in the body into gases in order that they may be more easily and more effectually expelled through the excretory system. The plan is to wait until the fever arrives of its own accord. Why not anticipate it and start it, and thus burn out the obnoxious sewage system before it clogs up to the point of actual obstruction? Why not? The time may possibly come when a patient will come to a hospital or sanitarium conducted along intelligent lines and apply for a fever, and be supplied with it just as carefully as though he came to have a mangled limb cut off. Why not? Fevers are a sort of house-cleaning, a brush-burning, an internal cleansing which nature orders when no other expedient will answer. It is a discredit to the profession of healing that the condition is ever allowed to progress so far as to result in fever. The only allowable fevers in future osteopathic practice will be such as are induced, superinduced let us say."

But this osteopathic fever, we suppose, must be inaugurated osteopathically, *i. e.*, by the peculiar kind of massage which is not massage. The foregoing suggestions are printed upon the same page with another editorial on the treatment of spinal curvature, in which it is said that

"Spinal curvature is frequently corrected by working one vertebrae (*sic*!) after another back into its place. Thousands of curved spines have been cured by this simple mechanic and sensible process."

Am I My Brother's Keeper? depends, of course, upon the answers to two questions: Who is the "brother" and what is meant by being his "keeper?" Contagious diseases are very effective methods of defin-

ing both terms. They are supplementing the religious command that brotherhood shall include all races, whatever the color and however distant they may be. So long as plague, cholera, etc., exist on the earth the most civilized man is in danger. Intercommunication and contagion prevent exclusion, and absolute safety is impossible. Perhaps this is the truth, the subtle meaning, underlying the furious and, on selfish grounds, illogical colonization and overrunning of all uncivilized countries by the Caucasian people. It is the devious but necessary way of "nature" to unite all parts and peoples of the world in a common uplifting. One phase of this progress toward unity is shown in Lord Cromer's report, concerning the plague in Egypt. "The plague," says Mr. Pinching in this paper, "has gradually extended and claimed more victims from year to year since its first appearance in 1899," and he anticipates a further extension of it in 1902. Bands of men, both Europeans and natives, have been organized for disinfection and whitewashing, but the difficulties they have to overcome are enormous. In the native towns the streets are so narrow that no cart can get down them, so that "all the articles for disinfection and the accumulation of dirt and refuse in the house have to be carried out to the carts by hand for a distance of some two or three hundred yards." The difficulty of housing the sick in the autumn and winter months is almost equally great. In the summer a tent hospital serves the purpose well, but after rain "alluvial soil is not an ideal spot for the pitching of tents . . . and no decent houses exist which can be turned into hospitals."

A Doctorless and Drugless Earthly Paradise.—Millionaire Elijah Dowie is making great progress with his Zion City, 42 miles north of Chicago. The Chicago city assessors refused to let his several millions of dollars' worth of property go free of taxes, so the modern Elijah has run away from them where only state taxation will bother him. The millions it is said that he will make by the new "real estate deal" are sufficiently numerous to make a European capitalist envious. Among the conditions of a lease of his land in Zion City are that no person shall sell liquors, tobacco, oysters, or drugs, nor shall any one living thereon practise medicine, surgery or dentistry. The believer in medicine may call in a physician from the outside, and may use drugs if he buys them on the outside. We wonder if the oyster may also be bought outside and eaten upon the grounds or not, and why this poor innocent is classed with immoral doctors and dentists and pharmacists. What are "drugs" is a question Dowie may have to decide in the courts; shall mineral and spring water, decoctions of berries, etc., be held as drugs or as food? Is the bark of one tree food and another a vile drug? Is trimming one's nails or cutting the hair neither sinful nor surgical, while wearing filled teeth and spectacles, or setting a dislocated finger, or stopping a hemorrhage, are both medical and immoral? The antimedical crank is a strange product of the times.

Secret and Ignored Vaccination.—The growing conviction on the part of the antivaccinationists that their cause is hopeless, combined with the increasing

pressure of public opinion, is producing a peculiar state of mind and more peculiar practices upon their part. The actual result is that they continue to preach the anti dogmatism but secretly practise vaccination. This at first comes about by a supercilious scorn of vaccination (similar to the lofty contempt of Eddyites for the contagiousness of contagious diseases, while humoring the law that requires reporting such cases) and a large-minded tolerance for the poor stupid folk who persist in ignorance and error. To satisfy such people they consent to vaccination. Then when they do not get smallpox they forget that they have been immunized, and claim that their freedom from the disease is due to their faith or to their natural immunity. Dr. Pfeiffer erred in a too thoroughgoing sincerity. It is undoubtedly true that this absurd condition of mind exists in a large number of semicivilized antis. Among semisavage antis it is well known. In his last report Lord Cromer tells of the success in vaccinating the Egyptian natives upon the condition of secrecy. The Bisharin Arabs "present themselves readily for vaccination, provided their names are not entered upon the register."

The lessened consumption of meat is a good result of the rise in price which has recently taken place. It is an "ill wind which blows no man to good," but it is surely a blessed one that blows good to all, and there is little doubt that if we all ate less meat we would be better off both financially and physically. The sudden advance in price has served to show people that strength and health and life are possible without meat or with much less of it than is customary. "Once a day" is becoming the rule with many who have thought that meat, often of two kinds, was necessary each meal. The fact is making quite a revolution with hotels, restaurant keepers, cooks, and extending all the way from the effete East to the breezy plains of the far West. New dishes are being devised, and the vegetarians are having their innings. Perhaps we may relearn that our Indian corn is as good and often a better food than so much meat. But both undernutrition and overnutrition have their bad effects upon the system, so we should not go to either extreme in the ordering of our dietary. Palatableness is also to be considered. In general it may be said that a moderate amount of meat with a greater use of good soups, spaghetti (with a small quantity of meat or veal broth), butter and eggs, will be required by active, energetic people.

Antivaccination hospitals are urged by an Englishman, who volunteers to subscribe \$25.00 and to raise \$500 toward founding one. Our esteemed contemporary, the *Medical Press*, calls attention to the fact that such a hospital already exists, the Hospital of St. Francis, in London, with a branch in Essex. The *Press* also states that qualified practitioners are on the staff, and that the contention of the chairman of the hospital that diet can take the place of vaccination will hardly pass muster professionally. The hospital's work in this method of supplanting vaccination does not seem to have aroused much attention. We do not understand why. Every anti should subscribe to its funds and support it *vi et armis*. It is the best way in the world to convince the doubtful. St. Francis seems to be still more interested in

antivivisection and in vegetarianism. By all means add these and other similar desiderata. It would be well for the American antis to establish such a hospital and to make Dr. Pfeiffer the manager. In analogy with his own journal it might appropriately be called "The Cranky Notions Department," or institution.

Libraries that do Good.—There are a hundred ways in which money could be given for libraries where it would be of far more benefit and much better appreciated than in the stereotyped way of fashion. One such is indicated by the following excerpt from a paper by Warden W. A. Hunter, of Anamosa, Iowa:

"Another factor contributing to the happiness of unfortunates is the establishment of libraries of carefully selected works of fiction, history, biography, science, literature, etc., giving a means of pastime, recreation and instruction, and likewise showing a healthy condition of public sentiment in whatever contributes to the amelioration of the conditions surrounding public wards. As an indication that this is appreciated it is but necessary to state that the library at the penitentiary at Anamosa last year issued 29,246 books, almost as many as the Cedar Rapids Public Library, which circulated 33,939 for the same period in a city of 25,000 inhabitants, against a prison population of 500."

Favorable Committee Report on the Perkins Bill.—We are glad to say that after careful consideration the Senate Committee on Public Health and National Quarantine has directed a favorable report upon the Perkins bill (S. 2,162). A few amendments were made which did not affect the value or character of the bill. We alluded to the progress of this important bill in our issue of April 26. The favorable report of the Senate committee renders its final passage practically certain.

EDITORIAL ECHOES

The Government Medical Services.—The incident serves as an excellent argument for putting all the medical departments of the government services on an equal basis, as regards rank, promotion, pay and allowances, and making the latter sufficiently generous to constantly attract to the government services the best medical talent that the United States affords. The medical profession, by united action, has it in its power to do this, and to prevent the passage of unwise legislation affecting its representatives, such as that by which the efficiency of the Medical Department of the Army has been lately crippled. There is not a medical department under the government which does not need—and is not worthy of—the support of the profession in the attainment of necessary reforms.—[*Medical Record.*]

Smallpox attack-rate of vaccinated and unvaccinated persons, under and over 10 years of age, in five English towns in which smallpox epidemics have recently occurred:

Towns.	Date of Epidemic.	Attack-rate under 10.		Attack-rate over 10.	
		Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
Sheffield.....	1887-88	7.9	67.6	28.3	53.6
Warrington...	1892-93	4.4	54.5	29.9	57.6
Dewsbury.....	1891-92	10.2	50.8	27.7	53.4
Leicester.....	1892-93	2.5	35.3	22.2	47.6
Gloucester.....	1895-96	8.8	46.3	32.2	50.0

[Vaccination and Common Sense, by T. D. Acland, M.D., *Brit. Med. Jour.*]

AMERICAN NEWS AND NOTES.

GENERAL.

American Congress of Tuberculosis.—The officers, in response to a general expression from the West and South, have decided to postpone the session to June 2, 3 and 4, 1902.

The quarantine against Cuba, which usually goes into effect at this season, will not prevail this year because of the greatly improved sanitary conditions existing in the island.

Metric System.—A bill making the use of the metric system compulsory in all departments of the government except in completing the survey of public lands, has been favorably reported in the House.

Physician for Lepers Needed.—The Health Board of Hawaii by unanimous action removed the resident physician, Dr. Richard Oliver, from the leper settlement on Molokai, on the charge of cruelty and neglect of duty. A physician to fill the vacancy at a salary of \$250 a month is desired.

Smallpox, as officially reported in the United States, from December 28, 1901, to May 2, 1902, presents a grand total of 30,815 cases with 921 deaths in contrast with 22,344 cases and 349 deaths in the corresponding period of 1901.

Association of Military Surgeons.—The eleventh annual meeting of the association will be held in Washington, June 5, 6, 7. Invitations have been extended to the armies of the world to be represented through their medical departments. France, Japan and Mexico have already signified their intention to send delegates.

The Association of American Physicians, which held its annual meeting in Washington, D. C., April 30, elected the following officers: President, James Stewart, Montreal; vice-president, William T. Councilman, of Boston; secretary, Henry Hun, of Albany, N. Y.; treasurer, J. P. C. Griffith, Philadelphia, and recorder, S. Solis Cohen, Philadelphia.

Beri-beri from Rice Eating.—Corroboration of the theory advanced by Baron Sancyoski, of the Medical Department of the Japanese Navy (*Sei-i-Kwai Medical Journal*, April and May, 1901), that beri-beri is due to a diet of Chinese white rice, is furnished in a report received at the War Department from Captain Harry A. Littlefield, assistant surgeon of volunteers, on duty at the military prison of Lingayen, Pangasinan, which contrasts the marked endemicity of beri-beri among the inmates of that prison where the sanitary conditions were excellent and its entire absence among the large number of natives confined in the civil prison ½ mile distant where the sanitation was not very satisfactory. The only difference in treatment was that the inmates of the civil prison were fed on native rice, the prisoners in the military prison on Chinese white rice. In February, 1902, this was discontinued and the native rice substituted, with the result that no new cases of beri-beri developed and no deaths occurred. This marked change occurred in the space of one month. The average of deaths had been five monthly and the number of new cases about 12 from the establishment of the prison until February, when the diet was changed.

EASTERN STATES.

Registered physicians in Massachusetts are said to number about 4,500, an average of one to every 625 inhabitants.

The free hospital for poor consumptives at White Haven has received the sum of \$2,500 from Henry Phipps, a member of the Carnegie Company.

New Floating Hospital.—Plans have been drawn for a new hospital ship 192 feet long to supersede the old barge Clifford in Boston harbor in the summer of 1903. It will be equipped with all the modern facilities for the treatment of children's diseases and will include ample provision for the care of permanent patients.

Compulsory Vaccination.—An inhabitant of East Boston who refused vaccination for himself and child recently on the ground that it was a menace to health and useless as a preventive of smallpox, contended that the compulsory vaccination law was unconstitutional. The question of its constitutionality will be carried to the Supreme Court for decision, it is said.

NEW YORK.

Bequest to Hospital.—Under the will of the late William Whitewright the Presbyterian Hospital receives \$50,000.

An endowment for a hospital bed is being seriously considered by brokers of the Stock Exchange for the treatment of sick and disabled employees.

A gold medal has been awarded to Dr. Alvah H. Doty, health officer of the Port of New York, by the directors of the Pan-American Exposition, for his exhibit on sanitation.

Patent Medicine Distribution.—A measure recently adopted by the Oswego Health Department forbids any person distributing patent medicines without permission of the board. The chief of police has been directed to enforce this order.

Coroners' Physicians.—The strong protests against the movement to place coroners' physicians in the exempt class has decided the Municipal Civil Service Board to recede from its position of advocating the exemption from competition of these practitioners.

Coroners.—In Erie county, N. Y., a recent legislative act has abolished the office of coroner with its associated office of postmortem examiner, and instituted instead a medical examiner at a salary of \$3,000, and an assistant medical examiner at a salary of \$2,000, who will act in conjunction with the district attorney's office.

Diphtheria Infection.—The committee appointed to investigate the cause of the prevalence of diphtheria in the Willard Insane Asylum reports that it is probably due to the imperfect ventilation, the germs being carried to the garret by upward currents of air and then either by changes in the current of air or by opening windows in the lower floors the germs are again distributed throughout the building.

The Suffolk County Medical Society held its annual meeting at Riverhead, L. I., April 24, 1902. The following officers were reelected: President, John H. Benjamin, Riverhead; vice-president, A. C. Loper, Greenport; secretary, P. Van Benschoten Fowler, Centre Moriches; treasurer, B. D. Skinner, Greenport. A paper on "Fractures of the Lower End of the Radius" was read by George Ryerson Fowler.

Prohibition of Eddyites.—At a late meeting of the Society of Medical Jurisprudence, a paper on "Legal Prohibition of Unprofessional Mental Healing," read by C. M. Demond, of the New York bar, excited much discussion, and in view of the fact that the Eddyites are more interested in the accumulation of money than in the alleviation of the sufferings of the poor, an amendment to the present law was advocated, prohibiting medical attendance by any one not a physician, and a committee was appointed to draw up a bill to that effect for presentation at the next session of the legislature.

Distribution of Antitoxin.—The New York State Health Department has announced that it will furnish diphtheria antitoxin, prepared and tested in its antitoxin laboratory, under the following conditions: That it is applied for the treatment or immunization of inmates of state institutions, or other charitable institutions in the state, or for persons who cannot afford to purchase the remedy; and that it will not be sold under any circumstances. Physicians obtaining the antitoxin must agree to report the results of its use on a blank provided by health officers. Those desiring the remedy for use in state institutions must apply to the State Department of Health, Albany, and all others can obtain it from the health officer of the city, town, or village in which they reside. The department specifies the amount of antitoxin which should be used in mild and severe cases of diphtheria and for the purpose of immunization.

PHILADELPHIA, PENNSYLVANIA, ETC.

Hospital Building.—The cornerstone for the new building to be erected as an annex to the Samaritan Hospital, Broad and Ontario streets, was laid May 3.

A crusade against mosquitos has been commenced in Elizabeth, N. J. Every attempt will be made to destroy the pest and the larvas. The last legislature had passed a bill authorizing the state entomologist to expend \$10,000 in this work, but no appropriation was made for it. Governor Murphy, however, has offered to advance the money for the work out of his emergency fund.

Pittsburg Hospitals.—An offer has been made by Mr. Carnegie to aid in the erection of a \$2,000,000 hospital for the workmen at Pittsburg, but he declines to establish such a hospital himself on the ground that the workmen would feel dependent, and that the employer would feel relieved of all responsibility, and would become careless of the lives of those employed. Mr. Carnegie, it is said, would contribute liberally to an institution in which all the capitalists were interested, and to which they could send their employees and pay for their care.

SOUTHERN STATES.

Tri-state Medical Society. of Alabama, Georgia and Tennessee will hold its fourteenth annual meeting in Birmingham, Ala., October 7, 8, 9, 1902.

New Orleans Sewers.—According to a recent communication the transaction by which litigation was to be avoided and the city to gain control of the sewerage system for the sum of \$295,000 has not been so successful as reported. The whole matter has been thrown into the courts, and probably an indefinite course of litigation will be undergone before the matter is finally settled.

Law Against Cocain.—The State Board of Pharmacy in a recent communication calls the attention of the druggists of Kentucky to the pharmacy law as amended March 17, 1902, by which the sale of cocain, abortifacients and poisons are severely restricted. The emphatic determination of the board to stamp out the cocain evil is expressed.

WESTERN STATES.

Spotted Fever.—A. F. Longeway, of the Montana Board of Health, and a party of scientists have gone to the Bitter Root Valley to investigate a fatal malady which is reported as causing a panic among the inhabitants of that region.

Health of Seattle.—The official report for March gives the total number of deaths as 74, making the deathrate 7.63 in the population of 115,000. The greatest mortality from any one disease was 10 from pneumonia, and eight from pulmonary tuberculosis. There were three clear days during the month.

Dysentery Research.—The departure for India is announced early in the summer of Professors Victor C. Vaughan and Frederick G. Novy, of the medical college of the University of Michigan, to investigate tropical dysentery and try the effect on that and other diseases of Professor Novy's new antiseptic.

The Indian medicine man, W. Mohawk, who was tried April 9 before a jury in the city of San Jose, Cal., on a charge of practising his profession without a license, is reported acquitted under the terms of the treaty existing between the United States and the Indian tribes, which allows Indians to sell medicines prepared by them on their own domains and which exempts them from liability under the state law.

Smallpox Charges.—At a recent meeting of the supervisors at Galesburg, Ill., a contention arose concerning the liability for smallpox charges, which the supervisors held should be paid by the township in which the cases occurred, as the Knox county board in 1896 passed a rule that contagious diseases should be a township charge and that the county would not be liable. The attorney-general holds that the county has no power to pass such a rule.

Mortality in Chicago.—For the week ended April 26 there were 550 deaths, an increase of 21 over the previous week and of 93 over the corresponding week in 1901. An excess of the usual deathrate is shown for Bright's disease, tuberculosis, convulsions, heart disease, scarlet fever, pneumonia and violence. The unusually large number of deaths from Bright's disease is attributed to influenza complications, although for the first time in four months there has been no death reported from influenza.

Smallpox.—From January 1 to April 26, inclusive, there were treated at the Chicago Isolation Hospital 153 cases of the disease. Of these 107 patients were discharged recovered and there was one death. Not a single one of the 153 patients had been properly vaccinated. The most serious group of cases in the city occurred among unvaccinated Bridewell prisoners. Smallpox as officially reported for the period from December 28, 1901, to May 2, 1902, amounts in Colorado to 794 cases. The total for the state in the corresponding period in 1901 was 1,763. In Ohio the total is 951 cases, with 22 deaths, while for the corresponding period in 1901 it was 1,685 cases, with 21 deaths. In Kansas 1,590 cases, with 2 deaths; in the corresponding period of 1901, 3,915 cases, with 20 deaths. In Wisconsin 6,073 cases, with 34 deaths, while for the corresponding period of 1901 it was 575 cases, with 4 deaths.

CANADA.

Cancer statistics in Ontario show an increase of 100% in the mortality between the years 1891 and 1900. The number of deaths for the past 10 years beginning with 1891 are: 579, 676, 678, 621, 620, 731, 927, 975, 1,041, 1,055.

Laval University.—A feature of the jubilee of Laval University, Quebec, will be the establishment of several professorships by former students. Thus far over \$10,000 has been contributed. Of this sum Dr. A. G. Belleau, of Quebec, has given \$1,000, and Drs. Arthur Vallee and Rosseau \$500 each.

Women Inebriates.—A resolution adopted by the Local Council of Women at Ottawa petitions the government to establish cottage homes for the treatment of inebriate women. It is claimed that such a measure is very necessary in order to check intemperance, which is spreading at an alarming rate among women. The statement is made that 75% of women prisoners, many of whom are under 20 years of age, are intemperate and that imprisonment has proved an utter failure as regards restricting the evil.

The Bacteriologic Station at Outremont, near Montreal, which has been maintained by the government for the past three years for scientific observations of tuberculous cattle, is to be closed. Dr. Higgins, the bacteriologist in charge, will be transferred to the cattle quarantine staff at Ottawa, where these investigations will be held in future. It is reported that the future work will also include researches respecting tuberculosis in human beings.

FOREIGN NEWS AND NOTES

GENERAL.

Contrast of Death Rates.—In Guatamala the deathrate is 41 per 1,000. In New Zealand it is 11 per 1,000.

Sleeping-sickness as an epidemic is reported to have broken out in the Protectorate and that hundreds of victims to it have been carried off on some of the islands and country places in Uganda, Central Africa. A British medical commission will be sent to investigate it.

GREAT BRITAIN.

Exemption Act.—A bill to be introduced into Parliament exempts agriculturists and horticulturists from proceedings under the Pharmacy Acts regulating the sale of poisons. A petition has been drawn up asking favorable consideration, but the bill is strongly opposed, and it is thought nothing will be done to relax the law governing the sale of poisonous substances.

Against Malaria.—The Liverpool School of Tropical Medicine in its campaign against malaria has asked assistance from the government to aid in improving the condition of Freetown, West Africa. The Governor of Sierra Leone reporting on the suggestion of the employment of more men under the direction of Dr. Logan Turner, who is at work there, concludes that the best aid the government can render is to undertake by degrees to drain that portion of the city most infected by mosquitos. Immediate surface drainage of a marshy part of the grass fields district in which Dr. Taylor has worked has been arranged for at an estimated cost of \$2,300.

Overfeeding and Cancer.—Josiah Oldfield, in correspondence with the *British Medical Journal*, adds further testimony to his conviction expressed in a paper read before the British Medical Association at Ipswich that the overfeeding of animals and the retention in their tissues of the decomposition products make the eating of such animals as food productive of an unstable cell equilibrium which foreruns the cancer incidence, and that the same thing applies to vegetables though in a lesser degree. During his late tour through India he found cancer practically absent from all those areas where vegetation was sparse and where the animals used for food had lived a hardy existence, and in those regions marked by ranker vegetation and where the animals were more highly foddered it was more prevalent.

London Medical Students' Degrees.—The licentiates of the Royal College of Physicians of London and members of the Royal College of Surgeons of England have petitioned the governing bodies of those colleges to obtain for them from the governing body of the new University of London or some British university the privilege of offering themselves as candidates for the final examination for a degree in medicine or that some other step should be taken to remove the disabilities under which the petitioners labored in not being able to style themselves "Dr." The petition set forth that their course of study was as prolonged and difficult and the examinations were as severe as those undergone by the graduates of the universities of Scotland, Ireland, and the provinces of England, who, upon graduation, could style themselves "Dr."

CONTINENTAL EUROPE.

Unna's prize has been awarded this year to Drs. S. Beck and C. Krompscher, of Ofen-Pest, for the best work on primary carcinoma of the skin and the relation between proliferation of the epithelium and the resistance of the connective tissue.

A Model Town.—Wiesbaden, brought into prominence by the German Medical Congress holding its recent annual meeting there, presents conditions worthy of imitation. The streets, which are all asphalted or paved with wood, are well flushed with water and swept after midnight, and by this means dust and refuse are effectually prevented and in consequence the buildings retain their snow-white appearance, the air its purity, the foliage of the trees its freshness.

V. Leyden's seventieth birthday, April 20, was celebrated in Berlin with great enthusiasm. The congratulation from other lands beside his own, the speeches, ovations and festivity, the dedication of the pages of the medical journals and newspapers to do him honor, bore indubitable evidence of the love felt for the great clinician and teacher and to the importance of his life work. At the Congress for Medicine held at Wiesbaden the week before, his chair was decorated with flowers and he took his seat amid loud cheers, partly due to the fact that he was the originator of these congresses. The great event of his birthday was the presentation of 56,000 marks for the foundation of a "Leyden-Liftung" for the assistance of medical research, and notice was given that one well-wisher desired to place at v. Leyden's disposal 100,000 marks for a founding hospital and another 26,000 marks for the children's seaside sanatorium already in existence.

Overcrowding in Paris Hospitals.—In order to relieve the congested conditions that exist in Paris hospitals during the winter and early spring, it has been decided to transfer all patients far enough advanced in convalescence to do without constant care to their own homes, where they will still be provided with medical attention and medicines free of charge. Such patients will also receive the sum of one franc a day for a month, and this may be extended to three months on a certificate signed by the medical attendant. This rule will only be strictly enforced for those who have a fairly good home and some relation capable of looking after them.

For the Fourteenth International Medical Congress which will be held in Madrid, Spain, April 23 to 30, 1903, the American committee, arranged by request by Dr. A. Jacobi, consists of W. W. Keen of Philadelphia, president of the American Congress of Physicians and Surgeons; John C. Wyeth, of New York, president of the American Medical Association; R. H. Chittenden, of New Haven, president of the American Physiological Society; Walter S. Christopher, of Chicago, president of the American Pediatric Society; Joseph Collins, of New York, president of the American Neurological Association; John W. Farlow, of Boston, president of the American Laryngological Association; Samuel A. Fisk, of Denver, president of the American Climatological Association; S. C. Gordon, of Portland, Me., president of the American Gynecological Society; Geo. T. Jackson, of New York, president of the American Dermatological Association; Horace G. Miller, of Providence, president of the American Otological Society; Presley M. Rixey, of Washington, surgeon-general of the Navy; F. J. Shepherd, of Montreal, president of the Canadian Medical Association; George M. Sternberg, of Washington, surgeon-general of the Army; C. F. Wadsworth, of Boston, president of the American Ophthalmological Society; DeForest Willard, of Philadelphia, president of the American Surgical Association; H. Augustus Wilson, of Philadelphia, president of the American Orthopedic Association; James C. Wilson, of Philadelphia, president of the Association of American Physicians; Walter Wyman, of Washington, surgeon-general of the Marine-Hospital Service; Abraham Jacobi, of New York, chairman. Dr. Howard A. Kelly, of Johns Hopkins University, will deliver the address at one of the general meetings of the Congress, and has chosen for his subject "The Passing of a Specialty." Dr. Ramon Guiteras has been appointed delegate to the Congress by the New York Academy of Medicine.

OBITUARIES.

Z. B. Adams, of South Framingham, Mass., May 2, aged 72. Dr. Adams was medical examiner for the district and a graduate of Harvard Medical School. He was surgeon of the Thirty-second Massachusetts Regiment in the Civil War and later captain of Company F, Fifty-sixth Massachusetts, and was commissioned major by Governor Andrew.

Hans Ritter v. Hebra, son of the famous dermatologist, April 13, aged 54. He was senior physician to the Wieden Hospital, Vienna, and professor of dermatology in the university of that city. He was the author of a textbook on skin diseases and of numerous contributions to the periodical literature of his special field of medical practice.

Cyrus D. Hottenstein, of Philadelphia, for more than 20 years physician to the Working Home for the Blind and connected with the medical service of the Pennsylvania Railroad, died May 1. He was graduated from Jefferson Medical College in 1848, and during the Civil War became surgeon-general of the Third Division, First Army Corps.

Thomas More Madden, of Tinode, Ireland, April 16, aged 64. He was the son of Dr. Richard Madden, and was prominent as a gynecologist and obstetrician, and in connection with this specialty filled many positions of honor and made numerous contributions to literature.

John Homans, of Boston, May 4, aged 45. He was graduated from Harvard Medical School in 1882; he was president of the Massachusetts Charitable Eye and Ear Infirmary and was a member of many medical societies.

Dr. Robert, formerly professor of internal pathology in the University of Barcelona, a prominent member of the Spanish Chamber of Deputies.

S. S. Wiest, of Schoeneck, Pa., April 27, aged 73. He was a graduate of the University of Pennsylvania and of Bellevue Hospital, New York.

Charles McDonough, of Reading, Pa., a graduate of Jefferson College and the University of Pennsylvania, May 5, aged 76.

Benjamin Lord, of New York, May 3, aged 83. He was the first president of the Institute of Stomatology.

Charles H. Masten, of Nyack, N.Y., a graduate of Bellevue Medical College, New York in 1869, May 1, aged 63.

J. Schoebl, professor of ophthalmology in the Czech University of Prague.

Philip F. Fulmer, at Port Jervis, N. Y., April 29, aged 62.

E. W. Aldrich, of Chicago, in Los Angeles, May 4.

J. R. Rowland, of Herndon, Kan., April 28.

SOCIETY REPORTS

ASSOCIATION OF AMERICAN PHYSICIANS.

SEVENTEENTH ANNUAL MEETING, HELD AT WASHINGTON, D. C., APRIL 29 AND 30, 1902.

The President, J. C. Wilson, of Philadelphia, spoke briefly of the inception of medical associations from the earliest county medical society in 1765 to the later more permanent organizations, as the American Medical Association in 1847, and the still more recent products of the tendency to specialism. Reference was made to the inroads into the membership of the Association by death during the past year and tribute paid to the memory of John G. Metcalf, Meredith Clymer, and W. W. Johnston. Interest of the profession in the Association was stated to be increasing, as evidenced by the long waiting list for admission. The suggestion that the membership be increased from 125 to 150 was made. This idea was afterward embodied in the form of an amendment to be acted upon at the next meeting of the Association.

Comparative Toxicity of Ammonium Compounds; A Study in Autointoxication.—B. K. Rachford and W. H. Crane (Cincinnati) gave the results of experiments upon mice regarding the comparative toxicity of salts formed by the union of ammonium, potassium, sodium, calcium, and magnesium, with such acid ions as may be present in the body in health and in disease. Tables showing the results with each substance were given. Ammonium may be active in producing autointoxication, but this depends somewhat on the toxicity of the acid ions. Compared with ammonium the sodium compounds are nontoxic and cannot be directly responsible for acid intoxication. Potassium has about one-half the toxicity of ammonium, hence sodium is preferable to antagonize ammonium compounds. A study of the various acids showed that ammonium is much better adapted to neutralize the organic than the inorganic acids. The statement was made that in diabetes, especially during coma, when enormous quantities of ammonium are being excreted, it cannot be proven that the ammonium is the cause of the symptoms.

An Estimate of the Amount of Toxin in the Blood of a Horse Infected with Tetanus.—This paper was read by B. M. Bolton and Carl Fisch (St. Louis), and detailed a study suggested by the recent outbreak of tetanus in that city. Four horses were inoculated with tetanus. Garden earth known to contain the organism was used, but in only one instance was it successful, and then a second inoculation with a large amount of earth was necessary. Cultures were used in the other cases. The amount of toxin in the horse serum was determined at intervals by injecting guineapigs with it; these experiments showed that tetanus toxin appears in the blood before symptoms of the disease are present; that it gradually increases up to within a few days before death, when it rather suddenly diminishes, this diminution becoming more marked until the time of death.

The Etiologic Significance of the Acid-Resisting Group of Bacteria and the Evidence of Their Botanic Relationship to *Bacillus Tuberculosis*.—A. C. Abbott and N. Gildersleeve (Philadelphia) made reference to the group of bacteria resembling the tubercle bacillus in morphology and staining reactions which are found in sputum, urine, gangrenous lung, and also of late in butter and milk. Experiments were made to determine the effect upon cattle of these bacilli. Four hogs were inoculated, with no result except the formation of granulation tissue at the point of inoculation. Calves were inoculated without reaction or dissemination, and no nodules were formed, there being nothing at the point of inoculation to resemble tuberculosis. The conclusion was reached that nothing harmful can be caused by inoculation into milch cows. The question of how closely these are related to tubercle bacilli is of importance. In no instance was the reaction to tuberculin present. Dr. Abbott would classify them all as actinomycetes.

Histologic Alterations of Cytotoxic Intoxication.—This question was discussed by Simon Flexner (Philadelphia). Experiments not yet completed have been made to determine the changes in the lymphatic organs caused by inoculation with cytotoxins from the spleen, lymphatics and marrow. It was found that lymph-nodes react to the introduction of lymphocytotoxin, whether it be given subcutaneously, intravenously or otherwise. Swelling and other changes in the lymph tissues were found to be the same as after the injection of bacterial toxins. This also proved the specificity of the cytotoxin, as no other tissue was involved. But the value of this work to pathology and medicine goes still further, and experiments were made to determine if autolysins were produced. These experiments are still incomplete, but there is evidence that the production of autolysins for some organs is possible. Flexner believes that further studies along this line may throw light on the production of sclerotic changes in the liver, spleen, etc., by revealing the presence of a vicious circle through autolysins. The remote effects of scarlet fever in the kidney are possibly not the persistence of processes in force during the disease only, but there may be set in motion by the disease an action

of cells which destroy the cells of the kidney, and this continues to act for years. In this connection a study of terminal infections has been made. In the great majority of cases there are found either a great reduction in or entire absence of the complements of the blood. This would indicate that susceptibility to infection is due to the fact that a part of the resisting power is destroyed. In discussion of this statement A. C. Abbott said that in animals to which he had given alcohol for varying lengths of time there was found a reduction of 15% to 25% in the complementary substances.

A Study of Bacterial Cells.—V. C. Vaughan (Ann Arbor) detailed some experiments made possible by the growth of an immense number of bacteria in a tank system previously described. Extended studies in pigment formation by bacteria are also possible by this method. In a murder case cited there was the probability of *Bacillus prodigiosus* having been mistaken for a blood-clot, as the spectrum of its pigment is almost identical with that of oxyhemoglobin. The writer bases his work on the idea that specific toxins are cellular. The work indicates that bacterial cellular toxins contain two or more toxic groups, one of which is split off more readily than the others. This explains the decrease in toxicity which occurs in solutions of bacterial toxins on standing. At the same time as much antitoxin is required for neutralization as before the toxicity was lessened. This is explained by supposing the toxin to be a group similar to the benzene ring as an instance. Antitoxin destroys the toxin not by neutralizing it as an acid base, but by the introduction of a molecule into the group. Hence as much antitoxin is required after a part of the toxin has been split off. This work on cells may also modify the conception of life in its unicellular manifestations. The following definition is proposed: Life in its lowest unicellular manifestations is the association of matter with that form of energy which endows the matter with the potentiality of assimilation, growth and production. One unicellular organism differs from another not only in the matter which makes up the cell, but also in the special form of energy with which the matter is associated.

Some effects of tobacco on the tissues of rabbits was the subject of I. Adler (New York). Rabbits fed on cabbage in solutions of tobacco of increasing strength were killed at intervals varying from three weeks to four months. The animals were all apparently healthy. The only change of importance, in fact the only change in all but the last, was found in the liver. This organ showed a progressive sclerosis, with proliferation of bile ducts, the liver cells and central veins remaining normal. In the last animal there is a suggestion of changes in the kidneys and heart muscle.

A case of hematomorphyrinuria was reported by James Tyson and Alfred Croftan (Philadelphia). The patient had been taking from 20 to 60 grains of sulfonal nightly for several years. With the condition of the urine described there were symptoms of sulfonal poisoning. Four specimens of urine were analyzed and the quantity of hematomorphyrin estimated. The first two specimens also contained albumin and casts.

Pneumococcal Arthritis.—This subject was considered by J. B. Herrick (Chicago). The condition is found once to 800 cases of pneumonia. Cave reported in 1901 31 cases, to which Herrick adds 21, including three of his own. The condition is found oftener in men than in women, and usually comes on late in convalescence. Traumatism seems to be an exciting cause. The lesion remains strictly local or involves the periarticular structures, ends of bones, etc. It is generally nonarticular and attacks the large joints, thus resembling gonorrheal arthritis. Prognosis is generally bad, because of the pneumonia or general bacteremia. Treatment, while generally surgical, can easily be too radical. There is a certain tendency toward spontaneous recovery, and simple incision and drainage even in suppurating cases may do better than much washing and other manipulation of the joint. When serous effusion is present aspiration should be performed. Dr. Osler had said that there were three groups of these cases: (1) Local arthritis alone; (2) arthritis associated with pneumonia; (3) arthritis associated with general pneumococcal septicemia.

The Pathology of Herpes Labialis and of Herpes Zoster Occurring in Acute Croupous Pneumonia.—This paper was read by W. T. Howard, Jr. (Cleveland). Two cases of herpes, one of the face, the other of the chest, occurring in croupous pneumonia, were studied histologically. Congestion and hemorrhage of the gasserian ganglia with cellular infiltration and proliferation, with compression and destruction of some of the ganglion cells, were found. The lesions of the skin were identical in the two cases. Diseases in which herpes occurs, as cerebrospinal meningitis, malaria, etc., are those in which hemorrhage and capillary engorgement, thus producing pressure on the ganglion cells, are apt to occur. As the lesions in the ganglion and in the skin in herpes labialis and nasalis, and in herpes zoster of pneumonia are the same, and as they have the same pathology as ordinary herpes zoster, it seems probable that the various forms of herpes are identical.

A case of Hodgkin's disease with recurrent fever was reported by H. F. Vickery (Boston). The patient was a girl of 19, under observation 73 days, and presenting febrile periods of six to eight days, with afebrile intervals of about the same duration. The glands were somewhat more swollen and tender during the febrile periods, but there was no notable spread of the process during those times. There was no dis-

tinct evidence of tuberculosis and no reaction to tuberculin. A gland was excised for study, the report being that it was a mixed cell sarcoma. There was a hypoleukocytosis. The case came to a fatal termination, there being terminal coma. No autopsy was obtained. No new invasion of glands was noticed while the patient was under observation. Vickery states that the absolutely essential relationship of tuberculosis to these symptoms is not yet demonstrated. The recurrent fever is probably due to some unrecognized organism. Drs. Starr and Kinnicutt (New York) reported a case similar to the above. Dr. Musser (Philadelphia) said that there were forms of adenitis tuberculous in origin which were associated with recurrent fever, and there were also cases of lymphadenoma. It is difficult to separate the two. Possibly there is a very rare form of adenitis with the phenomena described by Hodgkin which may be called Hodgkin's disease.

Splenic Anemia and Its Varieties.—William Osler (Baltimore). This paper was the analysis of a series of cases of chronic anemia with enlarged spleen. Osler has endeavored to select from the heterogeneous cases showing anemia, enlarged spleen, cirrhosis, ascites, etc., a group which has special characteristics enough to merit a special name. He concludes, from his own cases and those of other investigators, that there is a separate malady to which the name *Anemia splenica* may be given. The disease is apparently not related to Hodgkin's disease. A discussion of some of the special features included (1) chronicity, the cases lasting 10 to 12 years, or in a few instances much longer; (2) enlargement of the spleen; (3) absence of enlarged lymphatic glands; (4) blood changes, these being the picture of chloroanemia, associated with leukopenia; (5) hemorrhages. In 10 cases hemorrhage from the stomach was a marked feature. In a few instances the hemorrhage was of other forms, as hematuria and purpura. Hemorrhage from the stomach is explained in some instances by the near proximity of the enormous splenic veins, but this probably does not account for all; (6) pigmentation of skin. This occurred in seven cases. It is of peculiar tints, in some cases suggesting argyria, in others it is a mottling; (7) in the late stages there is involvement of the liver, with possibly jaundice and ascites. Treatment of these cases is not very satisfactory. Improvement may be rapid for a time, but the hemoglobin cannot be made to reach normal. Even when it does improve the patient remains pale. Splenectomy has been performed in three cases at the Johns Hopkins Hospital. One case is living four years after operation; one died almost immediately of hemorrhage from the large veins encountered, and the third died in two days from a ruptured esophageal vein. The disease is probably a chronic malady of unknown etiology of which the enlarged spleen is only one manifestation. Musser (Philadelphia) reported two cases somewhat similar to those described, but cannot clearly admit that there is a disease which should be termed "splenic anemia." Cabot (Boston) mentioned eight cases, but sees no reason for the term "splenic anemia." The blood changes are not characteristic. The low hemoglobin is not peculiar to this group of cases. The leukopenia is more peculiar, but not enough to differentiate the cases. He sees no more use for retaining the term than for retaining the term "lymphatic anemia." Stengel (Philadelphia) reported two cases conforming in general to the type. In one there were several septic complications, as pneumonia, etc., but the leukocytes never rose to more than 6,000. C. W. Stiles (Zoologist to the Agricultural Department) spoke of enlarged spleen and anemia in cattle being in some instances caused by multiple infection of the intestinal tract by parasites and suggested that a study of the feces and intestines be made in these cases.

A case of albumosuria associated with pernicious anemia was reported by H. F. Vickery (Boston). The patient was a man of 47, with progressive pernicious anemia, the blood showing only two megaloblasts to 17 normoblasts. There was no evidence of bone disease. Postmortem was not obtained.

Angiomyositis.—This case was reported by W. S. Thayer (Baltimore). The patient was a man of 34, who at various times has had swelling and hardness of different muscles accompanied by discoloration, etc. At times this follows extra exertion, at other times without apparent cause. Tissue over the biceps was removed for study, but the muscle itself was not reached. Bloodstained serum flowed freely and there was great edema of the subcutaneous tissues with evidence of hemorrhage. Thayer believes the case to correspond to those classified by Lorenz as Polymyositis hemorrhagica. Jacobi (New York) said that the simplest form of myositis was traumatic, as seen in newborn babes, in the sternomastoid muscles of boys flying kites, etc. He believes that most cases should be considered as forms of purpura.

A Report of the Cases of Thermic Fever Treated at the Pennsylvania Hospital in the Summer of 1901.—This report was presented by M. J. Lewis and F. A. Packard. Of the 91 cases included, 31 were in females and six were in negroes. Only those having a temperature of over 100° were included. There were no fatalities among those having a temperature under 106°, and none recovered who reached 111°. There were 13 deaths. All having a temperature above 102° were treated in a heat tent. Tubbing was largely given up for rubbing with ice as being more convenient and effective. Bleeding was practised, and is advised in cases where the symptoms do not ameliorate with the fall in temperature caused by treatment. Intravenous infusions of saline solution was used in ten cases.

It is believed to have saved some cases which would otherwise have died, and in no case did it do apparent harm.

A Clinical and Experimental Investigation of the Value of Gelatin as a Hemostatic.—This paper was prepared by Alfred Stengel and D. L. Edsall (Philadelphia). Clinically, gelatin was used in 12 cases of hemorrhage from typhoid fever, three from gastric ulcer, and four from pulmonary tuberculosis. Injections were used, except in typhoid cases, where it was given by the mouth for its local effect. Of course, no positive statements as to its effect can be made, except to say that cases of a gravity, which are ordinarily expected to die, recovered. The indications are to continue its use. Experiments to determine to what the coagulating power of gelatin should be attributed led to the following conclusions: It increases the calcium content of the blood; it causes agglutination of the red corpuscles, and it acts partly by its own viscosity. The clinical uses of gelatin are not free from danger. It may cause involvement of muscles, may injure the kidneys, and may cause pulmonary edema. M. H. Fussell (Philadelphia) has used gelatin in one case of typhoid fever where there had been hemorrhages for three days. It was given by injection and by mouth. The hemorrhages stopped within a few hours, whether due to the gelatin or not. Injections under the skin were followed by large sloughs. Billings (Chicago) has tried gelatin, but returned to the use of calcium chloride. There is no sloughing, and no pain when injected. In cases of gallstones and jaundice, he has increased the coagulability of the blood from 25% to 75%.

The evening session was devoted to lantern slide demonstrations. Dr. Flexner demonstrated for A. S. Warthin (Ann Arbor) **the histology of the hemolymph glands.** These are small glands of a redder color than other lymph glands, and contain blood instead of lymph. They are separable into two kinds which have their prototypes in the spleen and the marrow. Under normal conditions they are believed to have no part in blood formation. In abnormal states they may act vicariously for the spleen or marrow.

C. S. Bond demonstrated for George Dock (Ann Arbor) **mitosis in circulating blood.**

Frank Billings (Chicago) reported two cases, and showed slides of **Anguillula aceti in the urine.**

James Ewing (New York) showed slides to demonstrate his theory that the so-called vaccine bodies are fragmented red blood-cells.

THE AMERICAN GASTROENTEROLOGIC ASSOCIATION.

FIFTH ANNUAL MEETING, WASHINGTON, D. C., MAY 1, 1902.

Officers for Ensuing Year.—President, Dr. J. C. Hemmeter, Baltimore; first vice-president, Dr. W. D. Booker, Baltimore; second vice-president, Dr. S. J. Meltzer, New York; secretary and treasurer, Dr. Chas. D. Aaron, Detroit. Council—Dr. Max Einhorn, New York; Dr. W. G. Morgan, Washington; Dr. A. L. Benedict, Buffalo.

A Further Report on the State of the Gastric Mucosa in Various Pathologic Conditions of the Stomach.—Max Einhorn (New York) exhibited micrographs of specimens of stomach mucous membrane under various conditions. The secretory functional disturbances of the stomach are not based on a primary change in the mucous membrane of the stomach; they produce, if they last for a longer time, lesions of the mucosa of greater or less extent. The diagnosis of carcinoma of the stomach may, under especially favorable conditions, be made from a piece of gastric mucosa, if direct invasion of the gland substance by epithelial cells. Therapeutically attention must be directed principally toward the improvement of the general body state, and only secondarily by means of special measures against any secretory anomalies that may be present.

Discussion.—J. C. HEMMETER considered this a very valuable paper from one who had done a great deal of work on the subject. The difficulty that Dr. Hemmeter had was to find the locality from which the pieces came. It is hard to tell what level the sections are. Dr. Hemmeter and an associate were fortunate enough to have three cases. They were able to take pieces from the stomach and could see the place where they came from, from the cardiac end of the stomach. In that way they could tell the locality, possibly the origin. The peptic ducts differ in various localities of the stomach.

Electric Reactions of the Gastrointestinal Musculature and its Therapeutic Value.—Dr. G. W. McCaskey introduced one electrode into the stomach and the other into the colon and obtained muscular contraction and concluded from that that it goes to the spinal cord. By introducing it into the stomach and another into the colon this strong current is sufficient to produce contraction of the muscles under the skin, but not to the spinal cord.

Discussion.—Dr. MELTZER said he applied two electric currents in the manner indicated and did not find any contraction. Dr. EINHORN said that he thought the reverse of Dr. Meltzer's contention was the case. The mucous membrane presents very little resistance. If we put one of the electrodes into the stomach and take another one outside we can measure exactly the resistance which embraces them. C. W. STILES (Washington) read a paper which appears in the Original Article Department of this issue.

The Contraction of the Iliopsoas Muscle as an Aid in the Diagnosis of the Contents of the Iliac Fossa.—Dr. S. J. Meltzer (New York) presented this paper, demonstrating the value of this new diagnostic point.

Gastropnoia the Cause of Symptoms Erroneously Attributed to Nephropnoia.—A. Rose (New York) referred to a case in which the kidney was attached to the bladder. Many physicians overlook the mechanic conditions of the abdomen, also those of respiration, circulation and the nervous system. Sometimes it is more important in cases of heart disease to examine the abdomen than to ascertain the auscultatory symptoms. Gastropnoia is more often overlooked than diagnosed.

Discussion.—Dr. EINHORN was of the opinion that a splashing sound could be produced in a normal abdomen. The stomach is not a wall, it is an elastic organ. Then, you should be able to shape the fluid around there. But what is of importance is it gives us a means to find out about the position by the area. If we find that a splashing sound can be produced in the region of the navel and farther down and none above that shows there are some adhesions. If we can produce a splashing sound from way down to the pubes, then we have a dilated stomach, large area. Dr. McCASKEY said that the whole subject of the abdominal viscera is very complicated. There were two things which seemed to him to be fundamental—one was metabolism and the other innervation (or enervation?). The doctor thought that if by any possibility one could get proper nutrition it would be the first thing necessary to overcome the weakened condition of this organ. Dr. MURDOCH reported the case of a man who only weighed 70 pounds. His stomach reached three inches below the navel and the right kidney was in the fourth degree of displacement. He did not see him for about a year after he had treated him. During the time of treatment he improved very materially, gaining 40 pounds. He illuminated his stomach and found that the stomach only reached the navel and the right kidney could not be found at all except when he took deep inspirations. This shows how foolish it would have been to have operated on him for a floating kidney. Dr. McCASKEY said that the heart in these cases of gastropnoia is dilated and remains so until the general malnutrition is overcome and it goes back to its normal size.

Orthoform in the Diagnosis of Gastric Ulcer.—F. H. Murdoch (Pittsburg) reported two cases successfully treated. Patient No. 1 came to his office and took an orthoform powder every night until there were found circumscribed spots in the epigastric region; then he took the powder every second night. He lived on liquids for 3½ months and then the circumscribed spots disappeared, when he was allowed to go on solid food. The night before he saw the second patient he had such a severe attack of pain that it was necessary to put hot fomentations to his abdomen. Suspecting ulcer he was put on liquid food and bismuth. He was given an orthoform powder. Later the general distention disappeared, also the circumscribed spots, after which he was allowed to eat solid food and made an uneventful recovery. Eight grains given in a powder will relieve pain. Orthoform is the only remedy which enables differentiation in the epigastrium.

Discussion.—The president asked what was the action of orthoform to hydrochloric acid? Does hydrochloric acid decompose? The author said it did not in this case, that the hydrochloric acid was 56. Dr. SAWYER thoroughly endorsed the use of orthoform. Dr. McCASKEY said that orthoform had been disappointing to him; it might have been due to a lack of discrimination as to the proper cases in which to employ it. He now relies entirely on bismuth. Dr. MURDOCH had a case of gastric ulcer and stopped the use of orthoform as soon as he found it was ulcer, giving the regulation treatment and large doses of bismuth.

The Relation Between Pernicious Anemia and Achylia Gastrica.—Harry Adler (Baltimore). This paper will appear in a future issue of *American Medicine*.

Discussion.—Dr. EINHORN had four cases of pernicious anemia. In three of them he found the gastric juice present; they were typical cases of pernicious anemia and they died. Dr. McCASKEY said that he believed achylia gastrica could produce pernicious anemia, but there is something required beside that, some special vulnerability. He has reported a number of cases which have satisfied him fully as to the causal relationship in the production of diseases. He believes that Hunter's statement is correct and that pernicious anemia is a hemolytic process.

A Consideration of the Etiology of Mucous Colitis.—J. A. Lichty said that patients suffering from this condition are generally of a neurotic temperament. The neuroses are secondary to the existence of mucous colitis. He believes that there is a mechanic hypostasis. In 21 cases of mucous colitis (17 females, 4 males) he found ptosis in 16. At least 80% of all cases of mucous colitis have ptosis of the abdominal viscera. There has been right movable kidney and appendicitis, with general prolapse of the organs, producing decided interference with circulation and disturbance with those organs.

Discussion.—Dr. HEMMETER considered these investigations of great interest, as tending toward discovering whether anything pathologic passes from the blood through the mucosa into the intestines, and whether these substances, whatever they are, can set up such an irritation to cause the mucosa to respond to that type of membranous enteritis.

The Treatment of Hypertrophic Stenosis of the Pylorus with Oil.—J. P. Sawyer reported four cases of pyloric stenosis in patients with marked gastropnoia, permitting palpation of pyloric thickening and an unusually good opportunity to obtain active peristalsis of the compensatory hypertrophied gastric musculature. In two cases hematemesis had been observed, and in all stenosing gastritis had been excluded. Loss of weight and diminished urinary excretion had brought up the question of operation, before proceeding to which the use of oil, as suggested by P. Cohnheim, was tried with excellent results in each case, there being a gain in weight, increased amount of urine and resumption of the usual activities of the patients. The oil was administered in various ways and doses, success being apparently due to lubrication of the membrane or protection of it against the stimulus of food and not to direct sedative action of the oil. This seemed so pronounced that the writer had made use of the oil as a protection in irritable stomachs with satisfactory results, *e. g.*, in gastritis acidia, gastrosuccorria, chronic ulcer, erosions in which supraacidity was found. It was suggested that this use of oil, even if not permanently successful, might be advantageous by favoring the improvement of the condition of some patients so that they might endure the operation when it might become necessary. This is the more important because of the unfavorable state of nutrition in which they usually are operated.

Enteropnoia and Pregnancy.—Charles D. Aaron said that pregnancy creates a marked improvement in these cases. There is no reason why it cannot be made permanent through proper treatment. We may hold, therefore, that normal pregnancy does not exert bad action on the ptosis. He has found pregnancy a cure for enteropnoia. Case 1, wife of dentist, aged 32; emaciated; taught school before marriage. On account of an attack of bronchitis she had to go south; headaches, pains and aches and sleeplessness; lost 15 pounds in weight. On physical examination, however, found enteropnoia. He treated her case with the usual method and improvement was slow. The husband was advised that it would be advantageous for the wife to become pregnant, which the husband had purposely avoided. The woman conceived and all symptoms disappeared. She became strong and got well. After delivery she was kept in bed for three weeks and not allowed to get out of it. Applied a firm band to the abdomen. In three weeks she was allowed to get up for an hour a day and no former symptoms returned. She is entirely well. He endorsed the abdominal bandage and the condition of pregnancy as curative helps in this disease.

THE AMERICAN ASSOCIATION OF GENITOURINARY SURGEONS.

THE SIXTEENTH ANNUAL MEETING, HELD AT ATLANTIC CITY, APRIL 29 AND 30, 1902.

[Specially Reported for *American Medicine*.]

Officers for the Ensuing Year.—For president, Dr. Paul Thorndike, of Boston, Mass.; for vice-president, Dr. Edwin C. Burnett, of St. Louis, Mo.; for secretary and treasurer, Dr. John Vanderpoel, of New York; for council, Dr. William T. Belfield, of Chicago, and Dr. James R. Hayden, of New York. The next place of meeting, Washington, D. C.

The Technic of Prostatectomy.—John P. Bryson, of St. Louis, reported several cases and presented to the Association a large number of specimens. An adequate technic must include the removal not only of the urinary but equally that of the circulatory obstruction, and an operation which deals only with one of these was incomplete. With such modifications as seemed to be demanded by special conditions the technic was as follows: The anesthetized patient, whose perineum and abdomen had been prepared as for a celiotomy, is placed in a lithotomy position, a catheter introduced, the bladder irrigated with warm boric acid solution, and filled with warm salt solution to a point just below that which produces distention reflex. A broad, grooved staff is introduced and a free perineal incision made in such a way as to open the urethra just in front of the apex of the prostate. Most frequently the bulb is split, in which case a vessel is clamped, or the oozing is staunch by a catgut suture *en masse*. The knife, after entering the groove of the staff, is pushed backward far enough to incise the ring at the apex of the prostate, which is one of the least distensible parts of the duct. The forefinger follows well into the prostatic urethra, usually tearing it somewhat, and the staff is withdrawn. The finger quickly exposes the prostatic urethra, and ascertains whether the vesical outlet can be reached; after which the forefinger of the right hand in the rectum permits bimanual examination of the part of the prostate within reach. Guided by the finger, a blunt instrument is now passed into the urethra and made to puncture from the urethral side the most prominent part of the mass. This puncture is always made in the lower posterior quadrant, and the instrument is pushed well into the swelling. On its withdrawal the finger tears its way into the center of the mass which, even in fibrous prostates, is comparatively friable. The mass is now opened through to its capsule, the finger swept round its periphery without tearing the prostatic capsule or fibrous sheath of the gland. In the meantime the urethra is felt to tear longitudinally.

nally. After the lobe has been loosened all around there remains the attachment to the urethra, in detaching which care must be had not to take away too much of the sides nor any of the roof of the urethra. The floor may be disregarded if necessary. The hypertrophied lateral lobe is then removed, to do which one has often to go up well behind and beside the neck of the bladder; yet it is possible to do this and keep within the capsule. If there is any difficulty in delivering the detached mass, which is very smooth and slippery, an ordinary lithotomy forceps may be employed. If it is too large it may be broken up with the finger, or divided with scissors. This process is repeated on the opposite side, after which a median posterior segment remains to be dealt with. This can usually be done by sweeping the finger from side to side, its dorsal aspect toward the capsule, pushing it backward in such a way as to detach it well up behind the bladder and roll it downward. The more the detached mass is rolled downward by pulling upon its upper surface the less mucous membrane is removed. In some cases the whole of the floor has been removed without harm; in fact, in most of these cases this has been necessary. Usually now the finger may be passed through the ring into the bladder, which may be explored thoroughly. The cavity is now irrigated with a hot salt solution, until the oozing ceases. If the finger is now introduced the floor and sides of the urethra will be found intact, the latter often hanging loosely against the outer wall or sides of the cavity from which the growths have been removed. A large cavity is made out between the lower part of which and the rectum there is felt a thin wall. Into the lower part of this, hinged posteriorly about the ring at the vesical neck, is an irregular flap of mucous membrane, which can be pushed up and back and often made to occlude the vesical outlet. The walls of this cavity feel rough and irregular, and often shreddy; nevertheless they do not seem to be a poor basis for "taking" of a graft, for it seems that, if properly managed, this tongue of mucous membrane readily becomes attached, behaving subsequently like an auto-plastic flap. Care must be taken not to double backward and push this flap into the bladder when the large drainage tube is introduced.

The Surgical Relief of Prostatic Hypertrophy.—Charles H. Chetwood (New York) drew the following conclusions based upon his personal observations: Palliative measures should not be persisted in when they fail, after reasonable duration, to produce and maintain an abatement of symptoms. A first infection of the bladder is not alone sufficient excuse for operation unless palliative measures fail to promptly subdue inflammatory conditions. Recurring infection of the bladder or ascending infection of the kidney is sufficient warrant for operative interference. There is a growing tendency toward earlier operation than was formerly practised. The greater number of cases of prostatic hypertrophy can be satisfactorily reached through a perineal incision. In the large majority of cases the requirements of any operation upon the prostate consist in the removal of the obstructing area and depressing the bladder opening into the prostate, so that the *bas fond* may be properly drained. In many cases the obstructing area of the hypertrophied gland can be satisfactorily reached and effectually removed through a perineal opening by means of galvanocautic incisions. Perineal-galvano-prostatotomy is preferable to the Bottini operation on account of its greater accuracy and lower mortality.

Bottini's Operation.—Henry H. Morton (Brooklyn) reported a case in which this operation had been performed in a man aged 78 years, who for one year prior to his admission to the hospital had been suffering from tenismus and frequent and painful urination, and at the time of his entrance to the hospital there was complete retention of the urine. At this time the prostate was 1½ inches in diameter and the cystoscope revealed an enlarged middle lobe and trabeculated bladder. The urine had a specific gravity of 1.016, was cloudy, acid, and showed a slight sediment which contained pus cells but no casts. Bottini's operation was performed, three incisions being made, the anterior one being 2 cm., the posterior 3 cm. and the left lateral 2 cm. in length. Catheterization was necessary until the third day after the operation, when the patient began to urinate spontaneously. Eleven days after the operation micturition occurred every hour during the day and five times at night, catheterization being performed daily with withdrawal of 3 to 4 ounces of residual urine. One month after the operation the patient urinated six times daily and four times at night, the stream, although slow in starting, being ejected with good force. Cystoscopic examination at this time showed the posterior lobe of the prostate with a cleft in the middle made by the Bottini incision, and the patient continued to be in good general condition, being up and about the ward. Subsequently his appetite and general vitality began to decrease and 54 days after the operation he died. A complete autopsy was not permitted, but an examination of the bladder showed it to be contracted and contain a small quantity of thick and foul pus. Many small necrotic areas were scattered about the surface, and a number of small sacculi, one containing a little calculus, were observed. Traces of the posterior incision made by the Bottini operation were very distinct. The interureteric fold of the mucous membrane had been divided, and the middle lobe of the prostate cleft in halves, necrotic areas being visible at the apex of each half. The left lateral incision had not split the prostate, but had merely

separated the mucous membrane from superior surface of prostate, and no traces of the anterior incision were visible. The cause of death was probably cystitis, which had been aggravated by the operation. The middle lobe of the prostate was completely divided into halves. The reduction in size of the prostate following Bottini's operation probably results from the sloughing subsequent to the burning. The difficulty of placing the instrument in a correct position was shown by the fact that the left lateral incision did not divide the left lobe of the prostate as intended, but only lifted up the mucous membrane covering it, while the anterior incision was found not to be made at all. The obstruction to urination was relieved by a single incision through the posterior median lobe of the prostate, and death did not occur until seven weeks after the operation, at which time relief was complete. Owing to the facts that the patient required bladder washing, and that he had no home, he was kept in the hospital until his death; had he left the institution as soon as he was able to go after the operation, his case might have been reported as one of complete retention of urine in a man 78 years of age entirely cured by Bottini's operation.

Prostatectomy.—Dr. Morton also reported the case of a patient, aged 62, who entered the hospital suffering from retention of urine, due to enlargement of the prostate. Previous to his admission attempts by the physician in attendance to introduce a catheter had resulted in a false passage into the prostate. At the time of his admission no instrument could be passed into the bladder and so external urethrotomy without a guide was performed. For three weeks subsequent to this the bladder was drained through a 30 catheter, at which time it was removed, but owing to the fact that the patient could not urinate it was again introduced and allowed to remain two weeks longer, at which time prostatectomy was performed. Suprapubic cystotomy was performed in order to depress and hold the prostate and the perineal wound was used for shelling the prostate out from the capsule. Three tumors, from one-half to one and one-half inches in diameter, were enucleated without difficulty, and no hemorrhage followed the operation. Drainage was established through perineal and suprapubic tubes. The patient did well for three days and the drainage was perfect, but later sepsis developed and death ensued ten days after the operation. The autopsy revealed intense infection of the suprapubic wound; the cavity from which the tumors had been removed was healthy in appearance and indicated that it would have entirely healed by granulation. The obstruction to urination had been entirely relieved by the enucleation of the prostatic tumors.

Removal in Toto of All Three Lobes of the Prostate by Suprapubic Cystotomy.—Dr. Charles L. Gibson, of New York, presented this specimen, which was removed from a patient aged 62, who gave a history of increasing obstruction of urine for the past six years. Urine frequently dribbles away. Examination by the rectum revealed both lateral lobes enlarged. On several occasions 15 ounces of residual urine was obtained. Moderate cystitis. No kidney lesion was evident. Prostatectomy by the Alexander technic was undertaken, but the first step, however, revealed the bulging of the prostate in the lumen of the bladder so distinctly that he determined to remove the enlarged portions by this direct approach. The vesical mucous membrane was incised over the urethral orifice, and he then found that his finger could sweep easily all around the prostate; so, in a few seconds, he brought out the whole prostate *en masse*. The urethral outlet must have been avulsed, but of this he was not aware, so the prostate was simply shelled out without any force and without any bleeding. The operation was completed by adding perineal drainage. Four days after operation the dressings were changed, and the bladder was washed out, and the patient's condition appeared to be good, with a normal temperature and a free secretion of urine. Six hours later the patient died without any particular manifestation. No autopsy. He presented the case, not to recommend that the prostate should be removed *in toto* with the necessary drawback of destroying the urethral outlet, but for the purpose of emphasizing how easily the prostate, or portions of it, can be removed without destruction of tissue or hemorrhage provided one clearly enters the essential line of cleavage.

The Use of the Cautey on the Prostate Through a Perineal Opening; New Method, with Presentations of Instruments and Report of Cases.—This paper, by Dr. William N. Wishard, of Indianapolis, was read by Dr. Bransford Lewis, of St. Louis.

Discussion.—Dr. EUGENE FULLER, of New York, said that during the last one and a half years he had performed 12 perineal prostatectomies with but one death, which occurred from delirium tremens. The oldest patient was 81 and had atheromatous arteries and a mulberry calculus in his bladder to remove which he was compelled to make a suprapubic opening. Another patient had tuberculosis of one lung and so spinal anesthesia was given with good results, although the patient died seven or eight months after the operation from progressive tuberculosis. FRANCIS S. WATSON, of Boston, said that in 1888 he made the statement that two-thirds of all cases of prostatic hypertrophies would be found within the reach of the finger after a perineal incision through the urethra; the same statement held good today. He did not believe that an elaborate armamentarium was necessary; he used a little instrument made on the plan of the old gum-lancet with which the mucous

membrane was split and then the forefinger was utilized in completing the work of removing the prostate. GEORGE CHISMORE, of San Francisco, said that for 30 years he had seen many operations advocated for the relief of this condition and they had all been disappointing in their results; but of late he thought he would have to change his views. He had had an opportunity of observing 8 cases operated upon by Dr. Goodfellow, of San Francisco. His method was very simple and the only instruments used were the scalpel, staff and volsella. He placed much importance upon the position of the patient, who should be in a strongly flexed attitude, the thighs being flexed upon the chest. He made a median incision, introduced the staff, opened the urethra, and with his finger, with the greatest ease, enucleated the prostate, all within twenty minutes. All 8 cases were bad ones, occurring in old men, two being above 80 years. Among this number there were two deaths. In one case there was present an encysted stone which he had endeavored to remove through a perineal incision but failed; he therefore made a suprapubic incision and removed a stone not larger than the end of the thumb, which was encysted. This patient died from the effects of the abdominal wound. The necropsy showed the prostatic urethra practically well. The second case was a patient over 80 years. During the operation an opening was made into the rectum, causing the patient's death 30 days after.

[To be concluded.]

XX CONGRESS FOR INTERNAL MEDICINE.

WIESBADEN, APRIL 15-18, 1902.

[Specially reported for *American Medicine* by Dr. Albu, Berlin.]

FIRST SESSION.

On the Diagnosis of Gastric Ulcer.—Ewald (Berlin). There are many reasons for dissension from the view of von Yzeren that the cause of gastric ulcer lies in spasm of the pylorus. In an overwhelming majority of ulcers there is no sign of spasm. There seems to be in this view some confusion of cause and effect, inasmuch as hyperacidity, while not giving rise to ulceration, does lead to persistent spasm of the pylorus. Statistics afford no adequate ground for diagnosis, as in any given case it is difficult to decide whether one has to do with the rule or with the exception. A classification of the 1,080 cases observed by Ewald during the last 10 years as regards age and sex, leads to approximately the same proportions pointed out by other observers. The same is true as to the mortality. The use of the stomach tube for confirming the diagnosis is generally to be avoided; but for the irrigation of the stomach with icewater in cases of uncontrollable hemorrhage, its use is advisable. Cases frequently occur without any increase in the secretion of hydrochloric acid. Ewald had found hyperacidity in 34.1%, normal acidity in 56.8%, and subacidity in 9%; great fluctuations occur in any given case. Lactic acid is always wanting and generally the long bacilli. In patients with gastric ulcer blood often occurs in the voided contents of the stomach without its being due to vomiting. Hematemesis occurred in 203 cases out of 364 (125 times in men and 78 in women) =54.5%. The diagnostic value of these symptoms is great and yet the possibility of the blood having some other origin should be borne in mind. Ewald points out three sources of error in this respect: (1) Menstrual hemorrhage; (2) the hemorrhage or rather hematemesis of severe septic processes; (3) the so-called parenchymatous hemorrhage. The so-called hemorrhagic erosion Ewald did not regard as a distinct disease picture. Any positive diagnosis as to the seat of the ulcer is as uncertain today in most cases as it was 20 years ago. It is mostly a matter of conjecture and at best rests on the finding of a tumor at the pylorus with the remaining symptoms indicating an ulcer. Differential diagnosis here comes in connection with (1) spasm of the pylorus, (2) muscular hypertrophy, or cicatricial thickening, (3) carcinomatous new formation. Under the circumstances it is absolutely impossible, except by actual histologic examination of the thickened spots, to distinguish whether we have to do with a benign or an atypically generated tumor. The speaker recalled two cases in his experience in which he had excised what was apparently a benign hypertrophy of the pylorus, but which developed later into a typical carcinoma. As the speaker had pointed out years ago, it is to be remembered that microscopic extensions of the cancerous growth are to be found far from the center of the new growth, in the apparently sound mucosa and submucosa, so that the assurance of having excised all diseased tissue is attained with difficulty. The pain attending gastric ulcer is in nowise typical, this is especially true in old cases, so that confusion with cardialgia sometimes occurs, and occasionally is not to be avoided. Those gastralgias are to be excepted which occur in the initial stage of tuberculosis, as is the so-called prostatic stage of tabes. Particular attention was here called to hernias of the linea alba, the speaker having seen repeated failures in diagnosis in this connection. The affection assumed to be ulcer can be readily distinguished from hernia by a slight operation. Extreme emaciation and a cachectic appearance seem rarely to have any direct relation to gastric ulcer. Only in very nervous and hysterical persons on the one hand, and in very fat persons on the other, who from fear of pain have limited their

food as much as possible, and as a result have become emaciated, can it bear on the diagnosis. The glandular swellings are of slight and untrustworthy value. Great weight is, however, to be placed on the character of the tongue, which in most ulcer patients is moist, red and little or not at all coated. A great difficulty in diagnosis arises from the sequels of ulcer, they being diagnostically and therapeutically hard to assail. Of first importance in the consideration, according to the recognized signs, comes the hour-glass stomach, the loss of material in lavage, splashing sounds, the forward arching of one side. The speaker upheld the use of air inflation and of the gastrodia-phane and the introduction of an inflatable gum-bag approaching the stomach in shape. These are only to be brought into the oral end of the stomach, by which it may be readily delimited as regards the pyloric portion. On inflating the stomach with air the pyloric portion or the entire stomach arches out, while in the introduction of the rubber bag only the cardiac end is dilated, and the same thing occurs *mutatis mutandis* with the illumination of the gastrodia-phane. Perforation into the free body cavity is in general easy to recognize, and yet the speaker was able to refer to a case in which perforation of the processus vermiformis accompanied by diffuse peritonitis was falsely regarded as a gastric perforation with simultaneous gastric hemorrhage. It is impossible to recognize in advance an imminent perforation, and the chances of operative procedure are therefore better the sooner it is done; yet, the operation may cause unconquerable difficulties by extending the base of the ulcer. The extension of an ulcer to the neighboring organs is in many cases unrecognizable, in others it is easily detected by characteristic symptoms (rupture into the pleural cavity, into the pericardial sac, subphrenic abscess, rupture into the large intestine, etc.); such cases can, if they drag along, be taken for functional neuroses. This is especially the case with old perigastric growths, where the diagnosis can rest only on the anamnesis pointing to a former florid gastric ulcer, which gave constant and circumscribed pain at one spot with increased or unchanged secretion of hydrochloric acid; together with the lack of results from treatment. In short, the speaker held operation to be accompanied by complete and lasting results. Formerly such cases were prevalently regarded as neuroses, as were the conditions of hyperchlorhydria and gastrosuccorhea; yet we now know that a great number are conditioned by gastric ulcer. Differential diagnosis is practically impossible in many cases, especially in those of young chlorotic, anemic persons. In such cases one often reaches a correct judgment as the result of giving the typical ulcer treatment. This, when employed with the neuroses, gives no results at all, or only transitory results through suggestion, but has lasting results to show when it has to do with an organic lesion. It may, however, happen that one has every reason for operating on an ulcer or a perigastric adhesion only to find the stomach without recognizable alteration. The differential diagnosis between *ulcus ad pylorum* or *duodenale* as contrasted with inflammatory processes on or in the region of the gall-bladder or bile ducts, or some calculus or newgrowth in the same was only touched upon by the speaker, who pointed out that in processes not pertaining to the stomach the gastric juices show normal characters. Of diagnostic importance are the reflex neuralgias in the shape of intercostal pains, pain under the shoulder blades, especially the left, as well as the typical intermittent diffuse pain, with suspicion of marked ague, due to gallstones. Swelling of the liver or lobes of the same sometimes appears and frequently the surgeon's knife is the first to throw light on the situation. Ulcerations of the esophagus give occasion to few mistakes, the location and kind of pain and finally the esophageal examination render the diagnosis sure. This is also true of other inflammatory processes or new formations in the lower part of the esophagus. The question as to the anatomic nature of the ulcer, whether it belongs to the usual *ulcus pepticum* or to the rarer forms of the tubercular, syphilitic, diphtheric or uremic ulcer, can be differentiated in each case with approximate certainty from the course of the disease, that is to say, whether the symptoms of ulcer appeared at the beginning or during the course of the affection. Mostly ulcer remains latent in the last named cases and has more of a pathologic anatomic than a clinical interest.

On the Treatment of Gastric Ulcer.—Fleiner (Heidelberg) gave a thorough review of the history of the subject from the earliest times. There is no known specific for gastric ulcer. The physician can only affect favorable conditions for healing, he can remove all interference with the natural healing processes. Here belongs the emptying of the stomach, the bringing about of powerful contractions of the musculature for the purpose of lessening the area of the ulcer, and with a view to filling in the same with freshly formed granulations. All this will take several weeks at least, and for that reason the first provision must be for the longest possible extension of the rest cure (4 weeks and over). The first days the patient is allowed to go hungry, giving only fluids and these per rectum. Then a milk diet is begun and after 4 weeks soft flesh is allowed. After 14 days more a carefully selected mixed diet is arranged. Later it is necessary to avoid the use of foods capable of producing mechanic or chemic irritation. The taking of waters or of baths as an after treatment is useless. By this systematic treatment about 75% of all cases are cured. The failures are mostly attributable to the patients, especially to their laxity in carrying out the cure;

but sometimes to individual peculiarities, such as the fibrous band or wall-like border of the ulcer which leads to retention of remnants of food upon the same, to the lack of contractility of the musculature, the depth of the stomach, the habit of swallowing air, etc. The great tendency to recurrence is well known. The older the ulcer the greater the difficulty in healing, entirely irrespective of the constantly increasing danger of hemorrhage and perforation. At present the following methods of treatment are regarded as most rational. The stomach should be washed out to remove remnants of food; but always with a small quantity of water under the least possible pressure. The quantitative ingestion of food should be narrowed down. The bringing of a solution of nitrate of silver into contact with the cleansed surface of the ulcer quiets pain, reduces hyperacidity and incites granulation. Kussmaul recommended the use of bismuth in large doses as a covering for the ulcer; 10 grams should be given fasting. Under this treatment the aspect of the disease changes at once. The dyspeptic pain and distress pass away, the bismuth decreases irritation, disinfects and stimulates granulation. In the never-to-be-recommended ambulant treatment one may allow a drink of alkaline water in the morning to cleanse the stomach. Bismuth is absolutely nonpoisonous. Spontaneous healing, unfortunately, often leads to the formation of a cicatrix in the stomach which requires surgical attention. The occurrence of well-developed pyloric stenosis is easily recognized by the lessening of the diuresis and the emaciation which results from the lessened resorption of food. Not unfrequently hypertrophy of the musculature compensates for the decreased motility. The possibility of the spontaneous healing of a pyloric ulcer is increased if the spasm in the pyloric musculature is overcome; but then comes stagnation, gastrosuccorhea, dilation, the contractility of the musculature being lost. As a complication of pyloric ulcer he had seen tetanus eight times, and had operated in five of these cases with three recoveries. Next to pyloric stenosis the perigastric adhesions afford no indications for operative interference, inasmuch as circumscribed abscess formations start from an ulcer. In the former, as well as in the attempt to excise the ulcer, surgery has few favorable results to show. In perforation, where spontaneous healing appears possible, the surgical interference must be ventured notwithstanding the unfavorable chances. Gastric ulcer in itself is no indication, especially when seated at the pylorus. The speaker referred to the procedure in the Heidelberg surgical clinic, where his patients were operated upon. He gave detailed statistics to show that in contrast with resection and the usual methods of operation, gastroenterotomy alone gives satisfactory results. It also gives a favorable opportunity for the internal treatment of the ulcer during the healing of the operative wound, in that the irritation by food is avoided and the musculature can again contract.

[To be continued.]

Scurvy and typhoid are devastating the peasantry throughout the famine-stricken districts of Russia. At Menzelsk, government of Cufa, nearly 4,000 cases have been reported; at Belibelsky, 682 cases; at Akmollinsk over 1,900 cases. Similar reports are sent in from all portions of the Altai region. The Red Cross Society is giving all the aid it possibly can in the way of free kitchens and medicines.

Congress on Syphilis.—At the Second International Congress for the Prophylaxis of Syphilis and of Venereal Diseases, which will be held at Brussels on September 1 to 6, 1902, the subjects chosen for discussion are (1) Public Prophylaxis: Whereas, on the one hand it lies with the public authorities to protect society against contagious diseases which are a menace and on the other hand, apart from the sanitary aspect, it is their duty to afford protection to minors abandoned by their parents: (a) what prophylactic measures under the form of legal provisions should be instituted against venereal diseases with reference to the following points? Regarding prostitution: (1) The prostitution of minors; (2) the action of public bodies, both in the interest of public morality and of health; (3) procurers and bullies. Not connected with prostitution: (1) The protection of minors; (2) measures of relief for sufferers from venereal diseases, and the duties of charitable institutions to these sufferers; (3) wet nurses; contagion by midwives and nurses; arm-to-arm vaccination; contagion in factories and workshops by means of instruments of labor; registry offices, etc. (b) Is it necessary to apply the principles of civil and penal responsibility for the transmission of venereal diseases? II. Individual Prophylaxis: If prophylaxis against venereal diseases must be taken by the public authorities the duty of self-preservation is incumbent on the healthy by avoiding contact with infected subjects and it is incumbent on the infected to avoid the possibility of infecting others. (1) What means should be taken to enlighten the young and the general public on the danger of syphilis and gonorrhea and the direct and indirect methods of contagion of these two diseases. (2) How can individual prophylaxis by means of charitable institutions (dispensaries, refuges, etc.) and medical treatment of syphilitic or gonorrheal patients be best facilitated? III. On what uniform basis should the statistics of venereal diseases in all countries be formulated?

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

GASTROTOMY FOR REMOVAL OF A WATCH.

BY

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of Buffalo, N. Y.

The case of gastrotomy reported by Dr. George T. Inch in *American Medicine* of April 12, 1902, induces me to report the following case. It is interesting only on account of the character of the foreign body removed, a watch.

Mr. W. B., 20 years of age, consulted me on January 28, 1902. Seven days previously, on January 21, he accidentally, while joking with his sister, swallowed her watch, which he had put in his mouth. The watch was a cheap one, open-faced and about the diameter of a half dollar. He had suffered no pain or inconvenience from the accident, had lived for a week on a diet of bread, potatoes, etc., but the watch had not appeared in the stools, and both he and his family were badly frightened. An x-ray examination, done in Dr. Starr's office, showed the watch plainly to the left of the spinal column in the fundus of the stomach. The patient was taken to the German Deaconesses' Hospital and again fed on a dry diet and directed to lie on his right side, in the hope that the watch might in that way fall down toward the pylorus and then pass into the bowels. On February 3 he was again examined with x-rays and the watch found in the same position in the fundus of the stomach. A gastrotomy was thereupon done by a three-inch incision in the middle line, a part of the stomach near the pylorus pulled into the wound, surrounded with aseptic gauze and held with two silk sutures above and below the proposed incision of the wall. A one-inch incision was thereafter made in the stomach, a placenta forceps introduced and the watch removed with ease. The mucous membrane was sutured with a continuous catgut suture, the rest of the wound in the stomach closed with two rows of interrupted silk sutures passing through the serous and muscular layers. The wound in the abdominal wall was closed by three rows of sutures, catgut for the peritoneum, kangaroo-tendon for the fascia and catgut for the skin.

The patient was nourished by the rectum for six days and then allowed malted milk and peptonized milk by mouth for a few days. From the tenth day he received soft diet, milk, eggs, custard, farinaceous food, etc., and he left the hospital on the thirteenth day, with the wound healed and able to eat solid food. He has been well since.

The watch measured $1\frac{1}{2}$ inches in diameter, 2 inches through the stem and $\frac{1}{2}$ inch in thickness. It was completely covered with verdigris and flakes of fibrin. Had the watch been of gold it is probable that it might have remained for an unlimited time in the stomach without giving any inconvenience. The reason for its removal was that it was a cheap brass affair and might occasion ulceration by the formation of verdigris. His stay in the hospital was a source of amusement to the other patients, who frequently asked him "to pass the time of day."

SURGEON LAZEAR.

A Toast Delivered at a Banquet of the McKean County Medical Society, April 8, 1892.

BY

M. J. SWEENEY, M. D.,

of Kane, Pa.

Mr. Toast-Master and Fellow Physicians:—I wish to toast you tonight a contract surgeon, who, a little more than a year ago, gave up his life in the interest of science and humanity. It is not, perhaps, a convivial theme, and yet it is one in which we as physicians ought to be interested, and one from the discussion of which we can derive both instruction and inspiration. I do not desire to present this martyr to duty as an individual solely, nor as a conspicuous and solitary example of high moral courage and heroic sacrifice—ours is a profession in which such examples are numerous—but as a type of our common brotherhood, the *medical fraternity universal*, which from time immemorial has offered up its time, services and life on the altar of duty.

Accustomed as we are to meet death in its multitudinous forms, in the sick-room, at the operating table, in the laboratory with its myriad deadly germs, in the dissecting-room with

its noisome vapors and putrid cadavers, in the field hospital and on the firing-line, we have come to look on the grim reaper with indifference, if not contempt—so far as our own personal safety is concerned—and the dear public, who laud us so highly when they need us and treat us so shabbily when we need them—on settlement day, also look with indifference on our most courageous acts, our most wonderful achievements, our most unselfish sacrifices in their behalf.

The question which Surgeon Lazear, as a member of the Yellow Fever Commission, though a noncommissioned member, felt himself called upon, individually, to settle, was, What relation does the mosquito sustain toward the causation and transmission of yellow fever? It was a question which had often been presented, but which had never been settled definitely. Lazear, in order to determine whether this insect acts as an intermediate host for the yellow fever germ and afterward deposits that germ or its poison beneath the epidermis of the individual whose capillaries it taps in quest of nourishment, Lazear, I repeat, subjected himself voluntarily to the bite of an infected mosquito, well knowing that in case the theory was correct he stood at least no more than an equal chance for his life. The experiment was a success from a scientific standpoint, for he contracted the disease in a virulent form and died. Dr. Carroll, his associate, who later submitted himself to the same test, was also stricken with fever, but recovered. These sacrificial experiments demonstrated beyond peradventure the truth of the theory which had been so long entertained, that the mosquito is largely if not entirely responsible for the spread and transmission of that scourge of the tropics, yellow fever. The men who voluntarily underwent these tests faced a danger just as real, just as deadly, as the gunner on a battleship during action, a danger just as real as the soldier on the firing-line faces in the thick of combat, and they confronted it even more calmly, more deliberately, if that be possible.

The soldier braves death amid the din of conflict, the shrieking of shells, the zipping of Mausers, the booming of cannon, the stir of martial music; with the lust of battle in his heart, the cheers of his comrades ringing in his ears, the eyes of his fellow soldiers and officers upon him, well knowing that if he distinguishes himself by some brave act he will be applauded and promoted, and if he falls his country will cherish his memory and provide for those he leaves behind dependent. No such stimuli or incentives surrounded Lazear's action. He faced death in the quiet hush of the laboratory with no witnesses save a few associates as he submitted himself to the test which might and did cost him his life. There was no blare of trumpets, no applauding crowds, no bouquets, no medals, no promotions awaiting him—nor did he need these artificial spurs to die a martyr's death; and yet, dying as he did that his profession might profit and human lives be spared, he died practically without comment or notice, unhonored and unsung.

There were not a dozen lines in the newspapers commemorating the importance of his discovery or the sacrifice of his life. Had he given up his life while capturing some semi-savage Aguinaldo, Congress would have voted him a medal and his wife a liberal pension, while his admiring fellow-countrymen would have embodied his sacrifice in costly bronze or marble.

"Lazear's life was given up in winning one of the most important discoveries of medical history; a discovery, the money value of which to the United States alone, from the saving of human life, the opening up of unrestricted traffic with yellow fever ports, the abolition of shotgun and other quarantines, and freedom from delay and costly disinfective processes, amounts to a sum computable only in hundreds of millions of dollars annually."

Dr. Lazear had a right to expect that his life sacrifice would not be passed over almost unnoticed, and that the country he hoped to benefit would ensure that his wife would be spared the extremes of privation and want. The medical profession has reason to resent the grudgingly given \$17 a month pension as the money price of self-sought martyrdom in the cause of humanity, particularly since not a Congressional session goes by without numerous private pension bills, each carrying several times the pittance awarded Mrs. Lazear, being granted favored individuals. Had Lazear fallen at the head of troops engaged in the destruction of life and property; had he piloted,

Hobson-like, some old collier into an enemy's harbor for the purpose of blockading and reducing to submission, either by starvation or shot and shell, thousands of his fellowmen; had he consumed hundreds of tons of metal in destroying millions of dollars' worth of an enemy's naval material, to say nothing of the hundreds of human beings whose agonizing shrieks went up to high Heaven as they lay maimed and bleeding in the throes of death, as did our much respected and admired Dewey, his country could not have honored him sufficiently. Unfortunately, the work of saving human life and relieving suffering is slowly appreciated and soon forgotten by the general public. The unassuming heroism, self-sacrifice, and devotion to duty of the physician, in his efforts to improve the welfare and increase the happiness of humanity, are more commonly belittled or ignored by the very persons for whose benefit he labors. The only reward, in this country at least, for the leaders in medical progress who freely give their labors in the cause of humanity consists in increased professional reputation and a consciousness of good work well done. And yet, in spite of this notable private and public ingratitude our profession will continue, as it should, to emulate the example of that greatest of all physicians—the Man of Calvary—who went about healing the lame, the sick and the blind, and died that others might live.

Let us thank God, then, tonight that we belong to a profession whose aims are constructive and humanitarian, rather than destructive and brutalizing; that we belong to a profession who are engaged not in squeezing millions out of gullible humanity in diluted stock and trust schemes, but that we belong to a profession which is striving to make this sorrowful old earth a better and happier place to live in.

I toast you, therefore, Mr. Toastmaster, Surgeon Lazear, the type and beau ideal of our common aims and brotherhood, from Hippocrates on down, the men

"Who give what none can measure, none can weigh,
Simply going where duty points the way.
Truth, honor, duty—duty calmly done,
That shouts no vain self-praise o'er a victory won.
One bugle note, their battle call,
One watchword, Duty—that is all."

SECTARIAN MEDICINE, ITS ETIOLOGY AND TREATMENT.¹

BY

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of Worcester, Mass.

Enforced sectarianism is the highest of the three types of sectarianism, and is the result, first, of ignorance, particularly of historic and evolutionary matters; second, of prejudice, bigotry and intolerance; and third, of misunderstanding and misconception, due to a failure to scrutinize properly all the facts involved, and the maladjustment and misinterpretation of facts considered. Misunderstanding would prove a less important factor were it not for a tendency on the one hand to stifle the adequate discussion of matters which a snap judgment deemed irrelevant, unpleasant, or unprofitable; or on the other to dismiss, with a few trivial arguments, the fundamental principles upon which controversy rests. Earlier, the amount of material printed, defective in historic data and permeated with distrust, narrowness and the elements of persecution, was amazing. Happily today we find that the real issues involved are approached more temperately and intelligently, and are less and less obscured by the memory of earlier strife. The *Medical Times* says there is "warrant for the belief that a new dimension has been added to the concept of professional ethics—that of breadth."

Sophistry has had its day, and the catholicity which dominates all scientific intercourse has now begun to pervade medical discussion. If this is doubted, one has but to refer to the following three noteworthy literary events: First, "An Ethical Symposium," G. P. Putnam's Sons, 1883. Second, the Presidential address before the fifty-second annual meeting of

¹ Author's abstract of a paper read before the Worcester Clinical Club, February 6, 1902.

the American Medical Association, by Charles A. L. Reed, A.M., M.D. Third, "Simplicity in Therapeutics," by Edwin W. Pyle, M.D., in *American Medicine*, June 1, 1901. Another significant fact is that the more liberal and advanced journals are beginning to open their columns to the suitable discussion of this and kindred subjects.

Homeopathy operated as a protest against the gross medication of the times when it arose. So long as it was persecuted it flourished. Following, however, the law that reforms cannot develop unless opposed, the growth of homeopathy as an organization, first on the continent of Europe, and later in America, ceased upon the removal of active opposition. No organization can stand still. It must either grow or decay. An intelligent interpretation of the signs of the times discloses the fact that homeopathy organically has begun to decline.

Here in America we are neither graduating yearly the same proportion of physicians to the number in practice as formerly, nor so many in proportion as do the dominant schools. And, moreover, the total number graduated by homeopathic schools yearly compares less and less favorably in proportion to the growth of population with the total of its competitors. The magnificent endowments constantly received by the nonsectarian medical schools makes them yearly more attractive to the student than homeopathy. The positions in the public service are becoming more and more desirable to their graduates. The public is rapidly realizing that the therapeutic gulf is not so wide as of old, and as a result, seek less and less the service of those members of the profession who adhere inflexibly to a so-called "school." The constitution and by-laws of the societies of nonsectarian practice are being amended yearly with the view of putting them upon a broader and more just and liberal basis.

In neither so-called "school" have the two great branches of applied medicine, pathology and therapeutics, received the proportional attention merited. For while one has labored chiefly in the direction of pathology, the other has placed special stress upon the elaboration of a *materia medica*, a method of procedure obviously defective and fraught with equal peril to both. While homeopaths have drawn generously from the store of pathologic knowledge accumulated by nonsectarian investigators, they meanwhile have been long searching for a more rational and satisfactory therapy, and have been led to use, in an ever-increasing ratio, methods of prescribing approaching those used by sectarians. Even if a large number of the dominant school still engage largely in polypharmacy it is not true that in their ranks therapeutic progress is unwelcome and unknown.

Members of homeopathic societies are being admitted gradually to the general societies of the dominant school and the special societies affiliating therewith. Their best men recognize and deplore the blunders and injustice of the earlier times, and by their example are endeavoring to reconstruct the opinions and attitude of their less charitable and more bigoted fellows. All thoughtful physicians are realizing that the best interests of humanity demand a unified medicine; that the whole field of medicine, particularly in relation to sectarianism of every type, is today subject to influences as different from those of 25 years ago as those of that time differed from those of 100 years previous; that it takes but a glance at the subject to reveal the fact that, logically, sectarianism in medicine is fatuous; that even those who have the perpetuation of the rule of similars most at heart are not likely to stand upon the manner in which their support is enlisted, in an effort at reconstruction, provided only honorable and self-respecting methods are employed; that whatever difference may exist relative to this subject, it is not one involving aim, but method; that patience and generosity should characterize all debate having for its object the unification of the medical profession.

The studies, the labors and interests of the better element of each of the larger branches of medicine are converging along paths already plentifully adorned with conciliation, goodwill, toleration and mutual esteem; and failure properly to estimate the value of these considerations and those upon which the organic and philosophic phases of medicine are founded inevitably invite disaster. A too conservative attitude, an overestimated security, an uncompromising indifference to

the opportunities for reorganization, will lead to the most lamentable results. Homeopaths are entitled to look with satisfaction upon the good which has come to humanity through their influence in modifying heroic therapy, and on what it has cost them to stand by their principle.

It is unpleasant to see homeopathy taught as an elective or selective affinity, but so it is and will be taught for some years to come. Therapeutics is subject to the same evolutionary laws as economics. The transition from one line of thought to another is gradual, and it is idle to expect homeopathic *materia medica* to be taught as such in the nonsectarian medical schools. If homeopaths, however, so far as possible associate themselves with medical societies which have as requirements for admission no conditions conflicting with their own, they will by degrees promote an ever-increasing friendly spirit.

Rationally and constructively the first step in the evolution of the present system of medical organization should be in the direction of placing the sectarians in a position analogous to that now enjoyed by the societies embracing the various specialties, namely, affiliative relationship to the great body of general medicine, a plan which is not only ethically, scientifically and organically sound, but as well, the most just and feasible solution of the problem. And for the expeditious and harmonious consummation of that medical millennium, it is imperative that we appreciate the necessity of reciprocity. We must give if we would receive. We should be prepared to relinquish certain things to which we attach importance and expect concessions in return. If the policy outlined is wisely pursued, the integrity of homeopathy would be preserved, thus guaranteeing, when the time is ripe, continued recognition. If, on the other hand, the present course is continued, its extermination as an *organic entity* is certain.

The bias of personal motive or interest has ever been a stock argument against new ideas, and so attention should be called to the fact that those who champion this cause along the lines above indicated have everything to lose, and little, if anything, to gain, save the consciousness of having faithfully performed what was conceived a duty. They are likely to lose many friends among those with whom they have been associated and gain but few at first from any quarter.

The time is now propitious for the industrious advocacy of this plan, and in the support of this effort I urge cooperation, with the confident hope that many years cannot elapse before the profession will be well rid of at least the greater part of the feeling which menaces the future of homeopathy.

TETANUS FOLLOWING VACCINATION.

BY

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To the Editor of American Medicine:—Quite a number of cases of tetanus following vaccination have been reported of late, and from the standpoint of etiology I deem the case that recently came to my notice of some interest.

A child, aged 8 years, was vaccinated in a kindergarten with liquid glycerized lymph by a regularly appointed vaccine physician. In the course of a week the vaccination "took," and the arm was sore and swollen. Three weeks later the child was suddenly taken ill with symptoms of tetanus, and died after 24 hours. Upon inquiring into the case, I learned from the mother that on the second day after the vaccination she had removed the shield placed upon the arm by the physician, and then, with a "clean" rag, had washed the arm daily with rain-water taken from a cistern fed by pipes draining the water from the roof of the house. The water was simply warmed before use, never boiled.

The little house in which these people live is in a rolling-mill district, and all the dust and dirt that settles upon the house-top is washed into this cistern. Upon raising the lid of the cistern I detected a decidedly foul odor rising from the water.

There is, of course, not a particle of doubt as to the source of the infection here, though I presume this same soft rain-water will continue to be used by this family for washing of clothes and wounds. No other case occurred among the children vaccinated.

ORIGINAL ARTICLES

ON ADRENALIN GLYCOSURIA AND OTHER FORMS OF GLYCOSURIA DUE TO THE ACTION OF REDUCING SUBSTANCES AND OTHER POISONS ON THE CELLS OF THE PANCREAS.¹

BY

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This publication is made for the purpose of giving a condensed account of a recent experimental research on glycosuria due to the action of reducing substances and other poisons on the cells of the pancreas. In connection with Dr. A. J. Wakeman a detailed account of this work will before long be presented in the *Journal of Experimental Medicine*.

The starting point in this study of glycosuria is the observation that adrenalin chlorid when introduced into the peritoneal cavity of dogs is almost regularly followed by the appearance of considerable quantities of sugar in the urine.²

Preparation and Chemic Characters of Adrenalin Chlorid.—Of the method of preparing adrenalin chlorid little need be said here as this subject has recently been discussed by Takamine.³ One point should, however, be noted. In the course of preparing adrenalin the finely disintegrated suprarenal glands are steeped in water for about five hours at a temperature varying from 50°–80° C. and later are exposed to 90°–95° C. for one hour. This temperature is sufficiently high to destroy most, if not all, diastatic ferments. The adrenalin chlorid (in concentration of 1–1,000) of commerce shows a slightly alkaline reaction on moist litmus paper and with phenolphthalein. The colorless aqueous solution absorbs oxygen from the air and changes to pink and later to red or brown. The energetic reducing action of the solution is shown by its behavior to many salts. One cubic centimeter of 1–1,000 aqueous solution of adrenalin chlorid reduced .042 cc. of Fehling's solution and 100 cc. of the solution were thus equivalent to 0.21 gm. glucose. Adrenalin chlorid reduces potassium permanganate in the cold and Dr. Wakeman has calculated that the weight of oxygen which is taken up from this salt during the reduction of 1 cc. of the commercial solution of adrenalin is 0.000313 gm.⁴

The commercial aqueous solution of adrenalin 1–1,000 was employed in the research to be described. A few observations were made with adrenalin prepared by a somewhat different method by Dr. John J. Abel, who kindly placed some of his product at our disposal. One portion of the adrenalin given us by Dr. Abel is free from loose ammonia and differs in some of its reactions from the adrenalin of commerce, but its physiologic effects are essentially the same.

There are many conditions which affect the degree and duration of adrenalin glycosuria and some of these must be mentioned.

Mode of Administration.—Subcutaneous injections of adrenalin chlorid yield only slight degrees of glycosuria. Thus in a typical instance, a dog of 15 kilos received 10 cc. adrenalin under the skin. Before the injection, the urine contained 0.48% reducing substance (Pavy's method). The first collection after injection contained 0.66% reducing substance, the second 0.52% reducing substance. The explanation of the small excretion of

sugar is that the adrenalin is largely oxidized before entering the circulation. Larger percentages of sugar may be obtained, but they involve the use of larger doses.

Intravenous injections of adrenalin are followed by a larger excretion of sugar where a dose of from 5–10 cc. of adrenalin is put into a dog of from 8–15 kilos. Five or 6% of glucose may be observed under these conditions, but the percentage is sometimes much smaller. A rise in the blood pressure is an accompaniment of the glycosuria, but the latter outlasts this rise.

Other conditions being similar, a given dose of adrenalin (from 2–15 cc.) gives rise to a greater excretion of sugar when administered by the peritoneal cavity than when given intravenously. In well-fed dogs of medium size, a dose of from 4–6 cc. is always, or nearly always, followed by some degree of glycosuria. Somewhat larger doses almost regularly occasion the appearance of from 3–6% of sugar within an hour of the completion of the injection. The percentage of sugar may rise to 10% or more. Sugar has in some cases been detected within 15 minutes of the completion of the injection. The systemic blood pressure has been observed to rise after intraperitoneal injections, but not to the height noted after intravenous infusions. Thus in a dog of 11 kilos there was a rise from 100 mm. to 110 mm. of mercury after an injection of 10 cc. of adrenalin. Some rise was maintained for about an hour. There was a fall to below 100 mm. Under similar conditions an intravenous dose of 10 cc. of adrenalin might be expected to cause a rise from 100 mm. to 130–160 mm. of mercury.

By mouth, adrenalin apparently has no effect in ordinary doses. A well-fed dog of 13 kilos received 10 cc. of adrenalin by mouth without resulting glycosuria—an experience which corresponds with the known absence of physiologic effect of gland extracts upon the human subject.

Effect of Dilution.—In the case of intraperitoneal injections of adrenalin the excretion of sugar appears to be comparatively small when a considerable degree of dilution is practised. Thus, in a well-fed dog of eight kilos, 10 cc. of adrenalin with 40 cc. of 0.85% salt solution gave rise to the appearance of 0.16% of sugar in 1,000 cc. of urine—a smaller total than is usual following such a dose. Sometimes, indeed, glycosuria does not appear, as for instance in the case of a well-fed dog of six kilos which received 4 cc. of adrenalin with 12 cc. of 0.85% salt solution. Four hours and 19 minutes later 30 cc. of urine contained no sugar.

Size of the Dose.—Within certain limits the quantity of sugar excreted appears proportional to the dose of adrenalin, but the relationship has not yet been carefully studied. It is certain that doses smaller than those usually employed may suffice to induce glycosuria. Thus in a dog of 5.5 kilos an injection of 2 cc. adrenalin with 2 cc. 0.85% sodium chlorid solution was followed by the appearance of 3.75% of sugar in the urine. There is reason to think that when a certain dose is followed by a very large excretion of sugar a larger dose would not have materially increased this output.

Duration of the Glycosuria.—The glycosuria after a moderate intraperitoneal dose of adrenalin (say $\frac{1}{2}$ cc. in a dog of 10 kilos) lasts usually somewhat less than 24 hours. As a rule the glycosuria is at its height within a few hours after the administration of the adrenalin. The excretion of sugar then declines rapidly and the urine soon contains only a fraction of 1% of reducing substance.

Total quantity of Sugar Excreted.—The total amount of sugar excreted under the conditions just mentioned is usually not more than a few grams. The very high percentage sometimes observed soon after the injection of adrenalin might lead one to expect a much larger total excretion than actually occurs. The explanation of this unexpectedly small output of sugar lies in the rapid decline of the glycosuria after the first few hours.

¹ Abstract of paper delivered before the Association of American Physicians, April 30, 1902.

² Herter and Richards. Note on the Glycosuria Following Experimental Injections of Adrenal, *Medical News*, February 1, 1902.

³ The Blood-Pressure Raising Principle of the Suprarenal Gland, *Journal of the American Medical Association*, January 18, 1902.

⁴ Using a standard solution of $KMnO_4$ in which 1,000 cc. of the solution = 0.8467 gm. $KMnO_4$.

Nature of the Sugar Excreted.—No careful study has yet been made of the chemic constitution of the sugar excreted after adrenalin, but there is reason to think that glucose is the chief, if not the sole constituent of the urine in at least most instances of adrenalin glycosuria. In those cases in which the results of titration with Fehling's solution have been compared with the results obtained by fermentation there has been a close agreement. A glucosazon is obtainable without difficulty. The urines examined have shown dextrorotation. The chemical nature of the carbohydrates deserves much more careful study as it is by no means proved that dextrose is the only sugar present in the urine after adrenalin.

Sugar Content of the Blood.—Numerous observations on the sugar content of the blood before and after the production of adrenalin glycosuria indicate that in well-fed animals there is regularly an increase in the blood sugar. The following observations, which were made by Dr. A. N. Richards, are in several respects instructive.

A well-nourished dog (7.6 kilos) was fed 12 hours previous to the intraperitoneal injection of 8 cc. of adrenalin.

Blood.	Amount.	Sugar.	Coagulation time.
Normal.	29 gm.	0.26%	4 m. 00 sec.
5 minutes after injection.	15 gm.	0.36%	2 m. 15 sec.
10 minutes after injection.	11.5 gm.	0.40%	2 m. 00 sec.
32 minutes after injection.	10.7 gm.	0.44%	2 m. 20 sec.
1 hour after injection.	11.8 gm.	0.43%	4 m. 10 sec.
5 hours after injection.	10.8 gm.	0.31%	3 m. 05 sec.
17 hours after injection.	27.3 gm.	0.10%	3 m. 00 sec.

These results, which are typical, speak for themselves and call for little comment. The rapid increase in the blood sugar after injection is striking. Another point of interest is the subnormal content of sugar after the lapse of 17 hours. The increased rapidity of coagulation noted here has been observed in other instances, but appears to be unconnected with the occurrence of glycosuria. Dr. Richards has made a careful, detailed study of the behavior of the blood sugar after adrenalin, and his results will soon be published.

Influence of the State of Nutrition.—In general it may be said that the largest quantities of sugar have been observed in well-nourished dogs that had recently been fed. An adrenalin glycosuria may be obtained, however, even in dogs that have to be starved for two or three days. The glycogen content of the liver is undoubtedly a factor of much importance in determining the degree of the glycosuria. Sufficiently careful observations have not yet been made with reference to the influence of this factor, but there is some evidence that after a period of starvation, combined with the administration of phlorhizin, the excretion of sugar induced by adrenalin is very small. Thus in a dog of 20 kilos, after a period of fasting and of dosing with phlorhizin, 10 cc. of adrenalin intraperitoneally failed to cause glycosuria during the first four hours following the injection. During the next 20 hours the urine contained 0.1% of reducing substance.

On the Apparent Tolerance which Follows Repeated Intraperitoneal Injections of Adrenalin.—Observations were made in regard to the effects of repeated injections of adrenalin in four dogs, of which only three were normal, the fourth having had the spleen and one-half the pancreas removed at previous operations.

Injections were usually made every third day with doses gradually increasing. After about one month, two of the dogs died in consequence of excessive doses of adrenalin. The remaining animals, including the splenectomized dog, received injections during about two months. It was observed that the usual symptoms of an injection of average size became less pronounced than at the beginning of the experiment and that the sugar excretion was very much less. In the case of the splenectomized dog sugar ceased to appear in the urine after the last three injections, although the doses were larger than at the beginning. The appetite was very

slight at this period and there is no doubt that the animals were in a state of partial inanition. To this state of inanition the absence of glycosuria can almost certainly be attributed the failure of sugar to appear after the injection of adrenalin. This is indicated by the fact that in the case of the two dogs just mentioned large quantities of sugar appeared in the urine after small injections of adrenalin made after a two weeks interval in which the animals took a liberal amount of food.

Why the symptoms following intraperitoneal injections should grow less pronounced with repeated doses is not yet clear. In regard to these effects a condition of actual tolerance seems to become established. It cannot be said that our experiments prove that no tolerance to the glycosuria inducing action of adrenalin is established as the result of repeated injections. Such a tolerance is observed in the case of morphin and apparently depends on an increased oxidizing activity on the part of the cells.

Symptoms of Intraperitoneal Injections.—Within a few minutes after the injection of an ordinary dose of adrenalin the animal vomits. After 20 minutes or half an hour a period of intense excitement and restlessness usually sets in and lasts for about an hour. This condition is followed by a period of prostration, which is often pronounced in small dogs. The day following the injection the appetite is usually entirely lost. On the second day the animal begins to eat again and the signs of prostration are no longer noticeable.

After fatal doses (10–12 cc. in dogs of 5–8 kilos) the symptoms are similar to those described, but more intense. There is repeated vomiting in many instances and a bloody diarrhea is usual. The prostration after the period of excitement is profound and death commonly ensues within 24 hours. At autopsy the intestines is found to be the seat of intense congestion or hemorrhage into the mucous and submucous layers and the greater part of the intestinal tract may be denuded of its epithelium. The pancreas may be the seat of numerous hemorrhages and local necroses, but in other parts the normal appearances may be preserved.

Glycosuria After Local Application of Adrenalin.—At an early period of the research it seemed desirable to determine whether the greater efficacy of the intraperitoneal method in the production of glycosuria was dependent on the better opportunity for the local action of the adrenalin on the pancreas. The pancreas was, therefore, exposed in a number of normal dogs and adrenalin applied directly to the presenting surface by means of a brush. It was found that marked glycosuria follows the application of small quantities of adrenalin to the pancreas, quantities which when applied locally to other parts of the body either give rise to no excretion of sugar or to a trivial glycosuria.

As a rule the local application of adrenalin to the pancreas leads in a few moments to a deepening in the color of the gland at the area of contact. Sometimes this local reddening of the surface of the gland is preceded by a marked pallor of the organ, but this appears to be exceptional. The glycosuria usually sets in promptly after an application of 1 cc. of a 1–1,000 solution of adrenalin chlorid. Usually sugar may be detected in the urine within an hour of the application. It has been observed within 10 minutes of the painting. Sometimes one or two hours have elapsed before sugar was detected. The minimal dose which is capable of inducing glycosuria has not been determined, but it seems probable that in some small well-fed dogs less than 0.5 cc. of adrenalin 1–1,000 would suffice to cause some degree of glycosuria.

Examples of glycosuria from local painting of adrenalin are the following:

1. Both surfaces of the pancreas of a dog of 10 kilos were painted with adrenalin (2 cc. of 1–2,000 solution of adrenalin chlorid); within 10 minutes the urine contained more than 5% of sugar.

2. Dog, 8.4 kilos; 1 cc. of adrenalin (1–1,000) was painted on

the pancreas of a dog that had been fasting for two days; 2 hours and 10 minutes after the urine contained 2.8% sugar.

3. Dog, 8.5 kilos; the pancreas was painted with 2 cc. of adrenalin (1-1,000); 3 hours after 0.4 cc. of urine have a strong reducing action.

Control Experiments.—It was, of course, of the first importance that control observation should be made in order to determine whether applications of adrenalin to other organs than the pancreas are not followed by glycosuria. The following notes indicate the nature of the results attending such control experiments:

1. Dog, 10 kilos, spleen exposed and painted with 2 cc. adrenalin (1-1,000); during the second 15 minutes urine shows slight reduction (slight yellowish residue on casserole); other samples negative.

2. Dog, 11 kilos, fed upon sugar; 2.5 cc. adrenalin injected directly into the liver substance; small sample of urine after 3 hours contains 0.7% sugar; other collections negative.

3. Dog, 10 kilos; 2 cc. adrenalin with 2 cc. water injected into mesenteric vein; 1½ hours after urine contained 0.2% sugar.

4. Dog, 7.5 kilos; 3 cc. adrenalin and 3 cc. water injected into mesenteric vein; after 1 hour and 10 minutes, sugar 1.11%.

5. Dog, 9 kilos; 2 cc. adrenalin painted on surface of liver; 1½ hours after urine negative.

6. Dog, 8 kilos; 2½ cc. adrenalin with 2½ cc. water injected into mesenteric vein; 1 hour and 20 minutes after injection urine contained less than 0.5% sugar.

7. Dog, 1 cc. adrenalin applied to surface of pia arachnoid; urine negative.

These and other observations show plainly that the local application of adrenalin to the pancreas is distinctly more effective in causing glycosuria than is its contact with the liver, spleen or brain. It should be noted that although in several of the control experiments much larger quantities of adrenalin were used than in the case of the applications to the pancreas, the percentages of sugar in the urine were small. It seems extremely probable that when adrenalin is infused into a mesenteric vein rather rapidly, as in these experiments, a small amount of the substance reaches the pancreas and acts upon its cells. On the other hand, it is not improbable that in the case of the experiments in which adrenalin is painted on the surface of the pancreas a very small quantity of the active material reaches other parts of the body. Since we cannot completely exclude from the circulation the pancreas without producing glycosuria we are unable to say whether the contact of adrenalin with other cells than those of the pancreas is or is not capable in itself of inducing glycosuria. We may, however, feel certain that applications of adrenalin to pancreatic cells are peculiarly effective in the production of glycosuria. The difference between the behavior of pancreatic and other cells in this respect is so pronounced that we are justified in regarding the glycosuria of adrenalin as pancreatic in character.

The pronounced nature of the glycosuria following intraperitoneal injections appears to be mainly attributable to the readiness with which the adrenalin comes into contact with the pancreas. Experimental injections of colored fluids into the peritoneal cavity give support to this view. Other experiments, which need not be described here, show that when the pancreas is rendered comparatively inaccessible to intravenous and intraperitoneal doses of adrenalin the glycosuria is less than would otherwise be expected.

Nature of the Action of Adrenalin on the Pancreas.—The well known vasoconstrictor action of adrenalin naturally suggested that the explanation of the glycosuria was to be sought in a derangement of the circulation in this gland, probably one induced by narrowing of the arteries. Two observations, however, had been made which appeared opposed to this explanation. In the first place, the local application of adrenalin is followed by an appearance of congestion and not usually by blanching. Secondly, it was found that after intravenous injections of adrenalin followed by marked glycosuria the pancreas in several instances showed on inspection no alteration in color which could be interpreted to indicate a change in the caliber of the afferent vessels. Further investiga-

tion of the subject showed very clearly that substances may be applied to the pancreas which cause marked congestion but no glycosuria. On the other hand, it was found that a blanching of the gland, as from a 3% cocaine hydrochlorate solution, was not followed by glycosuria, though there is no doubt of the vasoconstrictor action of the drug when thus applied. It was also noted that substances which, like amyl nitrite, exert a vasodilator action are capable (at least under some conditions) of inducing marked glycosuria when applied directly to the gland. It is therefore impossible to establish any definite relation between glycosuria and the vascularity of the gland or of parts of the gland. It was further observed that there is no relation between elevation of the blood pressure and the glycosuria. Adrenalin was injected into the peritoneal cavity together with sufficient nitroglycerin to keep the systemic pressure much below normal. Yet glycosuria of the usual degree was observed.

While these various experiments do not prove that vascular derangements of the pancreas are of no significance in connection with the production of adrenalin glycosuria, they nevertheless point to the conclusion that if such derangements have a part in determining the glycosuria it must be of secondary importance.

Before obtaining a clue to what we believe to be the correct explanation of the nature of adrenalin glycosuria a number of experiments were made with a view to determining whether the blood drawn from the pancreaticoduodenal vein at the height of adrenalin glycosuria contains any substance capable of inducing glycosuria when injected into the portal system of a normal animal. The observations indicate that even large quantities of blood obtained in this way cause for the most part only a slight glycosuria. As this line of investigation did not appear promising it was not carried sufficiently far to prove whether the glycosuria noted might not be dependent on the increased sugar content of the injected blood or (what seems improbable) on the presence of unchanged adrenalin in the blood.

The Action of Dilute Solutions of Potassium Cyanid on the Cells of the Pancreas.¹—We are indebted to Prof. Jacques Loeb for calling our attention to the important work of Geppert² on poisoning by hydrocyanic acid. This suggestion was of much value for our work, as it has given us at least a clue to a better understanding not merely of adrenalin glycosuria but of other forms of glycosuria and diabetes. The fact was well known to Claude Bernard that when animals are poisoned with hydrocyanic acid the blood in the veins grows lighter in color and may assume a bright arterial hue. The explanation of this striking phenomenon has been given by Geppert in his classical work. This investigator showed that in experimental hydrocyanic poisoning the blood of the veins contains much less carbon dioxide than normal and much more oxygen, the percentage of oxygen falling only a little below that of the arterial blood. He further showed that the oxygen utilized in the organism is markedly diminished. A very careful scrutiny of all the facts brought out by Geppert's experiments brought out the conclusion that the disturbance in the gas exchanges of the body are referable to the poisonous action of hydrocyanic acid on the cell protoplasm of the organism. This action is of such a nature that it prevents the cells from taking oxygen from the blood as in health. Hence the blood of the veins assumes an arterial tint.

With a knowledge of Geppert's work in mind it seemed very desirable to try the effects of hydrocyanic acid on the cells of the pancreas with a view to testing the idea that local disturbances of oxidative function, limited wholly or very largely to this particular group of cells, might give rise to glycosuria. The experiments

¹ Sodium fluorid appears to be an example of a substance which, though devoid of reducing action, is capable of causing glycosuria.

² Ueber des Wesen der Blausäurevergiftung Zeitschrift für klin. Med., s. 208, Bd. xv., 1889.

which have been made bear out the correctness of this idea. A typical experiment is the following:

Dog about 7.5 kilos, urine normal; 0.5 cc. of N/1,000 KCN solution was applied to one surface of pancreas, which became bright red. After 30 minutes the urine showed decided reduction of Fehling's solution. After about one hour, urine negative. Then another application of about 2 cc. of same solution to surface of gland; also 1 cc. injected slowly into gland. After one hour urine had 2.1% of glucose; second hour, 0.85% glucose; third hour, slight reduction.

Control Experiments.—The importance of control experiments is of course evident. The following observations are instructive in this connection, as checks to the pancreatic applications:

1. Dog, about 17 kilos. Loop of small intestine painted several times with N/1,000 KCN solution (say 1 to 2 cc.), then 2 cc. of the same solution injected into the subperitoneal layer of the intestine. Urine negative.

2. Dog, about 10 kilos; 3 cc. N/1,000 KCN solution injected slowly into mesenteric vein. One hour and ten minutes later, urine absolutely negative.

These experiments and others of the same character leave no doubt that the absorption of minute doses of hydrocyanic acid by the cells of the pancreas is followed by a glycosuria of short duration. In the change in the color of the gland we have ocular evidence of the action of the poison in preventing the cells from taking up oxygen as under physiologic conditions.

The results of experimentation with potassium cyanid made it important to determine the local effects of some members of that large group of substances which have an energetic reducing action. It was thought that the use of such reducing substances might interfere with oxidation within the pancreatic cells and thus give results comparable with those obtained with potassium cyanid.

Effects of the Application of Reducing Substances to Pancreas.—Only the briefest references can here be given to the action of the various reducing substances which were employed.

Sulphurous Acid (SO₂).—An application of 0.5 cc. of a saturated aqueous solution of SO₂ was made to the pancreas of a dog of 7 kilos. The gland whitened as from coagulation of proteids. Urine before operation negative; 45 minutes later about 2% sugar.

Ammonium Sulfid (NH₄)₂S.—The pancreas of a dog of 5.5 kilos was painted with 0.5 cc. of an ammonium sulfid solution made by passing sulphuretted hydrogen through standard ammonium hydroxid solution of 0.96 sp. gr. Urine one hour after showed slight reduction, three hours after about 1% of reducing substance. In a second experiment of the same kind the glycosuria was less marked.

Sulphuretted Hydrogen.—A small current of sulphuretted hydrogen was allowed to flow against the surface of the pancreas for 15 minutes. The dog weighed 10 kilos. Two hours later the urine showed slight reduction.

Illuminating Gas.—A stream of illuminating gas was allowed to flow against the surface of the pancreas of a dog of 19 kilos for one hour. Urine after this contained 1.7% of reducing substance.

Carbon Monoxid (CO).—Twenty liters of pure carbon monoxid warmed to the body temperature were allowed to flow for one hour against the pancreas of a dog of 7.8 kilos. The urine after this contained a small quantity of reducing substance.

Benzyl Alcohol (C₆H₅CH₂OH).—Two cc. of benzyl alcohol were applied to the pancreas of a dog of 12 kilos. Three hours later the urine contained 3.57% of sugar. The color of the gland deepened but there were no indications of coagulation.

Pyrogallol and Allied Phenols.—The well-known affinity of pyrogallol (1-2-4 trihydroxyphenol) for oxygen suggested the use of this substance, which was employed in aqueous solution without addition of alkali. The following are typical results of trials made with this substance:

1. Dog, 6.4 kilos; the pancreas was painted with 1 cc. of pyrogallol in 1-8 dilution; 3½ hours after 30 cc. of urine contained 8% sugar.

2. Dog, 6 kilos; 2 cc. of pyrogallol (1-5 dilution) were painted on the pancreas; 2 hours after urine contained ¾% sugar.

Phloroglucin (symmetrical trihydroxyphenol), hydroquinon and pyrocatechin gave much slighter glycosurias than pyrogallol, but the observations are not sufficiently numerous to be conclusive.

Pyridin, Piperidin and Quinolin.—Experiments made with pyradin and piperidin are of a special interest because, as shown by Abel, a conium-like substance is present in the active blood-pressure-raising constituent of the suprarenal gland and this alkaloid is known to contain a pyridin base. Pyridin reduces potassium permanganate in alkaline solution, but not in neutral solution and one would not predict for it a marked action in the production of glycosuria. In three dogs in which a 1-10 aqueous solution of pyridin was painted on the pancreas there followed only slight glycosuria. Piperidin (hexahydropyridin) has a chemic constitution which indicates a much greater reducing activity than that of pyridin. In three dogs in which aqueous solutions of piperidin (1-10 or weaker) were brought into direct contact with the pancreas large percentages of sugar were found in the urine—in one instance 11.7%. It should be stated, however, that in another dog piperidin failed to cause the appearance of sugar. Here the failure of the sugar to appear did not appear to be connected with the quantity of piperidin used, for many times the usual dose was applied in this instance without leading to glycosuria. The explanation of these exceptional cases is not yet clear. In two instances in which the sugar of the blood has been determined the glycosuria after piperidin has not been associated with an increase of blood sugar, which suggests that there may be a renal element in these glycosurias. Quinolin appears to stand midway between pyridin and piperidin in its ability to produce glycosurias.

The Relation between Adrenalin Glycosuria and the Reducing Action of Adrenalin Chlorid.—The observations to which reference has been made rendered it not improbable that the action of adrenalin in causing glycosuria is connected with its reducing activity. It was very easy to demonstrate that any oxidation of adrenalin chlorid outside the body, which deprives it of its reducing power and of the characteristic Vulpian reaction with ferric chlorid, also destroys its action in raising the blood pressure and in causing glycosuria. Numerous experiments with oxidizing agents, including potassium permanganate and chlorin gas, showed that adrenalin thus deprived of reducing action could be injected intraperitoneally in large amounts without producing any glycosuria or indeed any symptom whatever. The chemic nature of the substance or substances that result from the oxidation of adrenalin chlorid is not yet known. Violent shaking with considerable volumes of neutral oxygen for periods of one or two hours caused a reddening of the adrenalin solution but failed to deprive it of the ferric chlorid reaction or of its ability to induce glycosuria.

Control Experiments with Substances which do not Reduce.—The importance of control observations makes it desirable to give brief abstracts of some individual experiments which were made as checks to the studies with reducing substances:

1. Dog, 7 kilos; 2 cc. of a 13.5% ferric chlorid solution painted on pancreas which whitened from coagulation. Urine one hour and three hours later negative.

2. Dog, 9 kilos; a 5% sodium chlorid solution (of about body temperature) was allowed to flow on surface of pancreas for 20 (?) minutes; 280 cc. were used. One hour later 30 cc. urine gave less than 0.1% of reducing substance on long boiling; 5 cc. of this urine with 10 cc. Fehling's solution caused no reduction; 5 hours later urine doubtful, possibly slight reduction.

3. Dog, 9 kilos; 10% solution of sodium hydroxid painted on pancreas, 1 cc. being used; 1 hour later urine gives slight but undoubted reduction; 2½ hours after, slight reduction; 4 hours after, no reduction; 5 hours after, no reduction.

4. Dog, 9 kilos; 1 cc. 10% hydrochloric acid painted on pan-

creas; 1, 3 and 5 hours later urine shows no reduction. A similar experiment gave a negative result.

5. Dog, 7.5 kilos; pancreas painted with 3 cc. bromin water; after 1 hour very slight reduction (trace); later collections negative.

6. Dog, 8 kilos; pancreas painted with 3.6 cc. chlorin water; urine, several collections, negative; second collection (after 2½ hours) slight suspicion of reduction, probably negative.

7. Small dog; pancreas painted with 2 cc. fresh hydrogen peroxide (Marchand's).

8. Dog; pancreas painted with 2% solution of chromic acid, 2 cc. used; no symptoms; urine negative.

9. Dog, 1.4 kilos; 2 cc. of a saturated solution of KClO_3 were painted on the pancreas; 2½ hours after, urine negative.

10. Dog, 9 kilos; 2 cc. of 2% HNO_3 solution were painted on the pancreas; urine negative.

This group of control experiments shows quite clearly that applications which are by no means indifferent in character may be made to the pancreas without causing glycosuria. Some of these substances have neither reducing nor oxidizing qualities, but are nevertheless distinctly injurious. Thus ferric chlorid and hydrochloric acid coagulate the protoplasm of the cells with which they come in contact, and there can be no doubt that a 5% sodium chlorid solution disturbs the normal osmotic relations. Other substances used possess a strong oxidizing action, but failed to cause the appearance of sugar.

Relation Between Experimental Pancreatic Glycosuria and Interference with Normal Oxidations of Pancreatic Cells.—The experiments heretofore made indicate plainly that a close relationship exists between the reducing power of a substance and the capacity of this substance to induce glycosuria when applied directly to the pancreas. There are indeed substances which possess active reducing power, but which have yielded only slight degrees of glycosuria.¹ On the other hand, there is at least one poison, hydrocyanic acid, which is capable of bringing on glycosuria, although it exerts no reducing action. As yet, we have found no oxidizing agent which causes glycosuria when applied to the pancreas, but it is possible that such an agent may in time be discovered. Our present experience indicates that substances which have a strong reducing action are very much more likely to induce glycosuria than those which lack this power, although it also indicates that the ability to produce glycosuria is not always proportional to the reducing activity as measured *in vitro*. Thus a solution of adrenalin chlorid of a given reducing power will cause much more glycosuria than a solution of hydroquinon of the same reducing activity. Nevertheless it appears that among substances of allied chemie constitution the ability to induce the appearance of sugar in the urine is at least roughly proportional to the reducing activity. We see this among substances of the pyridin and phenol groups.

It is not yet clear what interpretation should be put on the association of the power to reduce and the power to induce glucosuria. The striking case of hydrocyanic acid, which acts by poisoning the cell so that it no longer takes up oxygen normally, suggests that the various reducing substances act by removing oxygen from the pancreatic cells. The quantity of oxygen thus removed can be calculated. It is so small in the case of a powerful glycosuria-inducing agent like adrenalin that we must hesitate to ascribe the appearance of sugar to the mere removal of this small amount of oxygen from the cells. Moreover we know that there are substances with marked reducing action which induce only slight glycosuria, and are acquainted with at least one poison (hydrocyanic acid) which induces glycosuria without having any reducing action. We are therefore inclined to attribute the glycosurias we have noted not necessarily to the reducing action of the substances concerned, but to some toxic action on the cells. This action is, however, closely connected with the power of reduction. It is

possible that in some instances (as in the case of carbon monoxid poisoning) the quantity of oxygen removed from the cell is sufficient to account for the disturbance in the function of the gland.

Of the intimate nature of this functional disturbance we know nothing as yet. The instructive case of potassium cyanid suggests that in many cases the cells are poisoned in some way which interferes with their oxidative activities.

The discussion of hypotheses relating to this fundamental question will not be undertaken here.

On Glycosurias following Applications to One Portion of the Pancreas.—Early in the course of the study of adrenalin glycosuria it was observed that the reddening of the gland which commonly follows immediately upon an application of adrenalin, is localized to the area of contact and superficial. This observation raised the question whether the action of the adrenalin is actually limited to the parts which show an alteration in color or whether there is a diffusion of the substance through the gland, such as must occur when an intravenous infusion of adrenalin is followed by glycosuria. In order to form an opinion on this important point a special form of experiment was devised. The pancreas was cut through at right angles to its axis, and the incision was carried through the adjoining duodenum. The bleeding vessels having been clamped or tied, an application of adrenalin chlorid was made to one portion of the pancreas, special care being taken that none of the substance should come into contact with the unpainted part of the gland. This form of experiment was used not merely with adrenalin but with potassium cyanid and pyrogallol. The following notes indicate the nature of the results:

1. Dog, 4.5 kilos; pancreas divided into two portions, a splenic one-third and a cephalic two-thirds. The splenic one-third was painted with 1-1½ cc. adrenalin chlorid (1-500); 1½ hours after 13.5 cc. urine contained 10% of sugar.

2. Dog, 7.4 kilos; pancreas divided into a cephalic one-fifth and a splenic four-fifths; the cephalic fifth was painted with 1 cc. adrenalin chlorid (1-500); 1½ hours after, 8½ cc. of urine contained 2% of sugar.

3. Dog, 9.5 kilos; pancreas cut into two nearly equal halves; splenic half painted with 1 cc. N/1,000 KCN solution, also 1 cc. of same solution slowly injected into this part of the gland; 30 minutes after injection urine contained 6% sugar.

4. Dog, 7.4 kilos; pancreas cut into a cephalic three-fifths and a caudal two-fifths; splenic two-fifth painted with 1½ cc. N/1,000 KCN solution; two hours later 5 cc. urine contained about 1.5% sugar.

5. Dog, 10.1 kilos; pancreas divided into a caudal two-thirds and a cephalic one-third; cephalic end painted with 1 cc. pyrogallol solution (1-5) (not rendered alkaline); 1½ hours after 4 cc. urine show slight reduction; 2 cc. of urine with 10 cc. Fehling gave yellow deposit on casserole.

What interpretation are we to put on these experimental results? So far as the pancreas is concerned the glycosuria which follows the local application to the portion of the gland must either depend on the absorption of the toxic substance by this portion of the gland alone or upon absorption by the unpainted as well as the painted portion. In the former case we must suppose that the substances applied to the gland do not enter the blood in sufficient amount to exert any effect upon the remaining piece of the pancreas. In the latter case we must suppose that these substances do enter the blood in an amount sufficient to act on the detached piece of the gland. If the latter view is correct we are dealing with a phenomenon comparable to the elimination of functions that occurs when much the greater part or all of the pancreas of a dog is extirpated. But if this view is not correct, and the glycosuria arises from an effect limited to one part of the pancreas we are dealing with a phenomenon very different from the glycosuria of total extirpation. This conclusion is forced on us by the fact that a glycosuria may follow an application to much less than one-half the pancreas, whereas, as is well known, the extirpation of one-half the pancreas from the dog is only exceptionally followed by sugar in the urine. Owing to experimental

¹ Sodium: this sulfate is a powerful reducing agent, but has not yet yielded glycosuria in the course of our work.

difficulties which need not here be considered it has not been possible to decide this important point definitely.

Control experiments already referred to, together with others that have not been mentioned, indicate that doses of potassium cyanid from four to six times as large as those required to induce glycosuria when applied to the pancreas, fail when infused into the circulation to cause the appearance of sugar. This fact renders it extremely improbable, in the case of hydrocyanic acid at least, that any of the poison painted on one portion of the severed pancreas reaches the remaining portion of the gland. If this view should prove the correct one it carries with it important physiologic corollaries which will be fully considered in another publication. The evidence at hand points to a positive specific action on the cells of pancreas and not to a mere elimination of function, as in the case of coma from pancreatic extirpation.

Relations Between Human Glycosurias and the Experimental Glycosurias from the Action of Reducing Substances and Other Poisons.—It is proper to refer briefly to the bearing of this research upon the interpretation of the phenomena of human glycosuria and diabetes. Our experiments show that a large variety of substances applied to the pancreas in the dog are capable of inducing glycosuria, probably by interfering in some way with the oxidations carried on by the pancreatic cells. The very intimate connection of the pancreas with these glycosurias leads one to ask whether there are not many examples of human glycosuria of similar origin. The glycosuria following conditions of asphyxia, as for instance after epileptiform seizures, can probably be referred to interference with the oxidations in the pancreas. The glycosurias noted after poisoning with carbon monoxid can, we believe, almost surely be explained by the effects of this gas on the pancreas. In the case of the ordinary chronic forms of human diabetes, with or without marked lesions in the pancreas, we are not yet in a position to speak positively, but our research suggests an explanation which may apply to many instances of this sort. It has long been known to physiologists that easily oxidizable reducing substances are constantly being produced in the organism and that the combustion of these substances is one of the fundamental activities of living protoplasm. We know that at least one gland, the suprarenal, produces a reducing substance¹ which is of great importance for the maintenance of the general vascular tone, and it is likely that there are other reducing substances formed by other kinds of cells, dextrose itself being for the moment left out of account. The blood containing these bodies streams through all parts of the animal mechanism including the pancreas. If now we imagine a disturbance in the normal balance between the oxidizing activities of the pancreatic cells and the production of reducing substances in other parts of the organism, it is easy to understand how a functional inadequacy of the pancreas might arise which would interfere (through an unknown mechanism) with the normal combustion of sugar and its appearance in the urine.

If this conception be correct, the presence or absence of glycosuria in any organism may depend on the relation between two variable factors, production of reducing substances on the one hand, and oxidative pancreatic activity on the other. The effect of an excessive production of reducing substances (as from diseases of the suprarenal gland) would be equivalent to a reduction in the efficiency of the pancreatic cells. In most cases of diabetes both factors may coexist. Such a conception of

the nature of diabetes helps to explain those instances in which the pancreatic lesions are slight in degree.

This idea is put out as a suggestion, not as a fact. A large amount of very careful experimental work, involving a nice technic, is necessary to determine whether it has any substantial foundation. The establishment of the fact that the blood of some diabetic patients contains an excess of reducing substances other than dextrose would give substantial support to the conception here advanced.

Histologic Alterations in the Pancreas and Experimental Pancreatic Glycosuria.—Experiments to which no reference has yet been made indicate that histologic alterations in the pancreas are not a necessary condition of adrenalin glycosuria. Bits of pancreas removed before the production of such glycosurias were compared with bits removed at the height of the sugar excretion. Tissues fixed in Ohlmacher's fluid and in formalin, and stained by the ordinary methods,¹ failed to show recognizable alterations.

After fatal doses of adrenalin by peritoneum, the pancreas may be the seat of focal necroses and the islands of Langerhans may be the seat of destructive changes, but we attach no significance to these lesions in their relation to glycosuria.

It is instructive to note that glycosuria may follow the application of various substances to that portion of the pancreas which contain very few of the cell clusters of Langerhans. It is impossible to state whether a more marked glycosuria follows applications to the tail of the organ (rich in islands of Langerhans) than to the head. Perhaps a large number of experiments made under conditions nearly alike would throw some light on this point, but a small number of observations could not decide it. The observations which have been made do not indicate any distinct difference in the results from painting the tail and painting the descending cephalic part, which in the dog is most free from Langerhans' islands.

The Physiologic Significance of the Experimental Method Employed in this Research.—It has been shown that various substances applied directly to the pancreas are capable of acting on the cells of this gland in such a way as to induce glycosuria. Evidence has been brought out which makes it in a high degree probable that these substances, so varied in chemic composition, act through their interference with the oxidations normally carried on by the protoplasm of the pancreatic cells, though in a manner as yet unknown to us. The fact that so many substances which interfere with oxidative processes are capable of inducing glycosuria deprives adrenalin glycosuria of some of the special significance which attached to it before it was discovered that so many allied varieties of pancreatic glycosuria are readily induced.

The case of adrenalin glycosuria will always be invested with that special interest which comes from circumstances that adrenalin chlorid is representative of an important internal secretion. It is, however, an essential gain to physiology that we now recognize the glycosuria from suprarenal extracts to be a particular example of glycosuria from reducing substances rather than a wholly isolated and unrelated form of disturbed carbohydrate metabolism.

But just as we must look upon adrenalin glycosuria as one of a large number of forms of pancreatic glycosuria from some derangement in the oxidative functions of a particular gland, so must we look upon all pancreatic glycosurias from disorders of oxidation as a particular case of disturbed oxidation. By means of local applications of substances like potassium cyanid, adrenalin and piperidin to other types of animal cells, we may reasonably expect to interfere profoundly with the

¹ The following demonstration of the reducing activity of this gland is very striking. If a dog be injected with a preparation of alizarin blue, the blue particles will be found in those organs which have little or no action in reducing the pigment to a colorless substance. But in cells which reduce strongly (muscles, lungs, suprarenal glands) the blue color rapidly disappears and the suprarenal gland appears in striking contrast to surrounding structures.

¹ Dr. E. K. Dunham and Dr. Alice C. Brown were so kind as to make these preparations.

oxidations there carried on. Thus it seems likely that we possess a method which will teach us much of importance about the metabolic activities of the kidneys, the muscles and perhaps the nervous system. Interference with the activities of the pancreatic cells gives us a striking signal, glycosuria, but there is every reason to think that other groups of cells may be thrown out of action with equal precision, if not with equally obtrusive metabolic effects. The kidney of one side can be thrown out of function, so far as oxidations are concerned, without gross mechanic insults. One would expect that while the "vital" functions are thus placed in abeyance the processes of diffusion and filtration would be little disturbed. By means of such a method it seems not unreasonable to hope for new light as to the origin of uric acid, glycuronic acid, hippuric acid, etc.

Experiments which we have made suggest that there are other substances than phlorhizin which, acting on the cells of the kidney, lead to glycosuria. It is not impossible that adrenalin, while acting chiefly on the pancreas when intravenously infused, acts also on the kidney. On this and allied topics a further report will be made.

At present it is desired that our research be regarded as an introduction to a better knowledge of the all important subject of oxidations and reductions in the organism, as well as a contribution to the pathology of adrenalin glycosuria.

Note A.—It is desirable to make reference to certain conditions of the experiments which constitute the basis of the research. The dogs used were well nourished and were operated upon within 24 hours after a meal of raw beef, which with few exceptions was the habitual diet. Previous to each experiment the urine was carefully removed by catheter and examined for sugar, the bladder being thoroughly emptied. In all cutting operations the animals were fully anesthetized with ether. They were taken from the holder promptly after recovering from the effects of ether, in order to have them under comfortable and natural conditions. Morphine and other substances which cause the appearance of reducing substances in the urine were never employed as narcotics.

Note B.—It will naturally occur to the reader that the substances employed in the experiments may have passed into the urine unchanged, thus accounting for some reducing action on the part of the urine. In the case of adrenalin and piperidin the reducing power of small amounts actually used is so small that it would entirely fail to account for the sugar which was detected, even if the entire quantity used came through unchanged. In the case of carbon monoxid the question of passage into the urine does not arise. Sodium fluorid has no reducing action outside the body, and that of potassium cyanid is extremely slight. After pyrogallol a fermentable sugar appears in the urine.

For these and other reasons (especially the results of the control experiments) there is no reason to ascribe the glycosuria noted in our experiments to the excretion of the reducing substances used.

The International Exhibition of commerce, industry, science and fine arts, which will be held at Lille, France, from May to September, 1902, will include a showing of general hygiene, filters and sanitary improvements.

Rheumatism cures, according to latest computation, outnumber the varieties of the disease and amount to 1,437. The list includes horsechestnuts, wintergreen tablets, electric rings, magnetic watch charms, red flannel bandages, goats' milk, calisaya, horse hair poultices, raw onions carried in coat pockets, ice cream soda and flowers of sulfur worn in the stockings. One old-fashioned remedy is made up of a pint of old ale, to which a small measure of grated horseradish has been added and allowed to stand over night; the dose a glass before each meal. The generality of them are palatable, inexpensive and generally harmless, and their efficacy is strongly vouched for as was the rock and rye prescribed for the patient who attested to the great benefit derived, even with the rock candy omitted.

A NEW SPECIES OF HOOKWORM (UNCINARIA AMERICANA) PARASITIC IN MAN.¹

BY

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Engaged upon a study of hookworms (genus *Uncinaria*), I requested Dr. Thomas A. Claytor, of Washington, D. C., and Dr. Allyn J. Smith, of Galveston, Texas, to furnish me with some specimens from their recent cases of uncinariasis in man. Dr. Smith kindly sent me some material (B. A. I., No. 3,310) which I promptly examined, and noticing that the worms did not agree with the common form, *Uncinaria duodenalis*, but were much more closely related to *Uncinaria stenocephala* of the dog, I communicated with him again to inquire whether the parasites in question were actually from a man or from a dog. He has replied that they were from a man.

In connection with Dr. Claytor's case, which occurred in this city last summer, I had made a microscopic examination of the feces and had called Dr. Claytor's attention to the fact that the eggs did not agree with the measurements usually given for *Uncinaria duodenalis*, but it did not occur to me on a superficial examination of the parasites in question that they might represent a new species. Dr. Claytor has recently very kindly furnished me with some adult worms (B. A. I., No. 6,612), and I find that these agree with the specimens forwarded by Dr. Smith, and also with hookworms of man collected by Dr. Bailey K. Ashford in Porto Rico.

These parasites differ from all of the members of the genus *Uncinaria* which I can find recorded, and on that account I propose to base a new species, *Uncinaria americana*, upon them.

In order to determine the frequency of this species in man, I would request physicians who treat cases of uncinariasis to forward to me specimens of the parasites for determination. The characters of the two species which occur in man may be seen from the following diagnoses:

Genus *Uncinaria*² Frölich, 1789.

Generic Diagnosis.—Sclerostominae with anterior extremity curved dorsally; mouth round to oval, opening obliquely, limited by a transparent border and followed by a chitinous buccal capsule; the dorsal portion of the capsule is shorter than the ventral, and is supported by a conical structure, the point of which sometimes extends into the cavity; at the base of the buccal capsule are found two ventral teeth; toward the inner free border the ventral wall bears on each side of the median line chitinous structures or teeth, often recurved in shape of hooks; the inner dorsal wall may also bear teeth.

Type Species.—*Uncinaria vulpis* Frölich, 1789, in *Canis vulpes*.

Old-world hookworm, *Uncinaria duodenalis* (Dubini, 1843) Railliet, 1885, of man.

Specific Diagnosis.—Body cylindric, somewhat attenuated anteriorly. Buccal cavity with two pairs of ventral teeth curved like hooks; and one pair of dorsal teeth directed forward; dorsal conical tooth not projecting into the capsule.

Male: Eight to 11 mm. long; caudal bursa with dorso-medial lobe, and prominent lateral lobes united by a ventral lobe; dorsal ray divides at a point two-thirds its length from its base, each branch being tridigitate; spicules long and slender.

Female: Ten to 18 mm. long; vulva at or near posterior third of body.

Eggs: Ellipsoid, 52 by 32 μ , laid in segmentation. Development direct without intermediate host.

Habitat.—In small intestines, chiefly in upper part, of man (*Homo sapiens*).

New-world hookworm, *Uncinaria (Monodontus) americana* Stiles, 1902, of man.

Specific Diagnosis.—Differs from *U. duodenalis* chiefly in the following characteristics: Ventral recurved hook-like teeth

¹ Presented before the American Gastroenterologic Association, fifth annual meeting, Washington, D. C., May 1, 1902.

² *Synonymy.*—*Uncinaria* Frölich, 1789; *Ancylostoma* Dubini, 1843; *Ancylostoma* Creplin, 1845; *Dochmius* Dujardin, 1845; *Ancylostoma* Delle Chiaje (1846); *Ancylostomum* Diesing, 1851; *Ancylostomum* Küchenmeister, 1855; *Monodontus* Molin, 1861; *Ankylostoma* and *Ankylostomum*.

are absent from the mouth, their place being taken by a pair of semilunar plates, somewhat similar to *U. stenocephala*. Dorsal conical tooth projects prominently into the buccal capsule.

Male: Dorsal ray of caudal bursa divided to its base, each branch being bipartite at its tip.

Female: Vulva in anterior half of body, but near the equator.

Eggs: Slightly larger, 64 to 72 μ by 36 to 40 μ , in some cases partially segmented, in others containing fully-developed embryo when oviposited.

Type Host.—Man (*Homo sapiens*), at Galveston, Texas.

Type Specimen.—No. 3,310 B. A. I., U. S. Department of Agriculture.

A more complete description of this species will appear in a later paper, but the above is sufficient to distinguish *Uncinaria americana* from any other form of this group thus far described. It will be seen to differ radically from *U. duodenalis*, and to approach *U. stenocephala* of dogs in some characters and *U. cernua* of sheep in others.

From the above discussion it is clear that at least two species of hookworms (*Uncinaria duodenalis* and *U. americana*) contribute to the disease uncinariasis in man.

U. duodenalis is known to be an old-world form, and the indications¹ are that it has been introduced into this country. *Uncinaria americana* is known to occur in Texas, in Virginia, and in Porto Rico, and this wide geographic separation shows very clearly that in the new world we have a special, heretofore undescribed parasite which causes uncinariasis. This further indicates very strongly the correctness of the view that uncinariasis is endemic in the southern states, although it is rarely recognized.

The new parasite of man appears to be a member of the group for which Molin proposed the generic name *Monodontus*. Railliet has recently recognized several genera to hold the representatives of the generally recognized genus *Uncinaria*, but I am inclined to reserve opinion for the present upon their validity.

TWO CASES OF CANCER OF THE RECTUM OPERATED ON BY MURPHY'S METHOD.²

BY

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Carcinoma of the large intestine is a relatively common disease. Out of 7,878 cases of carcinoma collected by Williams from the records of four London hospitals, 499 had their initial seat in the intestines, 401 of these involving the rectum. Sutton estimates that of every 100 cases of carcinoma of the intestines 75 will occur in the rectum. It is sufficient to say that from 6% to 8% of all cases of carcinoma have their origin in the large intestines, and that by far the larger proportion of these occur in the rectum or sigmoid flexure. The disease is extremely rare before the age of 20, and becomes progressively more frequent as age increases. In women the disease may be primary, or secondary involving the rectum from the extension of a uterine or vaginal carcinoma. It is not my purpose, however, to discuss the etiology, symptoms and general treatment of rectal cancer, but simply to report two cases operated upon by the method described by Murphy, of Chicago, in a valuable paper read by title before the Southern Surgical and Gynecological Society on November 15, 1900. The subject of this contribution was "Resection of the Rectum per Vaginam." The development of the vaginal operation was carefully detailed, and five cases reported in which primary vaginal celiotomy with excision of the diseased tissue and end-to-end suture of the intestine was performed. Impressed by the advantages of Murphy's operation I employed it in the following case:

¹Specimens from a Baltimore case, which Dr. Yates has kindly sent me since the above was written, belong to the Old-world species, *U. duodenalis*.

²Read before the Philadelphia Obstetrical Society, February 6, 1902.

The patient, Mrs. P. M., aged 68, who was referred to me by Dr. Robert B. Scott, was admitted to St. Joseph's Hospital, August 31, 1901. For the following history I am indebted to the resident physician, Dr. Rhodes: "Both parents died of old age—the mother at 97 and the father at 82. Two brothers are living and well and two died of heart disease. One sister died from stomach trouble, another is suffering from heart disease, a third is living and well. Previous history, la grippe, measles, etc. Personal and present history: Married since 1851; husband died in 1880. She had had seven children, but only two daughters are living. Two other daughters died of pulmonary tuberculosis, and the remaining children in infancy. The patient, who was a well preserved woman for her age, entered the hospital complaining of extreme constipation with great weakness, loss of appetite, etc., for the last two years, these symptoms having gradually grown worse. During this time she had had several hemorrhages from the rectum which increased during constipation. At such times defecation was very painful, the pain subsiding after the movement; but when in a sitting posture it would reappear. Urination was never affected. Menopause at 50. On examination, an annular stricture was found with an ulcerating mass on the wall of the rectum about 3 cm. above the external sphincter, and a diagnosis of rectal carcinoma was made. Operation was performed September 3, 1901, under ether anesthesia. An incision was made vertically in the middle line through the posterior vaginal wall down to the rectum. The posterior vaginal wall was dissected laterally from its attachments and the anterior rectal wall exposed. The extent of the disease could be easily determined, and in this case the operation was rendered less difficult and dangerous from the fact that it was not necessary to invade the peritoneal cavity. The rectum was divided above the growth and its proximal end was grasped with four forceps which controlled all bleeding and indicated the lumen of the bowel. The involved portion of the rectum was then excised just above the external sphincter which was uninjured. The bowel was then drawn down and sutured through the anal opening to the narrow collar of healthy tissue which remained around the anal orifice. Fine chromicized catgut was used as suture material. After the upper and sphincteric segments of the rectum had been thus sutured together, a large rubber drainage-tube about three-fourths of an inch in diameter was inserted in the rectum and sutured in place. The vaginal incision was then closed by a continuous catgut suture very much as in performing a Hegar's perineorrhaphy. The patient lost very little blood and sustained practically no shock during the operation, which required only 30 minutes. The convalescence was uneventful: the bowels were moved on the second day, and no vaginal leakage occurred. The drainage-tube was removed on the fourth day. The patient left the hospital in two weeks after the operation, and there has been no recurrence of the disease at the time of writing, and the patient has perfect control of the bowel.

The case reported was an easy one for operation, as the disease was primary and seated in the lower third of the rectum and the infiltration was not extensive. A microscopic examination of the excised tissue made by Dr. R. C. Rosenberger showed the neoplasm to be a columnar-celled carcinoma.

By permission of Dr. E. E. Montgomery, I report a second case of cancer of the rectum operated upon by him at St. Joseph's Hospital on June 21, 1901.

The disease had produced an annular stricture of the rectum $\frac{1}{2}$ of an inch long, so contracted that the point of the finger could not pass through it without force. It was situated about $\frac{1}{2}$ inch above the anus. A semilunar incision was made posterior to the anus down to the rectum; then the finger passed through the stricture and pushed up the vagina, an incision was made upon it down to the rectal wall, cutting through the perineum. A flap which extended up to the point at which the stricture occurred was dissected back upon either side of the vagina, and the dissection around the rectum completed upon either side until an opening was made into the posterior incision. Then the sphincter was cut through anteriorly to beyond the stricture. The bowel was cut off above and seized with the forceps so that it would not retract; then the diseased tissue was excised, after which the rectum was united, first by buried catgut sutures, these sutures uniting the edges of the mucous membrane. The ends of the sphincter were brought in apposition and the union of the upper part of the intestine completed. Then the denuded surfaces in the vagina were united, including the perineum, by continuous catgut sutures. The continuous suture terminated at the margin of the mucous membrane, while the perineum proper was united by interrupted catgut sutures. At the completion of the union of the perineum the mucous membrane at the upper surface of the rectum was united with the sphincter. Result, recovery.

The advantages of Murphy's method of operation have been summarized by him as follows:

1. The sacrum and posterior bony wall of the pelvis are not disturbed.

2. The field of operation is as extensive and the anatomic parts as accessible as in the transsacral operations.
3. The peritoneal cavity is opened in both the vaginal and sacral operations, and in neither is it a source of danger.
4. The diseased tissue is more accessible for inspection, and the extent to which the operation may be carried in an upward direction is as great, if not greater, than by the sacral route.
5. The peritoneum may be drained freely through the vagina.
6. A perfect end-to-end approximation, either by suture or by the use of the button, may be secured. The preferable method of uniting the two ends is by interrupted sutures of silk; as there is no peritoneum on the sphincteric segment, the danger of failure of union with a button is present.
7. The sphincter is retained and the perineal body is restored. There is diminished action of the levator ani and muscle.
8. When the operation is complete the parts are practically in their normal positions.

A CASE OF TUBERCULOUS SALPINGITIS FROM WHICH THE TUBERCLE BACILLUS WAS GROWN.¹

BY

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Tuberculosis of the fallopian tubes is not infrequent, but cases in which it is possible to cultivate the specific bacillus from a tuberculous fallopian tube are among the exceptions. In fact, we have not been able to find a recorded instance in which this has been done. The history of a case follows:

CASE.—M. H., white, aged 21 years, was admitted to the gynecologic ward of Lakeside Hospital March 22, 1901. The family and personal history have no special bearing upon the case. She was married in June, 1900, and in December had a miscarriage at the third month of pregnancy. Catamenia commenced at the age of 14. They were regular for the first 10 months, but after this they appeared every two weeks, and sometimes more frequently. Prior to admission she had had a continuous flow for four weeks. She complained of the following symptoms: Dull pain in the lower abdomen extending down into the thighs, backache, a leukorrheal discharge, and constipation. On examination of the chest we were able to make out a few moist rales over both apices; the heart was normal. The leukocyte count was 10,000. The urine showed a slight trace of albumin with a few hyaline casts. The temperature ranged from 98° to 99.2° F. On examination of the pelvic organs, made under general anesthesia, the following notes were recorded: "The vaginal outlet is slightly relaxed. The cervix crosses the axis of the vagina. The uterus is in normal position. The right tube and ovary are somewhat enlarged and adherent. The left tube and ovary are small, irregular in outline, and adherent."

Operation.—On March 28, 1901, curetting and abdominal section were performed by Dr. Robb. A small amount of endometrial debris was removed. The tubes and ovaries on both sides were adherent to each other and to the broad ligament. The vermiform appendix and the lower portion of the omentum were also bound down by adhesions. Both tubes and ovaries, and the vermiform appendix were removed, with a portion of the omentum. On inspection of the peritoneal surface of the tubes gray tubercles were visible, but on no other part of the abdominal peritoneum could any be detected. The abdomen was flushed out with saline solution, and sponged dry; 500 cc. were left in it and the wound was closed without drainage. The patient made an uninterrupted recovery, except for a slight hacking cough.

The sputum was examined and tubercle bacilli were found in small numbers. The temperature during the last 13 days of her stay at the hospital was never above 99° F. She was discharged April 29, 1901, much improved. Seven months after the operation she returned to the dispensary service of the hospital, complaining of a cough with occasional night sweats. With this exception, however, there was a marked improvement in her condition.

The pathologic and bacteriologic examination have the following results:¹

Pathologic Examination.—On both macroscopic and microscopic examination the ovaries appeared normal, except for a few fibrous adhesions. The appendix was 8 cm. long, 5 mm. thick, and normal in appearance. The omentum was also normal. The uterine curettings showed no tuberculosis, though there was some chronic interstitial endometritis.

The right fallopian tube measured 20 cm. in length, and was very much convoluted, resembling a trumpet in shape. As regards width, it tapered from 3.25 cm. at the fimbriated extremity to 1 cm. at the isthmus. In color it was flesh pink, except at the more dilated portion, where it was tinged with yellow. The fimbriated extremity was occluded. The most striking feature, however, was the presence of small, gray, translucent tubercles scattered over the peritoneal surface. These were seen in larger numbers on the outer extremity of the tube, especially on the posterior surface. The wall seemed slightly thickened at the isthmus, but throughout the ampulla and the fimbria it was dilated, and fluctuation was readily detected. On puncturing this portion a thick, yellow, creamy pus exuded.

The left tube, though somewhat smaller in size, showed a condition similar to that of the right side. It measured 6 cm. in length and 1.5 cm. in width. It was very much distorted and bent upon itself. The fimbria was occluded. In the outer two-thirds fluctuation was elicited. A few miliary tubercles were seen on the distal half of the peritoneal surface. Pus of the same nature as that of the right side was found in the lumen of the tube.

On microscopic examination, the right fallopian tube presented a typical tuberculous salpingitis. The flat epithelium of the peritoneum was intact at the site of the adhesions. The underlying connective tissue was very vascular, and showed slight infiltration with lymphocytes, polymorphonuclear neutrophiles and eosinophiles. When sections were taken through a gray tubercle, characteristic areas showing a central giant-cell, surrounded by epithelioid and round-cells were observed. As a rule, there were three or four of these tubercles in each nodule. Between the fibers of the muscularis, there was an extensive infiltration of plasma cells, polymorphonuclear eosinophiles, polymorphonuclear neutrophiles, lymphocytes and mast cells. In some places the infiltrated muscle was hyaline, while at other points it had been replaced by fibrous connective tissue. Through the isthmus the muscular layer was very much hypertrophied. The lumen of the tube was filled with caseous material, compressing the underlying mucosa and submucosa. These two layers were the seat of diffuse tuberculosis, containing larger and smaller numbers of giant-cells. In sections taken through the internal extremity of the tube, it was observed that its lumen was free from exudate, the epithelium was intact, and the tubercles were found only in the muscularis.

The left fallopian tube presented a similar picture microscopically. The serous layer was the seat of a chronic perisalpingitis, and the muscular tissue was infiltrated to the same degree with round-cells. Toward the fimbria, the submucosa and mucosa were involved in the tuberculous process, and in some instances the tubercles had ruptured into the lumen. This latter contained a large amount of granular debris, among which appeared numerous nuclear fragments and a few polymorphonuclear neutrophiles. At the isthmus the lumen was intact and the epithelium appeared normal.

Bacteriology.—Coverslip preparations of the pus stained for tubercle bacilli proved negative. Cultures were made from each tube on glycerin agar and glucose bouillon potato, especial care being taken to obtain the loop from the tuberculous tissue rather than from the caseous material. The glucose bouillon potato was prepared by sterilizing potato in an excess of glucose bouillon. The culture tubes were sealed with paraffin and placed in the thermostat at 37° C. The glycerin-agar tubes showed no growth and remained sterile. Twenty-six days after inoculation a thin, glistening, greyish-white growth was detected on the potato. Coverslip preparations were stained by Gabbett's method and large clumps of acid-proof bacilli, morphologically identical with tubercle bacilli, were found in each potato culture. An emulsion was made by macerating the superficial growth in sterile glucose bouillon, and this was injected into the peritoneal cavity of a guineapig. Less than four months later the pig died and on examination an undermined ulcer was found on the abdominal wall with abscesses in the liver, spleen, lungs and the axillary and inguinal glands. Cultures were taken from all these tissues, as well as from the ulcerated area, the peritoneum, pericardium and right auricle, and all showed pure cultures of *B. pyocyaneus*. Coverslips were also made and stained with carbol-fuchsin and methylene blue, but the only one in which tubercle bacilli were demonstrated was the preparation from the lung, and here they were present only in small numbers. The organs were examined microscopically and only in the lungs was there any suggestion of tuberculosis. Here there was consolidation with cavity formation, but no characteristic tubercles were seen. However, on staining the tissue for tubercle bacilli they were found in large numbers. The animal had evidently been injured and

¹ Read before the Cleveland Medical Society, March 14, 1902.

¹ From the Pathologic Laboratory of the Lakeside Hospital.

become infected with *B. pyocyaneus* and died from pyemia with the formation of metastatic abscesses.

Several methods recommended for the detection of tubercle bacilli in tissues were employed, the one that yielded the best results being the following:

1. Stain slightly with alum-hematoxylin.
2. Wash in water.
3. Steam with carbol-fuchsin for three minutes.
4. Wash in water.
5. Decolorize with acid alcohol.
6. Very dilute ammonia.
7. Ninety-five per cent. alcohol till no fuchsin is left.
8. Clear in anilin oil and xylol.
9. Mount in Canada balsam.

On staining sections of the fallopian tubes as outlined above, the acid-proof bacilli were found in small numbers. As a rule they lay between the nuclei around the wall of the giant-cells, but some were found in the epithelioid zone. None was seen in the caseous material in the lumen.

In this case, then, we were able to demonstrate the presence of tubercle bacilli in the tissue of the fallopian tube, and to cultivate the organism found in this tissue, and then reproduce the same disease in the guineapig which had been inoculated with the bacilli from the primary lesion.

I wish to express my thanks to Professor William T. Howard, Jr., for his kind supervision of this work.

REPORT OF A CASE OF CARCINOMA OF THE CECUM AND A CASE OF RUPTURE OF THE SIGMOID TREATED BY INTESTINAL ANASTOMOSIS.

BY

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CASE I.—On April 11, 1901, I opened an abdomen at the Sisters' Hospital to remove a movable tumor situated in the right iliac fossa, which I had diagnosed carcinoma of the ileum. The patient was a woman of 38 years, who gave a history of dyspepsia and failing health dating back to January, 1901. She had lost 40 pounds in weight, and was suffering from colicky attacks, with constipation becoming more and more pronounced. Five weeks before presenting herself for operation she first noticed a tumor in the right side which gradually enlarged. Upon examination I found a movable nodular mass, roughly the size of a split orange, which could be grasped between fingers and thumb and pushed to the umbilicus or up into the right hypochondriac region under the free border of the ribs. Usually it lay in the right lower quadrant of the abdomen and had previously been mistaken for an inflammatory mass due to appendicitis, or a floating kidney.

The abdominal incision was three inches long, made in the median line, and extended from the right of the umbilicus downward. Through this incision the tumor was delivered and found to be a carcinoma at the ileocecal junction, mainly involving and nearly filling the cecum. The head of the cecum was inverted, resembling a glove-finger pulled into itself as the finger is withdrawn, almost concealing an unusually long appendix. The omentum and mesentery were free, excepting a few mesenteric nodes which were later found enlarged and were dissected out. Microscopic examination by Dr. Herbert U. Williams, of the Pathologic Laboratory, University of Buffalo, showed the enlargement of these nodes to be inflammatory. The tumor proved to be adenocarcinoma.

Gauze strips were now passed through the mesentery around the ileum, about 4 inches from the cecum, and around the large gut at the junction of the cecum and ascending colon, and the strips tightened to control the circulation and occlude the lumen of the cut intestine. The tumor was then cut bodily from the mesentery, all vessels being caught and tied separately. To avoid the difficulty of uniting the colon and ileum by end-to-end anastomosis the colonic end was closed by catgut sutures, inverting the mucous membrane, and next by Lembert silk sutures of the muscularis and peritoneum. The peritoneal edges of the cut mesentery were brought together by a continuous catgut suture. I now made a Murphy button anastomosis of the ileum and transverse colon, making a longitudinal slit in the transverse colon about 5 inches from the closed end of the ascending colon. The anastomosis was reinforced with an additional row of interrupted silk sutures. The peritoneal cavity was cleansed by irrigating with normal salt solution and the abdomen closed.

The patient was given half-pint normal salt solution enemas every six hours till flatus was passed. The bowels were moved on the fourth day, and thereafter food was given sparingly for a week. The button was passed on the sixteenth day and three weeks after the operation the patient went home; since which time her physician reports her in excellent health.

CASE II.—The second case was one of intestinal anastomosis, performed at the Sister's Hospital for complete rupture of the sigmoid flexure of the colon about three inches above its junction with the rectum. The rupture occurred during operative effort to remove dense inflammatory masses involving the bowel, arising from diseased tubes and ovaries. At the spot of rupture the sigmoid wall was dense and thick, and the lumen was reduced to a size not much larger than a lead-pencil.

I cut away the inflammatory masses, removing from two to three inches of the proximal intestinal end, until healthy gut was reached, which bled profusely, the bleeding from the torn ends involved in the inflammatory masses being noticeably deficient. After trimming the distal end I occluded it, as in Case I. The proximal end was now inserted into the sigmoid in a normal ballooned portion of the gut just at the beginning of the rectum. The anastomosis was held by several layers of sutures, a Murphy button being unobtainable. In this case catgut was used in place of silk for all the intestinal work, the inflammatory feature of the previous disease in the pelvis making silk less safe. This patient made a good recovery.

It seems to me that the closure of one end of divided bowel and the lateral insertion of the other end into adjoining bowel, in certain classes of cases, is far more advantageous than end-to-end anastomosis. There are several advantages: A better circulation is insured for each end of bowel. Each cut edge of mesentery is free to recover its circulation, eliminating the so-called "dead space" at the mesenteric border which leads to leakage in end-to-end coaptation. At the site of the anastomosis a far better circulation is insured, because only the cut end of bowel has had its mesenteric circulation impaired. Danger of leakage is lessened, one end of the bowel, with dubious circulation and reparative power being closed so that simple peritoneal adhesive action will occlude it, and the other end entering bowel with normal reparative power. And there is less breaking strain from peristalsis, I am inclined to think, because peristalsis in end-to-end anastomosis acts more vigorously on a new junction.

The only serious disadvantage in the operation is found in the added injury to healthy intestine to insert the cut end of bowel. Again the blind end of bowel may develop fecal impaction as a minor disadvantageous possibility.

I think the operation is indicated in cases of cancer, stricture, or other disease-producing obstruction of the bowel in the sigmoid and ileocecal regions. In a great measure this would render colostomy unnecessary, either through extirpation of the diseased area, or by short-circuiting the disease if inoperable. In gunshot wounds of the intestine with many perforations, in rupture of the intestine; in fact, in all conditions requiring anastomosis, when the circulation is dubious at the site of the bowel disease, this method of operation recommends itself.

PALMAR REFLEX (PRELIMINARY NOTE).

BY

JOHN H. W. RHEIN, M.D.,
of Philadelphia.

While studying a case of hemiplegia recently I observed what seemed to be a hitherto undescribed reflex. Slight irritation of the palmar surface of the hand with the point of an esthesiometer was followed by an extension of the hands and fingers. Sometimes only the hand was extended, sometimes only one or more of the fingers. The arm was not drawn away in a manner analogous to the withdrawal of the foot when the plantar surface is irritated.

I have observed this reflex in one other case of disseminated sclerosis.

A study of the literature has resulted in my finding no description of any such reflex. I intend to describe this condition more fully at a future date.

International Conference of the Red Cross.—Dr. Nicholas Senn, one of the five delegates representing the United States, left on April 29 for St. Petersburg, Russia.

SPECIAL ARTICLE

A COMPARATIVE CLIMATIC STUDY OF THE ARID AND SEMI-TROPIC SOUTHWEST AND ITS RELATION TO TUBERCULOSIS.

BY

WILLIAM WINTHROP BETTS, M.D.,
of Los Angeles, Cal.

In writing upon climate, it is not my purpose to advise the profession where to send their patients, but to make a few comparisons of more or less favorable localities and state a few facts that have been gleaned from travel over a greater portion of the Southwest in search of health; and possibly add a chapter to American climatology.

Ethnologic studies teach us that the chief characteristics of the race are mainly due to climatic causes supplemented by the food produced in a given zone. In going from the Equator to the Arctic Circle man meets many vicissitudes of climate. Traveling by easy stages, his system would be in training to meet all the physical conditions. The normal man, therefore, can accustom himself to, and thrive in, any climate. As years go by he takes on the characteristics of the people with whom he is associated. In northern climates, for instance, the functions of the lungs and kidneys are very extended, while those of the liver and skin are much more limited. In hot climates the reverse is true. Admitting that the effects of climate upon the inhabitants of different countries are so definite and obvious, it must be plain that they are clearly associated with the nature of disease and with its treatment.

The climates of the old world and that of the resorts of the older settlements of the United States are fairly well understood and will be found clearly discussed in the recent works on medical climatology. Now and again able articles appear in the medical journals of the country, written by physicians interested in their home climate, and much valuable knowledge has been disseminated. Favorable locations have sanatoriums, and their advantages are boomed by the local press; folders are distributed broadcast advertising the climate of the locality as a panacea for all the diseases to which flesh is heir. Lured by the glowing accounts, invalids gather from far and near. A few are benefited, while the great majority are doomed to disappointment. Thus a locality which really has merit is unfavorably considered, principally because the people sought a climate without regard to its probable effect on their case or were carelessly advised. No climate, however perfect, will meet the requirements of all invalids, even when suffering from the same disease. There is no greater fake in medicine than climate, followed, as often happens, like a will o' the wisp; no greater boon, when the case is intelligently placed under the most favorable climatic conditions.

The American Climatological Association has done much to popularize the study of climate and to bring its selection to a more scientific basis, thus more nearly meeting the requirements of the case to be climatically treated. When the early frosts nip the verdant fields and forests of our Eastern and Northern states, the golden woodland begins to fade, and chilling blasts set the falling leaves whirling over the landscape, thousands of people in this vast area ask: "Where shall we go to escape the long and tedious winter?"

It is not so many years ago that the great percentage of the wealthy people of the East spent their winters in the South of Europe on the shores of the Mediterranean, in the tropics, and on islands. Today 100,000 people yearly migrate to the Pacific Coast and the Southwest. The majority of this vast army are traveling for rest and pleasure; the others are trying to find an Eldorado where hope is stimulated and health restored.

For the physician who is advising these invalids, the publication of a few comparative tables may be of interest. The climatic data extends over a period of five years, from 1896 to 1900, inclusive, and is given under five heads: Temperature, humidity, sunshine, precipitation and wind-rate. The figures are the result of one-and-a-half million observations taken by the United States Weather Bureau at the following localities:

Santa Fe, Denver, Salt Lake City, St. George, Phenix, Los Angeles and San Diego, giving objective points in the country of the Continental Divide, the medium altitudes of Utah and Arizona, and the coast region of Southern California. In preparing these tables I have sought to group the cardinal features that go to make up a climate; to save space all detail has been cut out, leaving only a summary of facts, making the data given an index to the climate of the great Southwest. The tables of temperature are arranged so that the data of the localities studied can be readily compared. The maximum, minimum and mean temperatures are given by month and year, while the yearly range, plus, or minus, zero can be seen at a glance. At best, tables of temperature are apt to be misleading unless studied in connection with other meteorologic features of the locality in mind. At Santa Fe, lat. 35° N., 7,000 feet elevation, the average range of temperature for five years was 86°. The city is protected from the north and east by a spur of the Rockies, giving a very mild climate for so high an altitude. The temperature seldom goes below zero or above 90°. Denver, 4° further north, 5,290 feet elevation, has an average yearly range for the same period of 113°. Here we find a temperature of 22° below zero to 98° above. Salt Lake, 400 miles west of Denver, and about 1° further north, gives an average yearly range of 100°, showing 10° below zero in February, 1899, and 101° above in June, 1900. St. George, lat. 37° N., 2,500 feet elevation, 300 miles south from Salt Lake City, gives an average yearly range of 107°, from 0° to 115° above. Phenix, lat. 33° N., 1,076 feet elevation, has an

EXTREME MAXIMUM, MINIMUM AND MONTHLY MEAN TEMPERATURE FOR 1896.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Range.	
Santa Fe.....	54 11 33	57 7 33	69 15 40	70 13 48	86 31 58	89 48 70	82 52 67	88 49 61	84 54 68	70 30 39	64 18 35	57 7 50	87 — 80	
Denver.....	67 0 37	68 9 37	76 9 37	80 9 49	86 9 58	92 32 68	96 44 72	93 53 72	91 43 61	82 37 50	75 18 38	68 — 38	96 9 51	+ 105
Salt Lake C.	54 9 34	64 13 37	70 14 40	74 18 46	88 30 51	93 44 70	97 55 74	96 56 74	90 36 64	82 33 54	65 — 37	54 12 36	97 2 51	+ 99
St. George...	66 7 39	74 11 41	86 15 47	82 18 53	104 28 63	112 43 79	111 49 80	107 53 77	100 44 70	94 25 60	78 4 41	65 10 39	112 4 57	— 108
Phenix	76 30 54	82 28 55	92 34 62	89 38 63	110 45 74	115 51 88	109 53 88	108 49 88	104 36 82	98 25 71	83 32 59	75 23 54	115 — 70	87
Los Angeles	87 36 37	88 36 56	89 35 58	81 38 56	103 44 63	99 48 69	93 54 70	92 52 71	91 40 67	92 37 65	84 37 59	54 32 59	103 25 63	— 68
San Diego...	77 39 55	83 39 58	85 41 58	74 42 56	98 48 62	98 54 64	80 56 68	88 59 69	80 54 66	79 52 64	76 43 60	78 46 59	98 39 62	— 59

1897.

Santa Fe.....	48 —1 27	58 13 30	61 5 36	72 24 47	74 36 56	84 40 64	85 43 67	82 47 66	81 43 61	71 20 49	63 17 41	58 8 29	85 —1 48	86 + —
Denver.....	59 —14 26	65 8 31	69 5 35	77 15 47	84 40 60	90 46 65	96 49 69	93 44 69	94 40 66	93 19 51	81 7 40	77 —8 28	96 14 49	110 + —
Salt Lake C.	48 9 29	47 12 31	62 10 34	80 26 49	88 35 63	92 42 66	98 49 72	95 52 75	88 29 66	74 24 51	68 21 43	52 2 37	98 2 50	96 — —
St. George...	61 8 37	61 10 37	79 12 41	98 21 56	104 31 69	108 45 75	110 51 81	100 49 82	100 39 73	85 25 57	76 17 46	58 7 33	110 2 57	108 — —
Phenix	71 27 51	78 30 51	84 31 54	96 38 68	104 52 78	107 54 83	107 62 90	102 54 89	100 45 83	88 31 68	79 23 60	71 23 49	110 30 69	87 — —
Los Angeles	79 37 55	83 35 53	78 38 53	90 46 61	76 50 62	88 52 65	86 49 69	96 54 71	97 52 70	83 45 62	92 37 61	89 30 55	97 30 61	67 — —
San Diego...	73 40 56	76 38 55	70 46 54	88 50 60	67 54 61	70 59 68	79 60 67	89 54 70	83 58 68	76 51 62	83 45 60	80 36 55	89 36 61	59 — —

1898.

Santa Fe.....	48	58	61	74	79	91	89	85	82	73	62	46	91	-6	+ 97
	-6	16	14	26	31	41	49	52	32	22	12	1	-6		
	25	37	38	49	54	64	68	68	61	49	37	24	50		
Denver	63	65	67	83	80	98	96	95	90	84	74	60	98		
	3	10	0	20	27	41	49	50	32	21	2	-20	-20	+ 118	
	29	38	36	49	53	67	72	73	62	49	35	26	49		
Salt Lake C.	48	60	63	83	80	96	97	97	90	76	74	47	97		
	-3	16	11	27	32	33	49	58	36	30	10	6	-3	+ 100	
	21	36	36	54	54	67	76	77	66	48	37	25	50		
St. George...	61	79	80	98	94	108	115	110	102	90	81	63	115		
	0	20	12	32	32	40	34	36	42	23	13	1	0	115	
	30	45	45	63	64	72	85	83	73	57	45	35	58		
Phoenix	58	74	71	87	88	100	104	101	99	89	73	91	104		
	36	44	43	57	59	69	80	78	69	54	42	37	36	- 68	
	47	59	57	72	73	85	92	90	84	72	57	49	70		
Los Angeles	84	85	81	99	80	95	91	96	99	91	94	83	99		
	31	40	36	41	46	50	56	56	48	45	41	34	31	- 68	
	52	58	55	63	66	67	70	74	71	65	61	57	63		
San Diego...	78	75	77	86	69	88	77	83	91	81	76	76	91		
	36	42	38	45	51	54	60	63	56	51	43	43	36	- 55	
	51	55	54	59	59	64	67	71	68	62	59	57	60		

1899.

Santa Fe.....	48	58	68	71	79	84	84	87	86	74	65	51	87	-5	+ 92
	9	-5	18	23	24	35	52	53	37	24	22	8	-5		
	27	28	40	49	57	64	67	69	63	50	42	33	49		
Denver	58	56	69	79	83	96	95	94	97	87	74	61	97		
	-5	-22	-5	15	29	40	51	51	35	28	22	-5	-22	+ 119	
	30	18	33	49	59	69	70	72	65	49	45	30	49		
Salt Lake C.	54	51	67	80	83	96	97	91	91	73	63	59	97		
	16	-10	20	30	25	34	51	46	46	30	28	9	-10	+ 107	
	34	36	41	51	53	65	76	70	67	49	46	29	51		
St. George...	70	77	84	90	94	110	107	102	103	93	76	64	110		
	8	5	15	24	20	41	36	44	40	23	18	5	5	- 105	
	36	42	48	57	61	74	82	73	72	56	47	35	57		
Phoenix	63	67	74	84	86	99	104	101	101	82	75	67	104		
	37	39	46	54	56	70	78	74	72	56	47	39	37	- 67	
	50	53	60	69	71	85	91	88	86	69	61	53	70		
Los Angeles	82	80	90	92	76	89	93	89	95	100	86	82	100		
	37	33	39	42	44	50	53	53	51	45	43	37	33	- 69	
	56	54	57	60	60	65	70	69	63	62	58	62			
San Diego...	74	76	86	93	66	70	78	76	92	93	81	80	93		
	43	34	44	46	48	55	57	58	55	48	50	46	34	- 59	
	55	53	56	58	61	67	66	65	63	61	59	60			

1900.

Santa Fe.....	53	56	69	66	80	89	87	87	78	70	64	52	87	- 80	
	18	8	25	19	35	48	48	50	40	21	23	7	7		
	35	33	44	44	58	68	70	69	60	51	41	32	50		
Denver	67	61	79	72	87	96	96	97	90	82	74	64	97		
	-2	-10	14	8	36	45	44	46	34	19	16	-19	-19	+ 116	
	36	30	43	45	61	70	70	72	62	54	42	36	52		
Salt Lake C.	57	55	72	78	89	101	99	94	88	76	86	56	101		
	20	10	26	30	40	47	53	52	33	27	28	2	2	- 99	
	36	34	48	49	61	74	75	74	63	58	45	35	54		
St. George...	66	73	86	88	97	107	111	106	95	88	80	66	111		
	12	9	21	25	37	46	48	44	31	20	19	5	5	- 106	
	39	41	54	57	67	77	79	75	63	54	49	35	58		
Phoenix	75	80	94	92	103	110	112	107	102	94	89	79	112		
	34	29	40	40	50	63	67	64	50	36	40	22	22	- 90	
	56	56	66	68	78	86	91	86	79	71	63	54	69		
Los Angeles	81	84	90	96	87	89	95	93	94	83	96	86	96		
	41	40	40	40	47	52	53	51	49	47	48	37	37	- 55	
	58	58	60	57	64	67	71	68	67	64	66	60	62		
San Diego...	79	76	80	67	75	87	84	80	87	76	89	79	89		
	46	45	46	45	49	56	60	59	53	50	51	44	44	- 45	
	58	57	59	57	61	64	68	66	67	63	65	60	62		

average yearly range of 80°. The temperature rarely falls below freezing, but in December, 1900, reached 22°, and in July and August touches 115°.

The climate of the Pacific slope and the coast of Southern California presents striking features for comparison, and is represented by the data of Los Angeles and San Diego. Los Angeles, latitude 34° N., 330 feet elevation, gives an average yearly range for five years of 65°. The temperature rarely touches the freezing point, though in December, 1897, 30° was noted; the temperature in May, 1896, reached 103°. But such extremes are rare.

San Diego, latitude 32° N., 87 feet elevation, for the same period gives an average yearly range of 54°, the temperature ranging between the extremes of 34° and 98°.

It will be noted that in the arid country of moderate altitude, represented by Phenix and St. George, the temperature reaches 115°. Such a temperature in the moist and humid atmosphere of the Atlantic coast, Eastern and Middle States, would be insufferable; but when we consider the difference between the sensible and actual temperature demonstrated by the wet and dry bulb thermometer, the sensible temperature will be found 15° to 30° lower in the arid and mountainous country, owing to the lower percentage of humidity, corresponding to 80° or 95° in the humid atmosphere of the Atlantic states. That this is true is shown from the fact that sunstroke rarely if ever occurs. In this dry air which admits of an uninterrupted sun's ray and so high a temperature, the perspiration is more rapidly evaporated, and though the air is hot, the surface of the body is cooled (as surely as evaporating ammonia freezes water) and maintained at the normal temperature with less discomfort than in the humid atmosphere of 85° or 95°. Thus another great factor in estimating climate is its humidity. The comparative tables of relative humidity show the monthly and yearly average. It is to be regretted that there are no humidity records for St. George. However, previous to July, 1899, I took numerous observations, and am prepared to state that the relative humidity is approximately that of Phenix.

MEAN RELATIVE HUMIDITY, 1896.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly %.
Santa Fe.....	51	43	35	19	15	25	58	47	56	65	48	51	43
Denver	44	46	60	47	44	48	54	45	57	46	40	41	47
Salt Lake City....	71	62	62	52	56	40	45	43	44	49	70	73	56
Phoenix	55	45	38	33	28	26	49	49	47	55	54	50	44
Los Angeles.....	71	58	70	67	67	73	79	77	76	77	72	66	71
San Diego.....	73	58	71	67	73	80	78	79	78	81	76	72	74

1897.

Santa Fe.....	62	65	45	36	52	34	48	51	62	59	47	56	52
Denver	55	54	53	52	54	54	46	53	48	50	54	53	52
Salt Lake City....	85	79	72	63	52	44	44	40	47	62	63	74	60
Phoenix	62	54	47	31	28	22	37	34	44	54	44	45	44
Los Angeles.....	68	74	74	73	82	77	78	74	76	73	60	53	72
San Diego.....	71	72	71	72	81	79	80	79	77	70	64	58	73

1898.

Santa Fe.....	56	58	43	41	34	40	55	52	33	30	45	49	45
Denver	53	49	42	50	60	48	47	45	39	41	51	55	49
Salt Lake City....	76	66	60	39	56	39	30	34	28	52	68	73	51
Phoenix	56	41	33	30	27	25	37	44	32	23	35	51	36
Los Angeles.....	65	71	62	68	77	76	75	71	68	72	57	52	68
San Diego.....	70	75	68	77	77	80	82	83	77	78	62	59	74

1899.

Santa Fe.....	55	56	35	28	15	33	59	40	42	42	44	45	41
Denver	50	64	57	41	40	38	54	44	39	51	42	55	48
Salt Lake City....	64	64	56	34	39	30	30	33	28	50	61	73	47
Phoenix	49	40	32	28	22	32	40	38	31	40	46	38	36
Los Angeles.....	65	68	72	76	76	81	76	77	75	72	73	61	73
San Diego.....	63	67	67	73	74	81	81	78	86	73	75	63	73

1900.

Santa Fe.....	45	41	34	46	41	37	39	33	52	49	43	47	42
Denver	56	53	45	66	52	49	51	40	48	36	39	40	48
Salt Lake City....	78	65	40	59	41	25	24	24	36	48	62	63	47
Phoenix	41	29	38	44	26	16	25	26	30	36	41	42	33
Los Angeles.....	75	63	73	73	78	79	74	76	68	78	57	55	71
San Diego.....	76	66	74	71	80	80	76	79	68	73	57	58	72

It will be noted by referring to the table, that the average humidity is from 30% to 35% less inland than on the coast of Southern California.

From personal experience, the most important factor in estimating climate is its percentage of sunshine, for upon it depends so largely pure air, temperature, and humidity. Nothing is more depressing to an invalid than gloomy, cloudy

weather; nothing cheers the drooping spirits like the radiant luster of a perfect day.

POSSIBLE PERCENTAGE OF SUNSHINE FOR 1896

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly %.
Santa Fe.....	77	73	67	84	81	79	55	71	68	64	85	75	73
Denver.....	80	74	66	76	58	67	63	64	63	70	80	69	69
Salt Lake City.....	40	63	48	56	53	83	71	77	81	76	42	51	62
St. George.....	72	83	84	86	89	99	94	85	98	94	85	90	88
Phenix.....	77	87	75	91	89	98	73	85	82	81	81	79	83
Los Angeles.....										77	72	72	
San Diego.....	62	78	68	84	74	60	62	71	75	69	78	78	72

1897.

Santa Fe.....	65	60	75	73	60	75	65	70	68	66	81	81	70
Denver.....	65	59	64	69	72	70	70	74	69	65	66	68	68
Salt Lake City.....	44	32	46	67	73	71	82	77	77	61	45	48	62
St. George.....	76	65	80	90	94	99	95	90	85	83	90	87	86
Phenix.....	63	70	83	95	93	98	87	78	82	85	91	87	84
Los Angeles.....	53	49	52	68	80	86	82	85	91	87	73	41	71
San Diego.....	67	67	68	76	49	58	75	74	75	79	85	88	71

1898.

Santa Fe.....	55	83	74	71	79	70	61	72	90	89	82	74	75
Denver.....	69	73	70	66	51	67	73	74	79	81	77	85	71
Salt Lake City.....	48	61	55	73	49	85	83	76	92	65	57	68	68
St. George.....	76	80	94	85	92	95	96	89	99	95	94	82	90
Phenix.....	62	88	82	86	90	89	80	74	98	95	92	73	84
Los Angeles.....	65	70	78	74	64	68	83	85	81	89	92	73	77
San Diego.....	70	74	74	65	60	58	69	77	83	76	91	78	72

1899.

Santa Fe.....	80	79	79	83	85	85	69	82	84	80	83	77	80
Denver.....	77	75	71	84	79	75	64	77	80	67	81	72	75
Salt Lake City.....	32	36	36	67	59	80	76	73	91	57	66	44	62
St. George.....	82	85	87	96	87	95	98	92	98	90	89	86	90
Phenix.....	85	87	91	83	91	90	78	87	87	78	87	77	85
Los Angeles.....	75	85	65	74	66	67	84	78	78	73	69	70	74
San Diego.....	77	78	76	71	64	53	74	78	71	72	71	76	72

1900.

Santa Fe.....	86	78	80	71	77	79	80	83	69	80	76	93	79
Denver.....	79	74	71	55	71	72	72	72	74	81	74	77	73
Salt Lake City.....	52	51	84	52	79	91	94	84	77	61	60	44	69
St. George.....	79	82	91	80	90	94	97	95	90	86	73	92	87
Phenix.....	77	86	79	70	93	92	93	88	87	81	78	92	85
Los Angeles.....	64	83	61	62	71	65	77	69	80	72	77	89	72
San Diego.....	71	85	66	69	65	50	70	66	76	71	72	91	71

It will be seen by a study of the tables that a low percentage of humidity corresponds to a high percentage of sunshine. The tables give the monthly and yearly percentage for five years. The record is a revelation and a valuable comparative study. While living at Salt Lake I looked upon that climate as nearly perfect in its apparent wealth of sunshine, as compared with the Eastern States, but upon comparing it with the localities given here, we find that Salt Lake City averaged for five years only 65%; Santa Fe gives an average of 75%; Denver of 71% for the same period; while the country advertised the world over as the "land of sunshine," represented by Los Angeles and San Diego, gives respectively 73% and 71%. Phenix and the southern interior of Arizona shows a record of 84%. St. George gives an average of 88%, and represents the southwest corner of Utah, the valley of the Virgin and Moapa Rivers in Southern Nevada, and the northwest corner of Arizona, having an altitude of 2,000 to 3,000 feet.

[To be continued.]

Smallpox Insurance.—The well-known diary publishers of London, Charles Letts & Co., have contracted with an assurance corporation for 1,000,000 insurance coupons covering the risks of contracting the disease, the payment of £100 in the event of its fatal termination, and a weekly allowance during illness to be limited to five weeks. These coupons have been placed on the market to be sold for the nominal sum of one shilling.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

May 3, 1902. [Vol. XXXVIII, No. 18.]

1. The Function of the Soluble Ferments of the Blood in Intracellular Digestion. ALFRED C. CROFTAN.
2. Epilepsy, its Etiology, Pathology and Treatment Briefly Considered. WILLIAM P. SPRATLING.
3. Blackwater (Hemoglobinuric) Fever, with a Report of Two Fatal Cases Occurring in U. S. A. Military Hospitals at Manila, P. I. JOSEPH J. CURRY.
4. The Comparative Value of Cycloplegics. C. H. BAKER.
5. The Surgical Treatment of Ascites Due to Cirrhoses of the Liver. M. L. HARRIS.
6. Röntgen Rays in Pulmonary Disease. ALBERT ABRAMS.
7. Analysis of 52 Cases of Tetanus Following Vaccinia, with Reference to the Source of Infection, 1839 to 1902. ROBERT N. WILLSON. (Continued.)

1.—The Function of Blood Ferments.—One-fifth of the oxygen excreted is derived from the food and is torn from its combination by a fermentation-like process. The reducing stage of metabolism resembles the life processes of *Bacillus wrocephalus*, the anaerobic bacterium of putrefying milk which splits up proteid molecules. The intermediary products formed are immediately oxidized at the periphery of the cell, chiefly in the blood and lymph stream, by the intervention of soluble chemic unorganized ferments. Experiments with centrifugated blood, and blood from which the white and red cells have been aspirated separately, show the ferment is inherent in the white cells. These ferments may originate in the leukocytes themselves or in the body protoplasm in general, but are probably derived from the internal secretions of the digestive glands. If blood or lymph stands for several hours in a sterile vessel at body temperature a loss of blood-sugar occurs, and in such a way as to show both an amylolytic and glycolytic ferment. Chylous fat is destroyed by blood and converted into unidentified bodies. Oxidase, pepsin, trypsin and fibrin ferment are also present in blood. When we prepare extracts we destroy the cells and the solution develops less power than the living cell, as in the latter new ferment is continuously formed. The ferments appear to be nucleoproteids. Croftan's investigations show that through progressive regeneration one part of pepsin is capable of digesting many million parts of fibrin, pointing to the close connection between ferments and living protoplasm. Ferments seem to be fragments of protoplasm. [H.M.]

2.—Epilepsy.—Spratling briefly describes the various types and considers the relation of developmental and accidental epilepsies to varying ages, presenting statistics of heredity, trauma, toxemias, etc., in the etiology. He discusses the pathogenesis, pathology, prognosis and diagnosis. Fifty-five per cent. show a rise of temperature following the attack, while this is rare in hysterical convulsions. He recommends bromopin as a substitute for the bromides, as it does not produce acne, is nutritious, increasing the weight and may be used hypodermically in status patients without producing local abscess. If bromid salts are used, better results follow by withdrawing sodium chlorid and salting the food with sodium bromid. For the status one ounce of the following is given, and repeated if necessary in two hours: Potassium bromid, 2 oz.; chloral hydrate, 5 dr.; morphin sulfate, 2 gr.; deodorized tincture of opium, 60 m.; water up to 16 oz. Intestinal antiseptics must be given in epilepsies due to autointoxication. In arrested mental development good results have followed the use of thyroid extract. Diet should be light and nutritious. Surgery has been disappointing. The moral treatment is most important. [H.M.]

3.—Blackwater Fever.—Curry reports the clinical history and autopsy record of two cases occurring in the Philippines, and gives a general description of the disease and its distribution. In both cases there was the history of previous attacks of fever with chills. Each began with a chill without prodromes, followed closely with hemoglobinuria and marked icterus. No evidences of malarial parasites were found. If this fever is malarial, why does it occur in so few of such cases? The first case, treated with quinin, promptly went from bad to worse. The second, treated without, promised to recover, but the patient was handicapped by an old nephritis. [H.M.]

4.—Cycloplegics.—Atropin is cheap, sure and keeps fairly well, but it is not always safe; it is slow to act, and the effects last 15 days. Homatropin is safer, but not entirely free from danger. Opinions vary as to its sureness, and a drop every five minutes for an hour is a severe tax on a busy man. Duboisin, from its mixed composition and uncertain proportions, has proved too violent and erratic for use. Scopolamin is identical with hyoscin, but weaker. The prejudice against hyoscin and hyoscyamin is due to use of too strong solutions; one instillation of a 0.5% is enough. In children and light-complexioned persons absorption is more rapid. Mydriasis with hyoscin begins in six to 12 minutes, with complete cycloplegia in 30 to 48. Returning accommodation is complete in 48 to 60 hours. Curry has seen no serious bad result in over 2,500 cases. There is no pain or reddening of the conjunctiva nor choroidal congestion. The solutions keep well, cycloplegia is perfect. The effect wears off sooner than any cycloplegic except homatropin. [H.M.]

5.—Surgery in Ascites From Hepatic Cirrhosis.—Surgical treatment has been based on the assumption that ascites is due to increased pressure in the portal radicles from obstruction, and that the pressure can be relieved by artificially inducing adhesions between certain viscera and the parietes in order to increase collateral circulation. A study of 22 cases collected by Packard and 24 more by Harris, including 2 of his own, shows recovery from the ascites in 13% of the alcoholic cases and 15% of the mixed cases and 5% cured of intestinal hemorrhage, no ascites having been present. No particular method of operating has any special influence in determining the result. Atrophic cirrhosis may end fatally without ascites. Increased tension may exist without ascites. Edema of the feet and legs may precede ascites in the absence of the kidney disease. Ascites in cirrhosis is due to chronic generalized peritonitis which not only increases the fluid furnished but decreases absorption. The Talma operation is simple and devoid of danger and should be performed early, in a preascitic stage, if possible, as the ascites has apparently been favorably influenced in a few cases. [H.M.]

6.—Röntgen Rays in Pulmonary Disease.—No resistance is offered to the rays by the normal lungs, but the muscles of shoulder, of the vertebral border of the scapula and the serratus magnus may throw a shadow. Atelectatic areas will throw shadows. These are found in health, and located sometimes where they elude percussion. Unemployed areas should be eliminated as far as possible by forced inspirations, aided if necessary by a reflex from the ether spray or inhalations of compressed air. Position of the patient is important. When recumbent, the lungs adjacent to the chest wall are twice as active as in the erect posture. In early tuberculosis the presence of shadows is as tardy as tubercle bacilli in the sputa. The two early signs are restriction of the excursions of the diaphragm and emphysema. The lungs appear permanently bright instead of alternately bright as in normal conditions. The percussion note is unchanged in the two phases of respiration, and there is extension of the lung borders downward and diminution of the cardiac and splenic areas of absolute dulness. The rays are valuable in locating undetected pneumonic areas, and in deciding between pleural effusion and pneumonia, and in recognizing unresolved patches after apparent recovery. In pleural effusions the diaphragm is in slight evidence. A more distinct shadow is cast than in most affections, and this may change with the patient's position. The heart is dislocated long before there is any displacement of the diaphragm. The writer describes methods of focal diagnosis. [H.M.]

Boston Medical and Surgical Journal.

May 1, 1902. [Vol. CXLVI, No. 18.]

1. Problems Relating to Surgery of the Stomach. WILLIAM A. MAYO.
2. Thrombosis of the Cavernous Sinus; with Report of Four Cases, Including One Cranial Operation. EDWIN WELLES DWIGHT and HARRY H. GERMAIN.
3. The City Tuberculous Hospitals and the Duty of the Municipality and People Regarding Tuberculosis. EDWARD O. OTIS.

1.—Surgery of the Stomach.—W. A. Mayo states that gastric surgery is still in the developmental stage and this is due to our lack of definite knowledge upon which to base a surgical

diagnosis. He explores the interior of the stomach by means of a 3-inch incision in the anterior gastric wall and then inserts a short rectal speculum. Enlarged lymphatic glands in the omentum are found in the majority of diseases of the stomach marked by retention and fermentation of the food. The author and his brother, C. H. Mayo, have performed 15 pyloroplasties after Heinecke-Mikulicz; 4 of these were subsequently supplemented by gastroenterostomy because of a paunched condition of the stomach, which together with deficient muscular tonicity prevented its emptying itself. They now anchor the pylorus on a level with the umbilicus. They have performed 80 gastroenterostomies with 8 deaths. The anterior or posterior gastric wall for the site of anastomosis is equally good; the main point to observe is to have this site at the most dependent portion of the stomach—this prevents the so-called "vicious circle." In two cases there was leakage—one on the seventh day after, one on the tenth day, and death resulted. The omentum now is used to reinforce the seat of anastomosis. [A.B.C.]

2.—Thrombosis of the Cavernous Sinus.—Dwight and Germain report four cases and one operation. The site and extent of skull opening was practically identical with that devised by Krause in operation for intracranial resection of the trigeminus. The operation occupied but eight minutes. The cavernous sinus was opened, relieved of its dark, semiclotting blood, packed with gauze and the wound closed. Hemorrhage was easily controlled and the urgent pressure symptoms began to subside rapidly. The patient, who was practically moribund before operation, succumbed after six hours. The authors believe the operation one which should be resorted to in any such case, as the condition is practically hopeless without operation. [A.B.C.]

Medical Record.

May 3, 1902. [Vol. 61, No. 18.]

1. Inoperable Round-Celled Sarcoma of the Upper Jaw with Metastases Successfully Treated with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus. O. K. WINBERG.
2. The Indications for the Surgical Treatment of Cholelithiasis. A. A. BERG.
3. Functional and Paralytic Strabismus. D. B. ST. JOHN ROOSA.
4. Hydrophobia and the Pasteur Method—A Rejoinder. CHARLES WINSLOW DULLES.
5. Cancer of the Prostate, Complicated by General Fibroid Change of the Urethra—Urethrotomy—Prostatotomy, by the Bottini Method—Subsequent Partial Eneucleation. GRANVILLE MACGOWAN.
6. Gonorrheal Rheumatism. J. DOUGLAS WESTERVELT.

1.—Inoperable Sarcoma Cured with Coley's Fluid.—At the time treatment was begun in the case reported the patient's condition was desperate, metastases having occurred in the liver. In three weeks from the first injection the intense jaundice had completely disappeared and also the tumor in the left submaxillary region, while there was marked decrease in the primary tumor in the right superior maxilla; five months later there was no trace of any tumor. As the injections were made in the abdomen Coley considers that this case demonstrates that the action of the toxins is systemic and not local. Beside this case of Winberg's he mentions 17 others successfully treated. The report of the microscopic examination by W. H. Welch is appended. [H.M.]

2.—The Treatment of Cholelithiasis.—After a comprehensive study of the etiology, pathology, symptoms, etc., of cholelithiasis, acute and chronic, Berg concludes as follows: (a) Indications for medical treatment, cholecystitic pain or attacks of biliary colic in either case unattended with fever; (b) indications for surgical treatment, (1) operations of choice, undertaken in the quiescent period, with the object of avoiding serious complications, a simple procedure and followed by 2% to 3% mortality; (a) severe cholecystitic pain, or oft-repeated uncomplicated attacks of biliary colic, persisting in spite of medical treatment, in virtue of which symptoms the patient becomes invalided and incapacitated for work; (b) after the first attack of acute cholecystitis, associated with fever; (2) compulsory operations undertaken at any time of the day or night, difficult and laborious procedures, and attended with high mortality—50% to 75%; (a) foudroyant and intensely acute attacks of cholecystitis (this may be the first indication of calculous disease, but usually follows previous milder attacks); (b) hydrops,

empyema, gangrene, or perforation of the gallbladder, cholemia, abscess of the liver, and diffuse peritonitis. [A.B.C.]

3.—Functional and Paralytic Strabismus.—Roosa advises exercising the amblyopic eye by exclusion of the better one. In children glasses and stereoscopic exercises should be used, and if these fail, operation should be resorted to in a few months. In adults, or in inveterate strabismus, or in children having poor fixation, it is better to operate first and continue the treatment by glasses afterward. In nonparalytic convergent strabismus both interni should be divided and both externi for divergent strabismus, stretching the muscles before dividing according to Panas' rules. To speak of monocular strabismus except in paralytic cases is a glaring fault in nomenclature. It is important to note with which eye fixation is usually made. In some cases the amblyopia precedes the strabismus and is one of the factors producing it. Strabismus is not caused by weakness of the muscles. The fixation power is weakened or lost from central causes. [H.M.]

4.—Hydrophobia.—Dulles answers the charges made in a previous issue that he denies that rabies is a specific disease and the muzzling of dogs a preventive of hydrophobia, that he errs in asserting that the muzzling laws of England are as inefficient as here, that he misplaced statistics in the interest of his argument, that he errs in asserting that hydrophobia may follow the bite of a nonrabid dog, and that he has slandered Pasteur. He again calls attention to the fact that he is not discussing rabies, but hydrophobia in mankind, which he believes is not from the inoculation of a specific virus but a symptom of a variety of diseases or a psychic manifestation often following the bite of a healthy dog. [H.M.]

5.—Cancer of the Prostate—Prostatotomy by the Bottini Method.—MacGowan reports the case of a man of 76, who for three years had led a catheter life. The urethra contained dense organized tissue from the prostate to the external meatus and only a No. 9 French could be passed even with a stilet. The prostate was much enlarged, hard and nodular and encroached upon two-thirds of the membranous urethra. Internal and external urethrotomy were performed and the Bottini operation was done. The patient did well for a number of days but died from recurrent hemorrhage into the space from which a portion of the prostate had been removed. The prostate was found to be cancerous. The author believes the Bottini operation affords sufficient relief in malignant disease of the prostate to justify its use. [A.B.C.]

6.—Gonorrheal Rheumatism.—The main contention of this paper is that the variegated clinical history of rheumatism shows that it is a potent factor in many localized lesions and there is no justification in a sweeping denial of its relationship to gonorrheal arthritis. In treatment we must remember we are dealing with a mixed form of disease. Local treatment is practically the same as for any inflammation of the joints. For the urethritis instillations of potassium permanganate with internal administration of cod-liver oil and five grains of potassium iodid is recommended. This meets both the rheumatic and gonorrheal conditions. [H.M.]

New York Medical Journal.

April 26, 1902. [Vol. LXXV, No. 17.]

1. On Blood Pressure Under the Influence of Acute Overstraining of the Heart. THEODOR SCHOTT
2. A Further Contribution to the Study of Summer Diarrhea. CHARLES GILMORE KERLEY.
3. Acute Joint Diseases of Infancy. T. HALSTED MYERS.
4. A Peculiar Symptom in Typhoid Fever. W. C. DOANE.

1.—Influence of Blood Pressure on the Heart.—Schott reports some interesting experiments on men and boys to show the change in blood pressure under the influence of acute overstraining of the heart. By means of the radioscope he observed after the wrestling experiment, often within from two to three minutes, that the heart had increased in size, more quickly and strongly toward the right and less toward the left, that it moved more violently to and fro, and pushed the diaphragm downward. There was also an increase in the long diameter of the heart. The heightened frequency of the pulse was always connected with much smaller volume and was often easily compressible and of irregular rhythm. The sphygmographic trac-

ing showed this throughout the curve, and the exhaustion of the vessels was evident from the almost constant diastolic pressure. He concludes beyond a doubt that bodily exertions, as soon as they pass beyond a certain degree, may lead to acute dilation of the heart. [C.A.O.]

2.—Summer Diarrhea.—Kerley gives the results and method of treatment of 127 cases of summer diarrhea among the tenement poor. The work among this class comprised 682 cases with 21 deaths. All forms of milk are discarded after the first symptom of gastrointestinal derangement and no milk is allowed until the stools approximate the normal. Cereal waters and gruels are the safest substitutes. Four or five ounces of barley water and one or two ounces of broth, beef, mutton or chicken is a favorite mixture. The substitute diet is allowed to be given at intervals of two hours. Boiled water is given at any time. Repeated spongings with water at 80° F. are ordered if there is fever. Calomel is preferred in cases in which there is vomiting or a tendency thereto. Castor oil is given in the acute septic cases with infrequent stools and without stomach involvement, in which a prompt washing out of the small intestine is desired. Bismuth subnitrate is given in all cases in doses never less than 10 grains every one or two of the waking hours. The indications for opium are pain, tenesmus and frequent stools. Irrigation of the colon with normal salt solution benefits those patients who have a moderate number of green mucous stools with or without blood. [C.A.O.]

3.—Acute Joint Diseases of Infancy.—Myers points out that aid in diagnosis is sometimes obtained by considering the age of the child. Acute articular rheumatism is almost never seen in very young infants, scurvy commonly makes its appearance between the ages of eight and 20 months, and hemophilia usually appears about the end of the first year. The author had a blood examination made in many of his cases of joint disease, and noted quite uniformly, in cases of abscess formation, the presence of a moderate leukocytosis. Acute osteomyelitis is usually produced by staphylococci or streptococci, though exceptionally the result of infection with tubercle bacilli. He has never seen a case of typhoid periostitis in a young infant. In cases of tuberculous osteomyelitis the joint motions are not restricted. Syphilitic periostitis usually occurs in the first two years of life. The author has had considerable experience with the diagnostic use of tuberculin, and states that the positive reaction proves the presence of either tuberculosis or syphilis. In the mechanic treatment of the acute joint diseases of infancy rest of the affected part and extension are the chief features. [C.A.O.]

4.—A Peculiar Symptom in Typhoid Fever.—Over a quarter of a century ago Trousseau, of Paris, in a lecture on typhoid fever, called the attention of his class to the significance of deafness in one ear, stating that when the deafness is on only one side the prognosis ought to be guarded, but when the deafness occurs on both sides the prognosis is usually favorable. He was unable to explain this clinic fact, but asked his class to verify it in their practice. The author has had ample opportunity to observe, and he says that he can not call to mind a case of recovery from typhoid when deafness occurred on only one side, or a death when deafness has occurred on both sides. He cites a recent case and asks the profession to verify the phenomenon. [C.A.O.]

Medical News.

May 3, 1902. [Vol. 80, No. 18.]

1. Another Chapter on Phthisiophobia, and Resolutions Adopted by the New York Academy of Medicine. S. A. KNOPF.
2. Intravenous Infusion of Saline Solution. GEORGE CRILE.
3. The Right and Wrong Use of Digitalis Based on Cardiac Pathology. WILLIAM HENRY PORTER.
4. Operative Treatment in Certain Suppurative Conditions of the Kidneys. ALEXANDER B. JOHNSON.
5. On the Technic of Cystoscopy in the Female. FREDERIC BIERHOFF.

2.—Intravenous Infusion of Saline Solution.—Crile presents a summary of experiments on dogs under surgical anesthesia with and without the abdominal aorta and splanchnic arteries tied off, demonstrating that blood pressure can be increased only to a certain point, a continuous flow resulting in death from asphyxia, preceded by a gradual decline in pressure. The reason pressure is raised so little is due (1) to

escape of the fluid, especially into the gastrointestinal tract and in less degree into the respiratory tract, mouth and the somatic tissues generally; (2) to the automatic mechanism in the medulla which when pressure rises lessens constriction in the area of peripheral resistance. If peripheral resistance is lost by breakdown of the vasomotor mechanism, as in fatal "shock," no amount of infusion can wholly restore pressure and death is inevitable. When pressure is lowered by reasonable hemorrhage saline infusion promptly restores it. In the latter case oxygen inhalations should be added to compensate for the reduction in the number of the red corpuscles. That elimination of fluid corresponds to the rate of infusion was shown by the blood count in the experiments remaining the same after a certain dilution had been reached except when the splanchnic area was excluded. [H.M.]

3.—Digitalis.—We too often regard the heart as a mechanic pump and lose sight of the law governing its nutrition. In high tension nutritive interchange ceases. Porter discusses the isomeric transformations occurring in muscle fibers in hypernutritive and retrograde conditions, and the struggle between noble and common cells resulting in hypertrophy or sclerosis. Three of the active principles of digitalis cause a more intense and shorter systolic contraction with a prolonged diastole. Synchronous with this there is a marked contraction of the arterioles with rise of pressure. Slowing is due not only to resistance, but to the depressing effect of digitonin on the muscle fibers. The so-called cumulative effect of digitalis is explained by the increased work thrown on the heart, the toxic effect of all the active principles on the cardiac muscle and the deprivation of nutrition by the continued high tension. A little later the toxic effect is felt in the muscle fiber of the arterioles, the tension relaxes and death ensues in diastole. Very large doses may cause cessation in systole. The infusion contains only digitalein and digitonin, which are antagonistic to each other, yet, in a measure, toxic to the muscle fibers. Digitoxin and digitalin are freely soluble in the alcoholic tincture, while the fluid extract more closely resembles the powder. In mitral insufficiency and stenosis digitalis improves the condition temporarily, but once normal tension has been reached and passed, the action is detrimental. In aortic lesions and fatty degeneration it is contraindicated. [H.M.]

4.—Suppurative Conditions of the Kidney.—Johnson states that very often pyelonephritis is limited to one kidney and he concludes from his own experience and that of others that in such cases nephrectomy gives by far the greatest hope of recovery. In pyonephrosis nephrectomy is preferable to nephrotomy, because it rids the body at once of the seat of supuration, prevents danger of a sinus and the kidney if left is often virtually a functionless organ. In case of kidney abscess excision of the diseased portion of the kidney often leads to brilliant results. Infected hydronephrosis is often curable by nephrotomy and if done early there is a fairly good percentage of recoveries. [A.B.C.]

5.—Technic of Cystoscopy in the Female.—Bierhoff agrees with Casper that the insertion of the cystoscope is easier in the female than in the male, but the subsequent examination is more difficult because the lumen of the bladder, in women who seek the gynecologist, is rarely normal, but is encroached upon or distorted by the pressure of the abnormal condition of the uterus or adnexa, or by newgrowths and pelvic exudates. Bierhoff describes the technic of preparation, emphasizing the necessity of thoroughly irrigating the bladder until the fluid returns perfectly clear and then filling it with from 200 to 300 cm. of liquid. If because of some inflammatory process the liquid is rejected, the bladder may be rendered tolerant by the injection of a 1% solution of cocaine, or 2% betaucain. The next, and probably most important precautionary measure is the thorough exploration of the cavity of the bladder, using the unlighted cystoscope as a sound, which acquaints one with the relative position of the uterus and the presence or absence of obstruction or distortion. The next step is the illumination of the bladder and the methodical examination of the entire wall. Great care is needed, as any injury to the bladder by the lighted lamp may become the seat of infection. Hence, any sensation of burning or pain felt by the patient should be at once reported

so that the spot burned may be treated with silver nitrate. Bierhoff says that the cystoscope has furnished a means of attaining certainty in the diagnosis of hitherto obscure vesical and renal conditions, and that it is less dangerous than other means of diagnosis when properly employed by skillful hands. And neither cystoscope nor any other instrument has any business in the hands of a bungler. [W.K.]

Philadelphia Medical Journal.

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1. The Surgery of the Heart with Presentation of a Case. H. L. NIETERT.
2. The Relation of Uric Acid and Xanthin Bases to Gout and the So-called Uric Acid Diathesis. DAVID L. EDSALL.
3. Static Electricity in the Treatment of Insanity. ROBERT HOWLAND CHASE.
4. An Investigation of Solanum Carolinense, with Reference to Its Special Value in the Treatment of Epilepsy. M. CLAYTON THRUSH.
5. A Case of Foreign Body in the Lung; Diagnosis Confirmed by Radioscopy. FRANCIS HUBER.
6. Traumatic Meningitis with Effusion: Cerebral Convulsions: Double Trephining: Recovery. THOMAS W. JACKSON.

1.—The Surgery of the Heart.—Nietert, from his observations in suturing the heart, draws the following conclusions: Gentle manipulation may be applied without producing shock; the introduction of the suture produces but a slight irregularity in the heart's action; the heart wounds heal rapidly; intrapericardial pressure is increased, even if hemorrhage occurs during diastole alone; all heart wounds, in which there is danger of fatal hemorrhage, should be sutured; if the wound does not involve the pleura, the extrapleural route should be employed; if the pleura has been injured, the intrapleural method should always be employed, and the flap devised by Rotter is the best; although it is advisable for the surgeon to familiarize himself with the methods of operation and the flaps devised by the different operators, a thorough knowledge of the anatomy of the region is most essential, and each operator should modify the flaps as best suits the case. [F.C.H.]

3.—Electricity in the Treatment of Insanity.—Chase believes that static electricity, which has gained so great an eminence of late, is one of the best modes of applying electricity for medical purposes. It has no specific power either to cure or to prevent insanity, but its influence is similar in its action to drugs, in so far as it affects the mind through the body. At the Friends' Asylum, Philadelphia, static electricity has been applied in selected cases for some years, and while it may not have been always successful in affording relief, the general trend of treatment has been efficacious. It is not expected, of course, that static electricity will perform wonders when organic lesions have hopelessly impaired function, but its beneficial effects are usually found in the acute mental disorders, in restoring a balance to the system, in quieting the restlessness, and relieving the insomnia and melancholia, and reinvigorating the tone of both the body and mind. [F.C.H.]

4.—An Investigation of Solanum Carolinense, with Reference to its Special Value in the Treatment of Epilepsy.—Thrush concludes as follows: *Solanum carolinense* is of greatest value, probably better than any other known remedy, in fully developed epilepsy of idiopathic type without hereditary taint, and when the disease has begun beyond the age of childhood; it is perhaps next of greatest value in hysteroepilepsy with marked convulsive seizures. In cases of epileptic vertigo the drug does not appear to do the great good that was noted in the major type of the disease; in cases of well advanced epilepsy of any type in which there is degeneration of the cerebral neuron, the drug acts specifically for a time even better than the bromids, but the bromid salts will ultimately control the attacks better in these cases; a thorough impregnation of the nerve cells can alone be had, and a cure hoped for by attaining the fullest physiologic dosage of the drug and maintaining it through periods of months, a year not being too short a time to warrant its discontinuance; the freshly made fluid extract is the ideal form of pharmaceutical preparation given in ascending doses, commencing with 1 dram and increasing to the full constitutional effect; it is preferable to the bromids in the cases in which it can be advantageously used, because no toxic symptoms follow its free administration and the mental faculties are not impaired by its use. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Uncinariasis (Ankylostomiasis) Question.

The disease known as uncinariasis has been attracting more or less attention in this country during the past few years, because of the diagnosis of some 20 or 30 cases in man, and also because the Bureau of Animal Industry has shown that the heavy losses among the sheep in certain parts of the southern states are due to a similar disease. Dr. Stiles has also shown that 17% of the deaths among the seal pups of Alaska are caused by uncinariasis. In connection with this disease in man, Dr. Stiles has expressed views before various medical meetings which might at first be thought somewhat extreme, for he has repeatedly maintained that uncinariasis must be more common than is generally supposed, and that it has escaped attention because physicians are not in the habit of making microscopic examinations of feces in cases of anemia. He has also stated that the disease probably came to us both from Europe and from Central America. In a short article published in this issue of *American Medicine* Dr. Stiles gives a new and totally unexpected explanation of uncinariasis in America. While still admitting that cases of this disease have been brought here from Europe, as is clearly indicated by the case of an Italian recently reported in Philadelphia by Drs. Allyn and Behrends, Dr. Stiles shows that America has an uncinariasis of its own, due to a parasite which is totally different from the parasite which causes this disease in Europe. He has in fact shown that the Washington case reported by Dr. Claytor, a Texas case diagnosed by Dr. Allyn J. Smith, and (judging from the parasites preserved in the Army Medical Museum) Dr. Ashford's cases reported from Porto Rico, are all due to a new parasite, which he names *Uncinaria americana*. The discovery should lead to a more systematic examination of feces in cases of anemia, for the parasite in question must certainly be present in the triangle formed by Galveston, Porto Rico and Virginia, and probably outside of that triangle also. It will be interesting to discover whether the disease as found in Central and South America is due to *Uncinaria americana* or *U. duodenalis*.

The Presence and Formation of Agglutinins in the Blood.—Ruffer and Crendiropoulo¹ conclude (1) the cultures of a microbe freed from that microbe by filtration, dialysis, or centrifugalization, have a distinct, though feeble agglutinating effect on that particular microbe. The age of the culture and the constitution of the medium are important factors in determining the quantity of agglutinins present in such cultures; (2) the red blood-corpuscles of nonimmunized and immunized animals contain no trace of agglutinins; (3) on the other hand, the polynuclear leukocytes of nonimmunized animals always possess an agglutinating power greater than, or more rarely equal to, that of the serum. They may, therefore, be rightly considered as the producers, or at any rate the carriers of the agglutinins; (4) in immunized animals the specific agglutinins appear in the polynuclear leukocytes, and are therefore probably formed in them. The quantity of agglutinins begins to increase 30 to 48 hours after the injection, and goes on increasing up to the tenth day or thereabout. They then pass into the serum, the agglutinating power of which increases correspondingly; (5) the formation of specific agglutinins in polynuclear leukocytes and in the serum is preceded and accompanied during the first three or four days after the inoculation of any given microbe by an increase of agglutinins for other microbes. This latter increase is of short duration and stops suddenly, whereas the increase of specific agglutinins persists for a much longer time. [A.O.J.K.]

Trypanosomiasis of Cattle.—A. Laveran² communicated to the Académie des Sciences of Paris at the Séance of March 10 the discovery of Theiler, of Pretoria, of a new parasite in the

blood of cattle. It produces anemia, with or without fever, or pernicious anemia: it is inoculable only in cattle and in the largest species thus far described. Laveran gives it the name *Trypanosoma theileri*. [C.S.D.]

The Bactericidal Action of the Röntgen Ray.—Rieder³ finds that the Röntgen ray has an inhibitory and killing action upon bacteria. This action is a specific property of the x-ray, and has nothing to do with the light, the fluorescence, the heat, or the ozone. [D.R.]

Rötheln.—Ross⁴ considers the absence of Koplik's sign, which never occurs in rötheln, is of greatest importance in diagnosis. [F.C.H.]

Hepatic Insufficiency.—At the Sixth French Congress for Internal Medicine, held at Toulouse April 1, Dr. Charrin⁵ precipitated a spirited discussion by his paper on hepatic insufficiency. Among the causes of this morbid condition he enumerates: diseases of the mother during pregnancy; auto-intoxications; action of the spleen on the biliary gland; the condition of the skin; atmospheric conditions and alimentary glycosuria. [C.S.D.]

The Heart in Diphtheria.—After a consideration of the various forms of heart failure occurring during the different stages of diphtheria, as exemplified by the cases detailed by Bolton,⁶ the grave danger to which patients during the whole course of the disease are liable, as a result of the acute degeneration of the neuromuscular mechanism of the heart, is at once apparent. There should be a thorough and systematic examination of the heart and pulse in every case of diphtheria, however mild it may appear; and heart failure can be best guarded against by keeping the patient in bed, or at least perfectly free from all excitement and strain as long as there is an irregular pulse, or the physical signs of cardiac dilation. Primary heart failure is to be feared during the acute stage of the disease, and the only prevention of this consists in the use of efficient doses of antitoxin at as early a period as possible. After the acute stage has passed, and convalescence has begun, the heart failure is generally secondary. [F.C.H.]

The Diagnostic Value of the Variations in the Leukocytes and Other Blood Changes in Typhoid and Malarial Remittent Fevers Respectively.—Rogers⁷ is of the opinion that the percentage of the different forms of leukocytes counted in a stained blood film is of great diagnostic value in differentiating typhoid and malarial remittent fevers, and is easily ascertained; that an increase of the lymphocytes to 40% or over, without increase in large mononuclears, points to typhoid as against malarial fever; that an increase in the large mononuclears to about 12% and upward, especially during the remissions of the temperature, strongly indicates malaria as against typhoid fever, and that this change is of great diagnostic value when parasites are absent from the blood; that the presence of myelocytes in any number, such as from 1% to 5%, points to malaria as against typhoid fever; that a high degree of anemia, such as a reduction of the red corpuscles to below 3,000,000 per ccm., is much more frequently met in malarial than in typhoid fever; that a very great reduction in the total leukocyte count, such as below 2,000 per ccm., is much more frequently met in malarial than in typhoid fever, while the proportion of white to red corpuscles in malaria is not infrequently less than 1 to 2,000, which is rare in typhoid fever; and that leukocytosis can be detected by the presence of a great excess of white corpuscles, upward of 80% of which are polynuclears, in a stained blood film, and is often of service in excluding malaria in intermittent fever due to liver abscess or other local inflammation. [A.O.J.K.]

Report of a Case of Acute Yellow Atrophy of the Liver and of the Concomitant Psychic and Nervous Symptoms.—Wieg⁸ reports a case of acute yellow atrophy in a man of 32. The symptoms were more or less typical; there was no fever, but there was wild delirium, with jactitation. At the autopsy numerous colonies of *Streptococcus pyogenes*, fewer of *Staphylococcus pyogenes albus* and *Bacillus coli* were found

¹ British Medical Journal, April 5, 1902² La Semaine Médicale, March 12, 1902.³ Münchener medizinische Wochenschrift, March 11, 1902.⁴ Pediatrics, April 1, 1902.⁵ La Semaine Médicale, April 2, 1902.⁶ Edinburgh Medical Journal, April, 1902.⁷ British Medical Journal, April 5, 1902.⁸ Wiener klin. Wochenschrift, March 27, 1902.

in the liver, the spleen, and the mucus of the gallbladder. The author discusses the mental symptoms of acute yellow atrophy which may be due to the same cause as the hepatic disease itself, or may be due to the loss of the antitoxic activity of the liver. [D.R.]

Hypodermic Injections of Glucose.—Following the suggestion of Dr. K. Lennander, of Upsala, the value of hypodermic injections of glucose has been tested with very favorable results by Dr. A. E. Baker,¹ Professor of Surgery in the University College of London. When increased nourishment was indicated injections were made night and morning on the inner face of the arm of sterilized water containing 6% of sodium chlorid and 5% of glucose. [C.S.D.]

Voluntary Dislocation of the Humerus.—Riedinger,² after quoting the instances of this condition in the literature, mentions the case of a boy of 11½, who was able at will to dislocate the left humerus, and also to some extent the right. [D.R.]

The Isolation of the Typhoid Bacillus.—Moore³ describes a method for isolating the typhoid bacillus by means of a W-shaped tube containing Parietti serum gelatin capable of agglutinating the colon bacillus in dilutions of 1 to 1,000, and another method consisting of a modification of Elsner's potato-iodid method, in which agar is substituted for the gelatin of the original method. [A.O.J.K.]

Courbometer.—Professor Chatelain⁴ demonstrated at the congress of Russian naturalists and physicians, recently held in St. Petersburg, an apparatus for showing on a screen the curve of the alternating electric current. This device, to which the name courbometer is applied, is of interest to electrotherapists. [C.S.D.]

Acute Endocarditis.—J. B. Herrick⁵ says this disease is commonly secondary; occasionally the infection is cryptogenic, but a careful search usually reveals a suppurative middle ear or gallbladder, a chronic osteomyelitis, a phlegmon, a gonorrhea, a scarcely resolved pneumonia, a dysentery or an infected uterus. As to the prognosis in acute ulcerative endocarditis, he maintains that it is possible for the body to resist, for the inflammatory process to subside, and for local healing and constitutional recovery to ensue. This is borne out by clinical observation and postmortem findings, and illustrative cases are reported. The diagnosis is generally simple if the disease is thought of and its evidences especially sought for. The two diseases most commonly mimicked by ulcerative endocarditis are malaria and typhoid fever. The primary disease may divert attention from the endocarditis, which, in reality, is of chief importance, or the secondary or complicating lesions may attract the attention from the valvular disease. The treatment should be rest for the body and heart. We should get rid of the primary focus of infection, treat untoward complications, aid elimination and should strive by serum, ointment, drug, diet and hygiene, and by improving the resisting power to overcome the septicemia and toxemia. [C.A.O.]

Latent Pneumonia.—Littlejohn⁶ concludes as follows: Pneumonia may be completely latent during its whole course; the form of the disease most liable to be latent is basal pneumonia; alcoholic apical pneumonia is rarely latent during its whole course; the disease may be latent even although the whole of one lung or a considerable portion of both lungs is affected; in latent pneumonia, sudden death most commonly occurs during the stage of grey hepatization; the condition is practically confined to persons addicted to excessive alcoholic intemperance; complete consolidation of the whole of one lung is not inconsistent with a person having continued to lead an active life up to the time of death; latent pneumonia is most frequent as a cause of sudden death during the winter months; it is most common after the age of 40 and in the male sex; the explanation of "latency" is to be found in the quantity of alcohol consumed after the onset of the disease; first in masking the ordinary signs and symptoms by dulling sensibility;

second, by its stimulating effect, thus enabling the person to go about until he suddenly collapses and dies; in medicolegal cases the discovery of latent pneumonia may satisfactorily explain the death of an individual and thus allay all suspicion connected with the case; and, on the other hand, the existence of pneumonia, even in an advanced stage, will not preclude the possibility of an individual having died from other causes, natural or violent, and of his having been at the time of receiving an injury in a state of apparent good health. [F.C.H.]

Tetanus Following Subcutaneous Injections of Gelatin.—At a recent séance of the Société médicale des Hôpitaux of Budapest Drs. Hochhalt and Herezel¹ reported a case of tetanus in a patient who had received hypodermic injections of gelatin to check hemorrhage following splenectomy. In view of the fact that gelatin has been shown to be at times a carrier of tetanus bacilli it is suggested that gelatin solutions to be used for hemostatic purposes should be inoculated with *Bacillus subtilis* before proceeding with sterilization, and only used after it has been demonstrated that this microorganism, which is more resistant to heat than the bacillus of tetanus, will give no colonies. [C.S.D.]

A New Diagnostic Point in Typhoid Fever.—Gibbes² believes that it is possible by photography to detect the roseola of typhoid fever before they can be seen. [A.O.J.K.]

Tetanus After Gelatin Injections.—Kuhn³ reports a case of tetanus following gelatin injection in a hemophiliac. He thinks that the bacilli were present in the gelatin, and advises that gelatin which is to be used for hypodermic injection should be prepared from the tissues of healthy animals. [D.R.]

Concerning Grassi as a Discoverer.—A communication from Ronald Ross⁴ states that Grassi's only claim to recognition in regard to the relation of mosquitos to malaria lies in his having determined the correct zoologic name of the species designated by Ross as "the dapple-winged mosquito;" and further, that the only new and important discovery made in Italy in this connection, is the fact that the tertian parasite is also carried by anopheles in that country, a contribution to knowledge, however, the credit for which belongs to Bignami and Bastianelli, and not to Grassi. [C.S.D.]

Postgonorrheal Vesical Bacteriuria Produced by *Bacterium Lactis Aerogenes*.—Goldberg⁵ reports the following case: A man of 32 acquired an attack of gonorrhea—his second—which for a long time resisted treatment. Eventually the posterior urethritis which had existed subsided, and there was very little discharge from the anterior urethra. About this time the urine suddenly became cloudy. Otherwise there were no local disturbances, but slight headache, constipation and irritability were present. The turbidity of the urine was due to *Bacillus lactis aerogenes*, an organism resembling *Bacillus coli communis*, but differing in the absence of motility and of flagella and in the manner of growth upon gelatin. It is also related to Friedländer's bacillus. The patient's bladder was not tender, and cystoscopic examination revealed nothing abnormal. Under treatment with ichthargon locally and urotropin internally the urine became clear, except for a few cloudy flocculi. This is the second case of bacteriuria due to *Bacterium lactis aerogenes*. In the majority of the reported cases of bacteriuria the colon bacillus was found, but the staphylococcus, streptococcus, *Bacillus subtilis* and typhoid bacillus may produce bacteriuria without coincident cystitis. In the diagnosis of bacteriuria it is not absolutely necessary to make cultures, since the presence of bacteria in the urine obtained by catheter is sufficient. The cystoscope serves to show the absence of cystitis. In a case previously reported the urine was said to have an odor of burnt fish. This was not present in the author's case. Though bacteriuria is usually accompanied by local symptoms, it may lead to cystitis, and is perhaps the first stage. The alkalies are contraindicated in bacteriuria; they intensify the condition. [D.R.]

Diagnosis of Aneurysm of the Mesenteric Artery.—Mesenteric aneurysm is common in the horse, in which it is

¹ La Semaine Médicale, April 2, 1902.

² Münchener medizinische Wochenschrift, March 11, 1902.

³ British Medical Journal, March 22, 1902.

⁴ Deutsche medizinische Wochenschrift, March 27, 1902.

⁵ Northwestern Lancet, March 15, 1902.

⁶ Edinburgh Medical Journal, April, 1902.

¹ Le Semaine Médicale, March 19, 1902.

² British Medical Journal, March 22, 1902.

³ Münchener medizinische Wochenschrift, November 26, 1901.

⁴ Deutsche medizinische Wochenschrift, March 27, 1902.

⁵ Centralblatt f. innere Med., March 29, 1902.

due to a parasite, *Strongylus armatus*. In the human subject it is very rare, and has received two explanations: Eppinger attributes it to mycotic embolism; Ponfick to simple or mechanic embolism. Gabriel¹ collects three cases from the literature and reports one of his own, that of a boy of 10, with aortic and mitral insufficiency, who had a walnut-sized tumor in the umbilical region, to the right of the linea alba. At first it did not fluctuate, but it subsequently presented distinct fluctuation. A week before death, the child also developed a hemiplegia. The patient died, and at the autopsy an aneurysm 5 cm. by 3 cm. was found in the mesentery of the small intestine, springing from the anterior branch of the superior mesenteric artery. There was also an area of softening in the left optic thalamus. The diagnosis of mesenteric aneurysm may be made by the aid of the following features: (1) The presence of a recent endocarditis; (2) the presence of a hemiplegia; (3) a rapidly growing tumor in the abdomen, of the origin of which there is no other satisfactory explanation; (4) the youth of the patient, all the cases having occurred in children or young adults. [D.R.]

Bacteriemia.—R. Kretz² says that an invasion of the blood by bacteria may assume a manifold aspect; first, the involvement of the blood without any primary local manifestation, as in malaria, Malta fever, and relapsing fever; second, typical blood invasion, with blood reaction at the site of ingress, as in typhoid fever or anthrax; third, the involvement of the blood through the medium of the leukocytes, as in gonorrhea and possibly also in leprosy; fourth, the blood may be infected by disease of the bloodvessel wall, as in pus infections, tuberculosis and bubonic plague; finally, streptococci, diplococci and other organisms may enter the blood through the lymph stream. To these modes of invasion are added the cases of bacteriemia which are due to a mixed infection. The blood infection is dependent on two factors: first, upon the nature of the bacterium, which depends in general on its biologic characteristics and in particular on its degree of virulence or upon the association with other bacterial agencies; second, on the condition of the individual affected. [C.A.O.]

The Microorganism of Vaccinia.—Sjöbring,³ in a preliminary report of his investigations of the cancer parasite and the specific microorganism of vaccinia, calls attention to certain interesting points of comparison between the two. He found that the microorganism of vaccinia is very closely related to the parasite of cancer, both belonging to the subdivision *Pimelodea* of the Rhizopods. The vaccinia-microbe shows a development in the main similar to that of a variety of *Strombodes* (described in *Archiv. f. klin. Chirurgie*, 1901). The spore formation of the vaccinia-microbes reminds one in many respects of that observed in certain mycelia, although it occurs with more rapidity, there being found in the culture after only one or two hours millions of very minute bacterialytic, but feebly refractive spores. Sometimes these "spores" remain separate, at other times they are observed to melt together in a uniform, structureless colloid mass, or plasmodium—a phenomenon which may possess significance for the clinical difference between vaccinia and variola as well as for the question of immunity. The microorganism of vaccinia is in all probability always parasitic—like the cancer parasite—the hosts being certain mycelia and probably also certain varieties of bacteria (!)—a hitherto entirely unknown feature in the life of pathogenic organisms. For the microorganism of vaccinia Sjöbring suggests the name *Strombodes jenneri*. [A.E.E.]

Human Actinomycosis in France.—Dr. A. Poncet,⁴ of Lyons, at the April 1 seance of the Academy of Medicine of Paris, presented statistics regarding the prevalence of actinomycosis among human beings in France. Since the previous review (Cf. *Semaine Médicale*, 1900, pp. 106-107) 21 new cases have been published, and eight others collected by Thiéry (of Paris). This makes up to date a total of 146 cases observed and reported for France. Of these 79 were cervicofacial and 67 visceral in localization. [C.S.D.]

GENERAL SURGERY

A. B. CRAIG

MARTIN B. TINKER

C. A. ORR

The Ultimate Results of Operations for Hemorrhoids.—The fact that almost any of the methods of operation for hemorrhoids gives reasonably satisfactory results and that all operations are attended by so little danger, leads most surgeons to fall into a rut, performing one operation in all cases without taking into consideration the possible advantages of other methods. Of the methods most generally employed of late years, the clamp and cautery operation and complete excision have met with most favor. Other methods which have been suggested from time to time have been for the most part unimportant modifications of these procedures. Talke (Beiträge zur klinische Chirurgie, 1902, Vol. 33, p. 231), of Professor Garré's clinic in Königsberg, has taken the trouble to follow the results of the clamp and cautery operation in 105 cases and he compares these results with those after excision. In 1899, Reinbach gave the results of excision in 81 cases operated upon in Mikulicz's clinic. These two writers seem to be about the only ones who have recently taken the trouble to follow up their cases to determine definitely the after results of operation. Talke discusses the age and sex of the patients and various etiological factors at considerable length as well as other considerations of comparatively little practical importance. His description of the preparation of the patient for operation and the method of operating shows that in the Königsberg clinic an amount of care is taken which would give greater promise of success with almost any operation. For two to four days before operation the patient's bowels are thoroughly moved by castor oil. After this enemas are given for one or two days and during this time the patient takes only fluid nourishment. The region of the anus is shaved and carefully cleansed and an antiseptic compress applied the night before operation. On the morning of the operation the patient is given 15 to 20 drops of tincture of opium. The hemorrhoids are drawn down and clamped with a Langenbeck clamp at the base, the importance of clamping not more than four sections of mucous membrane in order to avoid the possibility of stricture being emphasized. The hemorrhoids are then burned down to the clamp with actual cautery and a rectal plug is inserted. The bowels are kept closed for four to six days with opium and the patients are allowed to get up on the fifth to eighth day. Among the advantages of the operation which he mentions are that the seared surface left by the cautery does not become infected and when it sloughs off the granulating surface is not readily infected; many patients who have suffered from ulcerated or bleeding hemorrhoids are very anemic, and in such cases the clamp and cautery operation is much simpler and quicker, being accompanied by no loss of blood. In all cases in which inflammatory conditions are present which would prevent union if excision were practised it is definitely indicated. If properly carried out there need be no danger from stricture resulting. A satisfactory report of the ultimate result of operation was obtained in 85 out of 105 patients that were operated upon: 88% of these cases were permanently cured; 8.4% were very much improved, and in 3.6% cases the ultimate results were not satisfactory. Reinbach (Beiträge zur klinische Chirurgie, 1899, Vol. 23, p. 561) gives late results of excision in 67 cases operated upon in Mikulicz's clinic by the method commonly known in this country as Whitehead's operation, but which he states was devised independently by Mikulicz. In only one case was there a recurrence, thus showing unfavorable operative results in 1.4% of the cases. In 27 cases operated upon in the same clinic with the clamp and cautery 19 were permanently cured; there was one recurrence and seven were very much

¹ Wiener klinische Wochenschrift, October 24, 1901.

² Interstate Medical Journal, March, 1902.

³ Hygeia, March, 1902.

⁴ La Semaine Médicale, April 2, 1902.

improved. This gives 3.7% of unfavorable results as compared with less than 2% after the method by excision.

If the statistics of these two writers can be relied upon it would seem that excision is likely to give more satisfactory results as a routine operation for the treatment of hemorrhoids, but the difference (1.4% as compared with 3.7%) is so slight as to be of no very great importance. Either method if properly carried out will give very satisfactory results in nearly all cases, but it would seem that a selection of cases might be advisable. Excision is certainly the ideal method and should be performed in all cases where there is extensive involvement of the entire mucous membrane. No other method gives certainty of removal of the entire pile-bearing area and the prospect of healing by first intention with a linear scar which is not likely to cause stricture. While requiring more surgical skill than the clamp and cautery method, excision can be performed rapidly, safely and with the loss of little blood by a skilled surgeon. In the hands of a bungler neither operation would be safe, but the clamp and cautery would perhaps be less dangerous. The simpler clamp and cautery method might give equally satisfactory results in case of less extensive disease and should be preferred in the case of patients much weakened and anemic from long-continued bleeding or where some inflammatory or infectious condition is present in the region of the rectum.

Epitheliomatous Degeneration of Old Osteomyelitic Cavities.—Bauby¹ reports four cases of this kind from the surgical clinic at Toulouse. The first patient, a man of 56, suffered from acute osteomyelitis of the tibia, which became chronic, and a fistula had existed for a long time. When the man entered the hospital he had a pathologic fracture which had occurred spontaneously, and there was epitheliomatous degeneration of the bone. Disarticulation at the kneejoint was followed by recovery. In a second case, a man of 62 had suffered for about 38 years with osteomyelitis of the tibia. There was also spontaneous fracture in this case, and a generalized carcinomatosis with grave cachexia, which led to the patient's death. Operation was out of the question at the time the patient came under observation. In a third case, a man of 58 had suffered from osteomyelitis of the tibia for over 50 years, the fistulous tract had undergone epitheliomatous degeneration when the patient came under observation. Disarticulation of the knee was followed by a good recovery. In a fourth case, a man of 45 had developed osteomyelitis of the humerus after an attack of typhoid fever. A fistulous opening had existed in the upper part of the right arm for 31 years. Resection of the humerus was performed with recovery from the operation, but was followed by a late recurrence, from which the patient will no doubt die. Bauby has collected from the literature 49 cases of this kind. The tibia was affected in 33 cases, the femur in six, the humerus in three, the calcaneum in three cases, and the seat of the disease was not definitely stated in the remaining cases. The newgrowth usually develops in the depth of the wound about the sequestrum, and finally makes its appearance at the mouth of the fistulous opening as a cauliflower mass. Spontaneous fractures, such as were noted in three of his own cases, were mentioned in most of the cases collected from the literature. Histologic examination was made in most of these cases. There has been considerable theorizing as to the origin of these tumors. Some have suggested that epithelial cells become detached from the skin around the sinus and fall into the depth, where they find conditions favorable to neoplastic development. The influence of chronic inflammations, suppurations and other forms of irritation in the development of new growths is very generally recognized, and no doubt it is a factor of considerable importance in these cases. The lymph glands are affected late in the disease as a rule, and metastatic growths are of rare occurrence. The development of the tumor is slow, possibly because that the hard cicatricial tissue resists the invasion of the epithelial growth. This slow development,

the late involvement of the lymph glands and late occurrence of metastasis makes the prognosis favorable in these cases, if an early operation is performed. [M.B.T.]

Single Nontuberculous Ulcer of the Bladder: Suprapubic Cystotomy: Cure.—Christopherson¹ reports the case of a man of 49 who suffered from frequent micturition, had worked only six months in the past two years, had no history of syphilis, weighed 93 pounds, and was pale and emaciated. He had twice suffered from chronic lead poisoning. The urine was 1,012 acid, cloudy with one-eighth albumin; it contained no blood, pus, nor tubercle bacilli. Suprapubic cystotomy was done and revealed a hypertrophied bladder wall and the presence of a small irregular jagged ulcer. The ulcer was treated locally and the patient made a good recovery. [A.B.C.]

Temporary Closure of the Carotid Arteries in Operations About the Head and Neck.—Crile² gives the results of experiments on 19 dogs which were operated upon to determine the effect of closing the carotid arteries temporarily, together with his clinical experience in 18 cases in which he has performed various operations about the head and neck, making use of this procedure to lessen hemorrhage. In his experimental work the arteries were clamped sometimes from 4 to 6 hours. If too tightly clamped pressure-necrosis resulted in certain instances. But his experiments showed that a properly-adjusted clamp could be left in position even for so long as 48 hours without serious injury to the walls of the bloodvessels. Twenty minutes before applying the clamp he advises the administration of $\frac{1}{100}$ grain of atropin, which affects the vagus, preventing possible inhibitory action upon the heart after the closure of the vessel. A small clamp with blades covered with rubber and adjustable with a thumbscrew is used. In operations in which blood may enter the pulmonary tract the patient should be placed in the Trendelenberg position. This increases venous pressure but diminishes the danger of entrance of air into larger venous trunks. The control of arterial hemorrhage by this method is absolute, except in the vessels which receive direct collateral pressure from the vertebral arteries. In his operations the ages of the patients ranged from 7 months to 79 years, and there were no deaths attributable to this procedure. Both common carotids were closed in 10 cases, one common carotid in 5, and an external carotid in 3. In every instance the circulation was resumed immediately upon releasing the clamps. There were no late effects upon the vessel walls, on the circulation in the closed arteries or their branches, or cerebral veins. Less anesthetic was necessary, the time of operation was much diminished by freeing the field from blood, loss of blood was much less, and there was less difficulty in keeping blood from the respiratory tract. In case both common carotids were closed the respiration was somewhat imperfect in certain cases. This difficulty was relieved on releasing the arteries. The application of the clamp is easily accomplished through a small incision in a short time and the safe and absolute control of the hemorrhage renders operative procedures so much safer as greatly to increase surgical possibilities. [M.B.T.]

Mentholization of the Air Passages in Ether Anesthesia.—Dr. W. A. Briggs,³ of Sacramento, calls attention to the remarkable paresthetic effect of menthol and oil of peppermint on the mucosa of the air passages, and the favorable results obtained by their use preliminary to etherization. About a dram of the oil of peppermint or of the 50% alcoholic solution of menthol is sprinkled in the cone before etherization, and the patient is allowed to inhale freely for three minutes, then etherization is pushed as rapidly as is consistent with safety. The advantages of this as compared with the usual method are: (1) Anesthesia may be more easily and quickly induced, and more easily and smoothly maintained; (2) entire freedom from coughing and suffocation, and comparative freedom from nausea, vomiting and retching; (3) suppression or marked abbreviation of the period of excitement; (4) profounder first anesthesia, which permits minor operations with greater certainty than does the usual method; (5) less postoperative nausea and vomiting. [C.S.D.]

Appendicitis in which the Appendix was Lodged in

¹ British Medical Journal, March 29, 1902.

² Annals of Surgery, April, 1902, Vol. 35, No. 4.

³ Occidental Medical Times, April, 1902.

¹ Arch. Provinciales de Chirurgie, 1902, Vol. xi, p. 96.

the Femoral Canal.—Galton¹ reports the case of a woman of 32 who had suffered for some time from indigestion and pain in the lower right quadrant of the abdomen. The abdominal pain and tenderness were accompanied by considerable rise of temperature and general symptoms. The patient recovered from the acute attack, however, but was still troubled with abdominal pain. An incision four inches long was made parallel to Poupart's ligament and a little above it. The tip of the appendix was found to be lodged in the femoral canal and firmly adherent. Appendectomy was performed and a good recovery resulted. [M.B.T.]

Lymphangiectasis.—Whitehead² reports three cases. A man of 32 had suffered from a constantly growing tumor on the posterior aspect of the arm since a child. The entire arm and scapula were removed, the mass weighing 70½ pounds. A girl of 18 suffered from a huge tumor-mass on the posterior aspect of the left thigh. It was successfully removed. A woman of 40 had pseudoelephantiasis of the right leg. The foot, ankle and leg to the knee were greatly enlarged. Elastic pressure reduced it almost to the normal size. All patients recovered. [A.B.C.]

Prostatectomy by the Perineal Route.—Syms³ briefly reviews the steps of his operation, which was first described in 1898, and the results of which he has published in several subsequent articles. He emphasizes the necessity for early operation and believes that the perineal route is the safest method, requiring less cutting, less time, giving freer drainage and attended with less danger of infection. He reports 13 operations by this method, all of the patients recovering. In three patients there was temporary incontinence of urine, in one case lasting for about three months, but later the patients had complete control of their bladders, they were relieved from cystitis, frequency and pain in urination, and their general condition has been extremely good. [M.B.T.]

A Few Cases Illustrating the Results of Operative Interference for Fractures About the Elbow Joint.—Arbuthnot Lane,⁴ in demonstrating what may be done to remedy various forms of solution of continuity of the bones about the elbow joint, strongly advocates the strict observance of two rules: the incision should be sufficiently long, and the operator and his assistants should keep their fingers out of the wound. [F.C.H.]

Internal Derangement of Kneejoint.—H. W. Allingham⁵ reports 59 cases in which he has operated for the removal of loose cartilages and other foreign bodies in the knee-joint. He does not advocate operation in every case. If there is a history of some severe injury followed by pain and swelling in the joint which becomes locked he advises splinting for from one to three weeks, followed by massage, passive movements and properly selected exercises. This treatment definitely cures a considerable proportion of the cases, but if the trouble recurs operation is indicated. A vertical incision along the inner border of the patella under strictest care as to asepsis and hemostasis is advised. The wound is closed entirely without flushing with anything more than boiling water. He considers the operation for this condition highly satisfactory in most cases. There is generally rapid recovery and no recurrence of the trouble. [M.B.T.]

Rupture of Jejunum from External Violence.—J. L. Livingston⁶ reports that a lad of 16 fell and was trod upon by a horse. Three hours later when seen he was pale, somewhat cold, pulse 116 and respiration 24. There was no external bruise and the abdominal muscles moved on respiration; though the horse had stepped on the right hypochondriac region. Consultation was called, but the lad had improved. The following day the patient appeared to be doing well. On the second day after vomiting blood there was collapse; liver dulness was diminished and a dull area found below the liver. An attempt was made to administer chloroform preparatory to laparotomy, but the patient's condition became so alarming that this was abandoned. Death followed a day later. Necropsy

showed a collection of blood in the abdomen and a rent 1½ inches long in the jejunum. [A.B.C.]

Intestinal Obstruction from Meckel's Diverticulum.—Halsted¹ reports a case of obstruction from Meckel's diverticulum occurring in a man of 25 upon whom he operated, perfect recovery following. He reviews the literature of this subject at some length. By reference to older statistics he finds that the frequency of obstruction caused by diverticula as compared to that from other causes is about 6%, showing that this condition is relatively common. He has collected from the literature 69 cases, brief summaries of which are given. The mortality in cases subjected to operative treatment was 59%. As regards the diagnosis of obstruction from a diverticulum, he calls attention to the age of the patient, the condition usually occurring in children or young adults. Frequently the history of previous mild attacks. The configuration of the abdomen is that of an inverted cone, being due to the obstruction in the upper part of the intestinal tract. Local meteorism on the right side of the abdomen under the costal margin is fairly common. Fecal vomiting comes on early, and there is tenderness on the right side just below the umbilicus. [M.B.T.]

Treatment of Aneurysm by Proximal Ligation.—Cecil Birt² reports six cases of aneurysm treated by proximal ligation, all of the patients recovering. They were as follows: Diffuse traumatic axillary aneurysm, ligation of third part of subclavian; diffuse traumatic axillary aneurysm, ligation of third part of subclavian; diffuse traumatic brachial aneurysm, ligation of third part of axillary; diffuse traumatic popliteal aneurysm, ligation of upper third of popliteal; circumscribed traumatic radial aneurysm, ligation of upper third of radial; diffuse traumatic popliteal aneurysm, ligation of the superficial femoral in Scarpa's triangle. [A.B.C.]

Patent Meckel's Diverticulum.—Hubbard¹ reports a case of this kind in a female child one month old, which was successfully operated upon, celiotomy being performed. The diverticulum was removed, the opening in the intestine closed, the edges of the abdominal ring freshened and sutured. He finds that spontaneous cure in such cases is rare. Compression should be applied as soon as the condition is recognized in order to prevent prolapse. The treatment should vary with the size and condition of the fistula, but that adopted in the case which he reports is considered most rational for most cases. The prognosis depends upon the condition, age of the patient, and the size of the diverticulum. In complicated cases it is most grave. Hubbard has collected nine cases which have been operated upon with cure resulting. [M.B.T.]

A Wash-basin for Urologic Purposes.—Two devices have been designed by Dommer³ to protect the patient and the doctor in performing operations, including irrigation, about the male urinary organs. One is designed for use by the patient; the other, by the physician. [D.R.]

Intravenous Injection in Hematemesis.—Bruce-Porter⁴ reports that a woman of 40 had suffered several hemorrhages from gastric ulcer. She was weak and emaciated. A sudden hemorrhage was followed by all the evidences of collapse, and death seemed imminent. Intravenous injection of normal salt solution was given at once, the ordinary restoratives used, and the patient recovered. [A.B.C.]

Hernia of Meckel's Diverticulum.—Webster¹ reports a case of this kind occurring in a woman of 42. Three days before admission she had fallen and then began to suffer from severe abdominal pain and vomiting. On examination the abdomen was found greatly distended and tender. There was a lump in the left inguinal region which the patient stated she had not noticed previously. Partial reduction of the hernia was easily accomplished, but a hard mass still remained. The bowels moved shortly afterward, there being a good deal of blood in the stool. Operation was decided upon, and on opening the sac a cylindric mass looking like intestine was discovered bound down by adhesions. On separating the adhesions it was found to be a Meckel's diverticulum proceeding from close to the mesenteric border of the ileum and having a well-defined

¹ Lancet, March 29, 1902.

² British Medical Journal, March 29, 1902.

³ Annals of Surgery, April, 1902.

⁴ Edinburgh Medical Journal, April, 1902.

⁵ Lancet, March 15, 1902.

⁶ British Medical Journal, March 1, 1902.

¹ Annals of Surgery, April, 1902.

² British Medical Journal, March 15, 1902.

³ Münchener medizinische Wochenschrift, December 24, 1901.

⁴ British Medical Journal, March 29, 1902.

mesentery of its own. The mesentery was tied and the diverticulum removed close to the bowel, which was then sutured. The diverticulum measured $\frac{3}{4}$ inches. An uninterrupted recovery followed the operation. [M.B.T.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

The Use of the Angiotribe.—Since 1896, when Doyen, of Paris, presented to the profession the above instrument, which he termed a progressive pressure forceps, much has been written about the value of the angiotribe. It has been modified by Tuffier, Thumin, Bissell and others, but the general principle underlying all of these instruments is the same. They are so formed as to crush the tissues into an almost ribbon-like thinness. The instrument is applied for only about two minutes, and it is claimed that much of the vitality of the crushed tissue will be restored, and that the sloughing consequent upon the retention-clamp method or the ligature is done away with. In 1899 Newman, of Chicago, presented a preliminary report upon the use of the Doyen-Thumin crusher, and described a new instrument devised for extending its work to the broad ligaments and other soft tissues. During the same year Stone, of Washington, reported a series of cases in which Tuffier's angiotribe had been used, and stated that where the tissues were fairly healthy and firm, the angiotribe as a compressor is nearly perfect, but that in all necrotic tissue, or in myomatous or omental structures, its work had not been altogether satisfactory. He noted a marked absence of pain after this method of performing hysterectomy. When the instrument was first introduced it was employed to the entire exclusion of ligatures. Ellis presents a thoughtful paper upon the use and abuse of this instrument. He finds it is useful wherever it would be necessary to ligate *en masse* a vascular pedicle, reducing its bulk to the least possible dimensions consistent with safety, and by the action of the angiotribe alone, or with the aid of supplementary ligatures of very fine catgut, assuring perfect primary and permanent hemostasis. Many surgeons who have used the angiotribe express entire confidence in its unassisted power to ensure perfect hemostasis, while others with less temerity or more caution habitually employ reinforcing ligatures. Ellis does not consider it safe to depend absolutely in all cases upon securing permanent hemostasis by compression with the angiotribe alone. The possibility of secondary hemorrhage after an apparently satisfactory compression of several minutes, though remote, is a danger that has occasionally materialized in the practice of those who have had extensive experience and depended solely upon this instrument. Montgomery,¹ of Philadelphia, employs the Doyen angiotribe for the crushing of the tissues, producing a groove or sulcus in which the chromicized catgut ligature is applied. He is thus able to secure safe hemostasis with a much smaller ligature than would otherwise be demanded. Zweifel, of Leipzig, employs a special clamp which exerts sufficient crushing power, if left for a few minutes, to arrest completely all bleeding, but he does not trust to it alone, using a Paquelin cautery upon the denuded surfaces and resorting to ligatures of chromicized cumol gut. The proper status of the instrument will probably be determined soon. The present satisfactory methods of sterilizing absorbable ligature material makes the necessity for such an instrument less imperative. The danger of infection and sinus formation, or of ligature irritation, has been reduced to the minimum; and the ligature of tissues in small sections rather than *en masse* also lessens the danger of hemorrhage and diminishes the postoperative pain; so that the angiotribe is virtually only

required for the crushing and reduction of a large resilient pedicle to an unresisting ribbon-like mass of insignificant size, to which a small catgut ligature can be readily applied. The risk of depending upon the instrument *alone* for the control of hemorrhage is too great to warrant its use for that purpose; and although 99 cases might be free from the accident, yet the possibility of the hundredth patient dying from secondary hemorrhage induces us to advise against its employment without subsequent ligation.

Vaginal Uterine Extirpation in Reference to Döderlein's Method.—A. v. Mars,¹ having operated in 17 cases by different methods, 25 of Doyen's procedure and eight by Döderlein's, gives a history of the last, and his opinion, drawn from experience, of Döderlein's method: (1) That it is not practicable in all cases of uterine carcinoma, especially not in those cases in which the posterior uterine wall has degenerated; (2) that in carcinoma cases in general this method does not protect the operative field from infection by the uterine secretions; (3) it facilitates the operative technic remarkably, since it avoids the necessity of dissecting the bladder from the uterus; (4) it also affords protection to the ligaments as no other method does; (5) it promises inestimable advantage in the extirpation of fibromyomas of the uterus in that it permits the extraction of a tumor of considerable size through the posterior vaginal vault; (6) this method is peculiarly adapted to cases of carcinoma of the posterior lip of the portio vaginalis; (7) Döderlein's method probably will be used exclusively in extirpation of the pregnant uterus, also in such cases directly after delivery. [w.k.]

Amputation of the Cervix.—The technic of amputation of the cervix has been developed from the original work of Sims and Schröder. C. P. Noble,² in his work, has developed a systematic technic which has given perfect satisfaction for a number of years. If the cervix is moderately hypertrophied and amputation is done for ectropion, laceration, etc., the cervix is split bilaterally down to the sound tissue, the diseased mucosa removed and enough of the underlying tissue to make a flap. If the operation is done for procidentia, it is desirable to remove a considerable portion of the cervix, and it is split until the vaginal vault is reached and the broad ligaments are exposed. Each lip is amputated in turn, either with the knife or scissors, the cervix being cut squarely across. The mode of suturing is the same in both cases. Six sutures are used to make a new os. One suture is used upon each side of the os to fasten the vaginal walls firmly to the cut surface of the cervix, and one suture is introduced from each side of the cervix, not only to fasten the vagina to the lateral walls of the cervix, but also to secure the cervical vessels which penetrate the cervix along its lateral borders. These two sutures when tied act as ligatures. Of the six sutures which are introduced to secure a patulous os, two are deep sutures and four are superficial. [w.k.]

Difference of Fetal and Maternal Blood Serum.—Halban and Landsteiner³ have conducted a series of interesting experiments to test the power of the maternal and fetal blood serum in resisting the agglutination and precipitation of blood corpuscles, and obtained these results: (1) The maternal and fetal blood react very differently; (2) the maternal serum dissolves a greater quantity of blood-corpuscles than the fetal serum; (3) the maternal serum agglutinates the blood-corpuscles more energetically; (4) it has a more powerful bactericidal influence as upon cholera germs; (5) it resists fermentation more strongly; (6) it is more strongly antitoxic; (7) the maternal serum will have more influence upon a precipitating immunserum; (8) examined human serums showed that the surplus of an agglutinating substance itself checked the agglutinating effects; (9) a surplus of precipitating immunserum acted to prevent precipitation; (10) these experiments in general go to show that in relation to chemic protection the organism of the newborn is less completely developed than that of the adult, the effective serum being indeed present, but not

¹ American Gynecological and Obstetrical Journal, December, 1901.

² Wiener klinische Wochenschrift, March 20, 1902.

³ American Journal of Obstetrics, March, 1902.

⁴ Münchener medicinische Wochenschrift, March 25, 1902.

in so great a quantity as in the adult; (11) the presence of a smaller amount of the serum material in the blood of the newborn brings with it a smaller power of resistance against infection, and it is desirable to determine by further experiment in what manner and at what time in the extrauterine life the changes in the character of the blood serum takes place. [W.K.]

A Case of Repeated Extrauterine Pregnancy.—Philippowicz¹ reports a case of extrauterine pregnancy, remarkable because of the conditions found at the second operation. The operation for the patient's first pregnancy, which was extrauterine, was in May, 1898. The abdomen was opened in the median line and the gestation sac was so firmly adherent to the abdominal wall and intestines that, considering the patient's weak condition, it was not deemed advisable to remove it. It was incised; the fetus 8 cm. long was removed, also the placenta; then it was tamponed with iodoform gauze. The cavity closed rapidly and the woman left the hospital with a small superficial wound. She returned two years later, in December, 1900, in the second month of pregnancy, evidently suffering from a ruptured ectopic gestation. When the abdomen was opened the small pelvis was filled with old and fresh blood clots. The removal of these showed a fetus in the left tube, which was resected and the fetal sac removed. But all of the firmly organized adhesions of mesentery, intestines and abdominal wall present at the first operation had disappeared; the inner genitalia were all entirely free, and there was no trace remaining of the former gestation sac, which had evidently been entirely absorbed. [W.K.]

Chorioepithelioma Malignum.—Our knowledge of these tumors, for which Pierce² has chosen the name applied by Marchand, "chorioepithelioma malignum," is comparatively recent. In 1888 Sänger describes such a growth, naming it deciduoma malignum, because he thought it grew from the decidua cells. But its pathologic-anatomic relationships were first definitely determined by Marchand in 1895, and his conclusions have been generally accepted by later writers. His teaching is that this peculiar growth originates at the point of placental insertion from the syncytium and Langerhans' cells of the chorionic villi; that it consists of interwoven masses of cells and protoplasmic masses, contains neither connective-tissue substance nor bloodvessels, but often areas of necrosis. The real cause of the disease is obscure; but it occurs only in women during or following pregnancy and at any time during the reproductive life. It may occur after normal labor, after abortion intrauterine or tubal, but most frequently follows a hydatid mole. Out of 45 cases collected by Herbert Spencer in 1896, 45% followed hydatid mole. Among 78 cases recently collected by MacKenna it occurred 35 times after hydatid mole, 22 times after normal labor, 12 times after abortion. As hydatid moles seem a predisposing cause, their structure has been carefully studied to determine why certain moles become malignant, and on this subject Butz draws these conclusions: (1) Malignancy does not lie in the inward proliferation of syncytial elements as claimed by Neumann; (2) the peculiarity of the case described by him was in showing small villous processes and a scarcity of mole vesicles; (3) when the mole is only partly expelled spontaneously, the remainder being removed in pieces by the curet or finger, the liability to malignancy is greater than when the mole is expelled entire; (4) specimens from curetment of his case showed a proliferation of fetal cells into the depths of the mucosa no further than is observed after normal birth, but in much larger quantity; (5) malignancy lies in disease of the uterus, not in the mole itself. The first symptom of the disease is usually hemorrhage, which may take place during the involution period or several weeks later and is of a more or less spouting character, like blood from an open vessel. This is followed by discharges of a dirty watery nature, persisting between the hemorrhages. Metastases are frequent in the vagina or in the lungs. The disease is accompanied with fever. The uterus increases in size, is softer than normal and tender, the os is dilated and within is a soft, triable mass, resembling placental tissue and attached by a broad base. It is

mottled red and dark-purple in color. Occasionally the tumor occurs in the vagina instead of the uterus. The prognosis is bad. If taken very early, recovery may follow, but in most cases the diagnosis is made only after metastases have developed. For this reason comparatively little can be done, and the only hope lies in early diagnosis. Statistics by Eirmann show that it belongs to the most malignant of all forms of tumor, death occurring in most cases within six months, whether operated upon or not. There is only one method of treatment, total extirpation of the uterus as soon as the diagnosis is made. Most operations have been by the vaginal route; but, because of the danger of spreading the disease, Pierce favors the abdominal route, as thus much of the manipulation of the uterus can be avoided, at least until the vessels have been secured. [W.K.]

New Treatment for the Vomiting of Pregnancy.—R. Condamin,¹ of Lyons, reports the very favorable results obtained by rectal injections of two to three liters of artificial serum daily in cases of the intractable vomiting of pregnancy. If there is rectal intolerance, he recommends the addition of a few drops of laudanum. [C.S.D.]

Uterus Bicornis, with Twin Pregnancy and Incarcerated Placenta.—Otto Rudle² reports a case of twin pregnancy to which he was called at the beginning of labor, in the thirty-seventh week of pregnancy. Upon an examination showing the head in posterior occipital presentation and the heart sound first perceived not in a position corresponding to this, he suspected a twin pregnancy. This was confirmed by a second examination which determined a second fetus with foot presentation. After waiting several hours, during which the pains seemed to cease and the condition to remain unchanged, he proceeded to a forceps delivery of the twins. Three-quarters of an hour later one placenta was normally delivered with subsequent hemorrhage and threatened collapse, hence it became necessary to advance to a manual delivery of the second placenta. He did not find this in the uterine cavity but near the fundus was a cross-shaped opening penetrable with three fingers, and in this diverticulum was the adherent placenta which could with difficulty be drawn through the narrow opening. Apparently the fetus had in the early months of pregnancy escaped from this horn, in which the placenta was incarcerated, into the larger uterine cavity. [W.K.]

Pyrexia of Gastrointestinal Origin During the Puerperium.—E. M. N. Williams³ reports two cases. The first case was characterized by a rise in temperature to 103° on the third day after delivery. The uterus was firm and the lochia normal; but there was much abdominal pain, also pain and burning about the anus. After repeated enemas with the removal of a large amount of feces and much flatus, the recovery was quite rapid. In the second case the rise in temperature was accompanied by a bright red papulous rash, beginning on the abdomen, spreading all over the body and appearing as punctiform on the arms. There was no soreness of the throat. Calomel was administered and repeated enemas were given, with the removal of an enormous amount of feces. With this treatment the temperature soon fell, the rash subsided and was followed by desquamation. The symptoms were apparently entirely due to gastrointestinal poisoning, and had no connection with the genital tract. The reason for publishing these notes is to suggest that the role of the intestinal tube in infections during puerperium is wider than it is generally supposed to be. Since during the puerperium the resistance of the body against microbial invasion is very markedly diminished, it is but natural to suppose that this loss of defensive power will be as apparent in invasion from the intestinal tube as in the more usual invasion from the genital tract. [W.K.]

Cesarean Section for Placenta Prævia.—Schauta⁴ considers this question from two standpoints: maternal and fetal mortality. In his clinic during the past ten years there were treated 234 cases, 16 of which ended fatally; not a high mortality when we bear in mind the pitiable condition in which many of these patients are brought to the hospital. The advocacy of cesarean section for all cases of placenta prævia hardly deserves

¹ Wiener klinische Wochenschrift, March 27, 1902.

² American Journal of Obstetrics, March, 1902.

¹ Gazette hebdomadaire de Médecine et de Chirurgie, April 6, 1902.

² Wiener klinische Wochenschrift, March 13, 1902.

³ Lancet, April 19, 1902.

⁴ Interstate Medical Journal, April, 1902.

serious consideration; its peculiar province is central or total placenta prævia. This condition was encountered 50 times with a fatal issue in nine instances. To replace version by cesarean section in such cases would add another great danger to that already existing, since the latter involves much time for essential preparation and delay means diminished chance of life; while version can be speedily performed, often without waiting for anesthetizing. And in his experience all immediate danger is past as soon as version is completed. In cesarean section a deep narcosis is necessary. If prior to the operation a woman has lost a large amount of blood, she will be in no condition to withstand this procedure. The same is true in those cases in which repeated examinations have been made, or other minor operative procedures have been tried without strict asepsis; and Schauta has made it a rule in his clinic to exclude from conservative cesarean section all cases which were handled before entrance by untrustworthy people, unless the indication for operation was absolute. His practice is to perform craniotomy in such cases. In regard to fetal mortality he states that out of the 234 cases mentioned, 127 children died, or 54%. Of the 50 cases of placenta prævia centralis, 35 died, or 70%. If cesarean section could be performed immediately after the appearance of the first hemorrhage, if at this time the fetus is alive and viable, its life could undoubtedly be saved; but here enters in another consideration, the fact that so few of these children are fully developed. Of these 50 cases only 18 were at full term, and the mortality of premature children is very high; hence he believes that by using cesarean section, even in placenta prævia centralis the fetal mortality would be no less than by the commonly practised methods. For these reasons he does not approve of cesarean section at the present time as a method of treating placenta prævia. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

The Use of Urea in Tuberculosis.—It has long been a matter of common observation that persons predisposed to gout and lithemic diseases are less susceptible to infection by the tubercle bacillus than the ordinary run of humanity. In recent years this antagonism between the two diatheses has become more generally recognized by medical authorities; and indeed a case of pulmonary tuberculosis has been observed to have been arrested by an intercurrent attack of gout. It seems almost impossible for predisposition to both diseases to be existent in the same individual; Buck speaks of a family in which the father was gouty and the mother tuberculous; some of the children took after the one parent and some after the other, but in none were both the diatheses present. The remarkable success in some cases of the empiric treatment of tuberculosis with large quantities of meat as an exclusive diet has long been known.

In 1894 Dr. Samuel G. Dixon,¹ of this city, as the result of studies of the then recently discovered tuberculin, suggested the use of the nitrogenous catabolic compounds as remedies in tuberculosis, and reported a case of lupus which had been much benefited by the use of urea. More recently Harper² has published several very interesting reports of trials of this substance in a long series of cases of tuberculosis with remarkably happy results. Harper employed a synthetic urea which he gives in beginning doses of 15 grains three times daily, increasing, if no disturbance of the digestive tract occurs, to 50 grains three times daily. He makes the observation that under this treatment there is no increase in the amount of urea eliminated through the kidney, and asks very pertinent questions where does it go to. Although he does not neglect the other measures useful in consumption, such as cod-liver oil and fresh air, he

says: "Urea exerts a specific action on tuberculosis, is quite as marked as mercury on a syphilitic node, salicylate of sodium on a painful joint in rheumatic fever, or iodid of potassium on bronchial asthma." He has found the urea useful not only in pulmonary tuberculosis but in a large variety of other tubercular diseases, such as scrofulous glands, tuberculous joints or laryngitis, lupus or peritonitis. It is only useful as an antagonist to the tubercle bacilli, and in cases of mixed infection where there are large numbers of the pyogenic cocci present the treatment is of little value. Other cases in which the treatment is unsuitable are those in which there is marked gastritis where the temperature is over 101°, and in acute miliary tuberculosis. There is no possible danger, according to this author, except the production of a gastritis.

Buck¹ also reports a case of very extensive lupus in a man of marked tuberculous diathesis who had had an affection of nearly all the larger joints of the body. The lupus involved the entire face and had existed for 12 years despite various treatments. Under the use of urea in 20-grain doses the ulcers rapidly healed, no other treatment except local being employed.

Editor American Medicine.—The following prescription is the best I have ever tried, to prevent pitting in smallpox:

Ichthyol	} of each	2 drams
Guaiaicol		
Glycerin	. . . . .	½ ounce

Mix.

Apply locally with a feather three times a day.

The earlier it is commenced, the better the effect. The face should be bathed before each application with warm water and soap.

T. C. GIBSON.

Amyl Salicylate.—M. Lionnet (*La Médecine Moderne*, May 22, 1901) has employed amyl salicylate in place of methyl salicylate in various rheumatic manifestations. Local application produced no irritation nor inflammation; in 10 cases in which it was so used marked diminution of the swelling and pain always followed. Internal administration of amyl salicylate caused no untoward symptoms. Its therapeutic effect is equal to that of methyl salicylate, while its odor is much less penetrating. For this reason Lionnet recommends it as a substitute for methyl salicylate. [L.F.A.]

Infection and Epilepsy. Medication by Microbic Toxins.—The *Journal des Praticiens*, May 4, 1901, discusses the power of intercurrent infectious diseases to affect the course of epilepsy. Some diseases have a favorable, and others an unfavorable influence upon the epileptic crises. Among those which have been found to decrease the convulsions are erysipelas, anthrax, pneumonia, measles, tuberculosis, smallpox, acute articular rheumatism, intermittent fever, diphtheria and vaccinia. Those which increase the convulsions are scarlet fever, grip and typhoid fever. This difference in action is explained by the variability in the action of the toxins producing these diseases, some decreasing the excitability of the motor area in the brain, the others increasing it. Lannois has endeavored to treat epilepsy by the subcutaneous injection of a filtered culture of *Staphylococcus aureus*, and in a few cases obtained very encouraging results. The toxins are used in the same manner as is vaccine in combating smallpox. [L.F.A.]

Diet of Prisoners.—The *Journal des Praticiens*, March 30, 1901, states that Voit estimated the daily amount of food necessary for a workingman weighing 154 pounds, to be 3.7 ounces of albumen, 1½ ounces of fat and 16½ ounces of carbohydrates. Hirschfeld, in an analysis of the food consumed by the inmates of the Moabit prison of Berlin, finds that 3 ounces of albumen, 1 ounce of fat and 18 ounces of carbohydrates are consumed daily by each man. Similar researches made by von Rechenberg on the food of the weavers of Zittau, Silesia, revealed the fact that each man does not consume 2½ ounces of albumen daily. These facts prove that the amounts fixed by Voit are not indisputable and that the equilibrium of the nutritive changes may be maintained with less albumen than he indicated. [L.F.A.]

¹ Dixon, *Therapeutic Gazette*, December 15, 1894.

² Harper, *Lancet*, 1901, 11.

¹ Buck, *Practitioner*, 1901.

Spontaneous Hypnotism.—Berillon (*La Médecine Moderne*, May 28, 1901) states that spontaneous hypnotism may occur accidentally, without suggestive intervention by shock or convulsive seizures. It may be characterized by catalepsy or by somnambulistic automatism. Suggestion can only be used as a therapeutic agent in these cases after a very long education on the subject. In 1742 Sauvage de la Croix, of Montpellier, reported a curious case of this sort. He observed at that period the somatic phenomena described by Charcot; catalepsy and somnambulism followed regularly, without any suggestion independent of all physical or psychic action. [L.F.A.]

Hypodermic Injections of Mercuric Benzoate.—Desesquelle (*La Médecine Moderne*, Vol. 15, No. 4, 1902, page 36) calls attention to the fact that mercuric benzoate is decomposed in the presence of the alkaline chlorids, bromids, and iodids. The same decomposition occurs in the formula recommended for hypodermic injection in the treatment of syphilis, by Gaucher, who dissolves mercuric benzoate in an isotonic solution of sodium chlorid. Desesquelle states that mercuriochlorate of sodium and sodium benzoate are formed, the latter being of no medicinal value. In order to avoid this, he proposes the following:

Mercury bichlorid 15 grains
Sodium chlorid (pure) 12 grains
Distilled water enough to make 3½ ounces

Fifteen minims to be injected every day, or every second day. [L.F.A.]

Treatment of Orchitis.—Lutaud (*La Médecine Moderne*, Vol. 13, No. 9, 1902, page 74) combats the pain of orchitis by the administration of cachets containing 7½ grains of quinin sulfate. In the majority of cases pain is arrested after the first dose, and it is unnecessary to give an injection of morphin. At the same time the following is applied locally:

Methyl salicylate 6 drams
Guaiacol 1 dram
Vaselin 1 ounce

By this treatment the pain and swelling rapidly diminish. [L.F.A.]

Classification of the Climates of Canada, the United States, Mexico and Neighboring Islands.—According to Guy Hinsdale ("Climatotherapy," Cohen's System, Vol. IV) the health resorts in North America and the neighboring islands may, in a general way, be classified as indicated under the following heads:

Marine Climates.—Warm sedative: Bermuda, the Bahamas, the West Indies—Havana and other cities of Cuba, Puerto Rico and Jamaica. Moderately cool: The Channel Islands of California. Cool stimulant: Long Island, Nantucket, Martha's Vineyard, the extremity of Cape Cod, the Isles of Shoals. Cold stimulant: Newfoundland, Cape Breton, Nova Scotia, Campobello, south shore of Mount Desert.

Coast Climates.—Warm sedative: The shores of South Carolina, Georgia, Florida and the Gulf of Mexico; San Diego; Coronado. Cool stimulant: The New Jersey coast, Lakewood, resorts on Long Island Sound and Narragansett Bay, western end of Cape Cod, the "North Shore" of Massachusetts, the coast of New Hampshire and Maine; San Francisco. Cool sedative: Portland, Oregon; Tacoma, Seattle, Olympia.

Inland Climates.—Low elevation (0-1,500 feet): Warm and moist: Louisiana, eastern and central Texas, Mississippi, eastern Arkansas. Warm and dry: Aiken, South Carolina; Thomsville, Georgia; Phoenix and Salt River valley, Yuma, Arizona; Redlands, Riverside, San Bernadino, Pasadena, San Gabriel, Ojai valley, California; the lake district of the interior of Florida during the winter. Moderately warm and dry (but liable to severe cold in winter): The pine region of New Jersey. Desert climate: The Mojave Desert. Cool and moist: The valley of the St. Lawrence; northern California and western Oregon and Washington (not on the coast). Cold and moist: Winnipeg, Port Arthur, Sault Ste. Marie, Duluth. Cool and moderately dry: Southern Minnesota, North and South Dakota, the Muskoka Lake region in Ontario, the southern tier of counties in New York, and the adjoining counties in Pennsylvania, pineries in Wisconsin and central Michigan; northwestern Connecticut, the Berkshire district in Massachusetts. Mod-

erate elevation (1,500-4,000 feet): Warm and dry: Mesilla and Lower Pecos valley, Las Cruces, southern New Mexico, Guadalupe and Monterey, Mexico; southern Arizona, portions of southeastern California near the Sierra and Coast ranges. Moderately warm and dry: Asheville, North Carolina. Cool and dry: Eastern Oregon and Washington, the valleys of Idaho and Montana, southern Wyoming; El Paso, Texas. Cool and moist: The Adirondack Mountains, New York; the White Mountains, New Hampshire; Mount Kineo, Maine; Eaglesmere, Pocono, Pennsylvania; Deer Park, Maryland; western Virginia and North Carolina. High elevation (4,000+ feet): Warm and dry: Northern New Mexico, central Mexico, southern Colorado, northern Arizona. Cool and dry: Denver, Colorado Springs, Manitou and mining regions of Colorado, Montana and Idaho; the Yellowstone Park, Lake Tahoe, Nevada; Glacier, Field, Banff, Calgary, Rossland, in British Columbia. Cool and moderately moist: Roan Mountain, North Carolina; Mountain Lake, Virginia.

Method of Employing Antityphoid Serum.—Chantemesse (*La Médecine Moderne*, Vol. 13, No. 4, 1902, page 34) states that the injection of antityphoid serum is neither painful nor irritating. He prefers to make the injection beneath the skin of the forearm on a level with the bend of the elbow, because it is more quickly absorbed than when made beneath the skin of the abdominal region. Both the skin and syringe must be thoroughly sterilized, and care must be exercised that the needle does not enter a vein. During the first 8 or 10 days of the disease in asthenic individuals the usual dose is from 2½ to 3 drams. The reaction is of short duration. Defervescence begins soon after the injection, and in seven or eight days the temperature returns to normal. In 100 cases treated by Chantemesse slight erythema followed the injections in two cases, but disappeared rapidly without causing a rise in temperature. At the end of 8 or 10 days, if the temperature remains elevated, or if it shows a tendency to increase, it may be inferred that the serum has been eliminated, and another injection may be given, the dose depending upon the amount of fever: 1 to 1½ drams if the fever is moderate, and 2½ drams if it is high. The initial dose of 2½ or 3 drams may be reduced below 2½ drams under the following circumstances: (1) when the patient is seen in the very beginning of the disease, during the first 5 or 6 days; (2) when the patient is seen late in the disease after profound intoxication has occurred. It is best at such times to begin with doses of from 1 to 2 grams, in order to avoid sudden arrest of the disease, or the shock of too great a reaction; then cease its administration for a few days, when it may again be given. In the use of antityphoid serum, the daily supervision of the physician is indispensable. Food should consist principally of aqueous beverages. When the reaction is marked, milk should be withdrawn, as it is poorly digested. After the diarrhea has ceased milk may be resumed, and beef juice may be added to it. [L.F.A.]

Vesical Calculi and Their Operative Removal.—Miclescu (*Therapeutische Monatshefte*, Vol. xvi, No. 1, 1902, page 12) has analyzed 128 operative cases of vesical calculus from a mixed clinical material in which every age, and various sorts and conditions of men were represented. The patients were all Macedonians and, as a class, lived chiefly on vegetables. The liability to vesical calculus increases with age; it is at its height in the third decade, decreases between the ages of 30 and 50, and increases between 50 and 80. In regard to chemical constitution, the distribution is as follows: Urates, 24%; phosphates, 41%; oxalates, 31%; cystin calculi, 3%; xanthin calculi, 1%. Miclescu saw stones ranging from the size of a millet seed to that of an orange; one calculus filled the entire bladder. They usually occur singly; in one case, however, 300 calculi were removed. A favorable prognosis depends on early recognition of the calculus, early removal, the patient's condition and the consistency of the stone; soft calculi being, of course, more easily removed. Miclescu prefers median lithotomy, combined if necessary with litholapaxy in general practice, especially when few facilities are obtainable. The technic is described. The mortality in his series of 128 cases, 120 of which were his own, was 1.3%. He emphasizes the importance of suturing the perineal wound, as it controls hemorrhage and

favors healing by first intention. In 92% of his cases the wound healed by first intention within four to five days, while in 6.7% the wound healed by granulation in from 10 to 15 days. [R.M.G.]

Treatment of Ulcerated Gumma by Phenosalyl.—Tshitsherin (*La Médecine Moderne*, Vol. 13, No. 7, 1902, page 57) has employed phenosalyl with excellent results in ulcerated gumma. In some cases in which the ulcers had persisted for several years, and in which the edges were thick and hard, the drug is said to have produced a gradual softening and thinning until the edges were on a level with the bottom of the ulcer; the secretion ceased and the bottom of the ulcer became red and covered with granulation. These results were observed in two or three weeks; cicatrization followed as in simple ulcers. No other medication was employed. Phenosalyl was applied to the ulcers in from 10% to 30% solution, according to the duration of the lesion. Equally good results in the treatment of varicose ulcers are reported. [L.F.A.]

The Use of Gelatin in Albuminuria and Diabetes.—Laffont and Lombard (*La Médecine Moderne*, Vol. 13, No. 2, 1902, page 16) believe that diabetes, albuminuria, and hemophilia are due to changes in the blood plasma. These variations cause hepatic, renal or capillary alterations. Even when an anatomic lesion exists they believe that it may be favorably modified by restoring the normal condition of the blood. To this end they have administered an aqueous solution of four grams of gelatin daily in the treatment of these conditions. Good results have followed in many cases. [L.F.A.]

On the Treatment of Ileus by Atropin.—Several cases are reported in the *Therapeutische Monatshefte*, Vol. xv, No. 12, 1901. Krönlein removed the right kidney from a patient 59 years old; severe pain in the right side of the abdomen necessitated the daily administration of opium and morphin. On the sixth day after operation, as the bowels had not moved, a glycerin enema, and later colonic irrigation, were given without success. During the succeeding night the patient went into collapse, but was brought around by means of camphor injections. On the following day the abdomen became greatly distended, the patient again went into collapse, and stercoraceous vomiting and other symptoms of obstruction developed. Operation being out of the question 0.003 gram ($\frac{3}{100}$ gr.) of atropin sulfate was injected subcutaneously. After some hours of delirium and hallucinations the excitement subsided and several diarrheal stools were obtained by oil enemas. The patient recovered. Gebele reports a case that ended fatally and is more instructive than many successful cases reported. The patient, a woman of 72 years, received three injections of 0.001 gram ($\frac{1}{1000}$ gr.) of atropin sulfate as a last resort. This was followed by some improvement, although there was no movement of the bowels. Four days later operation was finally determined upon, but the patient died four hours later. The obstruction was found to be due to a small enterolith which, if the numerous favorable reports in regard to atropin are to be accepted, ought to have been easily removed by the drug; instead the atropin merely masked a serious condition so that the woman came to operation four days later than would otherwise have been the case and when the chances for recovery would have been very much better. Aronheim reports a case of ileus produced by fecal accumulations and cured by a subcutaneous injection of 0.003 gram ($\frac{3}{100}$ gr.) of atropin. The latter dose should not be exceeded during 24 hours. In the first of the three cases it evidently sufficed to remove the symptoms of ileus, but at the same time it produced marked intoxication. Gastric lavage and a large enema of oil—several liters of olive or castor oil at a time—or from 70 to 100 grams (two to three ounces) of olive oil internally are very beneficial in this condition. [R.M.G.]

Gelatin Serum in Gynecology.—Lafond-Grellety (*Montréal Médical*, August, 1901) reports that he has controlled hemorrhages in the first and last months of pregnancy by introducing into the vagina, tampons dipped in a 10% solution of gelatin at the temperature of 99°. In endometritis and metritis with bloody leukorrhea he has arrested the hemorrhage and diminished the leukorrhea, without curing it, however, by injecting into the uterine cavity daily a 10% solution

of gelatin at the temperature of 99° and immediately afterward irrigating the vagina with two quarts of hot boiled water containing 10% of gelatin and 10% of carbolic acid in solution: this to be followed by introduction into the vagina of two tampons saturated with the gelatin solution. These should be retained for 24 hours. Hemorrhage occurring in the course of intra-uterine curetment may be reduced to a minimum by continuous irrigation with a hot solution containing 10% of gelatin and 10% of carbolic acid. In inoperable cancer of the uterus Lafond-Grellety has controlled hemorrhages and lessened their frequency by means of gelatin tampons introduced into the vagina, care being taken not to injure the pathologic surfaces. In removing the tampons they should first be loosened with a hot gelatin solution, when they may be withdrawn without injury to the diseased parts. After the hemorrhages are stopped, vaginal injections of hot gelatin solution should be given two or three times a week. [L.F.A.]

Concentrated Foods.—A number of concentrated foods for invalids are upon the market. Some of them are extremely useful in increasing the amount of certain nutritive ingredients that are needed, and in helping to force alimentation when there is a disinclination to eat. They are important aids in the maintenance of strength: (1) When little food can be taken at a time; (2) when swallowing is painful or difficult; (3) when there is a disgust for food and only a small quantity will be taken; (4) when it is desirable to force upon patients a large amount of nourishment. Food can be concentrated only to a moderate extent. Meat, when desiccated, affords a weight of proteid equal to one-fifth its original weight. Sugar is the most concentrated form of carbohydrate. Olive oil is a type of the most concentrated oil or fat. When food is taken in concentrated form, it taxes the digestive organs to secrete juices to digest it, and its bulk is often insufficient to stimulate the stomach to muscular efforts adequate to expelling it promptly. So, even when food has to be administered in its most concentrated form, sufficient water should always be given to dilute it in the stomach, and to give a certain bulk or volume to the contents of the viscous. Concentrated foods are not well adapted for exclusive use, but they are most useful when employed to increase the percentage of certain of the proximate principles of food.—N. S. Davis, Jr., "Diet-Therapy."

Comparative Influence of Climates and Individual Resistance in Experimental Tuberculosis.—Lannelongue, Achard and Gaillard (*La Médecine Moderne*, August 7, 1901) have made a number of experiments to determine the influence of climate on the development of tuberculosis in guineapigs whose pleura had been inoculated with the bacilli. They found this influence but slight, and not of the importance generally attributed to it. Remarkable differences were observed, however, in the progress of the disease and in the lesions, in different animals of the same group inoculated in the same manner and submitted to the same conditions of climate and of nourishment. Some of these animals resisted to such an extent that the infection may be said to have been aborted, or cured spontaneously. A certain number increased in weight and even died in a fat condition, while presenting lesions of generalized tuberculosis. In about half of the cases the lesions were localized in the thorax. The alterations in the serous membranes were numerous, and presented all the characteristics of those seen in man. Rupture of the spleen with profuse hemorrhage into the peritoneal cavity occurred in six animals. The spleen was often the seat of infections which increased its size in some cases to one-tenth the weight of the animal. The majority of the lesions having their counterpart in human pathology, the results of the experiments are compared to those observed in tuberculous man. The authors believe that these internal changes determine the character of the lesions and the general progress of the infection much more than do the external causes and the climatic influences. The chances of infection, and the mode of entrance are almost the same in a great many human subjects; but the progress of infection is very different in each individual. The relative resistance is much greater in man than in the guineapig, because in man infection takes place slowly and from small doses, and does not require the large doses used in experimental inoculations. [L.F.A.]

The Aix Treatment of Syphilis in London.—Houchin (*Journal of Balneology and Climatology*, Vol. vi, Part I, 1902, page 9) calls attention to the importance of keeping the mouth in perfect condition, and to the advantage of a prolonged bath in artificially mineralized water at a temperature of about 100° F. to render the skin receptive before the inunction is applied. He prefers the salt from the Kochbrunnen Spring in Wiesbaden, because it contains no sulfur, and therefore leaves no black deposit of sulfid on the skin. He does not give potassium iodid during or after the course of inunctions, believing that it reduces the action of mercury by forming the milder iodid of mercury. The cases in which the treatment is suitable and the results most satisfactory are: Secondary eruptions and affected mucous membranes; eye affections, late secondary or early tertiary; pregnant women who have aborted in consequence of syphilis; gumma and gummatous exudation, whether cerebral, spinal or intramuscular; the syphilids; disease of the arteries; old syphilitic ulceration; nervous diseases, which usually require prolonged treatment; congenital syphilis. [R.M.G.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Chelidonium (Celandine).—E. A. Wolfe (*Trans. Nat. Eclectic Med. Ass'n.*) reports favorable experiences with chelidonium majus in conditions suggesting the existence of congestion, or mild acute or subacute catarrhal inflammation of the stomach, bowel, or liver, especially cases associated with cough, or with headache and mental depression, in addition to local pain and tenderness, or jaundice. In one of his cases glycosuria was present, and he gave nux vomica and podophyllum as well as chelidonium. [Chelidonium as a remedy has not maintained professional confidence. The plant is described in the U. S. P., 1890, but no official preparation is given. The P. G., 1872, gives an extract, which is said to be used in doses of 10 grains; and in domestic practice an infusion is made with ½ ounce of the plant to a pint of water—the dosage being indefinite. The drug contains several alkaloids, concerning none of which is there sufficient information to serve as a basis for therapeutic advice. In the *National Dispensatory* the juice of the fresh plant is said to be a violent local irritant, a drastic purge, and a narcotic. All of these properties would indicate useful therapeutic powers if kept under proper control by a good preparation and well regulated dosage; but among official or domestic preparations there seems to be none that can be recommended highly. In European rural districts where the plant is indigenous, the fresh acrid juice, given in doses of 30 to 40 drops, is a popular remedy for dropsy, jaundice, and scrofula, and is applied locally for cutaneous warts.]

FORMULAS ORIGINAL AND SELECTED.

Treatment of Diarrhea in Children Fed on Artificial Milk.—Comby (*Journal des Praticiens*, Vol. 15, No. 50, 1901, page 792) directs that these patients should receive pure water for 12 to 24 hours. Sterilized milk should be used in place of ordinary milk; this may be mixed with sweetened boiled water if it is not digested pure. As a remedy, Hayem prescribes:

Lactic acid 30 grains
Syrup of raspberry 1 ounce
Distilled water 3½ ounces

To be taken by teaspoonful doses in 24 hours.

Saint-Philippe recommends antipyrin as follows:

Antipyrin 7.5 grains
Syrup of orange-flowers } of each 1½ ounces
Water of lime-tree

5 to 6 teaspoonfuls daily.

[We should hesitate to give antipyrin.]

Dermatol, salol, tannigen, tannalbin and calomel in small doses may be given. Any tendency to collapse should be combated by stimulating frictions, hot mustard baths, and subcutaneous injections of saline solutions. Children suffering from infectious diarrhea should be isolated, and their stools disinfected. In cases resembling cholera infantum the treatment should consist in injections of saline solution and the use of albumen water. Lavage of the stomach may be performed in cases of vomiting. [L.F.A.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended May 3, 1902:

SMALLPOX—UNITED STATES.			Cases	Deaths
California:	Los Angeles.....Apr. 12-19.....	3		
	San Francisco.....Apr. 13-20.....	3		
Colorado:	Denver.....Apr. 12-19.....	7		
Illinois:	Belleville.....Apr. 19-26.....	2		
	Chicago.....Apr. 19-26.....	13		
	Freeport.....Apr. 19-26.....	1		
	Galesburg.....Apr. 19-26.....	1		
Indiana:	Evansville.....Apr. 19-26.....	4		
	Indianapolis.....Apr. 19-26.....	16		
	Terre Haute.....Apr. 19-26.....	4		
Kansas:	Wichita.....Apr. 19-26.....	5		
Kentucky:	Covington.....Apr. 20-27.....	16		
	Lexington.....Apr. 19-26.....	2		
Louisiana:	New Orleans.....Apr. 19-26.....	1		
Maryland:	Baltimore.....Apr. 19-26.....	1	2	
Massachusetts:	Boston.....Apr. 19-26.....	51	3	
	Brockton.....Apr. 19-26.....	1		
	Brookline.....Apr. 19-26.....	2		
	Cambridge.....Apr. 19-26.....	2		
	Everett.....Apr. 19-26.....	3		
	Fall River.....Apr. 19-26.....	2		
	Fitchburg.....Apr. 19-26.....	1		
	Malden.....Apr. 19-26.....	1		
	Medford.....Apr. 19-26.....	1		
	New Bedford.....Apr. 19-26.....	3		
	Newton.....Apr. 19-26.....	4		
	Somerville.....Apr. 19-26.....	5		
Michigan:	Detroit.....Apr. 19-26.....	5		
	Ludington.....Apr. 19-26.....	8		
Missouri:	St. Louis.....Apr. 13-27.....	83	2	
Montana:	Butte.....Apr. 20-27.....	5		
Nebraska:	Omaha.....Apr. 19-26.....	45		
New Jersey:	Camden.....Apr. 19-26.....	3		
	Hudson County, including Jersey City.....Apr. 6-27.....	107	13	
	Plainfield.....Apr. 19-26.....	21		
New York:	Buffalo.....Mar. 27-Apr. 30.....	1		
	New York.....Apr. 19-26.....	56	13	
	Yonkers.....Apr. 18-25.....	1		
Ohio:	Cincinnati.....Apr. 18-25.....	12		
	Cleveland.....Apr. 19-26.....	2	1	
	Dayton.....Apr. 19-26.....	2		
Pennsylvania:	Columbia.....Apr. 21-28.....	4		
	Erie.....Apr. 19-26.....	2		
	Philadelphia.....Apr. 19-26.....	31	6	
	Scranton.....Apr. 19-26.....	6		
Rhode Island:	Providence.....Apr. 19-26.....	2		
Tennessee:	Memphis.....Apr. 19-26.....	14	2	
Utah:	Salt Lake City.....Apr. 19-26.....	1		
Washington:	Tacoma.....Apr. 13-20.....	3		
Wisconsin:	Green Bay.....Apr. 20-27.....	6		
	Juneau.....Apr. 19-26.....	1		

SMALLPOX—FOREIGN.			Cases	Deaths
Austria:	Prague.....Apr. 5-12.....	8		
Barbados:	.....Apr. 12.....	5		
Belgium:	Antwerp.....Apr. 5-12.....	9		
Canada:	Quebec.....Apr. 12-19.....	9	2	
	Winnipeg.....Mar. 29-Apr. 19.....	18		
China:	Hongkong.....Mar. 8-22.....	7	7	
Colombia:	Panama.....Apr. 21.....	Present.		
France:	Rheims.....Mar. 31-Apr. 6.....	5	3	
Gibraltar:	.....Apr. 6-13.....	1		
Great Britain:	Dundee.....Apr. 5-12.....	1		
	Edinburgh.....Apr. 5-12.....	1		
	Glasgow.....Apr. 11-18.....	11	2	
	London.....Apr. 5-12.....	274	73	
Greece:	Athens.....Apr. 5-12.....	1		
India:	Bombay.....Mar. 25-Apr. 1.....	10		
	Karachi.....Mar. 23-30.....	5	2	
Italy:	Palermo.....Apr. 5-12.....	40	5	
Mexico:	Vera Cruz.....Apr. 12-19.....	5	2	
Russia:	Moscow.....Mar. 29-Apr. 5.....	14	3	
	Odessa.....Apr. 5-12.....	3		
	Warsaw.....Mar. 29-Apr. 5.....	2		
Spain:	Corunna.....Apr. 5-12.....	1		
Uruguay:	Montevideo.....Mar. 8-15.....	71	5	
	Montevideo.....Mar. 22-29.....	70	3	

YELLOW FEVER.			Cases	Deaths
Mexico:	Vera Cruz.....Apr. 12-19.....	12	5	
Venezuela:	Puerto Cabello.....Feb. 8-15.....	1	1	

CHOLERA.			Cases	Deaths
China:	Canton.....Mar. 19.....	Present.	Nine	
			deaths among Europeans.	
	Hongkong.....Mar. 8-22.....	23	19	
India:	Bombay.....Mar. 25-Apr. 1.....	3		

PLAGUE—FOREIGN.			Cases	Deaths
China:	Canton.....Apr. 24.....	Malignant outbreak.		
			1	1
	Hongkong.....Mar. 8-22.....			
	Bombay.....Mar. 25-Apr. 1.....		909	
	Karachi.....Mar. 23-Apr. 30.....		119	92
Zanzibar:	Nairobi.....Mar. 20.....		20	5

Changes in the Medical Corps of the U. S. Army for the week ended May 3, 1902:

JAMES, HARRY M., contract surgeon, is relieved from further duty at Rowell Barracks, Pasa Caballos, Cuba, and will proceed to Columbia Barracks for duty to accompany the Third Battery, Field Artillery, and detachment of Seventh Cavalry to Chickamauga National Park, Ga., where he will report by telegraph to the adjutant-general of the Army for further orders.

CARR, Major L. C., surgeon, is relieved from further duty in the department of Cuba, and will proceed to Columbia Barracks for duty with the troops of the Seventh Cavalry, en route to Chickamauga National Park, Ga., where he will report by telegraph to the adjutant-general of the Army for further orders.

BEVANS, First Lieutenant J. L., assistant surgeon, is relieved from further duty at Columbia Barracks, Cuba, and will proceed to Cabana Barracks for duty with the Twenty-first Company coast artillery, en route to Rowell Barracks, Pasa Caballos, Cuba, where he will report for duty at that post.

BROWN, HENRY L., contract surgeon, is relieved from further duty at Manzanillo, Cuba, and will proceed to Rowell Barracks, Pasa Caballos, Cuba, for duty to accompany the troops of the Second Cavalry en route to the United States, where he will report by telegraph to the adjutant-general of the Army for further orders.

STONE, Captain JOHN H., assistant surgeon, is relieved from further duty at Hamilton Barracks, Matanzas, Cuba, and will accompany the troops of the Second Cavalry from Matanzas to Fort Ethan Allen.

MAZZURI, Captain PAUL, assistant surgeon; Contract Surgeon Harry D. Belt, and Hospital Stewards Daniel Millen and William E. Arnold are relieved from further duty at Holguin, Cuba, and will accompany troops B, D, I, and K, Tenth Cavalry, to Fort Robinson, where the officers and enlisted men will be reported by telegraph to the adjutant-general of the Army for further orders.

TRUBY, First Lieutenant ALBERT E., assistant surgeon, is relieved from duty at Rowell Barracks, Pasa Caballos, Cuba, and will accompany troops I and K, Second Cavalry, to Fort Ethan Allen, where he will report by telegraph to the adjutant-general of the Army for further orders.

AUSTIN, Contract Surgeon R. EMMETT, is relieved from further duty at Manzanillo, Cuba, and will accompany a detachment of troops from that post and Holguin to Fort Robinson, where he will report by telegraph to the adjutant-general of the Army for further orders.

ESPIN, Contract Surgeon J. M., is relieved from duty at Morro Castle, Santiago, Cuba, and will accompany the remainder of the Eighth Cavalry from that post to Jefferson Barracks, where he will report by telegraph to the adjutant-general of the Army for further orders.

BAIGENT, Hospital Steward JOHN, is relieved from further duty at Hamilton Barracks, Matanzas, Cuba, and will accompany the detachment of the Second Cavalry to Fort Ethan Allen, where he will be reported to the adjutant-general of the Army for further orders.

SPURLIN, GEORGE G., hospital steward, is relieved from further duty in the office of the chief surgeon of the district of Santiago and Morro Castle, Santiago, Cuba, and will accompany the detachment of the Second and Eighth Cavalry to Fort Sheridan and Jefferson Barracks, where he will report by telegraph to the adjutant-general of the Army for further orders.

The following changes in the stations and duties of officers are ordered: Lieutenant Colonel Charles L. Heilmann, upon his arrival at San Francisco, Cal., will proceed to Chicago, Ill., and report to the commanding general, department of the Lakes, for duty as chief surgeon of that department, to relieve Lieutenant Colonel Timothy E. Wilcox. Lieutenant Wilcox will proceed to Vancouver Barracks and report to the commanding general, department of the Columbia, for duty as chief surgeon of that department, to relieve Major Rudolph G. Ebert, surgeon.

DARNALL, Captain CARL R., assistant surgeon, upon his arrival at San Francisco, Cal., will proceed to Plattsburg Barracks for duty.

KIERSTED, First Lieutenant HENRY S., assistant surgeon, is granted leave for two months on account of sickness, from May 1, with permission to apply for an extension of one month.

JOHNSON, Major RICHARD W., surgeon, now on leave at San Francisco, Cal., is relieved from further duty at Fort Douglas, and will report to the commanding general, department of California, for assignment to duty.

WILLIAMSON, First Lieutenant LLEWELLYN P., assistant surgeon, so much of orders of February 13 as direct him to report at Columbus Barracks for duty is amended so as to direct him to report at Jefferson Barracks for duty.

MOSELEY, Lieutenant Colonel EDWARD B., is granted leave for 20 days.

WALES, Captain PHILIP G., assistant surgeon, will, in addition to his other duties, take charge of the office of chief surgeon of the department of the Colorado during the temporary absence on leave of Lieutenant Colonel Edward B. Moseley.

KIEFFER, Captain CHARLES F., assistant surgeon, having reported his arrival at San Francisco, Cal., will proceed to Fort Screven for duty.

COX, First Lieutenant WALTER, assistant surgeon, having reported his arrival at San Francisco, Cal., will repair to Washington, D. C., and report to the surgeon-general of the Army for instructions.

IRELAND, Captain MERRITT W., assistant surgeon, is granted leave for 14 days.

SMITH, Captain ALLEN M., assistant surgeon, is granted leave for 15 days.

AGRAMONTE, ARISTIDES, contract surgeon, is granted leave for three months.

JONES, GEORGE B., contract surgeon, now at Angle Island, Cal., will proceed to his home, Rushville, Ind., for annulment of contract.

VENNEMAN, HEINTICH, hospital steward, Fort Snelling, will be sent to Honolulu to relieve Hospital Steward Max Werner. Steward Werner will be sent to Fort Snelling for duty.

THOMPSON, Contract Surgeon LOUIS A., now at Dayton, Ohio, is relieved from further duty in the division of the Philippines, and upon the expiration of his present sick leave will proceed to Columbus Barracks for duty.

MCGLOIN, PATRICK, hospital steward, Army General Hospital, Presidio, will be sent to San Diego Barracks, Cal.

McHENRY, Captain GEORGE A., assistant surgeon, is granted leave for two months, to take effect upon his arrival in the United States.

WATKINS, VICTOR E., contract surgeon, is relieved from duty at Fort Williams and will proceed to Whipple Barracks, Ariz., for duty.

SHELLENBURGER, JAMES F., contract surgeon, will proceed from St. Petersburg, Fla., to Fort Ringgold for duty.

MUNSON, Captain EDWARD L., assistant surgeon, will proceed to Millville, N. J., on business pertaining to the medical department of the Army.

Changes in the Medical Corps of the U. S. Navy for the week ended May 3, 1902:

YOUNG, R. M., assistant surgeon, detached from the Cavite Naval Station and ordered to duty at Guam, L. I.—April 26, 1902.

DUBOSE, W. R., assistant surgeon, detached from the Wisconsin and ordered to the Solace—May 1, 1902.

STOKES, C. F., surgeon, detached from the Solace and ordered to the Wisconsin, and on arrival of that vessel at Puget Sound, ordered to the Oregon.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended May 1, 1902:

BAILHACHE, P. H., surgeon, detailed to represent the service at the American Congress of Tuberculosis at New York, N. Y., May 14, 15, 16—April 30, 1902.

AUSTIN, H. W., surgeon, granted leave of absence for seven days from April 23, 1902, under paragraph 179 of the regulations.

BANKS, C. E., surgeon, granted leave of absence for two days from May 2—May 1, 1902.

CARRINGTON, P. M., surgeon, detailed to represent the service at the American Congress of Tuberculosis at New York, N. Y., May 14, 15, 16 reporting at Washington en route to New York and on return to Fort Stanton—April 30, 1902.

GEDDINGS, H. D., passed assistant surgeon, detailed as supervisor of repairs and alterations of the steamer Neptune at Baltimore, Md.—April 29, 1902.

PERRY, J. C., passed assistant surgeon, relieved from duty as chief quarantine officer of the Philippine Islands and directed to proceed to San Francisco, Cal., and await orders—April 25, 1902.

THOMAS, A. R., passed assistant surgeon, relieved from duty in office U. S. Consul-General at London, Eng., and directed to proceed to Manila and assume the duties of chief quarantine officer of the Philippine Islands, relieving Passed Assistant Surgeon J. C. Perry—April 25, 1902.

CUMMING, H. S., passed assistant surgeon, detailed as inspector of unseizable property at office of plague commission at San Francisco, Cal.—April 30, 1902.

McMULLEN, JOHN, assistant surgeon, relieved from duty at Baltimore, Md., and directed to proceed to Boston, Mass., and report to medical officer in command for duty and assignment to quarters, relieving Assistant Surgeon M. W. Glover—April 30, 1902.

GRUBBS, S. B., assistant surgeon, bureau letter of April 18, 1902, directing Assistant Surgeon Grubbs to assume command of the Gulf quarantine station, amended so that he shall visit New Orleans, La.; Pascagoula, Miss., and Mobile, Ala., en route—April 28, 1902.

PARKER, H. B., assistant surgeon, relieved from duty in the Hygienic Laboratory and appointed chairman of board of medical officers for the investigation of yellow fever, malarial fevers and dengue, at Vera Cruz, Mex.—April 25, 1902.

ANDERSON, J. F., assistant surgeon, to proceed to Norfolk, Va., for special temporary duty—April 30, 1902.

HEISER, V. C., assistant surgeon, to proceed to Quebec, Can., for duty in the office of the U. S. Commissioner of Immigration—April 28, 1902.

BILLINGS, W. C., assistant surgeon, granted leave of absence for two months from May 1—April 26, 1902.

GOLDBERGER, J., assistant surgeon, to report at Washington, D. C., for special temporary duty—April 25, 1902. Bureau letter of April 18, 1902, directing Assistant Surgeon Goldberger to proceed to Tampico, Mex., amended so that he shall visit Norfolk, Va.; New York, N. Y.; Havana, Cuba, and Vera Cruz, Mex., en route—April 26, 1902.

McLAUGHLIN, A. J., assistant surgeon, upon being relieved from duty at the immigration depot by Assistant Surgeon M. W. Glover, to proceed to Washington, D. C., and report to the Director of the Hygiene Laboratory for duty—April 30, 1902.

GLOVER, M. W., assistant surgeon, upon being relieved from duty at Boston, Mass., by Assistant Surgeon John McMullen, to proceed to New York, N. Y., and report to Surgeon G. W. Stoner, immigration depot, for duty, relieving Assistant Surgeon A. J. McLaughlin—April 30, 1902.

BURKHALTER, J. T., assistant surgeon, to proceed to Scranton, Miss., for special temporary duty—April 25, 1902.

BEAN, L. C., acting assistant surgeon, granted leave of absence for three days from April 30—April 29, 1902.

BURFORD, R. E. L., acting assistant surgeon, granted leave of absence for 30 days from May 15—April 23, 1902.

KINSELL, B., acting assistant surgeon, granted leave of absence for seven days from May 12—April 26, 1902.

WETMORE, W. O., acting assistant surgeon, granted leave of absence for seven days from April 19, 1902, under paragraph 201 of the regulations.

Promotion.

GIBSON, F. L., promoted to the grade of senior hospital steward from June 11, 1901—April 24, 1902.

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The West India calamity appeals to the sympathy of none more acutely than of the physician. He is certainly well aware of the close dependence of life and health on the physical forces of the earth. He knows better than most how intimately the two are associated, and his appreciation of the slow methods by which baneful cosmic influences bring on death by no means lessens his appreciation of the sudden ones that kill many thousands almost instantly. At this writing we do not know how many physicians have lost their lives in the West Indies, nor who the surviving sufferers may be. It is gratifying to know that our government has acted with most commendable promptness. Congress has voted \$500,000 for the relief of the survivors, and the steamer *Dixie* has been ordered to proceed at once to Martinique with clothing, food, medical and other supplies. Surgeon-General Sternberg has telegraphed us that the medical department of the Army will send with the Martinique relief expedition an ample supply of medicines and surgical dressings. Three medical officers and six members of the Hospital Corps have been detailed to accompany the expedition. The names of the medical officers are First Lieutenant Jere B. Clayton, assistant surgeon, U. S. Army; First Lieutenant James R. Church, assistant surgeon, U. S. Army; First Lieutenant John J. Reilly, assistant surgeon, U. S. Army.

Physicians Should Furnish Abstracts of their Papers.—There is no one capable of doing it so well, and none is so interested in having it done correctly. The writer knows best what is the essential thing in his article and just what needs to be emphasized. Reporters, even the best, cannot possibly know and do the work so perfectly, and especially during the *viva voce* reading. The succinct short epitome in 100 or at most 200 words should be appended to the paper so that editors after its publication may use this instead of the imperfect one each would be compelled to make for his readers. When going to a medical society this abstract should be manifolded and as many separate slips taken as may be desired by the secretary and the medical stenographers present. By following this plan the reports in medical journals would be more concise and accurate, and every contributor would know that he is correctly reported, and that his bit of experience has been surely and exactly added to the great body of medical truth.

A plan for uniformity in state medical organizations has been proposed by the committee of the American Medical Association composed of Dr. McCormack, Dr. Foshay and Dr. Simmons, and their report is published in the Association Journal of May 3. Without interfering with the proper independence of the individual state societies, their just rights as to conditions of membership, etc., the outline of the constitution and by-laws offered by the committee seems most admirable, and we hope it may be accepted, at least in essentials, by all the states of the Union. In this way may be reached that unity of the entire American medical profession by which alone we can lessen the degrading influence of quackery and aid in the making and execution of laws in a thousand ways affecting the public health. All progressive physicians should do their utmost to carry into execution the recommendations of Drs. Reed, McCormack, Foshay, and Simmons, who have labored so earnestly and nobly in the cause of professional unity and uplifting.

A national law regulating the conditions of the practice of medicine is repeatedly asked for, and we are in receipt of many letters urging us to agitate this method of reform. The fact shows the just irritation at the present method, which limits such regulation to the jurisdiction of the independent states. But these proposers of nationalization of medical practice conditions forget that it is simply impossible without a change in the Constitution of the United States. Whether constitutional or not, and even if possible to enact such a law, the momentous question would be left whether it would be wise to do so. It is almost beyond question that the method of progress will consist in interstate reciprocity. Any other method would require extensive abrogation of existing state laws, commissions, examinations, etc., to a degree rendering it out of the question. Already New Jersey has undertaken interstate reciprocity in an effective way, and the states with advanced standards should do the same. The plan advocated by Dr. Rodman (*Jour. Am. Med. Assoc.*, May 10, 1902) is most worthy of consideration, but seems of doubtful feasibility. The committee or board would be compelled to hold examinations in different parts of the United States, or all applicants would have to come, *e. g.*, to Washington for examina-

tion. Its efficacy would be further conditioned upon the doubtful acceptance of the greater number of the states of the findings of the general representative board. There is also another possible method of solving the difficulty—a congress of representatives of all the state examining boards of the United States and an agreement upon the part of the state boards for reciprocal registration according to common standards of examination, etc. This, however, is practically a logical evolution of interstate reciprocity, and along these lines the solution of the question will probably be found.

Smoke a Sanitary, Not Only an Esthetic Nuisance.—Probably one of the chief reasons for the indifference to the reform of the smoke nuisance is that most people think of the matter not as one of health but of esthetics. Manufactories are so necessary, it is thought, that the ugliness of a smoky city can be endured, because of the utility of the results of coal-burning. But nothing is easier than to prove that the smoke-cloud over a manufacturing city tremendously increases the mortality. The inhabitants of a large city are sufficiently handicapped by the mere fact of the aggregation. Finely ground stable manure is the principal abnormal constituent of the air of the streets, and compared with ocean air that over a large city has 13,000 times as many bacteria in it. It has been calculated that in such a city a man inhales 37,000,000 germs in 10 hours, and besides this some 10,000,000 dust particles as compared with 31,000 of mountain air. The case against smoke, however, rests chiefly with another factor, the increase it causes of the carbon dioxid in the air. In the country there are about three parts of carbon dioxid to 10,000 in the air, and the limit for health in rooms is six, or at most ten. During fogs the amount is greatly increased, sometimes rising as high as 14 and probably higher. The chief cause of fogs is the matter suspended in the atmosphere, but chiefly from coal-smoke particles. When Pittsburg burned natural gas it was free from dense and dark fogs. The great fog of 1880 in London increased the average mortality by 2,994 in three weeks, and that of 1892 caused an excess of 1,484 deaths in one week.

The financial cost of the smoke nuisance is scarcely recognized by those who throw their unburned carbon into the atmosphere. Sir William Richmond has estimated that as much as 6,000 tons of such unconsumed coal are thrown into the atmosphere of London every day, and the number of tons constantly floating above a modern city is almost impossible to calculate. Rollo Russell, ten years ago, figured the actual loss of coal to the people of London from this cause as worth about \$25,000,000 a year, and today the sum is more than twice as much. During a heavy London fog the weight of the deposit of dust, soot, etc., has been mathematically made out as twenty-two pounds to the acre. London now covers an area of over 100,000 acres. Among the expensive results of this constant deposit is the decay of stonework, building material, and buildings, the depreciation of art treasures, the great damage done to plant life, the great expense of artificial light, etc. But, after all, these direct losses of the wasted fuel and the

commercial injury, etc., are as nothing to the actual expense of life and disease which are the first and most direct results of smoke. It would require but little statistical ability to show that the cost in life and sickness is vastly higher, and estimated in money alone runs into hundreds of millions of dollars. In 1306 King Edward the First, on the petition of the citizens, had a law passed making the burning of coal ("sea coal" as it was called) a capital offense, and it is now over 200 years since a chronicler complained of the London fogs as "exceedingly obstructing the breath, so as one could hardly breathe." Today London has ten times the population it then had, and there is still little or no relief.

Sunshine and the Smoke Nuisance.—Carefully kept records have shown that the hours of sunshine in a modern manufacturing city are much less than in the country, and that they increase in number the farther one goes from the city. The hours of sunshine are least in the city in the winter, a period most severe upon the health. In some cases the disproportion is most striking, as *e.g.*, from November, 1885, to February, 1886, there were in London 62 hours of sunshine, while at Kew there were 222, and at Eastbourne 300. The sanitary value of light and sunshine cannot be judged from any statistics as to the length of life of miners and of animals living in darkness. There are too many complications to make the figures valuable in our present crude science of statistics. Cheerfulness is of positive sanitary value, and there can be no doubt in the minds of all physicians that light is of the greatest use in promoting cheerfulness and health and in stimulating convalescence. Dust and dirt are the great breeders of disease, and when smoke and the fog it begets are dense the health must suffer. If cleanliness is akin to godliness, it is also a prerequisite of healthfulness, so that the war on the smoke nuisance is clearly and directly in the interest of the national health and well-being.

The abatement of the smoke nuisance has been entered upon by most large cities, and it needs only the cooperation of citizens and an aroused public sentiment to do away with it altogether. The waste in fuel alone would more than pay the expense of inaugurating smoke-consuming devices, better methods of firing, etc. The law can do much, especially if backed by public opinion. But the manufacturers are not alone to blame. The private houses are so many and the servants who attend to the fires, ranges, and furnaces are so careless that fuel is not consumed as it should be. The greatest means of amelioration lies in the use of gas for cooking and heating, and probably electricity may soon supplant gas. The establishment of centralized power-stations and the distribution of power by electricity is also working to the same end. But the law must enforce the use of smoke-consumers by the power-stations when coal is used. In many cities, mechanical stokers, smokeless furnaces, ranges, etc., are lessening the evil. The railways are also cooperating by devices, and by appointing special engineers and inspectors to insist on better firing. In Cleveland the crusade against smoke is earnest and persistent. In Indianapolis the inspector filed charges

against the county officers because of the sooty smoke-stack of the county court house. In Chicago there is encouragement for the reformers in a legal decision that there is no private right to befoul the air, as by a rendering plant. The *St. Paul Medical Journal* is encouraging the reform, and says the energetic health-officer is doing all he can to carry out the smoke-ordinance. Evidence of neglect is furnished by photographs of chimneys belching forth smoke. Fines are imposed freely in Chicago, but the trend of custom is toward private remonstrance and personal methods. "Boston," says the *Boston Medical and Surgical Journal*, "has at last awakened, and is legislating to suppress the nuisance in the metropolitan area." Prof. C. H. Benjamin, of Cleveland, Ohio, is doing most efficient work, not only in his city, but by lectures in other cities, to lead public sentiment to an intelligent endeavor to reform the present abuse.

Is Absentmindedness Indicative of Mental Failure?—This question is suggested by such facts as the large number of unaddressed letters posted each year. An English contemporary cites in evidence the official list of articles left in one year in the London cabs and omnibuses. It includes 850 canes, 19,000 umbrellas, 267 rugs, 742 opera-glasses, 926 articles of jewelry, 180 watches, 3,239 purses, besides dogs, birds, cats, etc. The list seems like a pretty severe indictment of the mental qualities of the modern city dweller, and if the hard-pressed newspaper reporter happens to see it, he will undoubtedly send off a harrowing syndicate letter to all the Sunday editors on this alarming demonstration of mental degeneracy of the twentieth century man. Even our medical contemporary suggests the advisability of those who ride in omnibuses and who forget things of consulting a physician. The more marvelous thing, however, is that they do not forget far more often than they do. Civilization has suddenly increased a thousand-fold the necessary and synchronous preoccupations of the mind. Singleness of attention was the predominant characteristic of mental action before our time of bewildering interests and duties. Not to have learned the trick of poisoning in the attention at one instant such a multitude of objects is certainly not a demonstration of mental failure, but rather of nonacquirement of a difficult art. But the more convincing proof of the actual triviality of the amount of forgetfulness is shown by the comparison of the number of memory-slips of the Londoner with the number who ride in omnibuses and other public carriages. Let us double the number of lost articles, and put the total at 50,000; if now we roughly estimate the number of rides each day in London, as at least on the average one for each twentieth citizen, we calculate that in a year there are surely as many as 100,000,000 trips made. Consequently, on the average, a person forgets some article once in about every 2,000 trips taken. The alarmist adviser of consultation of an alienist for such failures of memory would probably smile at this evidence of his own mental failure.

Government Publications.—The question is frequently asked, "How can I obtain government publications?" In answer to this inquiry we will state that it

is both impracticable and impossible to have one's name placed on the free mailing list for all publications on a given subject. As a rule, government bulletins, except congressional editions, are issued in an edition of 1,000 copies in case the printed matter exceeds 100 pages, but in an edition of 2,000 to 5,000 in case the printed matter is less than 100 pages. Besides the regular edition ordered by the department, 64 copies are printed for the library of Congress for distribution to exchanges, and 500 are printed for the Superintendent of Public Documents, who is authorized to sell them at a nominal price to cover the cost of paper and press-work. The author of the publication usually receives 100 copies for distribution to specialists in his line; the division to which he belongs has 100 copies, 25 of which are held in reserve for emergencies; and the rest of the edition is distributed to exchanges, libraries, colleges, newspapers, and individuals particularly interested in the subject treated. The Superintendent of Public Documents (Union Building, Washington, D.C.) issues a monthly list of all government publications and the Department of Agriculture issues a monthly circular which gives details regarding its own bulletins and reports. The most feasible plan for a physician who desires to receive the publications of the Department of Agriculture which have a direct bearing on medicine is for him to request his senator or congressman to ask that his name be placed upon the mailing list for the "Monthly List of Publications of the Department of Agriculture." From this list the physician can then select such bulletins as he may desire, and either purchase them from the Superintendent of Public Documents, or apply to his senator or congressman for copies. The various free mailing lists in the government are quite restricted, except for such publications as Farmers' Bulletins, and if any person fails to acknowledge the receipt of two successive bulletins, his name is promptly stricken off the list, unless he happens to be on the exchange list.

The Osteopathic Compromise in Ohio.—The *Cleveland Medical Journal* gives an epitome of the compromise that has been effected in Ohio with the osteopaths. The state law of 1900 required the osteopaths to have a four years' course in osteopathy, and to pass an examination before the State Board in anatomy, physiology, chemistry, and physical diagnosis. The osteopaths naturally did not like such demands, and introduced a bill creating a special licensing board, with provisions which would have ruined the existing statute. The compromise effected consists in a reenactment of the clause of the law of 1900 requiring the osteopaths to prove that they have had a preliminary education and to be examined by the State Medical Board, which then issues a license. In addition an osteopathic committee of three, subsidiary to the State Board, will conduct an examination of its own before an applicant reaches the board. This double examination, the *Journal* says, will eliminate more applicants than would the original provision in the law of 1900. A sacrifice was made in admitting to registration without examination all osteopaths now in the state who can prove themselves "reputable." It is estimated that the total number thus to be registered will reach

fifty to seventy-five. "To have ruled them out by making the law retroactive would have been to jeopard the whole law when it again got into court." We are sorry that it was necessary to admit the fifty or seventy-five "reputables"—a very disreputable necessity and demand.

Concerning "Tolerance" of Quackery.—The compromise effected in Ohio as to the licensing of the osteopaths is bad in only one particular—that of admitting the 50 or 75 "reputable osteopaths" already in practice. This is one of the sad penalties we must pay for the blessings of democracy. Otherwise there was no "compromise" at all. There must be no legal tolerance of quackery; that would mean nothing short of murder of innocents, and the renunciation of fundamental professional principles. Tolerance is a vice when it sacrifices principle. It then becomes itself intolerance. The sole legal condition as to the practice of medicine which the state or the profession can demand is as to the possession of the requisite and single standard—knowledge and skill. The private opinions of those examined as to therapeutics cannot enter into the count. They may believe the stupidities of osteopathy, the idiocies of eddyism, the insanities of dowieism or of perkinsism—these and all such things cannot be considered. They cannot be discovered before examination, and if they are false, if they do not cure disease, they will be found out sooner or later in the competitions of medical practice. Even the silliest lunatics will never be able to cure syphilis, typhoid fever, astigmatism, or smallpox by any such means, and the most ignorant dupes will learn this in time. As we understand it the osteopaths in Ohio must hereafter have a proper preliminary education and pass the same State Board examinations as regular medical men. This is all that can be demanded or desired anywhere if the law is honestly executed.

Education of the public as to hospitals for the insane, etc., may be carried out, says Dr. C. F. Applegate, of Mt. Pleasant, Iowa (*Bulletin Iowa State Institutions*, January, 1902), and unreasonable suspicion and unjust criticism stopped by better methods of treating both the patients and the public.

"There is nothing that more certainly generates the much too common hatred of the officers and attendants of a hospital than the remembrance by a patient, or relative of a patient, or visitor, of an injustice, hardness of heart, or coarseness exhibited by an officer or attendant. Our work with the insane certainly, more than all others, encourages gentleness and the heeding of other sensibilities. The minds of those who are ill are peculiarly susceptible, and a careless gesture, word or tone of voice, that reveals a bad nature, is seen and sticks in the memory in all the after years. There is in our work much healing power in kindness and good manners. No matter how great the advance in other directions of hospital work comparatively little advantage will accrue to those suffering from mental maladies if the important subject of training the officers and attendants is neglected."

The principal ways of educating the community are by careful attention to visiting friends and relatives, encouragement of the visits of influential members of the community, illustration of the fact that treatment is precisely

on the same lines as in general hospitals and in the homes. Dr. Applegate specially urges:

1. The commitment of the insane to hospitals for the insane, and not by force or deception.
2. The proper way to admit insane patients; objects should be explained to him and to his friends; he should be treated as a reasonable being (as he is really, in many ways), with courtesy, and with interest in his welfare.
3. The careful selection and training of officers, nurses and attendants.
4. The inspection by visitors, which should be freer.
5. A system of open doors, whereby the patients are improved and also public opinion. "A patient must be very much beyond selfcontrol if he does not keep a promise."
6. The abolition of mechanic restraint.
7. Proper attention, and meeting complaints of patients.
8. The proper instruction of reporters and newspaper editors.
9. The classification of patients.
10. The medical treatment of patients.

"Unfortunately the medical profession outside of hospitals for the insane are ignorant of the problems connected with the treatment of the insane. The general profession does not give us credit for the medical work which we do accomplish. I believe we should have a visiting staff, composed of the leading medical men of our district. Efforts in some way should be made to enlist the interest of the general practitioners in our patients and in our hospitals for the insane. With a proper visiting staff the patients will have the advantage of additional expert medical skill, the relatives of patients will have more confidence in our institutions and the treatment of the insane, and public sentiment be improved."

Helpful occupations for insane women is the subject of an excellent paper by Phoebe Mumford Welch, in the *Bulletin of Iowa Institutions*, for January, 1902. To begin with there is to be no coercion, interest being aroused instead, and the natural desire for activity and employment will come into play. There must be no machine-work, no drudgery, etc.; pleasure in the work and willingness to do it are prerequisites of success. The cue should be taken from the spontaneous tendencies of the individual, which are manifest in all insane, and materials furnished with instruction to guide the work to some useful end. When this is done it is surprising to find how ingenuity and patience are aroused and success follows. All of us are said to be partly insane, and surely the insane are almost always partly sane. Logic and order are preserved in some part or parts of the organism of which advantage may be taken. Among the things commended by Mrs. Welch are the cultivation of individual and special garden plots, "crazy patch-work," crocheting, knitting, embroidery, lace-making, tatting, the making of paper flowers, paper plaiting, and especially the manufacture of baskets and of rugs. All such work is educative, and in a degree it has a therapeutic value. It may be a method of money-making also, and of beautifying the hospital. Games and amusements should be generously provided and urged. Why are the phonograph, cinematograph, stereopticon, etc., not more used in all our hospitals and state institutions? All this really forms a special department and Mrs. Welch

suggests that a regular salaried official should be put at its head.

Vacation schools and summer playgrounds seem at first glance to have nothing to do with disease and health, but only at first glance and by the unobservant. Physicians and those who work among the children and especially those of the poor, know how intimately sanitary problems are associated with the heat, confinement and life in narrow city streets during the summer months. We have been particularly interested in the reports of the work of this kind which for six years has been carried on in Philadelphia, Pittsburg, and other cities with increasing success. There is no reason why the school-boards should not give the use of the buildings and grounds otherwise unused for two or three months each year. As it is the truest education, they should also, as they do in Pittsburg and Philadelphia, aid the work with positive appropriations. Eighteen women's clubs have cooperated in the Pittsburg playgrounds and vacation schools and in Philadelphia the Civic Club has been especially earnest in establishing and carrying on the work. Courses in cooking, basketry, drawing, wood-carving, singing, nature study, sewing, bench work, etc., have been carried on in the vacation schools. The schools and playgrounds, says a visitor, exert a most humanizing influence, not only upon the children but upon the whole neighborhood, teaching lessons of cleanliness, morality and industry. Among the teachers we are sorry not to find at least one for physical training—not athletics, however, a very different thing.

A Business Policy of Life Insurance Companies.

—We have frequently urged in these columns that life insurance companies should in certain ways and to a certain extent care for the health and life of their policy-holders. It is an instance of the fact that sound financial shrewdness is very often for the public good. The *Chicago Record-Herald* publishes a letter recently received by an insurance company which shows that this common-sense policy, even if not recognized by the companies may be by the policy-holders themselves. What answer could be made to such an appeal as this:

I hold a policy in your company for \$20,000, on which I have paid the yearly premiums. I have now to inform you that my physician advises me that I have a pronounced case of appendicitis, and his diagnosis is confirmed by a specialist whom I have consulted. I am told that the only hope of saving life is in an operation, which, with hospital expenses, will cost \$800, an amount that I have no means to pay. I am sensible that I owe it to you, who have so large a pecuniary interest in my life, to give you the option to pay the cost of this operation to save my life, that I may continue to pay you the yearly premiums on my policy (I believe that I am otherwise strong and healthy), or in the alternative to pay the \$20,000 to my beneficiary within a few weeks. I am quite willing to be examined by any physician you may name and to have you select the operating surgeon. Immediate attention is, of course, imperative.

A New Ailment: Ping-pong Tenosynovitis.

The fascinating game of ping-pong, it seems, has an even wider vogue, if possible, in England than with us. As in every instance when people unused to much muscular activity take up an unaccustomed form of exercise

enthusiastically, painful conditions of joints, especially in the ankles and wrists, have developed in those devoted to the game. The ping-pong ankle is quite fashionable in London at the present time and will be with us soon if it is not already here. At times, besides the painful condition, there is actual swelling due to the fact that the unusual exercise causes irritation and low grade inflammation in the bursas of the tendons around the ankle. It is at least a fortunate thing that the true etiology of the affection is recognized and that it is not called rheumatism, as is so often the case with obscure joint pains. Occupation neuroses of the most varied kinds occur that follow no type described in the textbooks, and this would seem to be a characteristic example of them. Rest is the best form of treatment for the new ping-pong tenosynovitis—a medical term that is sure to be popular because it is so sphinx-like and mouth-filling. For the prophylaxis of the affection it is especially important that the ankles should be supported by reasonably firm, snug, well-fitting high shoes. High-heeled house slippers and very low cut shoes predispose to the occurrence of this kind of strain. The new affection is an interesting type of certain subpathologic conditions, most of them related more or less closely to good old fashioned tiredness that the fads of fashion have been bringing to physicians for treatment in recent years.

Public-Bath Charity that Pays.—Those who believe in the kind of sanitary charity that enables the recipients to preserve their independence may study the report of the Public Baths Association, of Philadelphia. What people pay for they appreciate, and it is remarkable for how little money a good bath can be furnished. The Philadelphia institution does this for five cents, including soap and towel, and so successful has it been that the deficit has been reduced by over \$1,000 in four years, and is estimated at \$1,000 at the end of 1902. In the same time the average cost of a bath has been reduced from 14½ cents to 7½ cents. In his report the superintendent tells of an interesting incident of the use of the wash house (for washing clothes), during which it was found that men had to be entirely denied the use of the rooms even on special days, as "the women objected strenuously and refused to continue their patronage." So successful has the institution become that a second bath house is being erected in another part of the city by the same benefactors. "A charity that stands still and is not making active strides forward, goes backward."

A Unique Medical Club.—There was recently organized at Dayton, Ohio, a physicians' club extending its membership to all the schools of medicine recognized by the state, the object of the club being to discuss such questions as are of importance to the public welfare and of political and commercial interest to the profession itself. By coming together in social intercourse, avoiding controversial topics and focussing the combined energies of the various recognized schools upon matters of legislation concerning the profession and upon subjects of municipal and state hygiene, the members of

such a club, acting as a unit, cannot fail to accomplish useful and important ends. At the first meeting of the new club Dr. C. A. L. Reed, of Cincinnati, was the guest of honor and delivered an interesting address, recently published in these columns.

Spectacles and Climate.—In a suggestive little article (*Ophthalmic Record*, January, 1902) Dr. George S. Hull, of Pasadena, reads a needed lesson to eastern physicians who are indifferent to or ignorant of the powerful influence for evil of eyestrain upon the general system, and who send their patients to California instead of to the home oculist. "It is surprising," he says, "how many neurasthenics cross the continent in search of health who have uncorrected errors of refraction, which are the largest factors in their breakdowns." The "glare of the sun" in this land of sunshine compels them upon arriving to seek the local oculist there who, in relieving eyestrain, relieves also the stomach trouble, the headaches, the insomnia, depression of spirits, spinal exhaustion, etc., for which they came. Even when there is such organic disease as pulmonary tuberculosis the cure is hastened, complicating symptoms relieved, and life made more enjoyable by this aid.

Correction.—Owing to an unfortunate ambiguity of language in the letter of our informant an error occurred in our issue of May 3, page 711, whereby it was stated that other fraudulent diplomas of the University of Kiel were held by physicians in Chicago and Milwaukee. So far as known this is not the case, and the genuine graduates of that university in those cities gave Dr. Van Meter valuable aid in prosecuting the forger in Denver.

EDITORIAL ECHOES

The New Harvard Course Preparatory to the Study of Medicine.—The first year is to be taken up with zoology, botany, physics, descriptive inorganic chemistry, rhetoric and English composition, German or French. The second year includes plant and animal morphology, advanced physics, chemistry, with English composition and German or French. In the third year, elementary physiology and hygiene and laboratory work in the comparative anatomy of vertebrates are taken up, along with a course in geology and one in logic and psychology. During these three years three and a half courses of elective study are allowed. The fourth year of the course, taken at the Harvard Medical School, includes the studies usually taken up in the first year of medical work. The requirements for admission are the same as to other departments of the Lawrence Scientific School. The course above outlined must commend itself to every one who looks toward the elevation of the standard of preparation of students about to take up the study of medicine. The arrangement of studies has evidently been carefully planned to meet the general demand for preliminary biologic and general laboratory training.—[*Boston Medical and Surgical Journal*.]

Perception of Light Produced by Radium.—At the meeting of the Academy of Medicine held in Paris April 15, M. Javal demonstrated that radium has the property of emitting continuously rays similar to cathodal rays or Röntgen rays. In connection with M. Curie, the discoverer of radium, he had made some experiments suggested by M. Giesel's findings that compounds of radium produce a perception of light in the eye even when a screen is placed between the eye and the compound. It is hoped that some benefit may accrue to the blind through this property.

AMERICAN NEWS AND NOTES.

GENERAL.

The Huxley Lectures.—Dr. William H. Welch, of Johns Hopkins University, has been chosen to deliver the Huxley lectures for this year. Previous lecturers have been Lord Lister, Sir Michael Foster, and last year Professor Virchow.

The Boylston medical prize offered annually for the best dissertations on questions in medical science by a committee in Harvard Medical School has been awarded for 1902 to Dr. Robert L. Randolph, Associate Professor of Ophthalmology and Otology in Johns Hopkins University, for a dissertation on "The Role of Toxins in Inflammations of the Eye," based upon experimental work.

Rockefeller Institute for Medical Research.—The admirable paper by Dr. C. A. Herter on "Adrenalin Glycosuria and other Forms of Glycosuria due to the Action of Reducing Substances and other Poisons on the Cells of the Pancreas," published in our Original Article department May 10, was founded upon research aided by an appropriation from the Rockefeller Institute for Medical Research.

Health in the Philippines.—A report from Colonel Heizmann, chief surgeon of the division of the Philippines, in regard to the health of army during the month ended March 15, 1902, gives 2,313 cases of sickness, being a percentage of 6.45 to the entire command of 35,814. A notable increase occurred in typhoid fever, and there was a decrease in cases of malarial fevers. Compared with the previous month there was a decrease in the number of deaths, dysentery being the principal cause.

The transformation of Havana under American rule is a constant source of admiration for those who knew the city under Spanish rule. By the end of the second year of American occupation every house in Havana had been thoroughly cleaned from top to bottom under the supervision of American officers. The accumulations of years were removed from cellars, courts and closets. The floors were washed with a sanitary compound and the walls with mercury bichlorid. An average of 16,000 houses were cleaned in this way in a month. Besides this the streets were thoroughly cleaned, many of the thoroughfares were widened and the sewers were rebuilt. The change wrought by the sanitary squad on the Hospital Militar is noteworthy. From being probably the vilest building in the world from a hygienic standpoint (in fact it is claimed that between 60% and 70% of all patients carried there died within its walls) it has been placed in a perfectly sanitary condition and converted into a schoolhouse accommodating 700 children and the boast is made that there is not a healthier building in Havana.

EASTERN STATES.

State Vaccine Virus.—A resolution that the Massachusetts State Board of Health be authorized to investigate and report a plan for the production and distribution of pure vaccine lymph for free use in the state, and that such report be made to the Supreme Court as soon as possible, has been presented to the committee on public health.

NEW YORK.

An epidemic of smallpox among the 2,000 patients in the Long Island State Hospital for the Insane at Kings Park, L. I., is reported.

Professor Haab, of Zürich, will be entertained at a dinner at Delmonico's, May 30, by a number of the leading physicians of New York City.

The resignation of Dr. Jacobi from his position as professor of children's diseases in the College of Physicians and Surgeons after 30 years of active service there, is announced to take effect in June.

Medical Jurisprudence.—A suit to be tried soon in the Supreme Court of New York will decide whether an action for damages can be maintained against a physician who makes public the nature of a patient's illness.

A Foster memorial to perpetuate the memory of the consecrated life of Mrs. Rebecca Salome Foster is proposed, and appeal to the public made for funds sufficient to provide a dignified and beautiful work of art is meeting with generous response.

Medal for Chemic Research.—At a recent meeting of the New York Section of the American Chemic Society announcement was made of a gift of securities of more than \$1,000 from William H. Nichols, president of the General Chemic Company, to endow the annual presentation of a gold medal to the author of the best paper embodying original chemic research which shall be presented to the New York Section during any year. This offer is open to all chemists.

PHILADELPHIA, PENNSYLVANIA, ETC.

Mosquito Extermination.—The authorities at League Island Navy Yard have commenced an active crusade against mosquitos. All the ponds, pools and marshes on the island are to be sprinkled with petroleum, so that the larvas and eggs may be destroyed.

Pennsylvania Hospital.—The report for the past year states that the number of ward and private patients was 4,705, an increase of 702 over the preceding year and 2,535 over 1891-92, a growth of 116% in 10 years. The daily average number of patients for last year was 251, while the daily admissions averaged a case every 23 minutes during the day and night. The out-patient department treated 16,388 patients, and 58,727 visits were paid. The total number of cases treated is placed at 99,800.

Sanatorium for the Tuberculous.—On the recommendation of the Governor, the last legislature of New Jersey passed a bill authorizing the purchase of a site and the erection of suitable buildings for a sanatorium for indigent persons suffering from tuberculous diseases, and appropriated \$50,000 for that purpose. For managers of the sanatorium the following were appointed: Drs. Charles J. Kipp, Newark; O. H. Sproul, Flemington; James S. Green, Elizabeth; Elmer Banvis, Trenton; W. P. Jones, Camden; Austin Scott, president Rutgers College; Col. E. A. Stevens, Hoboken, and Col. F. L. Shepard, Elberon. The officers are: President, Dr. Charles J. Kipp; secretary, Dr. James S. Green; treasurer, Col. Stevens.

SOUTHERN STATES.

The Medical College of Virginia graduated May 9, 13 students in medicine, 4 in dentistry and 6 in pharmacy.

Washington Medical Annals.—The first number of this bimonthly journal of the Medical Society of the District of Columbia has appeared for March, and contains a part of the proceedings of the Clinical Society of Washington, and Society of Ophthalmologists and Otologists of Washington.

WESTERN STATES.

The Military Order of the Loyal Legion of the United States, Ohio commandery, celebrated their nineteenth annual anniversary, May 7, 1902.

Rabies.—The State Bacteriologist of Minnesota reports rabies as being very prevalent in the state. This report has been endorsed by the Board of Health.

Nebraska State Medical Society.—The thirty-fourth annual meeting was held at Omaha, May 6, 7 and 8, 1902. The program included 11 papers on surgery, 17 on medical subjects and many others in special departments.

Lakeside Hospital in Cleveland, Ohio, is the recipient of a gift of \$100,000 from J. H. Wade. The gift is in the form of 400 shares of United States Steel Corporation preferred stock and 400 shares of American Shipbuilding stock, each bearing 7% interest. Mr. Wade has just given a similar amount to the Fresh Air Camp.

Smallpox.—The results of the campaign begun last February by railway managers and boards of health among the 25,000,000 inhabitants in the 600,000 square miles of territory tributary to Chicago are shown in the United States Public Health Reports. For the 30 days following December 28, 1901, before preventive measures were employed, an increase of more than 900% was noticed in this territory over the number of cases reported for the corresponding period in the previous year. From January 31 to April 25, while active operations against the disease were in operation, there were reported a total of 10,598 cases as against 10,464 for the corresponding period last year, an increase of little more than 1.25%. The total deaths recorded last week were fewer than for the corresponding week of last year.

CANADA.

Vaccination Order.—The city of Montreal has been called upon by the Board of Health of the Province of Quebec to enact a by-law at once providing for compulsory vaccination.

New Sanatoriums.—The conference on tuberculosis, held recently in Ottawa, has inspired two wealthy Canadians to donate two sanatoriums for the free treatment of tuberculosis. Sir William Macdonald will donate one, to be erected in the vicinity of Montreal, and Mr. W. C. Edwards, the president of the Canadian Association for the Prevention of Tuberculosis, will locate another near Ottawa.

The Immigration act is about to be so amended by the Canadian House of Commons that the Governor-General shall have power to prohibit by proclamation or order the landing of persons in Canada suffering from dangerous or infectious diseases; this prohibition may be absolute or may be accompanied by permission to land for medical treatment only, or for a period that may be determined by the order or proclamation.

FOREIGN NEWS AND NOTES

GENERAL.

Lepers' Ordinance.—An ordinance governing lepers in Straits Settlements provides that any leper carrying on any trade or calling prohibited by the governor or council may be committed to an asylum for detention until discharged by order of the governor, while any person who knowingly employs a leper shall be subject to fine or imprisonment. Any leper found guilty of entering a public conveyance of any kind or lodging in a hotel, boarding or lodging house, or bathing in a public bath shall be liable on conviction before a magistrate of a fine not exceeding \$50 and commitment to an asylum. Permission for lepers to remove from one asylum to another may be obtained from the colonial secretary, but the order for their discharge must be signed by the governor, who must first receive a certificate from the medical officer of the asylum stating that the patient has been cured. Food, clothing, or other articles cannot be received from an inmate of an asylum unless written permission is obtained from the officer in charge. Every leper asylum must be visited at least once in six months by the colonial secretary or a person appointed by the governor. No action suits or proceedings can be brought against any qualified practitioner who has issued a certificate or for anything that he has done in good faith in pursuance of the provisions of the ordinance.

GREAT BRITAIN.

Appointment.—The governing body of the Jenner Institute of Preventive Medicine has appointed Major Ronald Ross chief of a new department in the Institute at Chelsea.

Diagnosis by Tuberculin.—The most suitable times for taking the temperature of cattle after inoculating them with tuberculin has been investigated recently by the Agricultural Department of Aberdeen University, in consequence of a previous trial in 1899 when the tuberculin test appeared unsatisfactory, as out of 42 animals proved to be tuberculous, 17 failed to react. The temperature of the inoculated animals was taken at 10, 11, 12 and 13 hours after the tuberculin was given. Following the suggestion of Professor Nocard that intervals of three hours, commencing with the twelfth hour, should be allowed, a supplementary investigation was made, in which the temperature of the cattle was taken at 12, 15, 18 and 24 hours after administering the dose. From 17 animals afterward proved to be tuberculous, only 4 failed to react. Of these 4 had no active disease, and the other 3 suggested by the undulating temperature that a larger dose might have proved diagnostic. The general conclusion is reached that reaction may be looked for between the ninth and eighteenth hours after inoculation.

Cancer Research.—The Royal College of Physicians of London and the Royal College of Surgeons of England have conjointly drawn up a detailed scheme for systematic investigation of cancer, and the next step will be an appeal to the public for a fund to provide, extend, equip and maintain laboratories to be devoted exclusively to cancer research; to encourage researches on the subject of cancer within the United Kingdom or in the British Dominions beyond the seas; to assist in the development of cancer research departments in various hospitals and institutions approved by the executive committee; and generally, to provide means for systematic investigation in various other directions into the causes, prevention and treatment of cancer. Should the object of the fund be attained by the discovery of the cause and nature of cancer and of an effective method of treatment the Royal Colleges, with the consent of the trustees, shall be empowered to utilize the fund either (a) for equipping with the necessities for such treatment such hospitals as they may select, or (b) for forwarding research into other diseases. The fund shall be administered by a president, vice-presidents, five trustees, three of whom may be nominated by the donors of sums of £1,000 and upward, and one each by the Royal Colleges of Physicians and Surgeons, honorary treasurer, general committee and executive committee. The general committee includes all the officers already enumerated, the members of the executive committee, and also has one representative each from the Royal Colleges of Physicians and Surgeons, of Edinburgh and Ireland, from the Faculties of Physicians and Surgeons in Glasgow and the Royal Veterinary Colleges of London, Edinburgh and Ireland, and from donors of sums of £1,000 and upward. The general committee shall meet from time to time to hear reports from the executive committee on the general progress of the scheme, account of expenditure and the audited financial statement. The executive committee, consisting of (a) the president (for the time being) and two Fellows of the Royal College of Physicians of London; (b) the president (for the time being) and two members of the Council of the Royal College of Surgeons of England; (c) two members of the laboratories' committee of the Royal College of Physicians and Surgeons; (d) to members nominated by the general committee; (e) one member nominated by the Royal Society; (f) one member nominated by the Royal Veterinary College, London, shall have control of the income of the fund and shall be charged with the general supervision

and management of the arrangements to carry out the objects of the fund; shall appoint the working and consultative staffs and draw up the regulations under which the work shall be conducted. The working staff shall consist of: (a) A general superintendent of the investigation who may be the director of the central laboratory; (b) assistants to the general superintendent and director; (c) any other persons who may be appointed to make special investigations. The consultative staff shall consist of persons skilled in scientific investigations, representatives of various home and colonial government departments, physicians and surgeons attached to hospitals, statistical experts and others appointed by the executive committee. The consultative staff may receive fees for attendance at meetings and may be remunerated for any services performed in connection with the objects of the fund, on such conditions as the executive committee may determine.

CONTINENTAL EUROPE.

Smallpox in epidemic form is reported by the United States consul at Carthage, Spain. The exact number of cases is not known, though 100 is given as an approximation. Vaccination is freely practised.

Liquor Traffic in Germany.—A resolution adopted by the Prussian Diet requests the ministry to prepare a bill restricting the liquor traffic. It is claimed that Germany suffers a great injury through the excessive use of alcoholic beverages. One-third of all the inmates of her insane asylums are said to be victims of intemperance, while 80% of the idiots are the offspring of intemperate parents. It is estimated that the enormous sum of 3,000,000,000 marks (\$750,000,000) is spent in a year for drink.

A number of prizes, varying in value from 800 to 8,000 francs, are offered by the Belgian Royal Academy of Medicine for researches in various branches of pathologic and medical science. The largest prize is offered for discoveries relating to the diseases of the nervous centers, with special reference to epilepsy, and for a really valuable discovery, such as a curative remedy for epilepsy; two premiums, one being of 5,000 francs, may be given in addition to the prize of 8,000 francs.—[*Nature*, April 17, 1902.]

First Aid.—Delegates representing the medical profession of Germany and the government convened recently in Berlin to discuss questions connected with the first aid and accident service and to settle the principles on which it should be conducted, with due consideration for the interest both of the public and the medical profession. Great difficulty had arisen through the clashing of rival associations founded by physicians and through the employers' associations relative to workmen's insurance against accidents which acted to the prejudice of the medical profession. After much discussion a central committee to act under the general supervision of the government was then formed, with Professor v. Bergman as chairman, which will control the organization under these general principles laid down. Injured persons shall not continue to receive first-aid attention after first aid has been rendered. The organization of the first-aid service shall rest with the local medical association. As a rule, first aid shall be rendered in the accident wards of the public hospitals, but when special premises other than the hospitals exist for this purpose, such premises shall be used exclusively for the giving of first aid, not for subsequent treatment of patients or for other cases. First aid shall be rendered by any member of the medical profession who is willing to undertake such work and not by surgeons specially appointed.

Radica and Doodica.—In a paper read before the Academy of Medicine, April 8, Dr. Doyen pointed out that it was an error to describe xiphopagus twins as joined by a membrane. He finds that the union at the ensiform cartilages is immediate, that there is no supplementary tissue and the so-called membrane is a false pedicle resulting from the dragging upon the normal tissues, and that this pedicle lengthens with age. The formation of xiphopagi is explained by the simultaneous double fertilization of one ovule; making two embryos, side by side and always of the same sex. In the case in point Radica's development was considerably at the expense of her sister, because the arrangement of the anastomosing arteries at the line of union was in her favor so that she received from Doodica a considerable supply of arterial blood which she did not return, a condition similar to the well-known phenomenon in an acardiac fetus. Radica had long been afflicted with strumous glands, and the possibility of the tubercle passing from them to Doodica's peritoneum and causing the tuberculous peritonitis from which she succumbed was suggested, though the disease might have been of independent origin. Just before the operation Doodica's temperature was 102.2° F., while Radica's was 99.4°, which to Dr. Doyen is conclusive proof that the humoral theory of fever is quite untenable, for though the blood passed even too freely into Radica's circulation for the nutrition of Doodica, yet the former had almost no fever, while the latter had a large stercoral tuberculous abscess in her pelvis. Radica has now very good health and has gained much in weight since the strumous glands in the neck and axilla have

been removed, and there is more or less chance of recovery from her spinal deformity.

German Medical Examinations.—A synopsis of the regulations in force in Germany for the examinations of physicians has been forwarded to the U. S. Marine-Hospital Service by the United States Consul-General, F. H. Mason. The power to grant approbation is vested in the central authorities of the respective countries. Approbation is granted to those who have fully passed the medical examination and the one year of practice. Medical preliminary examination must be passed at the university where studying, exceptions only in special cases; not more than four candidates are examined at a time. Application for admission to the examination must be accompanied by a certificate of competency from a German gymnasium or real gymnasium. Certificates of a foreign school may only be admitted as an exception. With the application is to be sent proof that the student has studied five semesters (half years) at a German university. In exceptional cases, the time of study may have been spent for studying a branch similar to medicine, or at a foreign university. Proof of having taken part in microscopic-anatomic studies and physiologic and chemie practical training is to be produced. The examination comprises anatomy, physiology, physical-chemic science, zoology, and botany. It is public, and lasts four consecutive days. The medical examination can be made before any examining commission at any university. Applications must be accompanied by the necessary certificates as to the preliminary examinations. Exceptions granted for same hold good. At least four half-years of studies must have elapsed since the preliminary examination, and proof been produced that the candidate has for two half-years practised in the medical, surgical and obstetric clinic, has unassistedly treated four women at childbirth in presence of a professor; has, for half a year, worked in an eye hospital, medical polyclinic, the infant clinic or polyclinic and special hospitals or polyclinics for throat, nose, ear, skin, and syphilitic diseases; has made studies in vaccination, and gained the required technical practice and knowledge of the lymph; and having attended at lectures on topographic anatomy, pharmacology and criminal medical science. The application for examination must be accompanied by a *curriculum vitae* giving a course of the studies and (unless coming up for examination as soon as having finished studying) a certificate of good conduct. The examination comprises general and pathologic anatomy, medicine, surgery, obstetrics, eyes, lunacy, hygiene, etc. Only four candidates may be examined together. If the candidate fails in one or the other subject, he can come up for examination in that part after a period of two months to one year, according to his marks. If he does not come up for examination within three years, is considered to have failed entirely. Whoever fails twice is not admitted again. After having passed his examination the candidate has to practise for one year at a university clinic, etc., or special designated hospital in the German Empire, of which time at least a third is to be devoted chiefly to internal diseases. The candidate may choose the place, but without permission not change it more than twice. The time of practice may also be passed with a suitable medical man, for which the sanction of the imperial chancellor is to be obtained. At the end of the year of practice, the candidate applies to the respective central authority, inclosing all required papers. This decree came in force October, 1901. Some instructions regarding men already studying, etc., are then given, dealing with those who pass the preliminary examination before October 1, 1903. From October 1, 1908, the above instructions are in force in their entirety throughout the empire.

OBITUARIES.

Henri le Rendu, of Paris, a distinguished practitioner and clinician, aged 58. He was a member of the Academy of Medicine and a Chevalier of the Legion of Honor, and author of several books on the diseases of the heart and liver.

Henry C. Yeagley, of Lancaster, Pa., May 2, aged 75. He was a member of the State and National Eclectic Medical Associations and was the eldest practising physician in the city.

John G. Elliott, of Poughkeepsie, N. Y., assistant physician at the Hudson River State Hospital and graduate of Buffalo Medical University, May 12, aged 31.

Samuel H. Vaughan, of Morven, Amelia county, Va., May 3, aged 59. He was graduated at the Medical College of Virginia, 1868.

Thomas F. Riegel, resident physician at St. Joseph's Hospital, Philadelphia, May 6, aged 22.

William Houston Borderhamer, of New Rochelle, N. Y., May 10, aged 62.

Reuben J. H. Tall, a well-known physician of Baltimore, May 12, aged 59.

Ellington W. Aldrich, of Chicago, at Los Angeles, May 5.

Pierson J. Pratt, of Glen Echo, Pa., May 2, aged 27.

George Stewart, of Upper Marlboro, Md., May 9.

Ida E. Richardson, of Philadelphia, May 9.

H. P. Landrum, of Columbus, Miss., May 5.

George Hamilton, of Eaton, La., May 2.

SOCIETY REPORTS

ASSOCIATION OF AMERICAN PHYSICIANS.

SEVENTEENTH ANNUAL MEETING, HELD AT WASHINGTON, D. C., APRIL 29 AND 30, 1902.

SECOND DAY—MORNING SESSION.

[Concluded from page 763.]

On the Prognosis of Pleurisy with Effusion.—R. C. Cabot (Boston). The attempt was made to trace the after history of 300 cases of pleurisy with effusion, the diagnosis being confirmed in each case by tapping. It was possible to trace but 152 of the cases and upon these the report was based. In none of these cases was there evidence of tuberculosis of other organs at the time of tapping. Of the 152 cases 80 were found to be in good health at the end of from 5 to 21 years; 37 were well at the end of periods under 5 years; 23 had contracted tuberculosis; 14 had died of other causes. The conclusions based on the report were that 80% of uncomplicated cases of pleurisy with effusion are well at the end of 5 years and that more than half of them are well at the end of 10 years or more. Only 15% developed demonstrable tuberculosis and in many of these only after long periods of time after the pleurisy, as high as 16 and 14 years in some instances, only 3% showing that disease after 2 years. The type of tuberculosis was a mild one. A study of the clinical records showed that only one-fourth of the cases well at the end of 5 years or over had any family or past history of tuberculosis. The family history is considered to be of great value in determining prognosis, in fact of more value than the physical signs at the time of the pleurisy. The fact that no attempt was made to discover what percentage of the cases of effusion was due to tuberculosis means that the prognosis is good whatever be the cause. In discussing this paper Osler said that most members of the profession had held the idea that serous effusion was a very serious condition. This paper put it in a much more favorable light. Harris (Manchester, England) said that the statistics in England were much more unfavorable than these, the effect of pleurisy being regarded very seriously. There it is the rule of insurance companies not to accept cases of pleurisy until after a lapse of 5 years, tuberculosis being feared. Jacobi said that the fact that most people of advanced age showed signs of previous pleurisy proved that prognosis was not so unfavorable in that disease.

A Clinical Study of Cases of Empyema Based on the Bacteriologic Findings in the Exudate.—C. F. Withington (Boston) based this report upon 135 cases studied during the past 6 years. In each the pus for examination was drawn by a needle. The principal varieties were those in which the pneumococcus, *Bacterium pneumoniae* Zopf, was found, 28 cases with 8 deaths; the streptococcus, *Streptococcus pneumoniae* (Weichselbaum) Gamaleia, 35 cases, 9 deaths; mixed infection of these, 18 cases, 2 deaths. Many other organisms were found, 3 cases being due to *Bacillus typhosus*. Of the 135 cases, pneumonia was the cause in 95. Tuberculosis was present in 20 cases. Operation was performed in 115 of the cases with 40 deaths. Of the 20 cases not operated upon 10 died. Streptococcus infection furnished 24% of the deaths, the pneumococcus being responsible for 18%. Withington concludes that the prognosis in streptococcal infection is unfavorable if the lesion be without the lung. If in pneumonia it is more favorable than if the pneumococcus be present. In the discussion Welch (Baltimore) spoke of the difficulty of distinguishing between the streptococcus and the pneumococcus in some cases. An intermediate group gives doubt even after their morphology and cultural characteristics are studied. The point to remember is that the diagnosis should not be made by the microscope alone. Osler asked if there was evidence of a remarkable increase in the number of cases of empyema following pneumonia in the last 5 or 10 years. In reply Withington stated that there was no question as to such increase during the last few years. During the past two years he thought there were as many cases as during the preceding five.

Spontaneous Nontuberculous Pneumothorax.—M. H. Fussell and David Riesman (Philadelphia). The literature of this subject was reviewed and 56 cases collected, two of Fussell's being reported for the first time. The first patient was a woman of 21, with good personal and family history. The attack was sudden and severe, aspiration being followed by speedy recovery. The second case was a man having a good family history. He was not urgently ill and made a good recovery. A careful consideration of the cause, symptoms, diagnosis, prognosis and treatment of spontaneous nontuberculous pneumothorax was then given. Perhaps the majority of cases follow violent exercise or exertion. Dyspnea is generally not urgent except on exertion. The opening into the pleura closes or is valvular, as the air does not reaccumulate after tapping. In seven of the cases there was recurrence of the condition, in one case three recurrences. In one case recurrence was on the opposite side. The condition is most common in young men. Aspiration should be resorted to in prolonged attacks or when the patient is urgently ill. Prognosis is good, only one case dying, and in that the condition was unrecognized. Cohen (Philadelphia) said that one was justified in suspecting tuberculosis as

the cause in these cases, unless there was the history of trauma sufficient to produce the lesion. Shattuck (Boston) thinks the fact that there are no signs of tuberculosis and that the patient stays well afterward should exclude the question of tuberculosis in these cases.

Some Pulsations in the Chest other than Aneurysmal.—A. R. Edwards (Chicago). This paper was the report of a case of pernicious anemia with marked arteriosclerosis in which there was present a diffuse, expansile pulsation over the lower portion of the left side of the chest and upper portion of the abdomen. A systolic murmur was heard over this area. The clinical diagnosis was aneurysm and the case demonstrated as such by several observers. The patient died rather suddenly in collapse. Autopsy revealed marked atheroma of vessels and some adhesions of the lower lobe of the left lung and spleen. There was no evidence of aneurysm. La Fleur (Montreal) stated that he had seen a similar case, the subject being anemic and having pulsation exactly as described by Edwards. Autopsy showed no aneurysm.

Healed Ulcerative Endocarditis.—J. B. Herriek (Chicago) presented a communication on this subject. The writer stated that arguments tending to prove that there is occasional recovery from ulcerative endocarditis may be advanced along three lines: 1. Recovery is seen in not a few cases of other forms of septicemia and pyemia, even though they are severe. 2. Clinic observation shows occasional recovery as revealed by a review of the literature of the subject. It is true that flaws may be found in some of these histories, but weight must be given to the statements of observers who say that such is their diagnosis. Herriek reported a case of pneumococcal endocarditis in a child in which he thinks there was healing of the ulcerative form. There were all the symptoms of such disease with a permanent valve lesion after recovery. 3. Post-mortem findings indicate the possibility of healing of the valvular lesion. Conclusions based on these statements are: 1. More care should be exercised in diagnosis in discriminating between the cases of acute endocarditis, the causative organism being identified if possible. 2. A more favorable prognosis should be given. 3. More care should be taken in the treatment of such cases, probably looking more to the use of so-called specifics. Thayer, Kinnicutt and others reported cases of recovery from supposed ulcerative endocarditis. Osler said that recovery rarely followed in septic cases. There is a group of cases, which he calls the cardiac group, in which recovery occurs. These are cases of old heart lesions in which there is a lighting up of the process.

The Condition of the Heart in Pregnancy.—Alfred Stengel and W. B. Stanton (Philadelphia). The paper was based on tracings of the heart in 26 pregnant women compared with tracings in the same cases after delivery. The blood pressure before and after labor was also measured. The tracings confirmed the statement of Gerhard that the displacement of the apex beat in pregnant women is not due to hypertrophy of the heart. The apex of the heart is displaced outward by the upward displacement of the diaphragm due to pressure. There is also a slight enlargement of the heart upward and to the left due to dilation of the Conus arteriosus. This was noticed in nine of 11 primiparas and did not go down as quickly as the apex returned to its place after delivery. From this it is probably safe to say that there is an increase in the size of the right heart and Conus arteriosus during pregnancy. The overaction of these parts of the heart probably give rise to the murmurs heard in some cases. The blood pressure was found to be practically the same before and after delivery.

A Case of Pancreatic Lithiasis with the Recovery of the Characteristic Calculi From the Stools, Followed by an Attack of Cholelithiasis a Year Later with the Passage of Characteristic Biliary Calculi.—F. P. Kinnicutt (New York). The patient was a woman, 42 years of age, who had repeated attacks of pain, followed by the passage of calculi, composed of carbonate and phosphate of lime, thus showing their pancreatic origin. The pain began in the back between the shoulders, then later would be felt in the epigastrium, when nausea and vomiting would ensue. Later the calculi would be passed. That there was normal absorption of fat was shown by tests. There was no sugar in the urine. About one year after these attacks, a similar attack of pain was followed by the passage of typical biliary calculi. There was no jaundice. From this case, the history of which was given in detail, Kinnicutt concludes that the differential diagnosis between the two conditions is a difficult one. The pain in pancreatic lithiasis is probably the same as when biliary calculi are present. The presence of abnormal fat in the stools is not constant. The presence or absence of jaundice is not diagnostic. The absence of glycosuria is only a negative sign.

A Further Contribution to the Subject of Vasomotor Ataxia.—S. Solis Cohen (Philadelphia). The speaker referred to his previous writings upon this subject in 1892 and 1894, stating that observation since has abundantly confirmed the statements then made. The condition is one of instability of the controlling apparatus of the vasomotor nervous system, so that persons of the type described exhibit upon slight physical, chemic, or psychic excitation, certain phenomena which in other persons require causes of greater moment. These phenomena depend on relaxation or constriction of the capillaries and smaller bloodvessels. A third, most common, group depends on both of these causes commingled. Graves' disease

represents the extreme of one type, Raynaud's disease the other. Between these are many varieties, among which are urticaria, angioneurotic edema, migraine, tendencies to hemorrhage, from various organs, hay fever, drug idiosyncrasies, paroxysmal tachycardia, etc. Cohen contends that as causes are determined and mechanisms understood, certain syndromes may be made into diagnostic entities. Hysteria, neurasthenia and epilepsy bear vague, and as yet, undetermined relation to this condition. Essential vasomotor ataxia is usually a congenital condition affecting, in various ways, several members of a family. At times it seems to be acquired in sequence to disease or accident.

Intestinal Hemorrhage: Its Relation to Duodenal Ulcer.—Henry Jackson (Boston). A report was made of seven autopsies in which duodenal ulcer was found. Four of the cases died of perforation; in two the ulcer was of little importance as an etiologic factor; in one death was due to hemorrhage. In none of the cases was a definite diagnosis made, this being claimed to have been impossible, even in the light of the postmortem examination. Hemorrhage was stated not to be a factor of importance in the diagnosis, hemorrhage secondary to cirrhosis of the liver often being simulated. The elimination of gastric ulcer is difficult and probably impossible. Clinically, pathologically and from a therapeutic standpoint, duodenal ulcer may be considered as closely allied to gastric ulcer. The treatment is identical. The use of large amounts of normal salt solution is of decided value in these cases. Thompson (New York) stated that the diagnosis of duodenal ulcer could be made and he has done so in several instances. It is more common in men than gastric ulcer, and does not give the same symptoms on palpation. Hematemesis is not a distinguishing feature in duodenal ulcer. The symptoms, with hemorrhage, are more intestinal.

AFTERNOON SESSION, APRIL 30.

On Prognosis and Treatment of Tuberculous Peritonitis, Based on the Massachusetts General Hospital's Experience for the Past Ten Years.—J. C. Shattuck (Boston). The speaker reported 98 cases, medical and surgical. The end result was traced in 57 cases extending over a period of from 2 to 11 years after they left the hospital. The patients were adults rather than children, owing to the class of cases admitted to the hospital. Of the 98 cases 67 were female, and fluid was present in 63. In 13 cases tuberculin was injected as a diagnostic agent. There were 8 positive reactions, 3 negative, 2 unsatisfactory. One-half the patients were between the ages of 15 and 30. The prognosis depends largely on the diagnosis. Of 46 medical cases 7 died in the hospital, and of the 52 surgical 6 died. Of the 57 cases traced 29 had died, 27 of tubercular peritonitis or its complications, and 2 from causes unknown. Medical treatment is mainly symptomatic and hygienic. Surgical treatment at the hospital consists in opening the abdomen, sponging and washing out the fluid with salt solution or plain water and removing large masses of tubercular tissue when found. The abdomen was closed in 32 of the cases, drained in 20. Roughly speaking, two-thirds of the medical cases died, one-third recovered, while one third of the surgical cases died and two-thirds got well. Shattuck's conclusions are: (1) Cases of tuberculous peritonitis may be followed by apparently complete recovery, whether they are treated medically, tapped, or opened and drained; (2) they should not be kept in hospitals longer than absolutely necessary, as they need the very best hygienic conditions; (3) medical treatment for a time, under hygienic surroundings, is warranted; (4) if they fail to improve in from four to six weeks, or sooner if their condition is growing worse, surgical treatment should be instituted. Tyson (Philadelphia) reported a case, a girl of 16, in whom ascites was the only symptom. The tuberculin test was positive. She was operated upon, drained, and has been well since. Surgical treatment gives such good results that Tyson thinks it hardly worth while to temporize with medical treatment as its results have been *nil* in his experience. He has decided to try the tuberculin test in every case of ascites with enlarged liver. Brannan (New York) reported 18 cases from Bellevue Hospital, of whom 9 died. He emphasizes the value of surgical treatment, as out of 6 laparotomies there was but 1 death. Billings (Chicago) makes three clinical groups of cases according to the anatomic conditions present. In the first there is serous effusion with the lesion local, as in an ovary, etc. Second, there is general infiltration, the omentum is shrunken, the exudate, is turbid. Third, in addition to this there are adhesions between the various parts. Group I is benefited by tapping or surgical treatment. In groups II and III the surgeon simply writes the death certificate. Halsted (Baltimore) said that the results obtained at Johns Hopkins enforce the conclusions of Shattuck. They have used tuberculin systematically for eight years and not one case has proved to be tuberculous in which it failed to give a positive reaction. Jacobi (New York) said that he sees a large number of cases of tuberculous peritonitis in children. So long as the process is localized it is apt to heal. Recovery follows when dissemination is not present. While the process is slow, the patient has no rise of temperature, and there is no pain, he speaks of the condition as peritoneal tuberculosis. When symptoms develop he calls it tubercular peritonitis. He believes that too many laparotomies are performed for this condition.

A Pathologic Study of Thirty Cases of Smallpox.—

James Ewing (New York). Specimens were demonstrated. Ewing spoke first of the pathologic anatomy of smallpox, describing in detail the effect of the disease on the various tissues of the body. The trachea usually shows the most severe lesions in the body. The respiratory mucous membrane is involved earlier in the disease than is the skin, and is most often the cause of death. Acute degenerative lesions of the kidney are often found. There is extreme hyperplasia of the lymphatics. Three cases of necrosis of the testicle were found. The disease shows a preference for epithelial tissues in all parts of the body. Regarding the bacteriologic findings, vaccine bodies were present in all the cases, the streptococcus was present in all the lesions, a fine bacillus was present in some cases, and a variety of minute bodies which were unidentified. The streptococcus was found in the heart's blood in all the cases, it was invariably present in all the skin lesions, and was found alone in the skin lesions of 17 cases. The streptococcus is present in proportion to the severity of the disease, and overshadows all other organisms. There is probably a symbiosis of the streptococcus and the specific cause (if there be such) in cases of primary hemorrhagic smallpox. It is impossible to produce the tulniant variety without the streptococcus. W. T. Councilman (Boston) said that among the most constant lesions of smallpox is the destruction of polymorphonuclear leukocytes, they being reduced to 15%, and in one case as low as 8%, their place being taken by large mononuclears. In and around the areas of necrosis there are found no polynuclears and no evidence of attempt at regeneration by leukocytes. Death does not usually occur from smallpox itself, but as a result of secondary infections, the smallpox virus paralyzing the tissues. Councilman does not think that the vaccine bodies are formed of red blood-cells. If they are protozoa, they are some form which cannot be recognized. The streptococcus and similar organisms are only a part of the secondary infections and have no part in the true disease. Councilman displayed for Drs. Magrath and Brinkerhoff an exhibition of the anatomic lesions of smallpox, which attracted the attention of every member of the Association. It and the exhibition of Dr. Ewing were deservedly praised as being among the finest collections ever exhibited.

Some Experiments on the Nature of Vaccine Virus.—William H. Park (New York). Attempts to vaccinate calves from smallpox cases were unsuccessful, but they could be inoculated by using a monkey as an intermediate step. The monkey is considered better than the rabbit as a means of differentiating between smallpox and chickenpox. Experiments were also made with filtered virus. Three calves in a vaccine laboratory were successfully inoculated with this, but two outside could not be inoculated.

A Case of Osteitis deformans and One of Hyperostosis cranii.—Morton Prince (Boston). A brief report of the two cases was given, followed by a discussion of relation between the two diseases, which Prince thinks are identical. The pathology of osteitis deformans was considered, with particular reference to its being a trophic disorder and dependent upon some central nervous lesion. This hypothesis is claimed to be supported by the results of autopsies, in which the nerves and cord have been examined.

Some Clinical Manifestations of Hepatic Cirrhosis in the Light of 80 Autopsies.—G. G. Sears (Boston). Alcohol was found to be the most important factor etiologically. Sears concludes that hepatic cirrhosis is but one expression of the effect of a systemic poison. Ascites is a late symptom. There is never a continued fever, except in complicated cases. Treatment practically resolves itself into the best method of relieving the ascites. The expediency of surgical interference was discussed at length. A point to be remembered is that other organs are generally affected when ascites appears. Operative measures are never justified in the presence of jaundice. They may be employed when there is practically sound heart and kidneys, and general nutrition is good. The proportion of cases for operation is extremely small, and the burden of proof lies on the surgeon who advocates operation.

Clinical Manifestations of the Early Stage of Cirrhosis of the Liver.—Frank Billings (Chicago). This paper was based on the observation of 54 patients in whom there was palpable liver, usually tenderness of that organ, and indurated edges. The most prominent symptoms were referred to the gastrointestinal tract, 23 of the cases having fermentative dyspepsia, and 38 disturbance of the digestive tract, with constipation, etc. Only three had hemorrhoids. The next most frequent symptom was muscular rheumatism, so-called. Treatment prescribed was dieting, for each individual, but generally a diet free from meats, grease, sweets, etc. Alcohol, of course, was forbidden. Medication is indifferent. The bowels are kept free, digestive ferments are not used. Ammonium muriate was used in some cases with good results. Improved hygiene, with the use of a saline each morning, gives about as good results as more liberal medication.

Experimental Glycosuria From Adrenalin Chlorid and Its Relation to Other Forms of Glycosuria Dependent on the Action of Reducing Substances on the Cells of the Pancreas.—C. A. Herter (New York). This paper was printed in *American Medicine*, May 10.

Owing to the lateness of the hour the last two papers on the program were not read. These were On a carcinomatoid tumor of the Adrenals exhibiting Sarcomatous Metas-

tasis, J. G. Adami for P. G. Woolley (Montreal). Specimens were exhibited. **A Case of Cystic Degeneration of the Kidneys**, by I. N. Danforth (Chicago).

The election of officers resulted as follows: President, James Stewart, Montreal; vice-president, W. T. Councilman, Boston; secretary, Henry Hun, Albany; treasurer, J. P. Crozer Griffith, Philadelphia; recorder, S. Solis Cohen, Philadelphia; councillors, C. G. Stockton, Buffalo, and Walter Reed, Washington.

THE AMERICAN ASSOCIATION OF GENITOURINARY SURGEONS.

THE SIXTEENTH ANNUAL MEETING, HELD AT ATLANTIC CITY, APRIL 29 AND 30, 1902.

[Specially Reported for *American Medicine*.]

[Concluded from page 765.]

The Operative Treatment of Hypertrophied Prostate; with Presentation of Specimens and Models Illustrative of That Condition.—Bransford Lewis, of St. Louis, said that the proper selection of the operative procedure is of the greatest importance in attaining successful results, which was satisfactorily explained by the dozen or more pathologic specimens and models of hypertrophied prostates exhibited by the reader. In these the various forms of prostatic enlargement and obstruction were clearly illustrated, the prostatic bar, the bilateral hypertrophy, the intravesical tumors and projections, sessile and pedunculated, the nodular valves and the median outgrowths, adenomas, etc. From all of these it was perfectly evident that no one operative procedure could possibly fit all cases, and that the operation should be selected according to the case at hand rather than the personal inclination of the operator. The conditions favorable for the several operations in vogue were summed up as follows: *Favorable for the suprapubic route*: 1. General enlargement of the prostate, with extreme intravesical projection of the median or lateral lobes, diminishing their accessibility from the perineum. 2. Marked pedunculation of the intravesical tumors, with absence of obstruction from other source. *Favorable for the perineal route*: 1. General hypertrophy, involving the lateral lobes, without extreme intravesical projection. 2. Large or very thick bar formation. 3. Severe compression of the urethra between massive lateral lobes. 4. Excessive development of the prostate in the direction of the rectum. 5. In most cases, where the patient is in good general condition, is not too aged, and there is not a special indication favoring one of the other procedures. *Favorable for the Bottini*: 1. Cases of extreme debility, or of extreme age, unable to stand one of the severer operations. 2. Cases of bar formation or median sessile obstruction, of not too great dimensions. 3. Incomplete collar formation. 4. Horwitz says it should be employed as a prophylactic against further obstruction tendency at the beginning of catheter-life.

Discussion.—F. L. STURGIS, of New York, said that the removal of the prostate and ejaculatory ducts prevented the flow of the prostatic secretion which was so essential to the vitality of the spermatozoa, and therefore tended to make the male sterile. Some partial operation, such as the Bottini, was preferable on this account. EUGENE FULLER, of New York, did not think we could group the different forms of hypertrophied prostates under such a small class as shown by Dr. Lewis. If one had to deal with 100 cases of prostatectomy there would certainly be 75 of them that would represent something new. In cases complicated with troublesome hernias many surgeons operated upon the hernias without having in mind the cause of the hernia, the straining, etc., consequent upon the urethral obstruction. No matter how severe the hernia seemed to be if the bladder be opened and drainage instituted the tenesmus ceases and the patient may not again be troubled with the hernia. This also applied to prolapse of the rectum incident to the straining and tenesmus. F. TILDEN BROWN, of New York, said that Dr. Lewis had failed to show how we were to know in advance just what form of prostatic enlargement we were to deal with. The use of the cystoscope, for this purpose, was very unsatisfactory. Again, it was very necessary that one should know the condition of the kidneys and what sort of urinary obstruction we had to deal with, and this was difficult to learn. It seemed to him that where there was the slightest excuse for making a suprapubic incision for drainage such an incision should be made use of for the introduction of the cystoscope with which one could look directly down and learn the nature of the obstruction or growth. Recently he had the opportunity to examine two cases through a suprapubic opening in this condition and he had learned a great deal that would have been impossible to learn if the cystoscope had been introduced through the urethra. H. H. YOUNG, of Baltimore, said that Dr. Lewis' models and specimens were beautiful and very instructive but that he had met several forms of prostatic obstruction which were not shown in the collection. One case, in which no enlargement could be found by rectal and cystoscopic examination, was found by epicystotomy to have a small globular tumor of the verumontanum which was causing the obstruction. He had had several cases of so-called small sclerotic pros-

tate which also showed by rectal and cystoscopic examination very little evidences of hypertrophy and on which a prostatectomy would be impossible that was cured by the Bottini operation. In four cases which had previously been castrated he found with the cystoscope a collerette of mucous membrane and fibrous tissue around the prostatic orifice which continued to cause obstruction after the lateral lobes had atrophied. This, also, was relieved by the very small blade of the electro-incisor. He wished to reassert his adherence to the radical removal by prostatectomy in fit subjects. He had used both the perineal and suprapubic routes with but one death in fourteen cases. Many of his cases were so old that he feared the radical operation and general anesthesia and found the Bottini operation eminently satisfactory. He had had 19 cases over 70 years of age, 3 over 80, and operated under cocaine with the electro-cautery without a death and with good results. Dr. STURGIS, of New York, said that in the case of the tumor of the verumontanum the endoscope would have shown what the cystoscope had failed to show. Dr. BRYSON, of St. Louis, said he had had three or four such cases where he did an epicystotomy and found a tuberculous condition; they were scraped and cure followed. WILLIAM T. BELFIELD, of Chicago, said that none had as yet penetrated beyond the threshold in our endeavors to relieve these obstructions. It must be admitted that nothing was known regarding the etiology of these conditions. We all know that some of the most violent cases of so-called prostatic obstruction occurs when there is no prostate at all. We know of certain young men whose prostates are not enlarged, nevertheless they have symptoms of prostatism with residual urine, etc. Such cases have been described by Chetwood and others under the name of contracture of the vesical neck. There are cases occurring in women with all the symptoms of prostatism, with complete retention, residual urine, trabeculated bladder showing the efforts of the bladder to overcome the obstruction, and yet there is no prostate. He thought we were overestimating the importance of enlargement of the prostate as a cause of the trouble. He thought more attention should be paid to contractures, or fibrous degeneration of the vesical outlet, or what not, that may be present without any prostatic enlargement whatever. Again, we know that the prostate has no function except that imposed upon it by the internal secretion of the testicle; if we remove the testicle the glandular part disappears by atrophy. If such is the case and it be shown that the secretion of the testicle has anything to do with the production of the adenomatous enlargement, then it would seem rational to assume that no operation except a radical one would be of great benefit. The Bottini operation as a prophylactic one is unreliable. In the Bottini operation simply scratching offers no improvement which cannot soon be overcome by some causative agent which may be circulating in the blood.

Detection of Stone in the Kidney by Skiagraph.—James Bell, of Montreal, exhibited photographs of a case in which the skiagraph had demonstrated a stone with perfect satisfaction. The patient was rather a slight, poorly nourished woman, 42 years old. She had her first attack of colic when she was four months pregnant in 1897. She remained well until 1900 when, being three months pregnant, she had another attack. She then remained well until 1901, when she had other attacks occurring on the right side. She had observed no change in the urine but she declared that she had noticed some swelling on that side with each previous attacks. After admission to the hospital skiagraphs were taken which showed a small oval stone in the lower half of the kidney which was removed by the loin incision and it was shown to be of the size and shape as depicted in the skiagraph.

Renal Tuberculosis.—F. Tilden Brown, of New York, said that the results of necropsies were at variance with the clinical showings in the disease, as a rule, and that if we relied upon the evidence as produced at autopsies we would be convinced that there were but few cases of isolated renal tuberculosis which justified surgical intervention. He thought that a contribution from the hospital records extending over a period of ten years would be of value, although the statistics were incomplete. At the Presbyterian Hospital, New York, from February, 1892, to March, 1902, there were 1,427 necropsies, of which number 258 (18%) showed tuberculous lesions somewhere in the body, and 48 of them (18.5%) showed renal tuberculosis. Of these 48 cases, 32 occurred in males and 16 in females. Of the 48 cases, 39 had tuberculous lesions in both kidneys, while but 9 had tuberculosis of one kidney. Of these 9 cases 5 involved the right and 4 the left kidney. Of the 258 tuberculous bodies it was shown that the kidneys were more commonly involved than the spleen, liver or adrenals (kidneys involved in 48, spleen in 32, liver in 32, adrenals in 8, etc.). During the same time there were in the hospital 78 cases diagnosed as renal tuberculosis if the authorities be given the credit of making such a diagnosis in 48 cases where the kidneys were found to be involved in tuberculous lesions at autopsy. Of these 78 cases, 13 (16%) had nephrectomy performed, with one death occurring two months after the operation; at the autopsy the other kidney was found to be far advanced in the disease. That gave a mortality rate of 7.6%. Of these 13 cases, 6 fell into the speaker's hands; he had no deaths. The vast majority of cases that come to autopsy which show tuberculous lesions in the kidney were of the disseminated general miliary type, and with such a class of cases, of course, the surgeons have nothing to do with. At the present time we are sure that there is no form of medicinal,

hygienic or climatic treatment that is at all curative in renal tuberculosis. The evidences at necropsies show as high as 3% or 4% of healed cases of pulmonary tuberculosis; whereas it is the rarest occurrence to find at autopsy any evidence of healed renal tuberculosis. The speaker then showed photographs of nature's efforts in the attempt to cure renal tuberculosis. From a surgical standpoint he was satisfied that no surgeon today would hesitate to perform an immediate nephrectomy when he was sure that one kidney contained the only appreciable focus of the tuberculosis. Through the courtesy of his colleague, Dr. Tuttle, he was able to show a picture of a case of pseudo-tuberculosis of the kidney, a very rare condition, which was first described in 1891.

Tuberculosis of the Seminal Tract.—Dr. Hugh H. Young, of Baltimore, said that although tuberculosis of the seminal tract had been the subject of much investigation and discussion during the past three years there were still wide and important differences of opinion among prominent surgeons both as to the pathology and the treatment of the disease. The main question, at issue, he said, were these: *The Pathology:* Is the primary localization in the epididymis, in the prostate, or in the seminal vesicles? In disease beginning in the epididymis how often does the testicle become involved, and how soon? Does the disease ever begin primarily in the bladder, and from there travel to the genital organs? *Treatment:* In tuberculosis of the epididymis is castration, or epididymectomy, the better operation and what are the limitations of each? Is double castration followed by important psychical or sexual disturbances? To what extent should the vas deferens be followed and removed? Is forcible avulsing advisable? With disease of the prostate and seminal vesicles what should be the treatment? What hygienic and climatic treatment should be employed? Should the patient rest or lead an active life? The writer presented an exhaustive review of the literature as bearing upon the question as above set forth, and his conclusions were as follows: The disease may begin primarily anywhere in the tract but, in the majority of instances, it starts in the epididymis. The bacilli which are constantly being carried up with the testicular secretion along the vas deferens very soon localize in the ampulla of the vas, the ejaculatory duct, the seminal vesicle, and the adjacent portion of the prostate. The testicle is very seldom the primary point of origin, and it becomes involved secondarily to the epididymis generally much later than the seminal vesicles, though it seems not to be so immune as formerly supposed. Tuberculosis frequently travels from the kidney to the prostate and from there involves the testicles, but it is almost never primary in the bladder. The results obtained by operative removal of tuberculous seminal vesicles are indeed unsatisfactory, and apparently not nearly as good as where a partial operation upon the external disease in the testicle alone is attempted. In his own cases he had also had poor results with spermatocectomy and he now believed that the prostate and seminal vesicles should not be attacked early in the disease, for the statistics of Dimitresco, Kocher, Simon and others showed that a remarkable disappearance of prostatic and vesicular disease frequently occurred after removal of the external focus of disease by epididymectomy or castration. In later cases with extensive caseation and abscess formation in the prostate and vesicles it was necessary to operate to provide a proper escape of the fluid. Dr. Young showed diagram of a method he was now using for epididymectomy and castration. The incision was made above the groin, the inguinal canal opened, and was divided and brought out of the upper angle of the wound where it was sutured and left to drain exteriorly. Through this stump iodoformized glycerin injections could be made down the deferential canal to the seminal vesicles and prostate, both of which could be filled with the medicinal fluid. The forcible avulsion of the vas deferens gave a splendid opportunity for the foci situated near the deeper end to drain into the perivesical and superitoneal space and was, therefore, to be condemned.

Tuberculosis of the Testicle.—Paul Thorndike, of Boston, presented a short paper on tuberculosis of the testicle based upon 75 cases of the disease collected from the surgical wards of the Boston City Hospital. Sixty-seven per cent. of these cases occurred between the ages of 20 and 40 years; 60% of these cases involved the left testis; 18% involved both testes. Gonorrhea had preceded the development of the disease in 30% of the cases, and trauma in 12%. The epididymis alone was involved in 32 cases. The vas deferens was palpably involved in 12 cases. The seminal vesicles were palpably involved in 16 cases. The prostate was palpably involved in 13 cases. Dr. Thorndike's paper discussed two points: (1) The feasibility of removing the epididymis and leaving the testis behind, in proper cases; (2) the benefit to the patient of operations which remove only a part of the disease in cases where total eradication of the tubular process is impossible.

Cases of Genitourinary Tuberculosis.—Paul Thorndike, of Boston, showed two such cases. In the first there was a deposit in the prostate which was not alone the only manifestation of tuberculosis of the urogenital system, but also the only one in the body. In the second case it was clearly shown that the ureter on the same side as the diseased adrenal had been infected through its mucous lining by the tubercle bacillus carried there presumably by the urine secreted by the kidney, the adrenal of which was tuberculous.

An Analysis of 96 Operations for the Relief of Tuber-

culosis of the Testicle.—Orville Horwitz, of Philadelphia, after recounting many cases, said that he seemed warranted in presenting the following conclusions: 1. A primary tuberculous infection of either the epididymis or testicle may occur, the former being by far the more common. 2. A primary infection of the epididymis, secondarily to that of the testicle, is more common than the descending one. 3. Primary involvement of either the epididymis, or testicle, usually takes place through the circulation; the soil being predisposed to the location of the tubercle bacillus either by a slight traumatism or by some infective condition which has given rise to inflammation of that organ; most commonly an attack of gonorrhea. 4. Secondary tubercular involvement of the epididymis or testicle sometimes follows a primary focus of the disease in other portions of the body; more commonly in those organs that are in a direct anatomic connection with the sexual glands, such as the seminal vesicles, prostate, urethra, bladder, ureter, or kidney. 5. The invasion of the testicle may be rapid, associated with acute inflammatory symptoms, an abscess soon developing; or the onset may be slow, the symptoms simulating those of either chronic syphilitic orchitis or malignant disease of the organ. 6. The tuberculin test should always be employed in doubtful cases where only one focus of the disease is known to exist. 7. In doubtful cases associated with hydrocele, the fluid should be examined for the tubercle bacilli and inoculating experiments made. 8. The injections of either emulsions of iodoform or of sulfate of zinc into the diseased part are not to be recommended. 9. In all cases of encapsulated caseous nodules quiescent in the epididymis, epididymectomy should be performed. 10. Epididymectomy together with resection of the vas deferens is not attended by either atrophy of the testicle or sexual weakness. 11. The drainage of tuberculous abscesses followed by the use of the curet is only to be employed where radical treatment is not permissible, as it is attended with more or less danger and is generally unsatisfactory in its results. 12. In instances where the epididymis alone is involved, a resection of the diseased structure is all that is required; whether a partial or complete resection of the vas deferens is to be undertaken is still undetermined. 13. Double orchectomy should be performed when both glands are diseased, provided there is not extensive coexisting tubercular infection of other organs. 14. Whether infected seminal vesicles should be always removed at the time that the epididymis or testicle is resected is a question open for discussion. From the fact that in a large majority of cases the removal of the primary seat of the disease is followed by a subsidence of the tubercular involvement of the vesicles, it is deemed wiser as a rule to wait and remove the vesicles later if necessary. 15. Hygienic and climatic influence play as important parts after operations in fortifying the constitution against further invasion as they do in other tubercular conditions. 16. The antitubercular remedies are of great value in controlling the disease and should always be employed in conjunction with whatever surgical procedure may be deemed necessary.

Teratoma of the Testicle.—James R. Hayden, of New York, reported a case. The patient was 27 years old, a butler by occupation, who was admitted to Bellevue Hospital April 19, 1901. There was no family history of tuberculosis or malignant disease. He denied having had syphilis, and could not remember ever having had any traumatism or strain. Nine years previous he had gonorrhea, which lasted about three months. Seven years ago he had a second attack, complicated with a right-sided epididymitis, which confined him to his bed for two weeks. Since then the affected testicle had remained a little larger than its fellow, but in other respects he considered himself perfectly well as to his urinary and sexual organs. Two and a half months before admission the right testicle began to increase in size, and became firm and hard; during the last few weeks there was some local pain and a feeling of weakness when standing still, but which disappeared when he walked about. Upon admission the right half of the scrotum was found to be occupied by a smooth, painless, heavy and densely elastic tumor, in which the epididymis and testicle could not be differentiated. There was apparently no involvement of the cord nor was there any hydrocele. Circumference of the tumor at its largest part was 1½ inches. The scrotum was normal in appearance and nonadherent. There was no glandular enlargement. A diagnosis of malignant disease of the testicle was made and operation advised; but to exclude all possibilities of syphilis, the tumor was enveloped in strong mercurial ointment and the patient given large doses of iodid of potassium. At the end of 10 days the tumor grew so large that this treatment was stopped and the testicle removed. The tunica was normal in appearance, and there was no thickening of the cord, which was ligated high up and divided. The wound healed kindly and without complications, the patient leaving the hospital one month after his admission. The patient failed to return after his discharge. The pathologic report showed the growth mostly composed of a mixture of malignant elements, sarcoma and carcinoma, in combination with other varieties of tissue, and undoubtedly belonged to the class of teratomas. The sarcomatous tissue consisted of both small round cells and small spindle cells, with a few giant cells present in places. The cancer was adenocarcinoma and practically replaced all the glandular elements. A considerable cartilaginous element was found throughout, generally in the form of little nodules surrounded by a connective tissue capsule, but occasionally some-

what diffuse. Here and there a beginning ossification could be made out. Mucous cysts were present either as such or where the cartilage had undergone myxomatous degeneration. The connective tissue was fairly normal but as a whole showed an unusual cellular element. The vessels were congested and in parts there was a well-marked hemorrhage. Some smooth muscular fibers were present, with a slight degree of fatty degeneration, and also some necrosis. The tumor as a whole, on account of its composition and the large proportion of cells over basement and intercellular substance, was to be regarded as decidedly malignant.

Gangrene of Penis.—James R. Hayden, of New York, reported the case of a patient, 57 years old, married, a printer by occupation, who was admitted to Bellevue Hospital, January 15, 1902. He denied ever having had any form of venereal disease, local traumatism, or cauterization. He was a paranoiac, having various delusions as to the cause and nature of his present trouble, the rather unsatisfactory history of which was as follows: About two weeks prior to admission he noticed a small black spot on the end of the glans penis which increased in size and gradually spread over the rest of the organ, giving rise to an offensive odor. Aside from the mental condition he appeared to be a healthy man in all respects. The entire penis from the meatus to within one inch of the abdominal wall was greenish-black in color, dry, hard and gangrenous, with a most offensive and penetrating odor. The line of demarcation was well marked as shown in the photograph. The urine was passed from the under surface and about the middle of the penis. The inguinal glands were not involved. The parts were frequently irrigated and dressed with hot bichlorid solution, as a result of which the slough was removed in a few days, leaving a raw and bleeding stump about one and a half inches in length, from the end of which, at the lower border, the urine was passed in a good stream. Healthy granulations were established and the entire stump was covered with skin grafts which was followed by a favorable outcome as shown in one of the photographs, with the corpus cavernosa completely covered with sound integument. The patient left the hospital six weeks after his admission.

The Surgical Treatment of Bright's Disease.—Ramon Guiteras (New York) pointed out that the first operation for Bright's disease was performed by Harrison, in 1878, in a case of subacute nephritis following scarlatina, and accompanied by lumbar pain. The diagnosis was renal abscess, but on performing nephrotomy, nothing but a medical nephritis was found. The albuminuria and the pain disappeared after nephrotomy in this case. Here, then, we have the first operation for a medical nephritis; but it must be remembered that Harrison had thought that in this case there was a surgical condition present, namely, a renal abscess, so that he really did not operate upon the kidney with the specific object of curing a nephritis. Since then he has operated on several cases of a similar character and noted that the relief of renal tension produced by nephrotomy induced a regression of the nephritis. Newman, of Glasgow, published some years later two cases of nephritis in which nephropexy, performed on account of the mobility of the organ, was followed by an improvement in the Bright's disease. Since 1886 a number of cases of chronic Bright's disease have been operated upon by nephrectomy and nephrotomy, usually when there was a nephralgia or a hematuria, or both, or else when some surgical condition, such as stone, tumor, suppuration, etc., was suspected. Israel's work showed that the so-called essential hematurias and nephralgias are frequently dependent upon chronic nephritis, and that in such cases nephrotomy is of benefit. He does not consider, however, chronic Bright's disease without these symptoms as amenable to surgical treatment, and emphatically denies his intention of treating ordinary typical cases of Bright's disease by nephrotomy. Edebohl, of New York, was the first to operate upon kidneys with chronic Bright's disease with the specific object of curing the nephritis, and not simply for the purpose of relieving symptoms, or with the expectation of finding some strictly surgical condition. Edebohl operated upon 18 patients, in 16 of whom he performed nephropexy by a method involving the stripping of the capsule from one-half of the organ and anchoring it to the posterior abdominal wall, while in the remaining two cases he simply decapsulated the kidneys and cut away the capsule without anchoring the kidney afterward. There was no mortality in this group of cases, and the results were such as to justify the further employment of this operation (decapsulation) as a means of treating chronic nephritis. He also reported two cases of chronic Bright's disease, which he operated upon by stripping the capsule. The first case was that of a man, aged 79 years, in which complete double decapsulation was performed; the second, that of a woman, aged 35 years, in whom a partial decapsulation and nephropexy was performed. In a third case, a woman, aged 44 years, who was suffering from chronic nephritis, but who was in fair condition, collapsed on the operating table before the kidneys had been exposed, and was resuscitated with difficulty. The first case reported by Guiteras was operated upon over a month ago and has already shown improvement. The second case was operated upon two weeks before the presentation of this report, and sufficient time has not yet elapsed to warrant conclusions as to its result. The third case cannot be considered, as the operation was not completed. Other cases have been referred to Guiteras for operation, but they were considered unsuitable, either because

they did not show sufficient symptoms of chronic nephritis to warrant an operation, or because they were too far advanced to offer fair chances for a trial of this procedure. Guiteras concludes (1) that nephropexy is always a good procedure in a movable kidney in which chronic nephritis is present; (2) that nephrotomy has proved to be valuable in unilateral Bright's disease associated with hematuria and nephralgia; and (3) that complete bilateral decapsulation has not as yet been employed extensively enough to warrant any positive conclusions as to its value. Up to the time of writing, with the exception of Edebohl's two cases, and the case here reported, no instances of decapsulation performed for the cure of chronic Bright's disease have been recorded.

XX CONGRESS FOR INTERNAL MEDICINE.

WIESBADEN, APRIL 15-18, 1902.

[Specially reported for *American Medicine* by Dr. Albu, Berlin.]

[Continued from page 767.]

SECOND SESSION.

In the discussion of the papers of Drs. Ewald and Fleiner, Leo (Bonn) held that sounding in cases of ulcer was allowable only when there was uncertainty in the diagnosis and as a means of definitely ascertaining hyperacidity; otherwise it is unnecessary, and in no way helps the treatment. On the contrary, it is indicated in case of stagnation of the gastric contents, not for drawing-off, but for lavage. Technical middle-someness is to be avoided throughout; the ulcer borders are easily irritated. He favored the use of silver nitrate. Pariser (Hamburg) emphasized the danger of sounding. Hemorrhagic erosions are a complication of gastritis chronicus exfolians, and furnish a characteristic symptom complex. For example, the occurrence of shreds of mucous membrane in the lavage of the diseased stomach. Bismuth may be replaced by a mixture of chalk and talc, which is cheaper and does not color the feces. He regarded the dorsal pressure point as a constant and important symptom of fresh ulcerations. It is often the only sign of those exacerbations which occur at the time of the menses. Minkowski (Cöln) pointed out the appearance of hemorrhage of the stomach in cases of gallstones, as well as in cases of rupture of aortic aneurysms into the stomach or esophagus. Lavage of the stomach, with albumen water, is less dangerous than operative procedure. In those few cases of ulcer in which it is necessary to sound, there need be no timidity, only retching is to be avoided. The tube is unnecessary for the application of bismuth, small doses of which suffice, particularly as the powder attaches itself to the surface of the ulcer. To relieve the pain he recommends atropin; to check the bleeding, gelatin by the mouth in the form of jelly. Sahli (Bern) presented the following suggestion as to the indications for operative treatment: Gastroenterostomy is indicated in anatomic (not in functional) stenosis; it is not to be recommended for checking gastric hemorrhages, which usually require dietetic regulation; or they are so sudden and profuse that the surgeon comes too late. Early interference appears, however, to be unauthorized. In stagnation of the stomach contents, washing out is indicated and very effective. After gastroenterostomy the physical state is unfavorable for the healing of the ulcer, excision alone seems rational; but in severe cases it is precluded and in light cases is superfluous. Internal therapy must be carried out early and pushed energetically, with rest in bed and long-continued exclusive milk diet, which, by the abstraction of chlorids, acts favorably on the hyperacidity. Perforation requires operative treatment. Strauss (Berlin). Two aids to the oftentimes difficult differential diagnosis between ulcer and carcinoma are the digital exploration of the rectum for metastases, and the examination of the mediastinum for glands by means of the skiagraph. The examination of the stomach contents yields no information. Blood frequently occurs in removed stomach contents, in *apepsia gastrica*. He had seen four cases of coincident ulcer and *hernia epigastrica*. The contradictions respecting the hydrochloric acid content of the gastric juice in cases of ulcer explain themselves through regional differences. Strauss had observed hypersecretion in two cases where there was no ulcer. Hyperacidity is in every case to be regarded as suspicious, as pointing to ulcer and to be treated accordingly. V. Schrötter, Sen., (Wien) considered the gastric hemorrhage due to vicarious menstruation referred to by Ewald as a "bogy tale;" he had never seen it. When the supraclavicular lymph glands develop a growth suggestive of carcinoma, one should refrain from operative treatment. Bial (Kissingen) held that such traces of blood as are only to be detected by the gualac test offer no ground for conclusion as to ulcer, in which the hemorrhage is greater. Agéron (Hamburg) regretted that those making reports had said nothing as to the lessening of motility in ulcer. With men its less frequent appearance is only apparent, it being frequently confused with nervous affections. Agéron had also seen pyloric spasm as a preliminary symptom in myocarditis and aortic aneurysm. Schultze (Bonn) suggested that ligation of the adducted arteries should be considered in cases of hemorrhage of the stomach. The tetanus of gastrectasia is not always a malign symptom. Rumpel (Hamburg) thought, on the ground of the results of gastroenterostomy which he had observed, that

Sahl was wrong in casting discredit upon it. Strauss, on the contrary, remarked that small mediastinal tumors are not to be seen by means of the Röntgen rays. Von Mering (Halle) had made experiments with students, which demonstrate that enemas are of little utility: of albumen 15%, of fat only 5%, and of carbohydrates 66% being resorbed. In the place of milk and gelatinous soups which are poorly borne by ulcer patients, he recommended freshly prepared junket, which, with the addition of sugar, is very nourishing. Lenhartz (Hamburg) regarded with more favor the use of milk than egg diet, which, though richer in albumin, does not act so well in combining with acids. He gives only small doses of bismuth. Operation is only definitely indicated in case of pyloric stenosis. Ewald confirmed the occurrence of vicarious gastric hemorrhage. Respecting nutritive enemas, there are individual variations to their use, and at best the method affords but subalimentation. The question of operability is only to be decided by the individual cases. Fleiner emphasized the need of stringent individualization in the treatment and diet. Great care must be exercised in the use of the sound. Tetanus was in most of his cases obviated by gastroenterostomy.

On the Parasitism of Cancer (with demonstration).—Von Leyden (Berlin). The speaker first discussed the conclusions to be derived from the official cancer statistics compiled in 1900 for the German Empire. This was followed by a review of the present state of cancer theories. Opposed to this histogenetic or cellular theory of the pathologic anatomists is the parasitic or biologic theory which, though old, has recently received renewed consideration. Recalling the history of the former, he spoke briefly of the well-known theories of Virchow, Thiersch, Waldeyer and Cohnheim for the elucidation of the condition of boundless cell proliferation characteristic of cancer. He then took up the two latest theories of von Hansmann (anaplasia of cells) and Ribbert (dislocation and release of cells) which, especially the first, he regarded as inadequate. Ribbert's exceptions to the parasitic theory were briefly reviewed: (1) That it is always the same cells of the organism that contain the parasites is explained by the fact that only such parasites as are situated within the cells are able to propagate; (2) instead of devouring the cells, the parasites stimulate the cells to a proliferation entirely analogous to the cellular tumors produced in plants by parasites. He reviewed at length the observations of Woronin and Labaschin on the so-called hernia of cabbages. The similarity of the tumors found in this disease to human carcinoma has been recognized by botanists for 20 years past. In this case an intracellular ameba (*Plasmodiophora brassicae* Woronin) is known with certainty and its development fully ascertained. He drew attention to another line of facts which speak for the parasitic nature of cancer. The continuous irritation of a living organism must be taken into account in order to understand the continuous growth and multiplication seen in cancer cells. The clinical aspect of the carcinoma resembles often that of infectious disease, further the heightened albumen content, the increased occurrence of indican and the occasional diazo reaction of the urine, finally the severe anemia and cachexia. Through experiments made on animals, Hanau and others had demonstrated the transferability of cancer from one animal to another of the same species, and the speaker had recently been successful in his attempts to inoculate dogs with carcinoma of the penis; in one case metastasis followed. For man the transmissibility is probable though not proved. The speaker referred to a case in which a young physician had been attacked with cancer of the stomach two years after he had, by mistake, swallowed the expressed juice of a cancer. Fresh preparations must be examined. The unfruitful skepticism of anatomists must give way before these facts which all may see who will. Von Leyden had recently received help in his researches from the discovery of the spermatogonia (sporulation forms) of the parasite, which lie packed together in little heaps in a capsule formed by the cell membrane. These little bodies are not to be confused with the products of cell degeneration, etc.; they can but be regarded as the germs of living organisms. These germ forms are also to be observed in the "hernia" of cabbages. Naunyn (Strasburg) reported a case of a physician who developed carcinoma of the stomach three months after he had accidentally swallowed some of the contents of a carcinomatous stomach.

THIRD SESSION.

On the Relations Existing Between Infection and the Glycogenic Reaction of Leukocytes.—Kaminer (Berlin). The reaction is produced by cultures and toxins of streptococci, staphylococci, pneumococci, anthrax-bacilli, Friedlander's bacilli, typhoid-bacilli, *Bacterium coli*, *Bacillus pyocyaneus*, and by ricin, abrin, and the toxoid of diphtheria. The reaction is not produced by tetanus toxin or the bacilli of fowl cholera. By high immunization the normal appearance of leukocytes sensitive to iodine may be prevented after diphtheria toxin. Normal bone marrow is destitute of cells sensitive to iodine, but on the contrary they are to be found in the marrow when present in the blood. Ehrlich's views seem the most probable as to the nature of the substance, which assumes a brown color with iodine. Ehrlich (Frankfurt a.M.) explained that the reason why the tetanus toxin does not give the reaction was because the leukocytes were not active in building the antibodies. The iodine reaction is apparently only the sign of a transient state of solution of the carbohydrates contained in the

leukocytes. Hofbauer (Wien) held that the reaction had value for clinical diagnosis; that it occurs, for example, with typhoid, lues, and measles as well as with other infectious diseases and purulent processes. There seems to be no correspondence between the results of experiments on animals and the observations on man. Minkowski (Cöln) regards glycogen as being without doubt the substratum of the reaction. Hubner (Berlin) thought the failure of the reaction in malarial cases was due to there being no toxin in the blood. He had been unable to observe any iodophilia in the bone marrow of pernicious anemia.

On the Significance of Autolysis in Certain Diseased States.—Fr. Müller (München). The reduction of tissue and disease products, such as fibrous exudates, bland infarcts and the like, produces a condition where absorption occurs either through wandering cells laden with the fragments themselves or directly through the lymph and bloodvessels. The change of the solid product into a dissolved form indicates the existence of a digestive process. Such autolytic phenomena may be studied experimentally in many organs, thus, for example, albumin is transformed to deutoalbumoses in the hepatized lung, bases and acids made over into leucin, tyrosin, etc. The nuclear substances split up into nuclein bases and phosphoric acid. Pus, brain and muscle substance show the same digestive properties. The most important agents of these chemic phenomena are the polynuclear leukocytes. To some extent it may be characterized biologically as a fermentative process. In digestive power bacteria differ greatly among themselves, they bring about autolytic solution of many morbid products, the filth bacteria are especially active in this respect. They are active in the production of cavities in the tuberculous lung. Autodigestion may have something to do with degenerative nerve and muscle atrophy, but investigations have not yet reached a conclusion. At any rate such weakening only appears in conditions where the physiologic function of the tissue has ceased. The fermentative character of autolysis has only been ascertained for the leukocytes, the liver and other parenchymatous organs. Oxidation processes which may be artificially observed also go on in the body. Finally, insufficient nourishment may lead to tissue breakdown. Beer (Strasburg) reported briefly on some personal investigations on autolysis of the liver and of pus. Kraus (Graz) held that it was improper to include in the autolytic processes fatty degeneration without the formation of fatty acids. Weigert (Frankfurt a.M.) referred to a fermentative process of some kind, the coagulation of the fibrin in cheesy products, as for example, coagulation in necrosis. Matthes (Jena) recalled the fact that he had obtained deutoalbumose and peptone from tuberculous glands.

On Actinomycosis of the Heart.—Von Schrötter, Sen. (Wien). A case was described in which actinomycosis of the mediastinum had been diagnosed and confirmed by autopsy. It had been previously diagnosed as fistula of the mediastinum, cardiac arrhythmia, edema due to obstruction, etc. A demonstration of serial sections showed that the musculature was but slightly affected, but in the interstitial tissues there was an invasion by the fungus and a small-celled infiltration which gave rise to great induration between the muscle fibers, as has been observed in other infectious diseases. With this heart the patient had been able to endure hard work for a long time. Photographs were passed about showing details of a similar case reported from Chicago.

On the Nature of the So-called Charcot's Crystals.—Gumprecht (Weimar). For the determination of the substance of which these crystals are composed, three points are essential, the refraction, and the chemic and physical solubility. As to the first point, the crystals have a double refraction. As regards the second point, they show an uncommonly high degree of solubility. With most acids or alkalis a decinormal solution sufficed to cause the crystals to instantly disappear. Of physical agencies, it is heat which produces solubility, 60° C. being the point of solution. Many substances are capable of altering the main characteristics of the crystals. The prototype of these is corrosive sublimate in concentrated solution; it altered the double refraction, the solubility in acids and alkalis; and as regards heat, tannic, picric and chromic acid act similarly to corrosive sublimate. The crystals are, furthermore, capable of storing up acid coloring matter. They give peculiar color reactions, and appear to shrink somewhat on drying. There is, therefore, little doubt but that the Charcot crystals from bone marrow consist of albumin. It is possible that in these crystals we have a reserve of albumin for the building of cells. In marked cases of cachexia there is often very scanty formation of these crystals. Von Poehle (Petersburg) pointed out the correspondence of Charcot's, Leyden's, Böttcher's and spermin-crystals as to melting point, and suggested that they were related chemically.

[To be continued.]

Physicians in the French Chamber of Deputies are said to number 43. Of these 23 have been reelected and 15 are newly appointed.

Cattle plague in such virulent form is to threaten the stoppage of transportation of supplies to the miners is reported from Buluwayo (Matabeleland) Africa.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

A FEW THOUGHTS AND SUGGESTIONS ON THE SUBJECT OF MEDICAL EXAMINING BOARDS.

BY

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of Hartford, Conn.

However much the working of individual State Medical Examining Boards may be open to criticism—and the majority of them have faults not a few—most of us will agree that these Boards were created to answer specific needs. It would seem, too, that the movement must progress until every state has its board of examiners, for experience has shown that while the best of the graduates of our medical schools have no fear of these examinations the weaker men gravitate to the states where registration is sufficient. These states must in self-defense adopt the examination system.

May it not be said that one evil the examining board system is intended to check is a laxity on the part of our colleges in granting diplomas? It would seem as if some college authorities considered that having received a student's money they were bound to give him a diploma as a *quid pro quo*, instead of making the return for the student's money the opportunity to earn a diploma by hard work and diligent study.

Again, it would be hard to find any two colleges that are in agreement as to the standard to be required for graduation.

Bearing these facts in mind it seems impossible for us to accept the dictum of any college as to the fitness of the graduate to practise medicine.

What is the remedy? Let our medical colleges confine themselves to teaching and let all examinations be conducted by an outside body so that students in all colleges shall be submitted to the same examination.

The examining body that would command respect would be a committee appointed by the American Medical Association, to consist of well-recognized authorities in the several subjects, who, however, must not be members of the staff of any college.

I would suggest that there be three examinations for the aspirant to the medical profession to pass. First, a *Preliminary Medical*, to determine the candidate's fitness to enter a medical college. I would make the subjects for this examination Latin, German, French, Spanish or Italian; mathematics, English grammar and composition; history and geography; physics, botany and inorganic chemistry. Of course students presenting credentials testifying that they have attained the desired standard of preliminary education might be accepted by the board of examiners without examination; but it would simplify matters if all took the examination prescribed by the board.

If it is said that this is too high a standard, I would answer that it does not begin to compare with European requirements; and if the demand is made the supply will be forthcoming, as our high schools and colleges will see that intending candidates are properly prepared. The medical profession is supposed to be one of the learned professions, and the demands on the student are making a thorough preliminary education increasingly necessary. To say that many of our best physicians had little in the way of advanced education before they entered the medical college, is no comparison. Educational matters have progressed and are progressing very rapidly in this country, and the medical profession ought to be well to the fore in the movement.

The second examination I would call an *Intermediate Medical*, and would have it open to students who have spent at least two sessions of six months each in a recognized medical school. The subjects to be passed should be: Anatomy, including dissections; medical chemistry and toxicology, physiology, hygiene, histology, microscopy, including the preparation and examination of normal and pathologic specimens, urinary sediments, and bacteriology and pathology. So far as possible practical work should be required of the candidates. If a

human cadaver cannot be obtained, the students should be required to dissect out and label specified anatomic details in cats, dogs or rabbits. In chemistry students should conduct analyses of urine and chemic substances as part of the examination.

The third examination would be the *Final Medical*, open to four-year students, and embracing the following studies: Theory and practice of medicine, including physical diagnosis; materia medica and therapeutics; surgery; obstetrics and gynecology; mental and nervous diseases; otology; ophthalmology; laryngology and rhinology; dermatology; pediatrics; genitourinary and kidney diseases. Here again, if at all feasible, practical work should be introduced. Every candidate should be required to take the history, diagnose the disease, and outline a course of treatment for some hospital case or dispensary patient.

All students who successfully pass the Final Medical examination should receive from their respective colleges the degree of Doctor of Medicine (M.D.), and from the association the degree or title of Licentiate of the American Medical Association (L.A.M.A.).

The character of the examinations should be such as would make them at least equal in severity to the strictest of the present state examinations; and they should always be kept at a good standard of medical scholarship.

The next step would be to secure the passage of such legislative enactments as would enable the existing state boards to accept the L.A.M.A. examination in lieu of their own. With regard to physicians at present in practice, who desire to move to another state, they should be required to take the Final Medical examination, which should entitle them to the L.A.M.A. diploma, and thus admit them to registration in any state. This examination, consisting of every-day subjects of professional work, ought to be within the scope of all intelligent and up-to-date physicians without further study.

So much for the general idea of the scheme. To mention a few details with regard to these examinations: They should be held in the respective colleges, and should be under the supervision of physicians not connected with the institutions, appointed by the association. The names of candidates should not appear on their answer papers, only a number designated by the secretary of the examining board. Expenses should be met by the fees of the candidate, which might be \$5 for the preliminary, \$10 for the intermediate, and \$25 for the final.

Efforts should be made to secure the cooperation of the other national medical bodies, by the holding of similar examinations by the American Institute of Homeopathy and The American Eclectic Medical Association. I am given to understand that the former body would look favorably upon some such solution of this vexed question. Eventually, it ought to be possible to arrange that all students, irrespective of their therapeutic preferences, should answer the same questions and be marked by the same examiners, except in materia medica and therapeutics. And I will go further and say that I look forward to the time when all candidates will take the same questions in these subjects, those desiring to pose as specialists in homeopathic or eclectic therapeutics answering additional questions in these departments. Some such *modus vivendi* will solve the questions of the schools.

One other thought: We are all agreed that a physician should not stop studying when he leaves the medical college; might it not be well to offer some recognition of this postgraduate work? I would suggest that the association might conduct an examination open to graduates of five years' standing. This examination should embrace all the subjects of the Final Medical, and should be of such a nature as to show whether the candidate is reasonably well posted in the advances that are made from time to time in the various departments of medicine; and, in addition, the candidate should be required to select some branch or branches of medical science for a special examination. These branches should be theory and practice of medicine; materia medica and therapeutics; surgery; obstetrics and gynecology; mental and nervous diseases; ophthalmology; otology; laryngology and rhinology; dermatology; pediatrics; genitourinary diseases; kidney diseases; anatomic research; pathology and bacteriology; physiology; hygiene

and medical chemistry; and physical therapeutics (electricity, hot air, hydrotherapy, massage, etc.). The successful candidate should be entitled to style himself Fellow of the American Medical Association (F.A.M.A.). These Fellows would be the men whom we should consider entitled to call themselves specialists in their selected fields; and it would be from among their ranks that we should select our consultants. The fee for this fellowship examination should be \$50 or \$100.

Of course, I have not brought out all the details with regard to this plan; I have contented myself with giving a general outline of a scheme which I think would work to the advantage of the profession in this country. I am aware that some physicians look for a solution of the question in the formation of a national Board of Health, appointed by the government. This is open to the objection of a possible interference with the best interests of the profession through politics. Both plans would require the same acceptance by the various state boards; for the sovereign states cannot be deprived of their police power (under the head of which the regulation of the practice of medicine comes) without their consent; and this they are not likely to give. The plan I have outlined has the advantage that the profession is left to regulate its own affairs without interference by the professional politician. If members of the profession will cease quarreling among themselves and close up the ranks they will command greater respect from the laity than they now receive and will be entrusted with all the privileges of regulating their own affairs that they can legitimately desire.

EXTERNAL USE OF ALCOHOL FOR CARBOLIC ACID BURNS.

BY

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To the Editor of American Medicine:—The more recent general use of alcohol as an "external" antidote to carbolic acid burns, induces me to cite the following case as an illustration:

On March 28, Mr. O., a shoemaker by trade, experiencing some stiffness in his left leg, intended to limber it up with liniment; by mistake a bottle of pure carbolic acid was handed to him. He rubbed this in over the anterior and lateral surfaces of the left lower extremity extending from the crest of the ilium and Poupart's ligament above to the ankle joint below. In about three minutes he experienced an intense burning sensation over the parts. He grew dizzy and nauseated and fell to the floor, and then I was sent for.

I found him in a semicomatose condition, with sighing respiration, small feeble pulse and the surface of the body cold and clammy. From a hurried inquiry into the history the etiology was apparent. I sent immediately for alcohol 95% and applied it most liberally over the entire burnt area, and kept cloths saturated with it applied for about half an hour. This was looked after by an assistant while I attended to the constitutional condition, which had become alarming. It required radical treatment before reaction took place, the cooling effect of the alcohol applications to such a large surface undoubtedly retarding it somewhat.

At the end of a half-hour application of the alcohol the burnt area, instead of being intensely hyperemic, was pale, differing from the color of normal skin in that it had a yellowish tinge. A simple ointment was now applied and the entire limb bandaged. At the end of 36 hours the bandage was removed; the skin was found to be nearly normal, no denudation had taken place, and within five days he had full use of the limb as before with the exception of a slight stiffness probably due to the immobility of the part while bandaged.

There were a number of burnt patches on the other leg and thigh where it had come in contact with the left. Deciding to make a comparative test, I did not apply alcohol to these patches, but only the ointment. The difference was striking. The skin retained its intense hyperemic condition, a number of blebs formed, and all the pain of which the patient complained was referred to these patches. They must still be dressed, while the other leg is perfectly normal.

The case presents a number of other interesting points, viz.: The rapid absorbing power of the skin; only about three minutes' time sufficed to produce marked constitutional disturbances from absorption of the drug. The first urine voided was almost black with a distinct smell of the acid; it contained a very heavy precipitate and albumin, the latter not having totally cleared.

The temporary complete anesthesia produced on the application of the acid to the skin is shown by the fact that no sensation was at first experienced; not until the entire limb had been thoroughly rubbed were its effects noticeable.

The occupation (shoemaker) had toughened the skin of the palms so that, although all the acid came in contact with them, they did not at any time exhibit a lesion or experience any smarting; but the interdigital folds of skin showed all the effects of the acid.

A NEW SIGN IN THORACIC ANEURYSM (?)

BY

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of Baltimore, Md.

From the limited number of four cases of well-marked thoracic aneurysm recently examined by me, I wish briefly to call attention to a sign I found present in each case. As yet I make no other claims for this sign than the probability of its constancy, and the possibility of its value in the detection of early and masked aneurysm.

This sign is elicited by combined palpation and percussion as follows: The cricoid cartilage is grasped as is done for tracheal tugging while an assistant percusses the chest. When normal parts are percussed, the palpating hand feels a distant and feeble jar (proximal ends of the clavicles excepted), but so soon as the aneurysmal area is reached, a shock which is both direct and resilient in nature is felt, and somewhat suggestive, as I take it, of the sensation experienced by one when a rubber bag filled with water is simultaneously palpated and percussed. With my eyes shut, and by the examining method described, I have recognized in each case the peculiar modification of the percussion-stroke imparted to it by the aneurysm.

In making observations, it is well to note if the sign is present when the patient is changed from the erect to the recumbent and lateral positions, and if possible, the location of the aneurysm itself.

CASE OF HEMOPHILIA DEVELOPING SHORTLY AFTER BIRTH AND PROVING FATAL.

BY

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The following interesting case developed in the obstetric ward of the Freedmen's Hospital, Washington, D. C.:

Mrs. K. G., colored, age 22 years, a nullipara, entered the hospital March 21, 1902; on March 28 she was delivered of an apparently healthy male child weighing 6½ pounds, the labor being perfectly normal. The condition of the child was good, and nothing abnormal was noticed until April 5, 1902, when it was eight days old; on this day the umbilical cord, which had not yet dropped off, began to bleed, and about the same time a slight oozing of blood was noticed in the roof of the mouth. On the following day, in addition, there was epistaxis and hemorrhage apparently from the whole mucous membrane of the mouth and from the mucocutaneous junction of the upper lip.

Every effort was made where possible to control the hemorrhages successively with compresses, tannic acid, Monsell's solution, hydrogen dioxid, suprarenal extract, fresh blood, and with successive layers of gauze, collodion and bismuth, but all with no success. Gallic acid was given internally, but with the same result. The hemorrhages continued practically uncontrolled until April 11, 1902, when the child died.

Retardation of the coagulation time was especially noticeable in this case. There were no hemorrhages from the bowel or urethra. There was no history of any evidence that pointed to the existence of this disease in the family. Apparently the joints were not affected.

MEDICAL THOUGHTS OF SHAKESPEARE.

The reference to Dr. Field's work on "Medical Thoughts of Shakespeare," printed in our issue of May 3, was received by *American Medicine* through the courtesy of Dr. A. C. Pole, of Baltimore, Md.

ORIGINAL ARTICLES

THE FUTURE OF OBSTETRICS AS A SPECIALTY IN AMERICA.

BY

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There is no special branch of medicine that has displayed such a remarkable development in America in the last ten years as obstetrics; there is no other specialty in medicine that promises such development in the next ten years. Every maternity hospital of the first class, recently built in this country, contains a perfect equipment for the treatment by abdominal and plastic surgery of all the injuries of childbirth, all the infections and inflammations of the childbearing process after abortion and labor at term, abnormalities in the involution of the uterus, backward displacements of the uterus of puerperal origin (constituting 17% of the diseases of women), and tumors of the genital canal or its neighborhood which may possibly complicate pregnancy, labor or the puerperium. This category embraces far more than half the diseases of women. The specialists in charge of these hospitals, if alive to the best interests of their patients, never permit a woman to leave their charge with any of the injuries of childbirth unrepaired, with the uterus out of place, with inflammatory disease of the uterus, tubes, ovaries, the peritoneum or pelvic connective tissue, or any tumor of the genital canal or its neighborhood, which requires removal. If this plan is followed uniformly as it must be by a competent expert who has a claim to the title, more than half the diseases of women disappear from general practice. It follows, therefore, that the kind of specialist in the diseases of women to whom America has become accustomed in the last generation, but who is rare or does not exist in the older civilizations of Europe, must find his field of work much diminished, and small as it will be, it must be shared with the general surgeon who every year is encroaching more and more upon gynecic surgery.¹

It is inevitable, therefore, that there should be a rearrangement of the scope of the special branches of medicine which may be concerned with the surgical treatment of diseases of women, gynecology as it is called and has been understood in America being merged in obstetrics and surgery, the former naturally absorbing far the greater part. It might be urged by the superficial observer unacquainted with the actual facts of today and accustomed to the practice of a past generation that the expert in obstetrics would be too busily engaged attending irregular calls to labor cases to devote himself even in part to the surgical treatment of the diseases of women, most of which have their origin in the childbearing process or complicate it, and almost all of which must be considered in relation with parturition in the patient's present, past or future history. The same objection would obtain in the field of general medicine. No man can hope to attain the greatest eminence as a teacher and consultant in clinical medicine who endeavored to obtain at the same time a large general practice. It is the function of the professed expert in obstetrics, in my judgment, to confine his private patients, so far as possible, to cases promising to be unusually difficult or complicated, to reserve his time for hospital work and a consulting practice, and to make his daily work the diagnosis and treatment of diseases of women, almost all of which must be studied in relation with parturition and for the successful treatment of which a thorough training in obstetrics as well as surgery best fits him.

This is the actual condition of special practice on the

continent of Europe today and it must be the outcome of the shifting of work which is at present observable in America.

Another factor is arising which will have a bearing on this question. In the hospitals of Boston, New York and Philadelphia, and probably elsewhere, the trained nurses are receiving thorough instruction in obstetrical diagnosis, and in the management of a normal labor case. These women are much superior as a class to the midwives of Europe, good as many of the latter are, to my personal knowledge.

It would be a most desirable development of the near future if the average labor case could be entrusted to a highly trained, well-informed, skilful and experienced nurse, the physician being called in to repair the injuries of childbirth, to deal with any complication or abnormality that might arise, to make perhaps the daily routine visits, and above all to make the final careful examination at the end of the puerperal convalescence. By this plan the specialist and the general physician, too, could undertake the supervision of an almost unlimited number of cases.

ACQUIRED INCOMPLETE AND COMPLETE PROLAPSE OF THE UTERUS AND VAGINA IN NULLIPAROUS WOMEN.

BY

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of Philadelphia.

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The descent of the uterus and the invagination and descent of the vagina through the genital canal to the production of incomplete or complete prolapse is frequently observed in women who have borne children, but in the virgin and nulliparous woman such a condition seems to be very rare. No consistent study of this latter class of cases has been made, and although the literature furnishes little information on the subject, I have compiled a few facts for presentation in this paper which I believe will be of some little interest.

My personal observation of prolapse of the uterus in nulliparous women is limited to one case coming under my care on June 10, 1901.

The patient, A. A. W., American, white, 57 years of age, single, and positively a nulliparous woman, gave me the following history: Her father died of typhoid fever, mother and one sister of tuberculosis. Two brothers and one sister are living, strong and healthy, and are free from any deformity. Aside from the usual diseases of childhood, including scarlet fever, the patient had always enjoyed excellent health. Her occupation was that of a housewife, but her duties had never been excessively laborious. The menstrual function first appeared at 15 years of age, was regular, lasted six and seven days and was painful during the first day of the flow. The menopause occurred at 42 years of age. At 32 years of age she first noticed that the cervix presented at the vulvar cleft when on her feet for any great length of time. Since 30 years of age she had had a profuse mucoid, yellowish leukorrheal discharge, and even previous to that age, she had complained much of general weakness and backache. The descent of the uterus gradually increased, and during the last seven years she said it has been quite extruded from the body. In March, 1899, she consulted Dr. Skene, of Brooklyn, N. Y., who advised operation. Since then she had attempted to keep the uterus in position by means of a pessary, but without any degree of success. Her chief symptom has been difficult micturition, and it was for retention of urine that her physician, Dr. I. Newcomet, of Stouchsburg, Pa., was called, and discovered the prolapse. On admission to the University Hospital she complained of pain in the vulva, extending down the thighs, sacral backache, general weakness, and that the uterus protruded from the vulva. She was unable to attend to her daily duties.

On making a pelvic examination, the uterus was found in the position known as complete or the third degree of prolapse, as is shown in the accompanying photograph. The cervix, smooth and regular, protruded a distance of two inches beyond the vulvar cleft, and the vagina was quite completely invaginated and prolapsed. The uterine cavity measured four inches, and by palpation the cord-like elongated cervix was demonstrable. The posterior wall of the bladder was prolapsed with

¹One of the topics for discussion in this year's meeting of the American Surgical Association is "Hysterectomy." There are three separate papers on this subject.

the vagina. The rectum remained in its normal position. The uterine body was in the position of a plus first degree of retroversion. After replacing the prolapsed structures, the pelvic diaphragm was palpated and found to be tonic and completely intact, the levator ani muscle and pelvic fascia being felt as a ridged band crossing the pelvis, from which the posterior vaginal wall had been detached. Except for a small ulcer and the scar of a previous ulcer near the cervix, the vaginal walls were smooth and not injured. The case was one of complete prolapse of the uterus and vagina, with hypertrophic elongation of the supravaginal cervix, occurring certainly without injury or apparent distinct relaxation of the pelvic floor, or injury or hypertrophy of the vaginal cervix.

Since the production of the prolapse in this case was not dependent upon injury or undue relaxation of the supports of the pelvic floor, subinvolution or injury to the uterus, and the uterus was rather high in position, the selection of a form of operation for the permanent cure of the condition was a subject of considerable concern.

During the last eight years in perhaps 75 cases of incomplete and complete prolapse in multiparous women we have practised the following operations with constant and entire satisfaction: High amputation of the cervix, whether hypertrophied or of normal size, to secure the involution of the uterus. The formation of a wide triangular denudation or rather resection of the anterior vaginal wall, the base of the triangle being on the anterior surface of the amputated cervix, and the apex



just posterior to the external urinary meatus. This denudation is closed by transverse silkwormgut sutures, the first two or three sutures passing through the cervical tissue to attain the support gained by the so-called Crutch operation, and the others passing well into the wall of the bladder. Then the formation of a triangular denudation on the posterior vaginal wall, a modified Hegar operation, the apex of the triangle reaching almost to the cervix and the base being at the vulvar orifice. This denudation is closed by silkwormgut sutures so introduced from above downward, outward and inward as to catch, retract within the vagina and bring together in the median line a mass of the anterior fibers of the levator ani muscle and the pelvic fascia. The introduction of the sutures is begun at the apex of the triangle and each suture after being placed is shotted, so that in the introduction of the succeeding suture the muscle and fascia are caught and secured at a lower level than would otherwise be possible. When the woman has not reached the menopause, is young, these operations have been in one or two instances supplemented by ventrosuspension of the uterus. That the plastic operations are alone efficient is shown in one instance in which the woman has since operation given birth to two children and the uterus and vagina have remained

in excellent position. In the common case of prolapse, in the woman who has passed the climacteric period of life, we believe that except in the extremely rare instance where all supporting structures of the uterus and vagina are excessively relaxed and atrophied, the atrophic changes following the replacement of the uterus form this organ into a very small body of fibrous tissue upon which the intraabdominal pressure has little influence in causing a descent of the previously prolapsed structures. This, of course, provided the plastic surgery furnishes, as it should, adequate support.

In the case here reported, since the descent of the structures occurred through general weakness, was probably primary in the vaginal wall attachments, secondarily strongly influenced by the action of the intraabdominal pressure, the woman was in the post climacteric period of life and the chances of recurrence would be much greater than where the anatomic causes could be explained, my conclusion was to supplement the plastic operations just described by a strong abdominal fixation of the uterus. The operations were carried out on June 12, the uterus being secured to the abdominal wall by means of two silk sutures passed through the fascia of the rectus muscle on each side and a large portion of the uterine muscle at the posterior portion of the fundus. The patient had a perfectly normal convalescence, and after remaining in the recumbent position for four weeks left the hospital. The result of the operation now, after eight months, has been entirely satisfactory.

A similar case appeared for treatment at the Gyneccean Hospital in August, 1889. The patient was a single woman 20 years of age. She had never been pregnant. Menstruation appeared at 16 years of age, and was regular and normal. Complete prolapse of the uterus had been present for five years. For two years she had profuse leukorrhea and painful micturition. No attempt at operative cure was made in this case, but a pessary was introduced.

These two cases have been the only instances of complete prolapse of the uterus in nulliparous women treated at the Gyneccean Hospital in twelve years and at the University Hospital in nine years. During this time, on the other hand, at least 100 cases of similar descent of the uterus in multiparous women have been treated.

The frequency of incomplete and complete acquired prolapse of the uterus in nulliparas is impossible to determine. Many textbooks on gynecology state that it sometimes or may occur in such women. I find that men of large and many years' experience, such as Olshausen, Leopold, Emmett and Kelly, have observed but a single, at most two cases. Scanzoni saw 15 among 114 cases of prolapse; E. Martin, 6 among 174 cases; Fritsch, 6 among 80; Liebman, 3 among 39; and Neugebauer saw 7 among 28,000 gynecologic patients.

The cases reported in the literature, with the exception of those just referred to, are the descriptions of a single case by single writers. I have been able to collect, including the two cases here reported, 64 cases. The experience of Scanzoni, Martin, Fritsch, Liebman and Neugebauer appear to be decidedly exceptional. I think it is a conservative estimate that not more than 1% of the cases of prolapse of the uterus occur in nulliparas.

In 29 of the 64 cases collected, the age of the patient was stated, 21 were between 13 and 26 years of age, and 8 between 38 and 75 years of age. In all but two, when observed, the prolapse was complete. In one instance there was a complete congenital absence of the perineum, and in another a double uterus was completely prolapsed. In neither instance did the writer believe these malformations influenced the production of the prolapse. In 12 of the cases reported an opinion as to the cause of the descent of the uterus is given. Two were undeveloped women with an infantile uterus. Three were weak, sickly women with relaxed tissues. In seven the prolapse followed soon after assuming a laborious occupation. In one, the prolapse occurred suddenly after a severe physical effort; two had kyphosis; one

followed contraction efforts of the uterus in expelling a myoma; and in another a wide pelvis with a very deep Douglas culdesac was given as the cause. Dysentery, frequent vomiting, coughing, consumption, and excessive venery were given as the exciting cause in single instances. In nine cases the form of treatment is stated. Three were treated with a pessary, and three with plastic operations alone; two with ventrofixation and plastic operation, and one with ventrofixation and a cup pessary. In the case reported by Olshausen, a pessary was employed for four years, then anterior and posterior colporrhaphy were performed; six months later a transverse closure of the vagina was performed; and then four years later abdominal fixation. All failed to keep the uterus in position. No estimate as to the results of operation can be obtained.

The only conclusions to be gained from a study of the cases of prolapse of the uterus in nulliparas thus far reported is that commonly its subjective etiology is chiefly dependent, first, upon poor health, physical weakness and general tissue relaxation; and, second, frequently upon want of development of the uterus and its supports. The exciting causes are the diseases, laborious occupations and great physical effort which actively increase the intraabdominal pressure.

The cure must naturally depend much upon the general health of the patient, and since we have not here the common important causes of prolapse resident in the process of labor and the puerperium, upon the performance of such plastic and abdominal operations as shall positively restore the equilibrium of the uterus and fix the prolapsed structures in natural position.

I am indebted to Dr. Charles C. Norris for valuable assistance in the compilation of the literature on this subject.

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A CASE OF FRACTURE OF THE NECK OF THE FEMUR IN A MAN SEVENTY-SIX YEARS OLD, TREATED WITH THE THOMAS HIP-SPLINT. PERFECT RECOVERY IN TEN WEEKS.

BY

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I report this case because perfect recovery in cases of fracture of the femoral neck in old patients is rare, and because I believe that the results obtained depend largely upon the method of treatment.

D. W., aged 76, fell while boarding a street-car, striking squarely upon his left hip. He felt no pain until he tried to rise, when pain about the hip became severe, and he found he could not get up. He was lifted into a carriage and taken home, where I saw him as soon as he arrived. I found the following condition: The left foot was held slightly everted, and the left leg was one-quarter inch shorter than the right. He complained

of pain in the groin over the neck of the femur, and behind the great trochanter. He was unable to lift the leg off the bed, or move it in any direction voluntarily, and the slightest passive movement caused pain. I did not move the leg much in making my examination, as the displacement was slight and the position good, and I was afraid of breaking up any impaction that might exist. As the patient was a thin, spare man, the trochanter major could be easily grasped with the fingers, and holding the trochanter firmly with one hand, while the leg was gently rotated with the other, the trochanter was found to move with the shaft, proving that the fracture was in the neck. At the same time, a slight crepitus could be felt. After that, the leg was left completely at rest. Measurements were made for a Thomas hip-splint, and a long, wooden side-splint, extending from the axilla to three inches below the foot, was applied and bandaged snugly to the trunk and leg without lifting the leg from the couch. The patient was kept flat on his back for three days, while the Thomas splint was being made. Fortunately, he was of a quiet, phlegmatic temperament, and very intelligent, so it was not difficult to keep him perfectly still.

On May 24, the side-splint was removed, and the Thomas splint applied, without moving the leg. This was done by flattening out the wings or bands of the splint on the side toward the well leg, and then sliding them under the patient and bending them back into position. The splint was then bandaged to the leg from the ankle band to the thigh band. Before putting on the bandage a strip of adhesive plaster, two inches wide, was fastened to the fibular side of the leg, and the other end carried over the inside of the leg and fastened to the splint to counteract the tendency to outward rotation of the foot. The shoulder straps are to prevent the tendency of the splint to work down.

At no time after the application of the splint did the patient complain of the slightest discomfort. A few days later he was allowed to turn on his right side, the left side being supported by pillows the entire length of the body—not alone under the shoulder and hip, as is often done. About a week later a distinct callus was felt extending down to and involving part of the great trochanter. Then, and not until then, a hopeful prognosis was made as to recovery of the use of the limb. During the next two weeks the callus increased in size, until it felt like a fusiform swelling the size of a lemon. At the seventh week the splint was taken off, the leg bathed and the chest band bent open so as to allow of a half-reclining position. At the eighth week the callus had undergone considerable absorption, and the patient was allowed to get about the house on crutches, still wearing the splint. At the end of the tenth week he felt so confident of recovery that he took off the splint himself and began walking about with a crutch and cane. I found the callus almost completely absorbed, the joint freely movable in all directions without discomfort, and the original shortening of one-quarter inch. He said he could walk without any support, and would be doing so, but for the solicitude of the nurse and his family. I then discharged him with a warning not to do anything rash. I heard shortly after that he was going about, as well as ever.

I believe that excessive manipulation of the injured leg, in an attempt to make a diagnosis or to differentiate



Fig. 1.—Showing splint used.



Fig. 2.—Ridlon's Modification.

between intracapsular and extracapsular fracture, is detrimental.

A diagnosis of fracture should be made without it, as we must remember that when impaction of the fragments exists, the two pathognomonic signs of fracture—crepitus and false point of motion—will be lacking, and the fact that they are not found with slight and gentle motion, is the very best argument against making further attempt to elicit them.

In the absence of marked displacement and shortening, the sooner the joint is put at rest and perfectly immobilized the better will be the chances of recovery, and the Thomas hip-splint fulfils the indications with the greatest comfort to the patient.

In cases of displacement and shortening, when impaction has not occurred, I would use Ridlon's modification of the Thomas splint, which permits of traction being made with the splint itself, and at the same time tends to prevent tilting of the fragments. (See Fig. 2).

GOITER: MEDICAL AND SURGICAL TREATMENT.¹

BY

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I present this paper, not that I have anything original to offer, but that I may contribute to the literature on the subject my experience in the treatment of goiter, from the medical and surgical standpoint. During the past 17 years I have treated about 83 cases, not a large number to draw conclusions from, to be sure, but quite a number to have seen and treated in a territory where it is claimed goiter is not very prevalent, viz: central New York state. With the above number I have had opportunity to use many different forms of treatment with varying results. In these cases there have been used the remedies recommended by various writers for the cure of goiter, from iodine in its different forms, internally and externally, to mercury and adrenalin, and it was the results of the different treatments that suggested this paper. The unsatisfactory results of any one line of treatment in goiter, has, without doubt, been the reason for so many remedies being suggested. When I say unsatisfactory, that is just what is meant, because anyone who has had many cases of goiter to treat medicinally will have very unsatisfactory results in a large percentage of them. This is due chiefly to the fact that there has not been sufficient discrimination as to the variety of goiter treated by the remedies suggested. Take as an illustration, the enlarged necks that one sees in young girls at or about the age of puberty. Quite frequently the family physician is consulted regarding this condition, and nine times out of ten he will suggest that the neck be painted with iodine, and in due time the tumor or swelling disappears and the iodine receives credit for its disappearance. The same physician is consulted regarding a goiter in an adult and again suggests the use of iodine. If it is a miasmatic bronchocele, it will usually disappear upon the use of iodine internally, but if the tumor has been present for a year or more this treatment will generally be disappointing, as will almost any other medicinal treatment. It is only in miasmatic enlargements of thyroid glands that, in my opinion, the favorable results reported from time to time, obtained by remedies administered internally or applied locally, have been produced, not in cases of solid or cystic adenoma of the thyroid. Likewise, in the use of parenchymatous injections of iodine, carbolic acid and ergot, it is only in suitable cases that any benefit is derived, and I have reason to believe that it is the same class of cases that have been reported cured or benefited by internal remedies, in which parenchymatous injections are successful. Without

a doubt, electrolysis is certainly beneficial in some cases, particularly when the growth is comparatively small, as in the early stages of development, or when the bronchocele is smooth and soft to the touch; the so-called follicular variety. In the cystic or solid adenoma it will not only fail but will be harmful. I will not describe in detail in this paper the pathologic changes that take place in the thyroid glands and to which various names have been given, as it will be taken for granted that those interested in this subject will refer to the various works on pathology for such information. But in determining a line of treatment for goiter I would suggest that it be determined as nearly as possible whether the enlargement is parenchymatous, cystic, fibrous, hemorrhagic, or exophthalmic, for the reason that on the correct diagnosis of the nature of the growth depends the success of the treatment. The parenchymatous is the common goiter and is found chiefly in youth, between the age of 12 and 16. It is nearly always bilateral in its normal condition usually preserving the shape of the gland and it is soft to the touch. It is seldom that a parenchymatous goiter commences after the age of 35. The cystic goiter is also soft, presents in certain portions distinct fluctuation, but in some cases the fluctuation may be detected throughout the whole enlargement. The cystic goiter is probably the most common form found in adults. The fibrous enlargement will be recognized by its hard knotty appearance. Hemorrhagic goiter is found in middle-aged and elderly people, the name hemorrhagic having been given to designate a condition in which hemorrhage has taken place either externally or into the surrounding tissues. Exophthalmic goiter, Basedow's or Graves' disease, is recognized by enlarged thyroid glands, rapidity of heartbeat and palpitation, prominence and protrusion of the eyeballs. In referring to the literature the only conclusion to be drawn as regards treatment by internal and local remedies, including electricity, is that whatever degree of success has been obtained has been in the parenchymatous, hemorrhagic or exophthalmic forms. Summing up the various remedies used, iodine, mercury, ergot, carbolic acid, thyroïdin, adrenalin and electricity have given the most satisfaction. Iodine in the form of tincture is practically useless applied locally, and is a great source of annoyance to many. It should be used internally, if at all. If in the form of potassium iodide, 5 to 20 grains, three times a day, should be used, gradually increasing the dose up to the point of intolerance, or until some impression on the growth has taken place. For anemic patients syrup of iodide of iron may be used. The treatment most satisfactory to me is compound tincture of iodine, 4 to 6 drops, three times daily, gradually increasing the dose up to the point when iodism is present and then begin decreasing. I usually administer it in syrup. I also prescribe mercury according to the following:

Ointment of red iodide of mercury 3 drams,
Lanolin 1 ounce.

A small amount of this (about the size of a pea) should be rubbed in daily as long as it will be borne.

Of iodine injections much can be said for and against, as is also the case with any remedy used in parenchymatous injections. The one great point to keep in mind is as to the complications that may arise after an injection of any remedy into the growth. Death has taken place shortly after in many instances, and in some cases in from one to several weeks after, from prolonged suppuration. In no instance should a parenchymatous injection be given without having the neck thoroughly cleansed by the free use of soap and warm water, with alcohol and ether used after, as in the case of preparation for any surgical procedure; needle and syringe should be sterilized. The fluid, iodine, carbolic acid or ergotin, should be in tightly corked bottles that have been sterilized previously to pouring the fluid therein. After the fluid has been injected and the needle withdrawn, the site of the injection

¹ Read before the New York State Medical Society, January 28, 1902.

should be coated immediately with iodoform collodion. It is only in the parenchymatous growth that tincture of iodine or carbolic acid will be of any avail. Tincture of iodine, 10 to 30 minims, will be found to answer, and should be injected very slowly, after pushing the needle in quickly, avoiding the site of prominent bloodvessels and nerves. Carbolic acid is used in the same manner as prescribed for iodine, a 5% solution being used and 10 to 20 minims in amount. I have used a combination of tincture of iodine and carbolic acid in equal parts with more satisfactory results than with either alone. Once a week will be quite sufficient to give an injection. Of course, each time an injection is made a new site should be selected. A great advantage in using carbolic acid in preference to iodine is that when the former is used there is far less pain succeeding the injection than when the latter is used. The pain following the injection of iodine is sometimes very excruciating, and is not confined to the region of the tumor, but may be felt in the eye, ear or teeth, and quite frequently it shoots down the chest. In my hands thyroid extra's have not been very satisfactory. In cases in which I have used it, at first it acted with considerable benefit and gave every indication of producing a lasting effect, but after a constant use for 6 to 12 weeks the growth remained stationary, and in one case in particular after using the extract for 8 weeks, the patient began having pains in the joints, elevation of temperature and dyspnea. When the extract was discontinued the above symptoms gradually ceased. I am using adrenalin in a hemorrhagic case with some apparent improvement.

Electricity, as I have stated, is without doubt a valuable adjunct to the physician in treating small parenchymatous goiters, and it is in this particular form that I believe it is most useful. Galvanopuncture is performed by introducing a negative needle which has been cleansed thoroughly and sterilized, as should also be the skin of the neck. Having selected the site the negative needle should be introduced into the growth for one-third of an inch. Bloodvessels should be located and avoided. The current should be moderately strong, 15 to 20 milliamperes. The duration of current should be governed by the strength of the patient, and should not exceed 20 milliamperes; each sitting should not last more than 20 to 30 minutes, and an interval of two weeks will suffice. The positive pole should be applied to nape of neck by means of a large, flat sponge electrode. In exophthalmic goiter the treatment by medicine has been very unsatisfactory in the great majority of cases. Various remedies have been recommended, but very few have been of any benefit. Digitalis, strophanthus, belladonna, or atropin, aconite, gelsemium, and veratrum viride have been used with varying success, a few cases have been benefited, but I think none has been reported as cured. For anemic patients, iron, quinin, and small doses of strychnin given in conjunction with digitalis will be found very beneficial. For some time I have been using tincture of *Crataegus oxyacantha* (American hawthorn) instead of digitalis or strophanthus with more satisfactory results. Electricity may be used with benefit more particularly in the subacute or chronic form of the disease. The faradic current answered nicely in the cases in which I used electricity. In applying it do not limit its application to the neck, but apply it to the cardiac regions, spine, and epigastrium as well. The anode is placed along the spine or nape of neck, and the cathode on the goiter or cardiac region, also along the course of the pneumogastric nerve. The current should not be strong, two to four milliamperes, not over ten minutes duration, and used once a day. In the cystic and fibrous forms, it is useless to experiment with drugs or electricity, as it has been demonstrated beyond doubt that they will not be benefited to any great extent by these means. Then the surgical expedients are to be considered, and what has surgery to offer? Previous to the days of antiseptic and aseptic surgery,

surgical interference in thyroid goiter was not quite so satisfactory as it is at the present time when the mortality of this operation has been reduced to 1% or less. Professor Kocher alone has operated on 2,000 cases with a mortality of 1%. This list includes numerous exophthalmic and malignant cases. Berry, of London, reports 100 cases operated on by him with but one death, 99 patients being reported as cured. Several other surgeons report equally encouraging results.

The procedures employed at the present time are ligation of thyroid arteries, exothyropepsy, division or resection of the thyroid isthmus, partial excision, enucleation and its modifications, resection, extirpation, complete excision. The surgeon is governed by the nature of the growth as to which method is best suited for each particular case. The cosmetic effects of an incision should always be borne in mind, particularly in young women; therefore, the incision leaving the least scar should be made in all cases, and the transverse incision with an upward convexity, as practised by Professor Kocher, of Berne, Switzerland, is the one that should be made if possible. I will not give a description of the operations in detail, as this has been gone into quite thoroughly by Berry, of London, in a recent edition of "Diseases of the Thyroid Glands," also in Bryant's "Surgery," last edition, and Professor Kocher's work on surgery. The question of local or general anesthesia is one to be taken into consideration. Patients take considerable interest in this question, and will submit more readily to an operation if they do not have to take an anesthetic. Local anesthesia is resorted to in all cases by Professor Kocher. It is far safer for the patient, and more convenient for the surgeon to use local anesthesia by cocaine or eucain, hypodermically injected along the line of incision, for the following reasons: (1) If the patient suffers to any extent from dyspnea, as is usually the case, the hypodermic of eucain or cocaine does not increase it, when given in small quantities; a 1% solution of cocaine or its equivalent of eucain (eucain, by the way, has an advantage over cocaine, in that it can be sterilized). (2) In all cases, and particularly when dyspnea is present, the patient being conscious, can inform the surgeon should he press unduly on the trachea, which, if already narrowed and the patient unconscious, might cause suffocation. In applying ligatures to the thyroid vessels in close proximity to the recurrent laryngeal nerve, should the nerve be included, or if in separating the growth from the trachea the nerve be injured, in either case, if the accident occurs, it will result in paralysis of the vocal cord of the corresponding sides, and also in alteration of the voice. This can be avoided by having the patient, while conscious, speak at intervals during the operation. Professor Kocher informed me this last fall while visiting him in Berne, Switzerland, that he uses cocaine in all goiter operations. In the operations he performed while I was there, he repeatedly asked the patient questions, satisfying himself that the recurrent laryngeal nerve was uninjured. The patient gave very little if any evidence of suffering during the operation. A pleasing thing in connection with the cocaine anesthesia is the absence of nausea, so frequently following general anesthesia, which in goiter operations would be very likely to interfere with primary union. In conclusion, I would say that surgery offers more encouragement for relief from this deformity, which causes untold suffering mentally and physically, than any other line of treatment, particularly in cases of long standing. The benefit, too, is certainly accomplished in far shorter time and with decidedly less pain and discomfort.

Sanatorium for Hospital Nurses.—The Municipal Council of Paris has laid before a special commission a plan to equip a sanatorium on one of the properties of the Assistance Publique, with capacity of 50 beds, for the exclusive use of those nurses who may have contracted tuberculosis in their service.

THE SODIUM TUNGSTATE TEST FOR COMBINED CHLORIDS.

BY

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Aside from the incineration methods for quantitating chlorids in stomach contents and which are scarcely available for clinical purposes, there are only two methods in vogue for estimating combined chlorids. Neither of these is particularly accurate though either is considered sufficiently so for clinical purposes. Combined chlorids are estimated either by the difference between the end reaction with alizarin and that for total acidity with phenolphthalein or by the diminution of total acidity according to phenolphthalein, which occurs after adding sodium tungstate. This latter test depends upon the fact that proteid chlorids plus sodium tungstate yield sodium chlorid plus proteid tungstate, both of which are neutral, whereas proteid chlorid is acid to phenolphthalein. Between the two methods of determining combined HCl, I have found differences amounting to four to eight "degrees," sometimes greater in the one, sometimes in the other test.

The term degree in gastric analysis means the percent of decinormal sodium hydrate solution employed, the quantity of stomach contents examined being taken as 100%. These degrees are converted into parts of HCl per 10,000,000 by multiplying by 365 (the number of days in a year), 36.5 is the molecular weight of HCl and the decimal pointing off is determined by ordinary arithmetic computation. To avoid confusion, I have formulated this simple rule.

So far as I have happened to notice, no one has suggested how much sodium tungstate is needed and the direction usually given is simply to stir in the powder and let it dissolve. It has occurred to me that it is saving of time and altogether more convenient to add the tungstate in a standard solution and to know how much is needed. A 10% solution is convenient and perfectly stable. The atomic weight of sodium tungstate, $\text{Na}_2\text{W}\text{SO}_4$ is 2×23 plus 184 plus $4 \times 16 = 294$. Each molecule of $\text{Na}_2\text{W}\text{SO}_4$ combines with two of HCl, whose molecular weight is 36.5. We do not need to trouble ourselves with the molecular weight of proteid-Cl because our expressions are in terms of HCl. So far as I can learn from the rather meager statements in literature and my own analyses, combined chlorids practically never exceed the standard free hydrochloric acidity of gastric juice, about 2 : 1,000. We commonly perform our tests on 10 cc. of stomach contents, representing a maximum of 0.02 grams (two centigrams) of combined HCl. Hence, the maximum amount of $\text{Na}_2\text{W}\text{SO}_4$ required for the full neutralization of combined chlorids is found from the proportion $73 : 294 :: 0.02 \text{ grams} : x$, hence x equals 0.08 grams plus a small fraction. Allowing for this fraction and a little leeway beside, I would propose to add to each 10 cc. of stomach contents for this test, 1 cc. of the 10% solution of $\text{Na}_2\text{W}\text{SO}_4$. We shall then have no delay for solution, and shall feel that we are adding sufficient and yet not too much unless, of course, some exceptional result from other titrations suggests that we have to deal with an extraordinary amount of hydrochloric combination.

To facilitate criticism, I have gone quite fully into the details, including the arithmetical computations.

Prize Offered.—The Colorado State Medical Society offers a prize of \$25 for the best essay upon the dangers of self-drugging with proprietary medicines. Essays must be typewritten in the English language, must contain not more than 3,000 words, and must be submitted before June 15, 1902. Each essay must be designated by a motto; and accompanied by a sealed envelope, bearing the same motto, and enclosing the name and address of the author. Essays should be sent to the Literature Committee, Dr. C. A. Graham, Secretary, Stedman Block, Denver, Colorado.

VACCINATION FROM THE STANDPOINT OF THE SURGEON.

BY

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It has often occurred to me that the medical profession contributes a considerable amount of ammunition to the antivaccinationists; and, since the advent of aseptic and antiseptic surgery, unnecessarily so. Certainly there has been no adequate excuse during the last 15 or 20 years for not treating a vaccination wound according to modern surgical methods, save that until very recently it was not taught in our medical schools, and young practitioners were left to learn from experience and analogy how to protect their patients from trouble due to vaccination. Indeed, it is doubtful whether proper instruction is even now given in all colleges.

Formerly it was thought by the majority of physicians that the greater the disturbance produced by the vaccination, short of death, the more efficient was the protection against smallpox. We now know that the severe reactions were due to pus infection, as a rule, and that pus reaction does not protect against smallpox.

My first experience in vaccinating was in 1888, after I had seen and treated some bad vaccination sores. The experience with these bad sores led me to observe care as to the source of the vaccine employed, and also to carefully cleanse the field of operation and protect the vaccination wound from outside contamination. We know that practically all of the "points" used at that time were to some extent contaminated by one or more varieties of pathogenic bacteria, chiefly the pus cocci. It seemed to me that it would be best to prevent, if possible, the occurrence of a very troublesome sore, and it became my practice always to treat the infected vaccination wound as I would treat any infected wound; that is, disinfect it as thoroughly as practicable and apply a wet, antiseptic dressing, continuing the dressing until all undue reaction had subsided. This could not impair the result of the vaccination, since if vaccinia occurred at all, it was already present, and early healing of the inoculation wound could not influence it unfavorably. Patients were instructed to return on the fourth to sixth days, and again later. Whenever the reaction looked threatening the wound was treated accordingly. In over a dozen years' experience with vaccination I did not observe more than two or three troublesome sores, and these were in patients who did not return as instructed to, during the first week.

To obtain a noninfected vaccine sore employ a method similar to this: Scrub the part to be inoculated, and an area around it, with alcohol, and allow it to dry thoroughly before applying the lymph, or scarifying. In using the dry ivory points, first wet the point with sterile water, and with it scarify, then rub in the lymph and rescarify, being careful to draw little or no blood. With the glycerinated lymph, first apply the lymph and then scarify with an aseptic needle. After the point of inoculation has become dry, or nearly so, apply a rather thick pledget of sterile cotton, cover it with gauze or muslin and fasten it in place with narrow strips of adhesive plaster, carried nearly around the arm above and below scarification.

Usually, at the time of the first return visit, one can determine, by merely lifting one side of the dressing, whether the vaccination is "taking" or not. If it is, and the dressing is dry, no change is necessary. Often it occurs that vesicles rupture and some of the cotton becomes incorporated in the scab. When this occurs, if the wound remains aseptic, it may be left until thoroughly dried, and then the surrounding cotton cut away leaving the scab to exfoliate as usual.

Do not vaccinate on the lower extremities. Women and

girls often wish to avoid having a scar on the arm. They may be vaccinated upon or near the shoulder. Wounds on the leg do not heal as readily as those on the arm, probably because of their dependent position and the fact that the leg cannot be rested as conveniently as the arm. Moreover, a slow-healing wound, such as usually occurs on the leg, is more liable to infection than one which heals quickly, especially if it be subject to the irritation of use.

I have seen very severe vaccination sores on the lower extremities, even when carefully treated. I saw also a case of tuberculosis of the skin following vaccination on the leg.

A case of fatal infection from a vaccination wound of the leg is reported from Professor Christian Fenger's clinic, in the *Journal of the American Medical Association*, January 4, 1902, vol. xxxviii, p. 34.

Some physicians prefer the dry ivory points to the glycerinated lymph. I know of but one firm that produces aseptic dry vaccine—a firm in the middle west. Doubtless other firms will produce it if sufficient demand arises. As to the stability of the dry aseptic points, the producers state, in reply to a letter of inquiry, that "they will retain their potency for a period of three months, if stored in a cool, dark place, not over 70° F. in temperature and not under 40°."

Now that we have the sterilized glycerinated lymph, it practically always means carelessness in vaccinating or neglect afterward if infection occurs. I know of a leading northern town where, three or four years ago, the inhabitants became afraid to allow vaccination by the local physicians because several cases of tetanus had followed vaccination at their hands. I knew of cases of tetanus occurring in Chicago last year from the same cause. The recent deaths in Camden, N. J., are further examples. Pus and erysipelas infection have been common.

How many cases of serious infection have been due necessarily to infected lymph? Almost none, I believe. Even with the old dry points serious results were almost invariably avoidable, and since the advent of the glycerinated lymph are practically always so.

I maintain that no physician should vaccinate a person, excepting in emergency, unless he is willing to follow the case carefully—and he should give definite instructions as to its management in case the individual cannot return. If one has not the time or the inclination to follow up and care for vaccination cases they should be referred to a physician who has.

The almost unanimous opinion among those best able to judge is that the glycerinated lymph, when well prepared, is efficient in its effects as a protection against smallpox. As to its safety otherwise there can be no question. Dr. S. M. Copeman, who has studied the question carefully, says (Allbutt's Practice of Medicine): "By thoroughly incorporating four parts of a sterilized 50% solution, in water, of chemically pure glycerin with one part of lymph or vesicle pulp and then storing for some weeks prior to use in hermetically sealed glass tubes, protected from light, all the ordinary saphrophytes found associated with lymph are destroyed. . . . This statement applies equally to the tubercle bacillus and to the streptococcus of erysipelas."

How are we to be reasonably sure of obtaining a reliable and safe lymph? Simply by using only that which is produced by a firm well known to be generally reliable as to its pharmaceutical and biologic products, one with sufficient capital to enable it to sacrifice everything else to quality, and one that appears to keep abreast of the times. We all know a number of such firms.

Governmental control of vaccine has been advocated. As indicated editorially in *American Medicine* (Vol. II, No. 25, page 973), this is not feasible in this country. It is suggested that samples of all the vaccine manufactured here, procured in the open market, could be sent from time to time to the hygienic laboratory of the Marine-Hospital Service for testing, and the results of

such tests published. Also that the vaccine farms be inspected by an officer of the service as often as deemed advisable. This would necessitate the cooperation of the several state with the federal authorities. Such official action would insure good vaccine, as any firm which produced a poor article would soon be obliged to quit business for want of patronage.

One thing more should be borne in mind when selecting vaccine. If the glycerinated article has not been in the glycerin solution a considerable length of time, pathogenic bacteria or their spores may still be alive and produce unduly severe reaction. This would be more liable to occur when the farms were taxed severely to supply the demand. Then an unreliable firm might send out "unripe" vaccine.

If tetanus or other serious infection occur it will usually be due to infection by the fingers of the vaccinated person. We know that pathogenic bacteria abound almost everywhere. Tetanus bacilli are especially numerous in the dust of cities and towns and in garden and lawn soil. They seem to thrive especially where there are horse-droppings.

Probably nearly all cases of tetanus following vaccination in recent years became infected after the operation and not at the time of it.

As to the question of vaccination protecting against smallpox no argument is required to one who has studied the facts. We admit that it is possible to contract severe smallpox after comparatively recent successful vaccination. On the other hand, severe second attacks of smallpox itself occur.

In Boston (*Boston Med. and Surg. Jour.*, December 5, 1901, quoted in *American Medicine*, Vol. II, No. 24, p. 958) in 1721, when the population was 11,000, 6,000 were ill with smallpox and 850 of these died, nearly 8% of the whole population.

In Sweden, in 1779, the deaths from smallpox rose to 720 per 100,000 of population. Since 1810 the mortality has never risen to more than 70 per 100,000.

Before Dr. Edward Jenner introduced vaccination, smallpox was always prevalent, and every three to five years became a great epidemic. Half the children died of smallpox before their fifth year of life. Many of those who lived were made blind, not to mention the millions who were otherwise maimed and disfigured.

Before the introduction of vaccination, 95% of the deaths from smallpox occurred in those under the age of 10.

In Massachusetts during the period 1888 to 1899 inclusive, the smallpox mortality in children constituted 26% of the total smallpox mortality, but no vaccinated child under the age of 10 died of smallpox.

Compare the smallpox experience of Prussia with that of Austria. The mortality from smallpox in Prussia, as compared with Austria, from 1865 to 1884, was, per 100,000 population, as follows:

Year.	Prussia.	Austria.	Year.	Prussia.	Austria.
1865.....	43.8	22.8	1875.....	3.6	57.6
1866.....	62.0	35.9	1876.....	3.1	40.2
1867.....	43.2	46.9	1877.....	0.3	54.5
1868.....	18.8	35.5	1878.....	0.7	61.6
1869.....	19.4	35.2	1879.....	1.3	51.7
1870.....	17.5	30.3	1880.....	2.6	64.7
1871.....	243.2	39.2	1881.....	3.6	81.4
1872.....	262.4	189.9	1882.....	3.6	94.8
1873.....	35.6	314.7	1883.....	2.0	59.2
1874.....	9.5	174.3	1884.....	1.4	50.8

In Prussia, vaccination was made compulsory in 1874. In Austria, during this period—1865-1884—it was not compulsory.

In 285 towns in Germany, with a population of 16,000,000, there were, in 1899, 4 deaths from smallpox. In 116 towns in France, with a population of 8,500,000, there were, in 1899, 600 deaths from smallpox (less rigid vaccination in France).

In Holland, from 1866 to 1872, the smallpox mortality averaged 90 per 100,000 of population. From 1873 to 1888, a period of compulsory vaccination, the average was 7 per 100,000. In 1888 it was 4 per 100,000.

Why should this question greatly concern the United States? Because from June to December, 1901 (after a period of carelessness regarding vaccination), there were 15,549 reported cases of smallpox in this country, with a mortality of 502—3.2%. This, notwithstanding very extensive vaccinating during the winter of 1900-1901.

How long does the period of immunity last? The time is somewhat variable. Generally, if vaccination is done in infancy and again at the period of puberty—say at the age of 10 or 12—immunity will last during the remainder of life. However, it is best to revaccinate whenever one is exposed to the disease or whenever there is an epidemic in one's locality.

NOTE.—According to the health reports at Washington the number of cases of smallpox throughout the United States during the week of March 9, 1902, amounted to over 22,000, showing an enormous increase over last year.

RAYNAUD'S DISEASE.*

BY

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Raynaud's disease was first described by Sir Benjamin Brodie, in 1837, but the credit for giving it its proper place in medical nosology belongs to Maurice Raynaud, who first described it as a separate entity in his Paris thesis in 1862. He called it "symmetrical gangrene of the extremities," since which time it has been known largely by his name.

The disease is best defined as a vasomotor neurosis, dependent on an exaggeration of the excitomotor powers of the central nervous system, causing angiospasm in localized areas in various parts of the body and characterized by three grades of intensity, local syncope, local asphyxia or cyanosis, and local gangrene.

Both sexes and all ages may be affected, but it is seen most often in females and young adults. Of its causes practically nothing is known, and a study of the few cases reported in medical literature is also unsatisfactory on this point. A neurotic temperament and family history appear to act as predisposing factors, and in addition the usual causes of arterial degeneration and sclerosis of the central nervous system, syphilis, alcoholism, rheumatism, and unfavorable hygienic conditions. It is said to be frequently associated with hysteria and disease of the female generative organs, and chronic constipation with autointoxication may perhaps rarely be an etiologic factor, as mentioned in a case reported by Dr. Judson Daland,¹ and as may possibly be true of the case now under my care. Rarely it is an occupation neurosis, as when affecting the hands of a washerwoman.

In a large proportion of cases the disease appears without premonitory symptoms, the patient first becoming aware of its existence by noticing the ischemic appearance of the parts affected. The disease usually affects the organs in the following order as to frequency: fingers, toes, cutaneous areas of the legs and body, the tip of the nose, and the ears. I believe the internal organs by no means escape, as it is at times complicated by epilepsy, spells of vertigo, temporary palsies, mania, aphasia, hemoglobinuria and undefined bronchial symptoms. In describing the symptoms I will for convenience divide them into the classic stages. The stage of syncope begins suddenly, the part affected becoming pale, of a marble-like color, actually simulating dead tissue to appearance and touch, hence it is at times spoken of as "dead fingers" when affecting these organs. On pricking with a needle, blood does not appear, and sen-

sation is found to be decreased. At the same time there is a burning pain with tingling and numbness. This stage is of variable duration, from a few minutes to several hours, when normal conditions are restored only to reappear again and again until the second stage begins. Instead of resuming a normal appearance, the parts now become bluish, due to venous engorgement, the color shading to red and having a mottled appearance near its junction with the normal tissues. There is burning pain with marked hyperesthesia; a pin prick now is followed by bleeding and causes decided pain. This stage may also disappear in a few hours or days; usually, however, it persists more or less, tending to become aggravated, the parts now assuming a nearly black color, while the sensory symptoms grow still worse. The duration of the second stage in my patient was about 10 months before gangrene began in one of the toes, the other limbs being still in the cyanotic condition. The stage of necrosis is always preceded by long-continued asphyxia and is due entirely to pressure. It appears in the form of blebs, which if on the fingers or toes, affect the pulp. The blebs are filled with clear or bloody serum, blood or serous; their contents are soon discharged, crusts forming over the necrosed area under which the ulceration continues, usually involving only the superficial layers of the corium, though an entire phalanx or even a finger or toe may be lost. The ulcers are surrounded by a dark red inflammatory area, which is usually very painful. During this stage there may be some constitutional disturbance, due, doubtless, to septic absorption. After a time the ulcers heal, with, in most cases, surprisingly little loss of tissue, a small cicatrix remaining. The parts may now regain a normal appearance, but frequent recurrences are the rule, until often the affected organs are permanently injured and rendered useless.

The prognosis is favorable so far as life is concerned. When the disease affects young and otherwise healthy subjects it is quite apt to run a mild course and recovery may be permanent. Usually, however, recurrences appear from time to time. In the patients who have reached the declining years of life the prognosis depends on the underlying conditions, the state of the arterial system, peripheral nerves and central nervous system. Altogether Raynaud's disease is usually a serious affliction, making life an almost constant misery and nearly unendurable.

The diagnosis presents no difficulties in young subjects when the classic stages can be observed or a history of them be elicited. In older patients, however, when the lesions affect certain portions of the body it may be quite difficult. If affecting the feet and seen during the stage of cyanosis it is readily mistaken for pernio or chilblain; indeed, Osler² says "chilblains are the mildest form of the disease." While if seen later during the third stage it may be difficult to distinguish it from senile gangrene. If occurring on the trunk it may be mistaken for angioneurotic edema, in which latter condition the swellings last only a few hours and give rise to no other symptoms. Syringomyelia is another disease with which it may be confounded. Here, however, we find marked signs of spinal sclerosis, localized muscular atrophies and hemianesthesia in addition to the trophic changes in the extremities and skin in other portions of the body. In making an examination in this disease, we should bear in mind that the patient is, in most cases, in apparent good health, and that the affection invariably presents three distinct stages. In all cases a thorough physical examination is indicated to determine the exact condition of the circulatory apparatus and the central nervous system.

In the distribution of its lesions Raynaud's disease is unique. It was formerly thought to be limited to the extremities; this belief is, however, probably erroneous, though it is true in a large majority of all cases. In the case here reported it first appeared in the left

*Read before the Southwestern Minnesota Medical Society, at Pipestone, Minn., February 6, 1902.

great toe, involving successively the right and left forefinger, the right great toe and the right fourth toe. My patient has also shown peculiar lung symptoms, which I can only explain on the theory of areas of local syncope and cyanosis within the lungs; and very lately, spells of vertigo without palsy, leading to the query, Is this also due to the same process in the brain? Professor Osler³ in two papers refers to cases with cerebral complications. A man had hemoglobinuria, epileptic attacks with local asphyxia and necrosis, being affected in the winter months only. A woman had attacks of local syncope with cyanosis in the right hand with temporary aphasia and transient paralysis in the right arm and leg during a period of six years. He further states that many diseases of the nervous system, particularly hysteria, epileptic dementia, acute mania, hydrocephalus, syringomyelia and locomotor ataxia, may complicate this disease. It is also his opinion that these complications have no direct relation to the disease, which, it appears to me, admits of doubt, in some cases at least.

Of the pathology of this disease nothing is known definitely. The local syncope is certainly due to vasoconstriction, followed in the second stage by vasomotor paralysis. The resulting gangrene is due certainly to pressure and not to trophic changes, as in syringomyelia and other diseases. What poison can cause irritation in the central nervous system leading to such peculiar symptoms and distribution is entirely unknown. As few patients die of this disease, and infinitely fewer still, come to autopsy, almost nothing is known of the pathologic changes caused by it. The cases so far reported are few and reference to considerable medical literature published in the last eight years results in the description of one case and a reference to one other. In a case reported by Drs. Benjamin F. Lyle and John E. Greiwe⁶ the pathologic conditions found may be divided into changes in the bloodvessels and central nervous system, the peripheral nerves being found normal. In the specimens taken from the neighborhood of the gangrenous areas the lumen of the smaller arteries is narrowed, and surrounding them is a decided round-cell infiltration, the veins are dilated and crowded with blood, but are otherwise normal. The changes here seen are probably inflammatory in character and belong to nature's effort at defense and repair. In the spinal cord the changes in the bloodvessels are not uniform, some arterioles being normal, others having undergone a change in the intima. There is a distinct proliferation of the endothelial cells, which is best seen in the smaller arteries of the pia mater and in the spinal cord itself. In no instance did they find complete obliteration of the lumen of a vessel. There were no distinct changes in the media and adventitia, but there was an unusual amount of fibrous tissue immediately surrounding the arteries. The veins, too, were in a condition of dilation, and it was most marked in the grey matter at the level of lumbar region. Distinct changes were found in the tissue of the spinal cord. The grey matter was normal, excepting the dilation of the veins already described. In the white substance there is marked sclerosis in the lateral columns, but the degeneration is not confined to any well-known tract of fibers such as is found in systematic degeneration. In the posterior columns it is apparently largely confined to the columns of Goll, though a few areas were found in the columns of Burdock. This sclerosis is found in all parts of the cord, being irregularly distributed, and is most marked in the dorsal portion. From a study of this case the authors are of the opinion that this spinal sclerosis is due to compression, as it was most marked at the points where there was thickening of the pia mater, due to endarteritis, and that the changes found in this case in the cord do not stand in relation to cause, but are probably secondary in effect. The same authors quote from an autopsy by Professor von Recklinghausen, who found almost identical changes in the cord, and in addition small areas of sclerosis surrounded by hyperemia

scattered throughout both lungs. Ashhurst⁶ quotes Wigglesworth, who in one case found well marked changes in the peripheral nerves, consisting in overgrowth of the fibrous elements with atrophy and degeneration in the nerve cylinders. Undoubtedly serious changes will in the future be found in other organs as well as in the brain and kidneys. Pathologically there appear to be two classes of cases, those in which the exciting cause acts temporarily, and on its cessation the symptoms disappear, and those in which the cause acts on the terminal arterioles until it causes changes in their caliber by endothelial proliferation.

The treatment of Raynaud's disease is very unsatisfactory, and after 40 years of clinical knowledge it still remains entirely empirical. It depends largely on the physical condition found in the patient, and when it appears to be due to some evident cause, as the frequent immersion of the hands in water, this cause must be removed. The local treatment consists of maintaining an equable temperature in the affected part, and this can be obtained by wrapping in cotton. Sedative or stimulating lotions or stimulants appear to be of no benefit whatever, and the cause for this is evident if we remember that the lesion is a central neurosis, therefore local remedial treatment is about as sensible as treatment of the knee joint in coxalgia. If the stage of cyanosis is prolonged or gangrene has set in, rest in bed with elevation of the parts is necessary. The gangrene is to be treated in the usual manner with antiseptic precautions. Blisters should be opened as fast as they appear, emptied of their contents and hot, moist, bichlorid compresses applied for a few hours, followed by a dry dressing, dusting thoroughly with a powder containing some combination of iodine. The gangrene must be treated conservatively, as lines of demarcation do not form, little tissue being lost, and amputation rarely becomes necessary. For the pain the usual remedies are employed, though opiates should be sparingly used on account of the danger of inducing the habit. The anodyne coal-tar derivatives will, as a rule, act satisfactorily. If the patient is anemic, tonics and reconstructives with judicious feeding are necessary. Electricity is highly spoken of by Peters,⁸ and in the cases complicated by hemoglobinuria, Haig,⁷ recommends large doses of sodium salicylate. A powerful vasomotor dilutant would seem to be indicated, for it should act in the nature of a specific. For this purpose the nitrites of potash, soda, or glycerin are the best of their class. Dr. Cates,⁹ of Knoxville, Tenn., was the first to employ them, and Dr. McNabb¹⁰ also reports one case much benefited by their use.

The patient now under my care has the following history:

His age is 68, a farmer by occupation, born of healthy New England stock. The family history is negative, his father dying at the age of 70 of cancer of the stomach, having been sickly for 25 years as the result of a sunstroke sustained while at work in a hay field. His mother died at 68 of an acute inflammation of the stomach or diaphragm. An only brother died of either apoplexy or heart failure at 65. The patient spent the first 21 years of his life on the home farm, the succeeding 25 years he was employed as clerk, and later as a merchant. In 1879 he again engaged in farming. He has never had any serious illness, although from 1858 to 1879 he had what he calls bilious attacks two or three times a year, some of which would cause illness in bed for several days. All of his life he has been of a constipated habit. For about twenty years he used tobacco to excess, otherwise his personal habits have been exceptionally good. He never used alcoholic beverages in any form, nor has he had venereal disease of any kind. His entire life has been spent under the most favorable conditions, as to food and hygiene. I first saw him about four years ago, in the capacity of a physician, when he was afflicted with some obscure lung disorder. There was a slight elevation of temperature, not above 100°, and pulse of 90. He complained of an undefinable sense of distress, some dyspnea and a sense of constriction, there was some anemia but a physical examination of the chest was negative. This condition readily yielded to counter irritation—strychnin and tonics. His present illness began nearly two years ago with severe pain and cyanosis in the left great toe. He himself attributed it to ingrowing toe nail, and treated it with home remedies for three months, when the steadily

increasing severity of the symptoms caused him to seek medical aid. I found the toe swollen to the metatarsal joint, bluish-red in color, temperature sensibly lowered to touch, and hyperesthesia marked. There was no evidence of ingrowing toe nail. I ordered the application of a stimulant lotion and massage. This treatment was entirely unsuccessful. I saw him at intervals of from four to six weeks, with little change except severe burning and shooting pains occasionally at night. With the advent of cold weather all symptoms became aggravated and the affection spread until it included the great toe of the right foot and the index fingers of both hands. The local lesions so nearly simulated pernio that I treated him for some time for this disease, employing nearly all remedies, including silver nitrate, with wrapping in woolen protectors. During the winter he was confined to the house, as the least exposure to cold would aggravate all symptoms with almost unbearable burning and pain. The local asphyxia now remained constantly. In February, 1901, I made a thorough physical examination with especial reference to disease of the spinal cord, having in mind locomotor ataxia, senile gangrene, and Raynaud's disease. There were no signs referable to the cord. There was moderate arteriosclerosis, but no more than might be expected in a man at his age. The pulse has been for four years quite constantly at 78 at rest, and the heartbeats a trifle weak. There was also some anemia. I recommended rest in bed, tonics and the same useless local treatment. By the middle of March there was evidence of beginning gangrene in the left great toe, and not being able to make a definite diagnosis, I sent him to Dr. A. W. Dunning, of St. Paul, Minn., for further treatment, under whose care he remained for four weeks. I will quote from correspondence as to Dr. Dunning's opinion on this case and the treatment at the hospital. April 17, 1901, he writes as follows: "When I first examined him, I was of the opinion that Mr. D.'s case was of that type which is usually, though often erroneously, classed as Raynaud's disease, but dependent upon the general arteriosclerosis, which is very self-evident in his case. There is, however, a very reasonable question of debate between that and the regulation type of senile gangrene. I have had Dr. C. A. Wheaton see him a couple of times, and he says that from the standpoint of the surgeon he has never seen a case of true senile gangrene that was just like it. He therefore was inclined also to classify it in the former group. The feet are both very much better than when he came here, with the exception of the great toe of the left foot, which has been very black for some time, and the skin has blistered with seropus beneath in several places. Sensation remains very acute, however, and as there is no line of demarcation forming, we are treating it on the expectant plan, and propose to be very conservative any way." A few days later he writes as follows: "Mr. D. went home this morning. It was the judgment of both Dr. Wheaton and myself that it would not be advisable to amputate his toe or any part of the foot at present. There is no distinct line of demarcation, and on account of the condition of his arteries, we have reason to apprehend that there might be trouble in healing the flaps. As I intimated before, both Dr. Wheaton and myself believe it to be a case of neuroarterial disease. Not a typical Raynaud, nor yet a true senile gangrene. I think he should be kept quiet with the feet elevated most of the time, fed abundantly but judiciously, *i. e.*, to keep the nutrition up to the highest possible degree. He has been having a tonic with powder of a combination of coal-tar products for the relief of pain at night only. Locally the treatment of the foot has been dry dressing, except when pus collected under the skin, then we opened the blisters, drained them, applied bichlorid dressings warm and moist for a few hours, and then resumed the dry." From the hospital notes which the doctor kindly sent me, I also note that on several occasions there was slight pyrexia; that at times there was nausea. His constipation was overcome by salines and enemata. A few days after the patient's return home I saw him again, and found him suffering from the same lung symptoms already described. His temperature was normal, pulse soft and about 80. I evacuated a small pus pocket under the crust on the left toe, and continued the local and systemic treatment outlined by Dr. Dunning, changing the tonics from time to time. During the summer the patient was decidedly improved so that he was again able to do light work. I did not see him again from May until January 28, 1901. With the advent of cold weather all affected parts again caused trouble. The least exposure to cold caused local syncope, followed by cyanosis and burning pain, except the index finger of the right hand.

He has had frequent spells of dyspnea and respiratory distress and for the three weeks previous many sudden attacks of vertigo, in several instances falling to the floor. There is neither loss of consciousness, paralysis nor sensory disturbance and he quickly recovers after lying quietly in the prone position. On examination I found his condition as follows: Body fairly nourished, skin of healthy color, pink and moist, lips are red, apparently no anemia; temperature is normal; pulse 78, regular; tension is diminished, easily compressible, no arcus senilis, and arteriosclerosis is not very evident. Patient does not look like a man nearly 70 years old. The eye is clear and the pupils respond to light and accommodation. The knee jerks are normal; equilibrium is normal. There is no variation from the normal in cutaneous sensation, except in the parts affected. There is absolutely no sign of disease in brain or cord. The left great toe is bluish red to the tarsus, is some-

what swelled, and on the tip there is a smooth cicatrix covering the bone, the pulp being gone. The nail is thickened but not distorted. On the right foot the fourth toe is involved in the asphyxia. The left index finger is bluish red, the right index finger turned white within a few minutes after exposure to the air in my office, it being a little cool, and remained so during about 40 minutes, the time he was under my observation. In all affected parts there is anesthesia at the tips of the joints and marked hyperesthesia up to the normal tissue.

I believe this case to be a typical case of Raynaud's disease and its history shows the difficulty of always making an early diagnosis. This patient certainly suffered far more pain than is to be expected in most cases, at times being so severe as to nearly simulate erythromelalgia. Senile gangrene is I think excluded since the typical first stage can now be observed. The peculiar lung symptoms, and lately the sudden vertigo, appear to me to be due to vasomotor irregularities within the lung and brain. I think this case assists in proving that Raynaud's disease is by no means confined to the extremities but may affect any organ, in which opinion I heartily concur with the conclusions of Drs. Lyle and Greiwe.

March 6.—The nitroglycerin treatment in this case began late in January with the administration of one-half drop of the 1% solution, this dose being taken three or four times a day, whenever he felt respiratory or cranial distress. He was cautioned as to the physiologic effect and was instructed to gradually increase the dose as might be necessary. At first the effect was very good, his attacks of vertigo were entirely prevented and it also greatly lessened the pain in the hands and feet. By February 20 the dosage had increased to 3 or 4 minims and in spite of it the vertigo returned. On March 4, he tried to assist in some light manual labor, but complained of pain in the chest and walked to the house, about 150 feet. On arrival he fell to the floor. He was immediately gently supported and asked if he could walk to the sofa in an adjoining room, and answered "no, I cannot." Coma quickly followed and death took place in about five minutes. During this fatal attack the face was pale, and there was no respiratory distress, death apparently resulting from local syncope at the base of the brain. During these attacks of vertigo, and he probably had at least 20, he was never unconscious, nor was palsy ever present.

An autopsy was not permitted. To me the fatal outcome seems to be directly due to Raynaud's disease.

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- ⁴ Osler. }
- ⁵ Lyle and Greiwe. Phila. Med. Jour., Vol. viii, page 236.
- ⁶ Ashhurst's Principles and Practice of Surgery, 1893 ed., page 453.
- ⁷ Peters. }
- ⁸ Haig. } Sajous' Annual Univ. Med. Sc., 1893, Vol. ii, c. 14.
- ⁹ Cates. Univ. Med. Mag., February, 1892.
- ¹⁰ McNabb. Univ. Med. Mag., September, 1894.

Plague.—Official reports from Honolulu, from December 11, 1901, to March 17, 1902, give 15 deaths from plague, and one case, April 9, on the transport Sheridan at that port.

Protest Against Quarantine.—The United States Consul, Andrew D. Barlow, at the City of Mexico, has sent a letter to the Governor of Texas regarding the quarantine proclamation which was announced by the latter as being effective April 15, 1902, upon all persons or things coming from places infected by yellow fever, smallpox, bubonic plague or cholera, and all places south of the twenty-fifth degree of north latitude, which should be considered as infected unless proof to the contrary was submitted to the state health officer and special exemption granted to such places; otherwise they were prohibited from entering the state of Texas within a period of 10 days following their departure from said places. Mr. Barlow reports that during the period from April 15 to November 17, 1901, there were no deaths from cholera or yellow fever reported in the City of Mexico; there were 8 deaths from smallpox and 29 from typhoid fever. Last year was an average year. His opinion, based upon the official figures of the board of health, and the opinion of the ablest physicians in the city, is that there is no cause to fear contagion from persons or things going from that city or any other Mexican city having an altitude of 5,000 feet or over, unless there was an epidemic prevailing at the time, in which event he would give prompt notification to the U. S. Marine-Hospital Bureau. In view of this Mr. Barlow suggests to the Governor of Texas that places in Mexico having an altitude of 5,000 feet or over, south of the twenty-fifth degree of north latitude, be exempted from his general quarantine, as such a quarantine works a great hardship upon the traveling public, especially Americans, who constitute a large proportion of the international traveling public, from whom there is not the slightest danger of contagion or infection.

SPECIAL ARTICLE

A COMPARATIVE CLIMATIC STUDY OF THE ARID AND SEMI-TROPIC SOUTHWEST AND ITS RELATION TO TUBERCULOSIS.

BY

WILLIAM WINTHROP BETTS, M.D.,

of Los Angeles, Cal.

[Concluded from page 781.]

The Table of Precipitation is interesting, studied in connection with Sunshine and Humidity.

PRECIPITATION, 1896.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly.
Santa Fe.....	0.36	0.57	1.43	0.93	1.27	0.69	3.78	1.47	1.39	3.19	0.28	0.67	14.28 in.
Denver.....	0.25	0.24	1.43	0.93	1.27	0.89	2.86	0.97	1.81	0.84	0.10	0.31	11.84 "
Salt Lake City.....	1.26	0.69	1.99	2.53	3.67	0.25	1.35	1.47	0.56	0.70	3.15	0.84	18.42 "
St. George.....	0.40	0.10	0.15	0.03	0.71		2.98	2.59	0.12	0.11	0.26	0.20	7.65 "
Phoenix.....	0.48		0.28				3.66	1.05	0.45	1.15	0.95	0.60	8.62 "
Los Angeles.....	3.23	T	2.97	0.19	0.30	T	0.02	0.01	T	1.30	1.66	2.12	11.80 "
San Diego.....	1.27	0.02	2.89	0.25	0.03	0.01	T	0.13	T	0.97	0.98	2.18	8.73 "

1897.

Santa Fe.....	1.11	1.10	2.06	0.87	4.35	0.75	2.85	2.33	2.49	1.95	0.08	0.64	20.40 in.	
Denver.....	0.58	0.82	0.90	1.31	3.15	2.16	2.06	1.44	0.44	1.64	0.24	0.63	15.37 "	
Salt Lake City.....	1.16	3.81	2.20	2.00	0.98	0.52	0.69	0.33	0.48	1.91	1.19	1.47	16.74 "	
St. George.....	2.66	2.36	1.05	0.08	0.15		0.28	0.45	1.00	1.21	0.13	1.45	9.81 "	
Phoenix.....	3.67	0.47	0.53	T	0.01		0.44	1.11	1.58	0.22		1.49	7.69 "	
Los Angeles.....	3.70	5.66	2.31	0.02	0.01	T	T				2.47	0.01	0.06	14.28 "
San Diego.....	3.13	2.72	1.53	0.02	0.12	T	0.01	T	T	1.06	0.02	0.32	8.93 "	

1898.

Santa Fe.....	0.97	0.30	0.88	1.37	0.22	1.53	2.31	4.00	0.18	0.54	0.27	0.40	12.97 in.
Denver.....	0.20	0.68	0.28	1.20	4.88	0.94	0.67	0.96	0.68	1.05	0.85	0.97	12.98 "
Salt Lake City.....	0.58	0.38	1.71	1.30	4.19	1.45	0.18	1.35	0.15	1.57	1.95	1.25	16.09 "
St. George.....	1.15	0.56	0.44	0.60	0.93	0.39	0.05	0.74	.....	.....	.....	.....	12.48 "
Phoenix.....	1.63	T	0.08	0.18	0.01	0.08	0.24	1.03	0.04	.....	1.01	1.70	5.95 "
Los Angeles.....	1.26	0.54	0.98	0.03	1.75	T	0.07	T	0.06	0.09	T	0.16	4.69 "
San Diego.....	1.71	0.06	0.91	0.22	0.66	0.02	0.09	0.90	0.07	.....	0.15	0.87	4.67 "

1899.

Santa Fe.....	0.19	0.73	0.35	0.25	1.01	1.22	4.71	0.36	1.39	0.27	0.44	0.13	10.05 in.
Denver.....	0.25	0.58	1.10	0.75	0.15	0.47	1.97	1.78	0.20	1.01	T	0.12	9.33 "
Salt Lake City.....	0.84	2.98	2.98	0.81	2.59	0.96	0.42	1.06	T	2.85	1.52	0.61	17.57 "
St. George.....	0.34		0.29	0.24	0.05	0.28	0.05	2.93		0.45	0.23	0.33	5.19 "
Phoenix.....	1.28	0.10	T	T	0.09	0.75	0.87	0.89	0.37	0.30	0.55	0.08	5.19 "
Los Angeles.....	2.54	0.04	1.81	0.18	0.04	0.58		0.01	T	1.59	0.90	0.90	8.69 "
San Diego.....	2.34	0.30	0.85	0.29	0.10	0.27		0.07		0.35	0.86	0.65	6.08 "

1900.

Santa Fe.....	0.38	1.00	0.63	2.10	1.65	1.44	2.85	0.33	3.50	1.19	0.74	0.08	15.87 in.
Denver.....	0.13	0.55	0.63	8.24	0.53	1.87	1.30	0.05	0.87	0.33	0.37	0.42	15.27 "
Salt Lake City.....	0.44	1.30	0.33	2.91	0.44	0.08	0.32	0.72	1.44	1.97	1.40	0.16	12.53 "
St. George.....	0.35		0.27	2.07	0.46	0.20	0.16	0.51	0.29	0.54	0.89		5.44 "
Phoenix.....	0.11	0.04	0.22	1.12	0.12		1.70	0.01	0.12	0.22	1.73		5.39 "
Los Angeles.....	1.17	T	0.99	0.54	1.81	T	T	T	T	0.26	6.53	T	10.35 "
San Diego.....	0.69	0.30	0.85	0.29	0.10	0.27		0.07		0.35	0.86	0.65	6.08 "

The greatest average precipitation for the five years is found to be at Salt Lake City, 17.17 inches. The lowest at St. George, 6.61. The greatest precipitation was at Santa Fe, 20.4 inches, in 1897. The lowest at San Diego, 4.67 in 1898. Respectively above and below the normal for the locality.

In the area considered there are points in the mountains where greater precipitations are noted, and on the Colorado Desert—at Indio, for example, the precipitation was less than three inches, and the total at Yuma for 1900 was less than an inch. The movement of the air is a very important factor in climate. The winds are the ventilators and purifiers of the atmosphere. They range from the gentle zephyr to the destructive tornado, and transport from a distance temperature and humidity. The conditions of the wind, its direction and velocity may vitalize or depress. In order to have a standard by which to estimate the maximum and hourly velocity given in

the tables, I would quote from Dana: "The force of wind in its movements against objects varies as the square of its velocity. Suppose the air to be of mean density at 60° F., near the ocean level, the pressure it exerts on a square foot at a velocity of 5 miles an hour is equal to about 2 ounces; at a velocity of about 10 miles an hour, or that of a light breeze, 8 ounces; of 20 miles, a good steady breeze, 2 pounds; of 40 miles, a strong gale, 8 pounds; 60 miles, 18 pounds; 100 miles, 50 pounds."

WIND MAXIMUM AND AVERAGE HOURLY VELOCITY.
1896.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Sante Fe.....	26 63	38 74	40 84	50 94	39 89	31 74	34 58	32 62	25 62	27 56	33 66	24 58	50 70
Denver	66 86	54 96	60 102	55 96	42 93	36 73	45 72	39 72	40 68	32 71	44 67	36 78	66 81
Salt Lake City.....	36 57	48 52	39 59	37 79	48 67	30 62	34 55	26 56	44 63	34 59	26 58	48 44	48 60
Phoenix	20 43	32 48	36 51	34 60	24 57	24 51	48 48	40 46	23 44	36 43	20 33	26 31	48 46
Los Angeles.....	3.5 24	3.6 16	3.8 35	4.6 26	4.1 20	3.4 17	3.6 17	4.0 18	3.7 18	3.9 26	3.7 29	3.6 25	3.8 35
San Diego.....	3.8 4.4	4.4 5.6	5.6 6.5	6.5 6.1	6.1 5.3	5.3 5.2	5.2 4.9	4.9 4.9	4.9 4.3	4.3 4.6	4.6 3.6	3.6 4.9	

1897.

Santa Fe.....	24	40	35	40	36	40	33	30	27	33	30	36	40
Denver.....	45	46	38	46	42	60	48	39	33	36	51	53	60
Salt Lake City.....	15	32	38	40	40	31	32	32	30	36	33	30	40
Phoenix.....	17	22	26	22	26	19	20	29	26	24	19	28	29
Los Angeles.....	34	24	22	21	20	20	15	15	15	20	16	24	34
San Diego.....	46	52	53	46	42	47	44	43	42	39	37	39	44
	35	33	24	19	23	20	18	24	26	24	18	23	55
	4.6	5.6	6.1	5.0	5.9	6.0	5.8	5.7	5.8	6.0	5.1	5.3	5.6

1898.

Santa Fe.....	27	26	36	36	38	30	34	35	30	30	41	36	41
Denver.....	36	53	53	58	38	41	45	40	41	40	50	38	58
Salt Lake City.....	22	33	24	19	23	20	18	24	26	24	18	23	33
Phoenix.....	23	17	24	26	18	28	32	40	27	16	26	26	40
Los Angeles.....	24	17	24	20	15	15	15	17	17	20	24	22	24
San Diego.....	49	39	51	47	46	45	42	38	33	38	40	48	43
	36	23	30	24	24	18	24	18	22	18	26	33	33
	5.7	5.6	6.7	6.3	6.6	5.7	6.3	5.2	5.4	4.8	5.4	5.0	5.7

1899.

Santa Fe.....	36	36	32	43	42	34	37	32	25	37	35	29	43
Denver.....	50	42	50	48	42	38	35	43	43	37	51	47	61
Salt Lake City.....	36	30	32	51	56	41	32	32	28	30	40	36	56
Phoenix.....	60	50	68	74	68	65	58	66	52	57	45	37	58
Los Angeles.....	30	26	23	23	22	26	32	24	19	25	26	23	32
San Diego.....	37	48	50	49	49	51	47	45	41	43	37	33	44
	30	20	24	20	23	15	16	18	12	20	16	16	30
	3.4	4.5	5.1	4.7	4.6	4.5	4.3	4.2	3.5	4.4	3.6	3.4	4.2
	33	28	27	23	23	24	26	19	23	26	22	22	33
	5.1	6.1	6.6	6.2	6.3	6.5	5.8	6.1	5.3	5.7	5.3	4.3	5.8

1900.

Santa Fe.....	26	28	32	38	44	34	28	29	40	27	28	27	44
Denver.....	45	53	51	52	40	51	42	48	36	40	46	46	53
Salt Lake City.....	15	60	36	38	40	30	24	36	34	42	45	48	60
Phoenix.....	18	26	23	23	30	18	40	26	29	20	23	13	40
Los Angeles.....	23	18	14	22	22	14	17	15	18	21	20	14	23
San Diego.....	32	38	38	30	48	47	50	47	46	41	41	37	41
	20	28	26	30	24	22	20	25	23	19	23	22	30
	3.6	5.9	5.8	7.5	6.3	5.8	6.0	6.0	6.0	5.1	5.5	4.9	5.7

The maximum is the highest wind rate at any one time during a month or year. There are no records for St. George, but the rate is very low as will be explained later. The average hourly velocity for five years for Santa Fe is 6.7 miles an hour;

Denver, 8.1 miles; Salt Lake, 5.8; Phenix, 4.2; Los Angeles, 4.1; San Diego, 5.5. The maximum for Santa Fe for the five years was 50 miles an hour, in April, 1896; Denver, 66 miles, in January, 1896; Salt Lake City, 60 miles, in February, 1900; Phoenix, 48 miles, in July, 1896; Los Angeles, 34 miles, in January, 1897; San Diego, 35 miles, in March, 1896, and in January, 1897. Of the localities considered, Los Angeles has the lowest maximum and hourly wind rate; Denver the highest.

It will be seen from these comparative data that a great variety of climates can be obtained; but however ideal, no climate can be considered a specific for any disease, but usually a favorable climate can be selected, which will prove a most valuable adjuvant to the cure. While many chronic cases are benefited by a change of climate, I wish to speak particularly of tuberculosis. The best medical authorities tell us that this disease causes more than one-seventh of all deaths, and that one-sixth of the human race is tuberculous. Since the discovery of the bacillus of tuberculosis by Professor Koch in 1882, thus fully establishing the germ theory of the disease and its contagious nature, a great impetus has been given to the study of tuberculosis as one of the most important problems in medical science. It has been one of the magnificent achievements of medical science to demonstrate the curability of the disease and to call attention to the possible extermination of the tubercle bacillus. In England, since sanatoriums have been established and conducted along modern lines, the death rate in these sanatoriums from tuberculosis in the past decade has dropped nearly one-half. This indicates what may be universally looked for when the people everywhere observe the laws of personal hygiene and perfect sanitation. A person in vigorous health runs very little danger from tuberculosis. It is only when the vital forces are weakened from other causes, a feeble constitution exists, or a great number of germs overwhelm the normal resistance, that one succumbs. The germs of the disease luxuriate in the rural cesspool and the damp dark corners of our cities and towns made dangerous by bad plumbing and decomposition. Fresh air and sunlight are antagonistic to their growth. It has been demonstrated that half an hour of sunshine destroys the tubercle bacillus. The mysteries of light are artificially shown by the x-ray. But sunlight exerts a mysterious and beneficial influence on the body, promoting health, growth, and increased oxidation of tissue, and soothes and greatly stimulates the mental and nervous system.

The high mountain area most favorably known to the physicians of the East is represented in the table by Santa Fe and Denver. Both these cities are east of the continental divide and the country across whose surface runs the watershed of the southern Rockies. The whole country is a high plateau from 4,000 to 7,000 feet elevation. In all directions are mountain peaks, some of which reach the altitude of 10,000 to 14,000 feet. There are few towns having good accommodations at less than 5,000 feet elevation, except in the extreme southern part of New Mexico. It has been said that New Mexico is a country of mountain peaks, sun, silence, and adobe, but where a high altitude is advisable there is probably no climate in the world so favorable for the cure of tuberculosis as New Mexico. Colorado cities and health resorts will be found ably discussed by Solly in his work on Medical Climatology.

It will be seen from the tables that the climate of Salt Lake is not one of extremes. February and March are apt to be cloudy and stormy, but most of the year it is mild and delightful. The seasons are well marked, and the city is one of the most healthful in the United States. While it makes no pretense to being a health resort, it has many advantages in the way of hot springs, mineral waters, and the great Salt Lake bathing resort.

Up to a few years ago, it was thought by the majority of physicians that only the climate of high altitudes held the magic ozone and stimulants necessary for the cure of tuberculosis. A moderate elevation is advantageous at all times, but with the new method of treatment, diet and hygiene, a high altitude is no longer considered a ruling factor in the selection of climate. When the heart, digestive organs, and nervous system are in good condition many patients seem to do best in a high altitude, but the cases should be selected carefully.

The country known as the "Mormon Dixie" extends from St. George in Southern Utah to the Colorado river, covering a territory 115 miles long, varying in width from a few miles to twenty-five. Except in favorable locations along the Virgin and Moapa rivers, it is mostly rugged and unproductive. The country was settled by Brigham Young for the purpose of raising cotton, wine and fruits. It is the borderland between the perpetual verdure of Southern California and the barren winter hills further north. St. George, at the northern extremity of this remarkable climatic area, has a population of 1,800; altitude 2,300 to 2,500 ft. The city is favorably located on the highest ground of a picturesque valley, $2\frac{1}{2}$ by 3 miles in extent, protected on the east and west by a volcanic ridge about 500 ft. high. Across the foot of the valley runs the Virgin river, whose south bank is part of the mountain range. Between the south end of the volcanic ridges and the mountain range are canyons through which the river flows. Just above the town and running across the north end of the valley between these volcanic ridges is a red sandstone vault with perpendicular walls 300 ft. high. The great Pine Valley mountains a few miles away and the general topography of the country still further direct the winds from the north. This gives an almost semitropic climate. All but the citrus fruits do well, particularly the stone fruits, grapes, figs, almonds and pomegranates. Green vegetables are taken from the garden, and roses bloom in mid-December, and beds of violets shed their fragrance all winter. By February 1, the planting of gardens is again in progress, and almond trees are in bloom by the tenth. In the country further south the season is from ten days to two weeks earlier. A low wind-rate, no snow, very little rain, almost perpetual sunshine and a dry balmy atmosphere, not excelled anywhere in the arid region, give St. George an ideal winter climate.

For the past six years I have been familiar with southern Utah and southern Nevada, having spent the greater part of the past two winters at St. George and in the country to the south, bordering the great Mojave Desert. I have made many inquiries of physicians, leading Mormons, and business men, in regard to tuberculosis, and failed to get a history of or see a person suffering with it. The disease does not exist among the inhabitants, and there are no primary sources of infection. Traveling through the "Mormon Dixie" is done by horseback and stage. I slept out under the stars, in the Indian wickiup, and in the rude adobe dwellings, and can speak in a measure of some of the climatic features. The climate of St. George is an index to that of southern Nevada and northwestern Arizona. It is all a dry, desert region, modified more by altitude than by the difference in latitude, protected spots being especially mild. The normal daily range of temperature is a striking feature of this desert climate, and makes the hot summers bearable, the winters stimulating and delightful. For instance, in July, 1900, with an average maximum temperature of 102°, the average daily range was 44°, giving a night temperature of 58°; the lowest point being reached about 4 o'clock a. m. It will be seen that even when the days are hot the nights are comfortable. The average maximum temperature for January, 1900, was 55°; average daily range 34°. The cold months have just enough frost in the air at night to make it crisp and bracing, but rarely chilly. The mornings are like the bright autumn mornings in the Eastern states after the frost has opened the chestnut burs. Between the hours of 9 a. m. and 4 p. m., an invalid may ride without outdoor wraps, but in the early morning and evening an open fire is very welcome, and one must always be protected when sitting in the shade.

St. Thomas, 90 miles south from St. George, at the junction of the Moapa and Virgin rivers, is a particularly favored spot. The greater part of this country is away from the railroad, but will soon be opened by the San Pedro, Los Angeles and Salt Lake line.

The section of Arizona spoken of as having a climate similar to the Dixie country is in the vicinity of Kingman, on the Santa Fe railroad. Phenix, nearly on a parallel with San Diego, represents southern Arizona. Phenix and vicinity embraces all the climatic advantages of the St. George area, has a lower altitude and a higher average temperature. It has been about the only section of Arizona known to the physicians of the East,

but there are places with higher altitude which are superior for a year-round residence. So much has been written on the climate of southern California that it will not be discussed at length here. But in view of what has been said in this paper, I wish to call particular attention to San Diego and Los Angeles. Are these cities and the country near the coast the most favorable localities for the tuberculous? Manifestly not. Their advantage over the cities of the eastern coast is not one of humidity, but one of mild and equable temperature, thus enabling the invalid to spend most of the time in the open air. The climatic advantage for the great majority of consumptives is increased as the distance from the coast takes the invalid further and further from the humid atmosphere and morning fog, and approaches that of mountain and desert. In no country of the world can so great a variety of climate be obtained without traveling hundreds of miles, as in southern California. Pasadena and the towns of the San Gabriel valley are probably as favorable as any place immediately accessible to Los Angeles. The altitude varies from 800 feet to the higher elevation of the bordering foothills, with the towering peaks of the Sierra Nevada forming a majestic background. Viewed from these high elevations, a country of surprising beauty spreads out before one, covered with orange groves and thriving orchards that have successfully contested their rights with the sage brush in the march of irrigation.

For the invalid desiring a high altitude, some point in the Coast Range may be selected, notably Strawberry Valley, in the San Jacinto mountains, on the edge of the Colorado Desert. The valley has an altitude of 5,250 feet. The air is dry and balmy, never unpleasantly hot in summer, crisp and bracing in winter, but at no time disagreeably chilly.

Redlands, at an altitude of 1,335 feet, and 70 miles from the coast, is the most favorably located of any of the smaller cities. It is in the borderland between the orange belt and the desert country, and second only to Pasadena in being the most attractive city in southern California for the invalid. If one is willing to be deprived of some of the up-to-date elements of civilization, there are many places superior to the larger cities in the small towns and along the borders of the Mojave and Colorado Deserts.

Thus the ideal climate for the tuberculous is the one that will stimulate the greatest possible outdoor life, and this is undoubtedly a mild dry climate, at moderate altitude, with a high percentage of sunshine, low wind-rate, and comparatively free from the sources of tubercular infection.

I wish to acknowledge that many courtesies of the officials of the Weather Bureau in the localities mentioned, whose data made this paper possible, and also my indebtedness to the timely suggestion of Professor Alexander G. McAdie, in charge of the Weather Bureau Office at San Francisco.

An international congress for the relief of the blind will be held in Brussels, August 6 to 10, 1902.

That vaccination is the cure for smallpox is evinced by the results obtained in Porto Rico, which was formerly a hot-bed of the disease. For the ten years previous to the occupation of the island by Americans the average of deaths from smallpox is estimated at 621 yearly. Today it is practically unknown there in consequence of the strict enforcement of an order for universal vaccination by the Governor, General Henry, in 1899.

Concerning Tuberculosis.—At the late annual meeting of the German Central Committee for the establishment of sanatoriums for tuberculous patients, the report showed that 100 such institutions now exist in Germany, mostly in the west and south where the industrial centers are. "Erholungsttten," located in the vicinity of large towns have proved successful. The patients attending them have the benefit of the country air and nourishing food during the day and return to their homes for the night. One of the Hanoverian local authorities has leased a 300-acre farm where 50 tuberculous patients will be employed in the cultivation of vegetables. They will be paid wages and their food and lodging will be furnished them gratis. The hours of work will be limited to eight hours. The formation of a corps of nurses specially trained for sanatorium work and with a knowledge of hygiene, enabling them to instruct the patients as to precautions which should be observed at home after their discharge from the sanatorium, was urged. The meeting was attended by representatives from all parts of Germany and by a delegate from France.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

May 10, 1902. [Vol. xxxviii, No. 19.]

1. Lesions of the Conus Medullaris and Cauda Equina. A Contribution to the Study of Spinal Localization. BERTRAM W. SIPPY.
2. Plastic Surgery, with Cases. Formation of New Cheek. C. E. RUTH.
3. A New Dry Surgical Dressing. ALBERT C. BARNES and HERMAN HILLE.
4. New Method of Anchoring the Kidney—a Preliminary Report. BYRON B. DAVIS.
5. The Work of the Digestive Glands (Pawlow) and Estimation of Pepsin Digestion by Modern Instruments of Precision. FRANZ A. E. JUNG.
6. A Voluntary Board of National Examiners. WILLIAM L. RODMAN.
7. The Neurologist's Art. JOSEPH COLLINS.
8. An Analysis of 52 Cases of Tetanus Following Vaccinia, with Reference to the Source of Infection. 1839-1902. ROBERT N. WILLSON.

1.—Lesions of the Conus Medullaris and Cauda Equina.—Sippy gives the anatomy of the conus and briefly sums up the work of Starr and Kocher in spinal localization. He reports nine cases of these spinal lesions with graphic illustration of the areas of disturbed sensation. He presents a provisional chart based on a study of these cases in connection with those previously reported, and gives for comparison four charts by other observers. The paper concludes with the differential diagnosis between lesions of the cauda and conus. [H.M.]

2.—Plastic Surgery.—Ruth reports two cases with very extensive loss of tissue successfully treated by flaps from contiguous parts. He prefers to leave the pedicle connected at its base as furnishing a much safer blood supply than mere marginal nutriment. Marginal connection of flaps from distant parts has a very limited field, as the confinement is irksome and the vitality feeble for a long time. He also reports one case of cicatricial contraction and flexion of the fingers in which all scar tissue was removed and large skin grafts were retained in place by means of sutures. [H.M.]

3.—A New Dry Surgical Dressing.—Surgical dressings like iodoform and its substitutes depend for their activity on the evolution of free iodine when in contact with the wound secretions. This is antiseptic and stimulates granulation. The newer organic bismuth compounds act as a protective and diminish secretion. The writers have produced a body, moniodid-di-bismuth-methylene-di-cresotinate combining the properties of both, containing 45% of bismuth, 15% of iodine and 3% of formaldehyd. There is a gradual dissociation of the iodine and formaldehyd and the effect is antiseptic, astringent and alterative. The powder, odorless, tasteless and insoluble, has been in constant use for six months in several hospitals as a surgical dressing and in inflammatory lesions accompanied by disorganization of tissue and excessive discharges, and the results have been most favorable. [H.M.]

4.—Anchoring the Kidney.—In the case of floating kidney reported a vertical incision, 2½ inches long, was made through the capsule on the posterior surface with perpendicular incisions at each end. The capsule was stripped back ½ of an inch on each side of the vertical incision making two flaps. A strip of the quadratus lumborum the thickness of the little finger was split from the rest of the muscle by the handle of the scalpel for 2½ inches. Forceps were passed behind this strip grasping the free border of the posterior flap and bringing it through the opening. The two flaps were then brought together over the bundle of muscle fibers and stitched with a running suture of chromicized catgut, the needle penetrating the muscle at two or three places. The lumbar wound was closed by tier sutures of catgut and the skin with horse-hair. The kidney thus anchored cannot become loosened. Other operations are briefly discussed with especial reference to some recent ones related in principle to the author's. [H.M.]

5.—The Digestive Glands and Estimation of Pepsin Digestion.—Jung gives a synopsis of "The Work of the Digestive Glands," by Pawlow, not yet translated into English. Researches made by forming a sac from part of a dog's stomach outside the abdomen showed that there was perfect relation between the amount of food and quantity of gastric juice. The degree of acidity does not vary. After bread the juice shows the greatest peptic strength, next after meat and at last milk, the

latter having only one-fourth the strength of the first. With meat the maximum secretion is during the first and second hours, with bread during the first and with milk during the second and third hours. After bread a more concentrated juice is secreted, avoiding excess of HCl, which prevents conversion of starch. The pancreatic juice varies like the gastric in quantity. It contains its ferments in different percentages after different foods. Increased secretion on feeding after cutting the esophagus, and absence after cutting the vagi or giving unpalatable food, shows that appetite and satisfaction promote digestion. Meat extracts are powerful promoters of secretion. Egg albumin and starch alone do not cause secretion; fat diminishes it. With the exception of the psychic secretion the act is reflex from stimulation of the peripheral ends. Variations occur also in saliva and bile according to the nature of the stimulation. He compares Hammerschlag's and Mett's method of determining the amount of pepsin digestion, giving tables showing the values in normal and abnormal conditions of acidity. [H.M.]

6.—A Voluntary Board of National Examiners.—A national board created by Congress would be without constitutional sanction. A voluntary board whose examinations were of so high a standard as to command the respect of the states would induce them to issue licenses to those who had successfully passed. Rodman suggests that the board be composed of the surgeons-general of the Army, Navy, and Marine-Hospital Service who would serve without compensation, and three representative civil practitioners, two to be elected by the American Medical Association and one by the American Congress of Physicians and Surgeons. A seventh might be added to represent the National Board of Examiners. The meetings should be in June in Washington and possibly elsewhere also. The fee should be not less than \$25. The inducement to take these examinations would be the privilege of practising in any state, of obtaining government positions and of possessing a certificate that would be a diploma *cum laude*. [H.M.]

8.—Tetanus Following Vaccinia.—Willson, in the study of these cases, concludes that infection has taken place in most if not all at the site of vaccination. A secondary infection and one occurring at about the acme of the vaccinia is indicated by the otherwise discordant chronic incubation period and acute symptoms, by the almost uniformly fatal termination, by the millions of normal vaccination with the same virus, by simultaneous deaths from tetanus due to other causes, by the diminished number of cases with greater sepsis in treatment, by the special opportunity in these cases for secondary infection and by the failure of all bacteriologic and inoculation experiments to demonstrate the tetanus organism in the virus. The mortality with antitoxin treatment was 76.97%; without 82%; total 78.8%. Glycerin being a hypodermic irritant would seem to tend to produce a larger ulcerated surface when used; the shield also is injurious. Special susceptibility seems to be an important factor. The vaccine wound requires as skilful care as an abdominal incision. [H.M.]

Boston Medical and Surgical Journal.

May 3, 1902. [Vol. CXLVI, No. 19.]

1. The Patrol Ambulance an Adjunct to the Ambulance Service in Cities; a Substitute Therefor in Towns. FRANCIS D. DONOGHUE.
2. Therapeutics and the Drug Manufacturer. BRACE W. LOOMIS.

1.—The Patrol Ambulance.—Donoghue reviews the development of the municipal ambulance service in Boston, which now has nine ambulances and 15 wagons (practically ambulances) so that after notification the extreme limit any case can remain without transportation is seven minutes. He describes the wagons, which are simple and light in construction, with rubber tires, and cost only \$750. One of these is recommended for any town maintaining a hospital. The expense need not exceed \$300 annually. [H.M.]

2.—See *American Medicine*, Vol. II, No. 18, p. 681.

Medical Record.

May 10, 1902. [Vol. 61, No. 19.]

1. Remarks on Arteriosclerosis. I. ADLER.
2. The Indications for Nephrectomy, with Report of Three Cases. JOSEPH WIENER, JR.

3. Resection of the Cervical Sympathetic in Glaucoma; Its Present Status. WILBUR B. MARPLE.

1.—Arteriosclerosis.—Adler thinks that Thomas' theory of arteriosclerosis as an attempt at self-adjustment to a distended condition of the bloodvessels causing retarded circulation, does not account for all the facts, especially for the alterations in the smallest vessels and parenchyma, the organs and tissues participating in the interstitial inflammation or proliferation in every case studied. It is probable that the disease begins in the small vessels of the organs and extends thence to the trunks, the local increase in blood pressure retarding the current and aiding the process. Metabolic derangements due to sterility and various toxemias may be the cause of the lesions. It may begin as a purely local process in a single viscus. It may appear even in infancy, and hereditary predisposition is probable. Diagnosis of a localized process is often difficult or impossible. He describes the well-known cardiac, renal and cerebral types, and suggests two others—the spinal, simulating tabes somewhat, and the gastrointestinal type, including under this the liver and pancreas also. In the latter we find pressure—atrophy of the glandular elements with the accompanying symptoms. The utmost we can hope for in treatment is arrest of the process by removing toxic influences and meeting the various symptoms appropriately. He urges systematic use of the iodids. Diet is important. [H.M.]

2.—Nephrectomy.—Wiener says that diagnosis of surgical disease of the kidneys depends upon the history of the case; examination of the abdomen, with and without anesthesia; examination of specimens of urine obtained by voiding and ureteral catheter; examination of the bladder and ureters by cystoscope and ureteral catheter; examination by the x-rays and exploratory operation upon the kidney, ureter or bladder. He reports three nephrectomies. The first was performed on a child nine months old, which had a large cyst replacing a kidney. The next was upon a youth of 13, who had a perirenal abscess and miliary abscesses of the kidney. The third was upon a man of 40, who was suffering from a pyelonephritis. All the patients recovered. [A.B.C.]

3.—See *American Medicine*, Vol. II, No. 20, p. 766.

New York Medical Journal.

May 3, 1902. [Vol. LXXV, No. 18.]

1. The Mechanical and Operative Treatment of Tuberculous and Other Affections of the Joints. A. M. PHELPS.
2. A New Treatment for Deafness from Chronic Catarrh of the Middle Ear; A Preliminary Report. W. H. BATES.
3. Deformities Due to Muscular Paralysis; Method of Production; Possibilities in Tendon Transplantation; Combinations that have been Made to Correct Deformity. WISNER R. TOWNSEND.
4. Operations for the Relief of Paralytic Deformities, with Special Reference to Tendon Transplantation: Introduction, History, Indications for Operation. ROYAL WHITMAN.
5. Suture of a Perforating Wound of the Sclerotic. CARY KOLLER.

1.—Treatment of Joint Diseases.—Phelps takes the position that mechanic treatment should always be employed from the beginning to the end of the disease, and that every abscess should be attacked as soon as diagnosis is made. The idea that the joint should first be cured and then the deformity overcome by osteotomy or some other operation is regarded by Phelps as utterly wrong, because there is hardly any deformity in joint disease that cannot be best overcome by extension in bed and by forcible means under an anesthetic when the treatment begins. The theory that longitudinal traction relieves intraarticular pressure is wrong; in hipjoint disease the glutei and adductor group of muscles are pulled upon and, by the direction of their origin, any exertion must necessarily force the head of the bone into the socket. The lateral traction exercised by the fixation brace devised by Phelps many years ago prevents ankylosis, and when properly applied will prevent the limb from ever becoming deformed again. Another point emphasized by Phelps is, that no case of hipjoint disease recovers inside of two years, and the mistake that is constantly being made is to remove the brace prematurely. In disease of the spine the same law applies as in the treatment of disease of the lower extremities, and Phelps holds that no brace or support is so effective as the plaster-of-paris and aluminium corsets made while the patient is in a position of extension. Every joint condition attended with abscess should be immediately

operated upon for two reasons: First and most important, for the purpose of exploring the joint. No man can judge of the condition of a joint which is suppurating until he has put his finger into it. The largest abscess attended with the most pain is frequently the most benign and attended with the least amount of bone disease, while small abscesses are often found to have originated from foci of disease in the bone which require immediate operation to avoid excision. In hipjoint disease the head of the bone is frequently found separated from the neck, and when the surgeon has put his finger into the joint, then only can he determine to do a complete excision if necessary, thus anticipating by many months what would necessarily follow. Any abscess of any name or nature should be immediately opened and cleansed. One point on which Phelps is convinced is that single rheumatic joints never exist. If joint disease is due to rheumatism, more than one joint will become infected; every single-joint disease is always either purulent, tuberculous, gonorrheal, or due to pneumococcus or to some central nerve lesion. If one joint becomes infected and subsequently others, it is presumptive evidence that such joints are secondarily infected from original foci of disease. The article is fully illustrated with cuts of special apparatus devised by the author. [C.S.D.]

2.—New Treatment for Deafness from Chronic Catarrh of the Middle Ear.—After pointing out by a review of accepted methods that heretofore all efforts have been to improve the hearing by operative measures alone, and have expected nothing from after treatment, Bates states that he has gone a step farther and, while performing a radical operation, he has endeavored to obtain benefit not so much from the operation as from after treatment. The operation begins with an incision over the mastoid close to the insertion of the auricle and the bone, beginning above close to the hair and ending below at the tip of the mastoid. The auricle is rapidly dissected from the bone until the auditory canal in its cartilaginous portion is cut through. The superior and posterior walls of the external auditory canal is removed until the antrum is reached. The outer wall of the attic, the membrana and ossicles, and overhanging bone are removed, converting the tympanum, the external auditory canal and the mastoid antrum into one cavity with smooth walls. Hemorrhage is controlled by pressure with moist pads of cotton, by hot water or by artery forceps. After completion of the operation, the cavity is dusted lightly with iodoform. The skin wound is closed with sutures (silk No. 000) and covered with collodion, iodoform and cotton dressing. The day after the operation the bandage is removed and not used again. To prevent infection of the middle ear, the patient instils twice daily into the external auditory canal a solution of mercury bichlorid, 1 to 3,000, and this is continued during the after treatment. The object of the after treatment is the removal of and prevention of recurrence of connective tissue from the inner wall of the tympanum. This is best accomplished by means of cutting instruments (1. A Graefe cataract knife. 2. Sexton's trowel-shaped knife. 3. Wilde's ear forceps, mouse toothed) and not by the use of caustics. Local anesthesia with cocain is obtained quicker and continues longer after a previous application of a solution of suprarenal extract. The treatment was found beneficial in a class of cases which were not benefited by treatment of the nasopharynx or eustachian tube or by operative measures in the middle ear. Perhaps the only objection to this new method is the necessary time required in order to obtain good hearing (1-6 months). Yet Bates believes this objection can be overcome after further experience has perfected the technic of removing the excess of connective tissue from the inner wall of the tympanum. [C.S.D.]

3.—Deformities Due to Muscular Paralysis.—The importance of the fact that muscular paralysis, whether cerebral, spinal or peripheral, does not primarily produce a deformity, but simply a loss of power in the muscle or muscles affected, is pointed out by Townsend as teaching that the prevention of deformity is one of the principal objects of treatment. The various causes of deformity are discussed under the captions: (1) Gravity; (2) the action of nonparalyzed muscles; (3) the arrested development and growth of all tissues in proximity to the muscles paralyzed; (4) the results of weight applied to

weakened structures. A number of illustrative cases are described. [C.S.D.]

4.—Operations for the Relief of Paralytic Deformities.—Whitman discusses tendon transplantation from the first recorded case of Nicoladoni, in 1882, to the more recent suggestion that a section of living muscle be implanted in one that is paralyzed, which he holds is hardly worthy of consideration. Arthrodesis or artificial ankylosis, introduced by Albert in 1881, should be performed, as a rule, only in later adolescence or adult life. It may often be combined with tendon transplantation to advantage. [C.S.D.]

5.—Suture of a Wound of the Sclerotic.—The record of a case is given by Koller of successful suturing of the sclera, an operation first done by the Italian, Baretti, in 1833. [C.S.D.]

Medical News.

May 10, 1902. [Vol. 80, No. 19.]

1. On Adrenalin Glycosuria and Allied Forms of Glycosuria Due to the Action of Reducing Substances and Other Poisons on the Cells of the Pancreas. C. A. HERTER.
2. Sudden Death in Aortic Stenosis, with Report of Two Cases, One Complicated with an Aneurismalike Dilation of the Aorta at Its Root and Marked Stenosis of this Vessel Beyond the Dilation. JAMES M. ANDERS.
3. Remarks on the Diagnosis of Pregnancy in the Early Months. CHARLES JEWETT.
4. Diagnosis of Diseases of the Biliary Passages. N. E. BRILL.
5. Empyema of the Gallbladder. LUCIUS W. HOTCHKISS.
6. The Surgery of Gallstones. JOSEPH A. BLAKE.

1.—See *American Medicine*, May 10, page 771.

2.—Aortic Stenosis.—Pure aortic stenosis is unquestionably rare and other conditions are being constantly mistaken for it. It is easily recognized when fully characterized, but some of the cardinal signs are frequently absent, particularly the thrill, the characteristic pulse and the hypertrophy, which is concealed by associated emphysema. Anders accounts for the dilation of the aorta in his case which occurred subsequent to the stenosis of the valve, by the abnormally contracted part beyond obstructing the blood stream. There is risk of sudden death, especially from syncope, even when the symptoms are mild. It is probable that if pure cases only were considered it would prove to be a common mode of termination in this exceptional lesion. [H.M.]

3.—Early Diagnosis of Pregnancy.—During the greater part of the first three months of pregnancy almost the only reliable objective evidences of pregnancy are the structural changes in the uterus itself, which are stated by Jewett as follows: (1) Softening of the cervix; (2) size of the body and progressive growth at the rate of pregnancy; (3) extreme compressibility of the isthmus. Hegar's sign; (4) relative density of the median and lateral sections of the isthmus; (5) asymmetry and differential density of the body; (6) consistence and shape of the body as a whole. The first sign is not of much value before the end of the second month. Hegar's sign he considers of less value than that of the shape and consistence of the corpus because it is not so readily appreciable. The change in the differential density of the isthmus is well marked by the fifth week, the middle portion which usually presents a dense longitudinal ridge by that time being less dense than the parts on each side. [W.K.]

5.—Empyema of the Gallbladder.—Hotchkiss states that in all cases of acute suppurative cholecystitis, as well as in the chronic empyemas, surgical treatment is clearly indicated, and in many instances is imperative. In acute cholecystitis in a relatively healthy gallbladder, the walls of which are thickened and the contained exudate muddy or purulent, cholecystotomy with drainage is the operation of choice. In a cholecystitis of longer standing, with adhesions, contracted gallbladder and probably occluded cystic duct, cholecystotomy is usually the operation of choice, but in selected cases cholecystectomy is better. In empyema of the gallbladder, stone in the cystic duct, adhesions, etc., cholecystotomy is generally to be preferred, though cholecystectomy may also be done in many cases. [A.B.C.]

6.—The Surgery of Gallstones.—Blake states that gallstones and diseases of the biliary passages are frequently asso-

ciated with pancreatitis or chronic appendicitis. Ochsner found the appendix diseased in six out of 18 cases of gallstones. The author reports 11 cases in which he operated. In five of these cases the gallbladder was much contracted, thickened, adherent and difficult to remove. Three were advanced cases of common duct calculus and three had empyema of the gallbladder. In all cases there was a history of repeated attacks with the exception of one case of suppurative cholecystitis, in which there had been one attack four months previous. In discussing the relative merits of cholecystostomy and cholecystectomy the author makes the following statement: "Cholecystectomy should not be performed in cases in which drainage is indicated, namely, (1) when there is uncertainty as to the patency of the common duct; (2) suppurative cholecystitis without sloughing; (3) cholangitis; (4) when the duct is sutured after choledochotomy and the gallbladder can be easily and safely drained; (5) it should not be attempted in cases in which prolongation of the operation would lessen the patient's chances, as when jaundice and bleeding are present or there is impairment of vitality by disease, age or condition. [A.B.C.]

Philadelphia Medical Journal.

May 10, 1902. [Vol. ix, No. 19.]

1. A Voluntary Board of National Examiners. WILLIAM L. RODMAN.
2. Diagnosis and Management of Some of the More Common Lesions of the Adult Knee. V. P. GIBNEY.
3. The Kidney Complications of Typhoid Fever. JAMES ELY TALLEY.
4. Value of the Justus Test, with Report of Cases. HENRY TUCKER.
5. The Justus Test for Syphilis, with Report of Cases. WILLIAM E. HUGER, JR.
6. An Investigation of Solanum Carolinense, with Reference to Its Special Value in the Treatment of Epilepsy. M. CLAYTON THURSH.

2.—Diagnosis and Management of Some of the More Common Lesions of the Adult Knee.—Gibney details a series of cases illustrative of the text of his paper, and enumerates the various important symptoms by which a diagnosis can be made of the common rheumatic affections of the knee, and by which they may be differentiated from the graver forms of kneejoint diseases. The management of the ordinary peri-articular lesions is described, and the time indicated when rest and protection should be employed, and when motion is best for the knee. [F.C.H.]

3.—The Kidney Complications of Typhoid Fever.—Under this heading Talley discusses albuminuria, acute nephritis, hemorrhagic nephritis, suppurative nephritis, pre-existing chronic nephritis and hematuria. Two cases are detailed, and a tabulated report of over 17,000 cases of typhoid is given. [F.C.H.]

4.—Value of the Justus Test, with Report of Cases.—As stated by Tucker, Justus' test is based upon the fact that mercury given either by subcutaneous or intravenous injection, or by inunction, will cause a diminution in the hemoglobin of the blood. In the healthy or nonsyphilitic individual, nature rapidly replaces this loss, but in syphilitics the loss will not be immediately compensated, so that at an examination made 24 hours after giving the drug it will be found that a fall of from 10% to 20% in the hemoglobin has occurred. Tucker details 27 cases in which, after the first examination of the hemoglobin, all the patients were given an inunction of one dram of mercurial ointment, and were reexamined within from 24 to 30 hours subsequently. He is firmly convinced, from the results obtained in this series of cases, that Justus' test has no practical value in the differential diagnosis of venereal ulcers, since the reaction occurs with an almost equal degree of frequency in the nonsyphilitic conditions, with which syphilis may be occasionally confused. [F.C.H.]

5.—The Justus Test for Syphilis.—Huger reports 16 cases, from which he has drawn the following conclusions: Although the number of cases which he reports are few, there are enough of negative results in the group of chancres to show that the test is wholly unreliable, and, moreover, the one positive result among the chancroids detracts even more, because the failure to place a syphilitic on mercurial treatment will soon be proven a mistake, but to condemn a nonsyphilitic to years of, to say the least, unpleasant treatment, and a lifelong belief that he has had and perhaps still has, the disease, is unpardonable. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Weight of the Human Brain.—The weight of the human brain is variously given by different authors. Gray estimates it for the male brain, as 49½ ounces—about 1,485 grams, Luschka as 1,424 grams, and Krause as 1,570 grams. Reid, quoted by Holden, found it to be about 50½ ounces, or somewhat over 1,508 grams. Boyd, quoted by Mills, gives the average weight of the male brain at from 20 to 40 years as 1,360 grams. These differences are not very great. They may be accounted for in part by slight differences in the technic of estimation, in part by differences in the pathologic material, and in part by differences attributable to race. The most recent investigation upon the subject is that of Marchand.¹ It comprises an estimation of the weight of 1,173 brains, gathered from the Hessian population in and about Marburg. The brain was weighed in the fresh state, with its membranes, immediately after its removal from the skull.

The cause of death has a considerable influence upon the weight of the brain, producing, on the one hand, a diminution, and, on the other, an increase. A diminution is most frequently produced by age, while an increase may depend upon hyperemia, edema, hydrocephalus, inflammatory and hemorrhagic exudates, and newgrowths. Of acute diseases, diphtheria was with striking frequency accompanied by an increase in the brain weight.

As regards the weight at different ages, it was found that the average weight of the brain in the newborn, including infants up to the age of one week, was 371 grams in the male and 361 grams in the female sex. At the end of the first year the figures were 967 and 893 grams, respectively, the weight doubling in the first nine months. It triples before the end of the third year. From thence onward the increase is much slower, particularly in the female sex. The weight of the brain seems to reach its height between the nineteenth and the twentieth year in the male, and between the sixteenth and the eighteenth in the female sex. The average weight of the adult brain is 1,400 grams for the former and 1,275 grams for the latter. A reduction in weight owing to senile atrophy begins in the male in the eighth and in the female in the seventh decade, although there are marked individual variations from this.

In childhood the increase of the mean weight of the brain corresponds with an increase in stature, and is independent of age and sex up to a height of 70 cm. In the adult there is no definite relation between the brain-weight and the length of the body, although, as a rule, the average weight of male brains is somewhat less in undersized individuals than in those of normal size. The smaller weight of the female brain is not dependent upon the shorter stature of the sex, since the mean brain-weight of women is, without exception, smaller than that of men of the same height.

Marchand did not take into account the relation of body-weight to brain-weight, since the body-weight at autopsy, owing to marasmic conditions, is subject to such wide variations that it cannot be brought into definite relationship with the weight of the brain; and he does not agree with Bischoff that such a relation exists. The heavy brains sometimes seen in rickets, when not due to hydrocephalus, are generally dependent upon edema. There are, however, true cases of hypertrophied brains, but not much is known about them. To this class probably belonged the heavy brains of Cuvier (1,830 grams) and of Tourgenieff (2,120 grams); but possessors of abnormally large brains have not

¹ Ueber das Hirngewicht des Menschen. Des XXVII. Bandes der Abhandlungen der mathematisch-physischen Classe der Königl. Sächsischen Gesellschaft der Wissenschaften, No. IV.

always been characterized by striking intellectual powers. The largest brain on record appears to have been that of Rustan, which weighed 2,222 grams (74 oz.).

An interesting table of brain-weights is given by Mills in his *Textbook of Nervous Diseases*. The smallest brain in the table is that of Gambetta, weighing 1,160 grams; the largest, that of Tourgenieff, 2,120 grams. As Mills says, there is probably no relation between the brain-weight and the degree of intelligence; but high brain-weights occur in larger proportion among civilized than among uncivilized races.

The Toxin of Epilepsy.—The support of a specialist of such extensive experience as Spratling adds great weight to the view that the sudden discharge of nervous energy characteristic of epileptic seizure is the result of an autointoxication following the cumulative formation of some as yet undiscovered toxin. The theory of a specific toxin gives ground for hope that immunity may in time be secured to this dreadful affection by the isolation of its toxin and the discovery of some means of neutralizing it or of preventing its formation. Just how a toxin sufficient in quantity and toxicity to produce such profound nervous disturbance can suddenly and as the result of a convulsion be rendered innocuous, so as to allow of almost immediate restoration of mental and physical equilibrium, is a most interesting problem, and one which calls for serious attention on the part of the physiologic chemist. It is possible that the waste products resulting from muscular action are capable of uniting with the epileptic toxin and of rendering it inert. May it not be that the beneficial results of regular physical exercise afforded by the outdoor life and farm duties of the colony plan of treatment are due to the fact that the products of muscle waste serve to neutralize or destroy the special toxin and thus prevent its accumulation in the system, together with the seizure which results from its retention?

The Value of an Occasional Convulsion.—William R. Spratling, medical superintendent of the Craig Colony for Epileptics, discusses in a recent paper¹ the relief which follows a convulsive seizure in epileptics. In some cases of epilepsy prolonged periods of mental disturbance or insanity are prevented by the occurrence of a fit, while in some selected cases of incipient alcoholism persistence in the drinking habit would probably lead to confirmed epilepsy, were it not for the emphatic warning given by the convulsion. In the first class the epilepsy seems dependent on fluctuating internal causes; on the action of certain toxins not as yet isolated, and but little understood, and which grows in intensity until a limit is reached, when their toxicity is in some manner neutralized or destroyed by a convulsion. This convulsion appears to come as the termination of an obscure autotoxic cycle that varies in duration in different individuals, the specific cause of the fit in these cases is something that comes and goes, causing a sort of psychic tide that rises and falls, that grows and develops in intensity, exerting a pernicious influence on the daily life of the patient by making him do and say things not in harmony with his normal state, which abnormalities the patient will exhibit in proportion to his power of inhibition, until the limit is reached and the mind loses its direction and control. The power of further inhibition finally being destroyed, the nervous storm breaks with great force and violence, the poison is neutralized or destroyed, equilibrium is restored and all is quiet and serene once more. In the second class the alcohol acts as the toxic substance, and the nervous system, having little or no power of resistance to its action, is irritated to an explosive discharge of nervous energy, which serves in many cases as a warning and leads to timely

self-control of the drinking habit, thereby avoiding the acquirement of habit epilepsy.

Localization of the Mental Faculties in the Left Prefrontal Lobe.—Phelps¹ reviews critically the literature and reports a number of cases illustrating the localization of the mental faculties in the left prefrontal lobe. His personal experience now comprises the results of an examination of 295 cases in which the history was supplemented by necropsy. Of these 295 cases, 49 were available for detailed study, and the histories of many of these are given in detail. It is stated that in every case but two in which consciousness was retained or regained and the mental faculties were not perverted by general delirium, laceration involving the left frontal lobe was attended by default of intellectual control, and the lesion was usually, if not always, of the prefrontal region and implicated either its superior or inferior surface. Subcortical disintegration, or deep or extensive laceration of the cortex, was especially characterized in its manifestations by abrogation of mental power, and superficial laceration by aberration. In every case in which laceration was confined to the right lobe the mental faculties were unaffected, except as they were obscured by stupor or delirium occasioned by coincident general lesion. Compression or contusion of the left lobe only exceptionally produced specific intellectual disturbance. In order to ascertain with the greatest possible certainty whether the law which seemed to have been established connecting symptoms of mental disorder or default exclusively with left prefrontal lesion, was absolute, still larger groups of cases with limited lesions were gathered without discrimination from such sources as were available and subjected to analysis. These were divided into three classes: (1) Atrophies; (2) pistol-shot wounds; and (3) abscesses and tumors. The histories of many of these cases are given in detail, and after considerable discussion of the questions at issue it is concluded that three propositions are justified by the cases: (1) The more absolutely the lesion is limited to the left prefrontal lobe the more positive and distinctive are the symptoms of mental default; (2) the integrity of the mental faculties remains unimpaired in right frontal lesions, though it involves the destruction of the entire lobe, or even extends to the entire hemisphere; and (3) the exceptional instances in which seemingly opposite conditions exist are always reconcilable, on more careful examination, with the assertion of an exclusive control of the mental faculties residing in the prefrontal region of the left side. [A.O.J.K.]

Granular Degeneration of the Erythrocyte.—Stengel, White, and Pepper² present a further discussion of the probable nature of the granules found in granular degeneration of the erythrocyte, and report the results of some observations undertaken with a view to determine, if possible, the location in which the degeneration takes place. From a large series of experimental investigations and the study of the blood in different diseased conditions they conclude that toxic causes of various sorts are capable of producing the granular degeneration, but that no poison thus far studied is as regular in its production of the degeneration or as prompt in its action as is lead; and they adduce considerable evidence to support their view that the granules are the product of a specific degeneration of the protoplasm rather than the result of changes in the nucleus. [A.O.J.K.]

A Case of Peripheral Gangrene in Phosphorus Poisoning.—Vollbracht³ reports a case of gangrene of the feet in a case of phosphorus poisoning. The patient was a young woman of 18, who had swallowed an infusion of heads of matches. A study of the literature leads the author to the conclusion that gangrene of subacute phosphorus poisoning depends upon disturbance in the general circulation, which may be aided by a narrow arterial system and by pressure. [D.R.]

Obscure Injuries from Toxic Use of Alcohol.—Crothers⁴ states that persons who become neurotics in the best conditions of life and then unexpectedly drink or take drugs to excess are often found to have a history of some early profound intoxica-

¹ American Journal of the Medical Sciences, Vol. cxxiii, pp. 563, 751, 1902.

² American Journal of the Medical Sciences, Vol. cxxiii, p. 873, 1902.

³ Wiener klin. Woch., December 26, 1901.

⁴ Medical Press and Circular, November 27, 1901.

¹ Albany Medical Annals, May, 1902.

tion with slow recovery. Many persons becoming intoxicated at long intervals do not have pronounced neuropsychic symptoms, but debility and weakness or organic and functional disorders and acute diseases ascribed to other causes. Every intoxication is a physical and psychic concussion to the brain centers, followed by a period of anesthesia of the higher and sense centers with delusional exaltations, these finally merging into stupor, palsy and unconsciousness. The so-called stimulation is irritation and paralysis. Spirits instead of bringing new force in an emergency, bring recklessness and loss of judgment. Intoxication near puberty has been the starting point of serious neuroses. [H.M.]

The Etiology of Acute Rheumatic Fevers.—Augustus Jerome Lartigau¹ sums up the most recent and important literature on bacteriologic investigations into the nature of acute articular rheumatism and formulates the following conclusions: 1. Acute articular rheumatism is an infectious disease probably induced by a specific bacterial excitant. 2. The claims of Achalmé and others that the infection is attributable to an anerobic bacillus have not been sustained and are very probably untenable. 3. The correctness of the contention advanced by Singer, that the disease is a modified pyemia, is very doubtful. It is probably much safer to say that secondary infection with pyococcal bacteria is common in this disease. 4. The diplococcus isolated by Wassermann, Poynton and Paine and several others is probably a modified streptococcus. All of the inoculation results induced by this assumed specific diplococcus may be obtained with *Streptococcus pyogenes* Rosenbach. The demonstration of this organism then as the causative factor of rheumatic fever is incomplete. 5. The specific bacterial excitant of the disease still remains to be discovered. [C.S.D.]

X-Rays in Diagnosing Early Tuberculosis.—Espina y Capo² discusses the value of radioscopia in studying the arhythmic tachycardia of the tuberculous and the unsymmetrical and arhythmic excursions of the diaphragm, which does not rise as high on the side most affected. Radiography shows the small heart of the tuberculous and the peculiar shape of the intercostal spaces, explaining the difficulty of performing percussion. The ribs are disposed somewhat as roof tiles. The clavicle presents an augmentation on the inflection of its external extremity, the scapulas are higher, the internal and superior vertex is more elevated, swinging toward the center, the point and internal edge which are raised owing to the peculiar disposition of the ribs and spinal column. The heart is extended toward the lines of Traube and Friedreich on the right side, showing compensatory insufficiency of the tricuspid with right ventricular hypertrophy. The writer commends Redondo's suggestion that the strengthening screen be employed as a radioscopic screen, the image resembling in depth of tone the radiographic image, the detail being as fine as with the fluoroscopic screen. This is important in obtaining the semilunar space of Traube and the diaphragmatic excursions. In radiography with images that require great detail it is better not to use the strengthening screen. The best distance between tube and plate is 50 c. [H.M.]

The Unilateral Occurrence of Kernig's Sign as a Symptom of Focal Brain Disease.—Sailer,³ discussing the nature of Kernig's sign and the literature on the subject, states that with the exception of a case reported by Herrick, in which the sign was present in the unaffected leg of a woman suffering with gonorrheal gonitis, mention has not been made of its unilateral occurrence. He reports in detail two cases in which the sign was unilateral and appeared to be a symptom of focal encephalitis. The one, a man of 20, presented Kernig's sign in the left leg, and at necropsy was found to have an area of hemorrhagic softening in the middle of the right ascending parietal gyrus extending inward through the centrum ovale toward the internal capsule, which, however, it did not involve; the other, a man of 37, presented Kernig's sign in the left leg, and was presumed to be afflicted with a nonsuppurative focal encephalitis in the upper portion of the right half of the medulla,

though the possibility of tumor, etc., was borne in mind. The following conclusions are drawn: (1) Kernig's sign may occur as a symptom of focal encephalitis, and in this condition may be present only upon the opposite side of the body; sometimes it is associated with spastic paresis of the leg upon that side; (2) in these cases there may be a persistent tonic spasm of the flexor muscles of the arm, which, however, does not resemble Kernig's sign in its mechanism; (3) the most reasonable explanation of Kernig's sign is that it is due to an irritative lesion of the pyramidal tract that diminishes but does not destroy its functional activity. [A.O.J.K.]

On the Geographic Distribution of Cancer in the German Empire.—Dr. Wutzdorff,⁴ Division Superintendent of the Imperial Board of Health in Berlin, contributes a statistical review of the occurrence of cancer in Germany since 1875. The article is illustrated with maps showing the relative prevalence of the disease in the various principalities and is summarized as follows: (1) Official death statistics for the years 1892-98 show a marked increase in cancer, chiefly in Würtemberg, in the city district of Hamburg, in Posen and in Bavaria to the left of the Rhine; to a lesser extent in Hanover, Saxony, Westphalia, Hesse and East Prussia. A decrease is shown only in Hohenzollern and Saxe-Coburg-Gotha; (2) the deathrate as compared with population for the year 1898 shows cancer to be most prevalent in the Lubeck and Hamburg city districts, in Baden, Bavaria to the right of the Rhine, Berlin, Hesse, Würtemberg, Saxony, Brunswick and Bremen; least in Schaumburg-Lippe, Posen, Saxe-Coburg-Gotha, Westphalia, West Prussia, Hohenzollern, East Prussia and in the Rhine province; (3) in general, it may be said that the increase in deaths from cancer is relatively greater than the increase in population; (4) cancer appears, on the average, earlier in life than formerly; (5) cancer is more frequent among women than among men, but more dangerous for the latter. [C.S.D.]

Congenital Disease of the Left Side of the Heart.—Fisher² reports two cases of congenital disease of the left side of the heart—the one of mitral stenosis in a child dead at the age of 15 months, and the other of aortic stenosis in a child dead aged 4½ months. Reference is made to the literature. [A.O.J.K.]

Intrabuccal Cyclones in the Whispering Voice.—Gelle³ has demonstrated by means of a small paper shield mounted on a stem of polished steel that intrabuccal air is possessed by a cyclonic movement during the utterance of whispered words. [C.S.D.]

Clinical Ferrometer.—E. Boetzelen,⁴ of Berlin, calls attention to Jolle's clinical ferrometer, as recently modified and improved. The accuracy of the results obtained by the apparatus is shown by a tabulated list of tests in which the known iron-content is compared with that given by the ferrometer. [C.S.D.]

Kernig's Sign in Nonmeningitic Cases.—Shields⁵ reports the results of his examination of 100 nonmeningitic patients, both febrile and afebrile, for the presence of Kernig's sign. In five cases the sign was present; three showed the sign unilaterally, and two bilaterally. The last mentioned included a case of uremia and a case of typhoid fever, and in both cases the sign disappeared when the patients had recovered. The sign persisted in the three cases in which it was elicited unilaterally—two cases of hemiplegia, and one case of typhoid fever (still ill at the time of the report). Notes of these five cases are given. [A.O.J.K.]

Sewage Irrigation and Vegetables Eaten Raw.⁶—The committee on public hygiene of the city of Paris has recommended that in all contracts concerning irrigation by sewage there shall be inserted a clause interdicting the use of sewage in connection with the cultivation of such fruits (strawberries, etc.) and vegetables (salads, etc.) as are destined to be eaten raw. [C.S.D.]

¹ Deutsche medicinische Wochenschrift, March 6, 1902.

² British Medical Journal, March 15, 1902.

³ La Semaine Médicale, February 5, 1902.

⁴ Münchener medicinische Wochenschrift, March 4, 1902.

⁵ American Journal of the Medical Sciences, Vol. cxxiii, p. 781, 1902.

⁶ Gazette Hebdomadaire de Méd. et Chir., March 30, 1902.

¹ Albany Medical Annals, May, 1902.

² The Medical Press and Circular, November 27, 1901.

³ American Journal of the Medical Sciences, Vol. cxxiii, p. 772, 1902.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

The Cause of Death During the Administration of Chloroform.—It is almost trite to assert that no means of producing general anesthesia has as yet been discovered which is free from danger. Chloroform and ether remain the two great agents for inducing general narcosis for operative purposes. In the United States chloroform is used almost exclusively in the south and west, while ether is vastly the drug of choice in the east and north. Whether this difference in choice is due to habit, to custom, to the early training of the physician, or to climatic and atmospheric differences, it is difficult to state, but the fact remains. Statistics amply prove that chloroform is by far the more dangerous of the two drugs, death from ether administration being about one in 20,000 cases, while that from chloroform is about one in 3,500 cases (Hare), thus making the latter drug about six times the more dangerous. The extensive employment of chloroform, however, adds special interest to investigations which have for their object the discovery of the danger element and the actual cause of death when such unfortunate termination supervenes. This is not a new field for investigation, but it is one replete with differences of opinion.

Embley,¹ honorary anesthetist to the Melbourne Hospital, has concluded an article which gives evidence of painstaking and exhaustive research. It is true that his are laboratory investigations, carried out upon the lower animals, and are therefore probably of less practical utility than clinical observations. The subject, however, is one almost or quite incapable of scientific investigation from a purely clinical standpoint, and therefore recourse must be had to the armamentarium afforded by the laboratory.

Particular attention was devoted to recording the changes in circulation during the early period of chloroform administration in animals which had not previously received chloroform. This was accomplished by performing all operative procedures necessary for studying the circulatory changes under morphin narcosis, either alone or with curare; or by inserting cannulas, etc., under brief anesthesia by ether some eight to twelve hours before the observations under chloroform. That early in the administration of chloroform is the danger period is amply attested by the statistics from England, which show that of the eighty-three deaths which occurred from this cause in 1899, sixty-eight happened before the operation was started, and in another year the same condition obtained in thirty-nine out of forty-one deaths. Embley's researches were carried out in the laboratory of the University of Melbourne. In the whole investigation 289 dogs were used and 284 graphic records were obtained.

The salient conclusions were that chloroform has an immediate and progressively paralytic effect upon heart muscle. Chloroform raises the excitability of the vagus mechanism, particularly in the early part of its administration, the increased excitability being due to its influence upon the centers; and the inhibitory action of the vagus upon the heart is more intense and fatal from being exercised upon an organ whose spontaneous excitability is diminished by the action of chloroform upon it. Vagus inhibition of the heart is, in dogs, the great factor in the causation of sudden death under chloroform. It was found that chloroform vapor, not stronger than 1.5% in the air, administered to morphinized dogs, after a period of mild excitation, slowly depresses vagus excitability, but if administered above 2% in the inhaled air it may cause dangerous or persistent inhibition. Section of the vagi or atropinization of dogs absolutely abolishes sudden heart arrest from chloroform.

roform; the heart under such conditions fails slowly with rapid pulse, slowing as the blood-pressure approaches zero. Under these conditions the respiration fails when the blood-pressure falls sufficiently, and invariably long before the heart stops. The failure of respiration in inhalation experiments is due to fall in blood-pressure and without this fall in blood-pressure failure of respiration is practically impossible by inhalation of chloroform.

Obvious conclusions to be drawn from these researches are that air chloroformed to a greater extent than 2% should not be used for anesthetic purposes, and that during the early periods of administration, when danger from vagus inhibition of the heart is at its height, an admixture of less than 2% of chloroform would be safer; that since at least after the primary period of administration the respiration fails only as a result of a fall in blood-pressure, respiration should be watched by the anesthetist as an index to the circulatory condition; and, most practical of all, since atropinized dogs never suffered cardiac arrest from vagus inhibition, this drug should be given previous to the administration of chloroform. This latter is in accordance with the findings and suggestions of Rudolf,² of the University of Toronto, already referred to in the editorial pages of *American Medicine* (Vol. III, No. 18, p. 744).

Rodent Ulcer Treated by X-Rays.—Pugh³ reports four cases of rodent ulcer treated by x-rays. One was a man of 93, whose ulcer was cured after 36 sittings; another was a man of 83, whose healing occurred after 34 sittings; another was a woman of 48, who was cured after 28 sittings; and the fourth was a woman of 70, who was subjected to but 12 sittings in order to effect a cure. In none of the sittings was the exposure longer than 15 minutes. A mask usually prevented a dermatitis in the surrounding region, but when occasionally it did occur it yielded to lead water and laudanum. [A.B.C.]

Chylous Ascites Due to Peritoneal Carcinoma.—Leslie⁴ details a case of chylous ascites, the rarity of which renders the report of interest. The patient was a woman of 52. Necropsy revealed a large carcinomatous mass involving the whole of the omentum and infiltrating the greater portion of the mesentery, and extending between the coils of the intestine, which were inextricably matted together. The abdomen was full of bile-stained milky fluid. The right lobe of the liver was involved in the malignant mass. The thoracic duct was normal, patent throughout, and showed no sign of rupture. The chylous ascites was in all probability due, not to the obstruction of the thoracic duct, but to the blocking of the smaller lacteals close to the mesenteric attachment of the bowel by the infiltrating growth. Study of the recorded cases seems to indicate that actual obstruction of the thoracic duct as a cause of chylous ascites is extremely rare. [F.C.H.]

Carcinoma of the Papilla of Vater: Hepatotomy.—Scheuer⁵ reports the case of a woman of 59 who had frequently recurring attacks of vomiting, gastric pain, jaundice and fever a year and a half before entrance to the hospital. The jaundice gradually increased and the patient lost in weight progressively. The liver and gallbladder were both considerably enlarged. Biliary calculus with empyema of the gallbladder was suspected. At the operation 12 gallstones were removed from the gallbladder, but no stones were found in the gallducts. There was no pus, but only thin gall in the gallbladder. Cholecystostomy was performed. After the operation the patient was somewhat relieved but the stools continued clay-colored and the fistula did not heal. A stone in the common duct was suspected and a second operation was undertaken, at which the common duct permitted the passage of a large sound and the remaining gall-passages were found free. A bend in the gallduct was suspected as the cause of the obstruction. After this second operation the patient suffered from repeated chills and the symptoms were not relieved. A third operation was undertaken but no

¹ University of Toronto Studies, Physiologic Series, No. 3, 1901.

² British Medical Journal, April 12, 1902.

³ Edinburgh Medical Journal, April, 1902.

⁴ Berliner klin. Wochenschrift, Vol. 39, p. 138.

⁵ The British Medical Journal, April 19, 1902.

pathologic condition was found. The patient recovered from the effects of the operation and left the hospital but died soon afterward. At the necropsy carcinomatous ulceration of the intestine in the region of the papilla of Vater was found. In the center of the ulcerated area was the free end of the common gallduct. Scheuer states that these cases have been reported infrequently in German literature, but Terrier and Auvray have collected 15 cases of this kind. In a second case a youth of 17 was taken suddenly with an attack of pains in the back, chest and stomach. On admission to the hospital he had a high fever and the symptoms pointed to some affection of the liver. Jaundice developed in a short time. On opening the abdomen the gallbladder was found small but not tense, the common duct was not distended, the liver was enlarged. No stone could be found in any of the biliary passages. Cholangitis with closure of many of the small gall-passages within the liver-substance was thought to be the cause of the condition. In such a case cholecystostomy would be of little avail, hence incisions were made with a cautery a distance of 6 cm. directly into the liver substances. One of the gall-passages in the liver substance was struck and gall escaped under considerable tension. The result of the operation was very satisfactory. Gall escaped in large quantities in the dressings, the stools soon became colored and the jaundice disappeared. The patient left the hospital perfectly cured. [M.B.T.]

Fracture of the Humerus by Muscular Action.—Fracture of the humerus by muscular action is of comparatively rare occurrence. Milbradt¹ reports a case occurring in a muscular young man of 24 who was testing strength with a comrade by clasp hands, and with elbows resting upon a table, trying which could turn the arm down. The fracture of the right humerus was situated a hand's breadth above the elbow joint. The displacement was readily reduced and the arm put up in plaster-of-paris, an excellent result following. [M.B.T.]

Enucleation of the Prostate.—Wallace,² after examining a number of enlarged prostates, has concluded that it is not unusual to find them covered with an abnormal capsule, and believes that the prostatic tissue cannot be separated from the prostatic urethra without injury, as they are so intimately connected and blended. [A.B.C.]

Trephining for Brain Tumor.—Gussenbauer³ reports 10 cases of brain tumor in which he operated. The cases are reported at great length, and the author makes no attempt to group his information or give any definite conclusions. He states, however, that his experience has shown him the difficulties of brain operations even in cases with definite localizing symptoms referred to the motor areas. He gives a good prognosis for operation for gliosarcoma, even in cases in which it seems that the entire tumor has not been removed. In his cases recurrence occurred late, in the third year after the operation. There were no infections, the single death, which occurred immediately after operation, resulting from hemorrhage because of the restlessness of the patient. In one case pneumonia followed 10 days after operation. Even in cases in which no permanent result was obtained, there was temporary relief, cessation of the distressing headache, disappearance of optic neuritis, and the patients recovered vision if atrophy of the nerve had not already occurred. There was also relief of motor and sensory disturbances after the operation. [M.B.T.]

Excision of the Nails.—Baumgartner.⁴ Inflammatory processes involving the nails are usually very chronic in their course, and the entire nail is practically always lost. In all such chronic cases in which the onychia is not rapidly cured by the usual measures, he recommends the excision of the entire nail, leaving intact the bed of the nail and the matrix. In such cases the forcible pulling out of the nail by the root, as originally suggested by Dupuytren, is still commonly practised. If, on the other hand, the nail is excised early, leaving the bed and the matrix intact, regeneration occurs very rapidly, and the patients are frequently able to use their hands very well in from four to seven days after the operation. For performing this operation Baumgartner has devised a very thin-bladed

knife which he calls a nagellöser, and which he slides under the nail, dividing it from its bed, until the matrix is reached, when it can be dissected out. [M.B.T.]

Fracture of the Semilunar Cartilages of the Knee.—Mayo Robson¹ reports a series of 33 cases of internal injuries to the knee operated upon, 21 being for fractured semilunar cartilages, four for loose cartilages and eight for foreign bodies in the knee. He calls attention to the frequency of the occurrence of injury to the semilunar cartilages among miners. Flexion and extension are always accompanied by some rotation, inward during flexion and outward during extension, and during flexion the ligaments are relaxed and the semilunar cartilages alter their relations with the femur and the tibia. If any violent or sudden movement occurs the cartilage may be caught in its wrong position and nipped with sufficient force to fracture it or rupture the attachment of the coronary ligaments. In by far the greater number of cases of internal injury to the kneejoint there is a history of some slip, sprain or accident more or less severe. Replacement by manipulation, fixation and rest usually relieve and may, after a time cure many cases, yet relapse is so frequent and annoying as frequently to call for surgical intervention. In such cases the author does not hesitate to open the joint by an incision beginning at the inner border of the lower end of the patella (if the injury is on the inner side, on the other side otherwise) and extending upward and backward, severing no ligament but opening directly into the kneejoint. On flexing the knee any injury is apparent, any loose or distorted cartilage is snipped off with scissors, and the joint at once closed. Formerly he sought to fix the distorted cartilage with sutures, but this has been abandoned and no evil results have obtained. Failure to effect a complete and permanent cure is very rare. [A.B.C.]

Circular Incision for Varicose Veins of the Leg.—Wenzel² has had unsatisfactory results following Trendelenburg's operation because of the small veins becoming enlarged and taking on the function of the large saphenous vein. To avoid this difficulty he has used circular incision through the skin and division and ligation of all veins (as suggested by Schede). He has performed this operation 26 times, with primary union resulting in every case and no recurrence of varicose veins or ulcers after healing. He advises incision at the junction of the lower middle third of the thigh, never lower than this, and sometimes somewhat higher. The skin nerves should be avoided as far as possible. The operation should not be performed in case there is probably any obstruction of the deep blood channels or lymph channels or as in phlegmasia alba dolens. It gives good results in all cases in which the return flow of blood and lymph from the skin of the lower extremity is obstructed and a stasis results. Chronic eczemas, varicose ulcers and varicose veins are permanently cured by this method. [M.B.T.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Suture of the Abdominal Incision.—As abdominal operations in various situations increase in frequency, the subject of the best way to suture the abdominal wall becomes one of increasing importance. To the abdominal surgeon who has possibly performed a most skilful operation and relieved his patient from some pathologic condition which menaced the life, nothing is more unpleasant than to find himself severely criticised, and his best efforts unappreciated, because of the development of a hernia which occurs in the line of incision. If the hernia occurs after the wound has healed by first intention, it must be attributed to a failure in the union of the fascial layer, which is the most important part of the abdominal wall. In suppurating wounds there is invariably a thinning of the abdominal wall on account of the destruction of the fatty layer. In many instances the use of drainage tube or gauze, the almost obsolete extraperitoneal method of treating the stump after

¹ Berliner klinische Wochenschrift, Vol. 39, p. 146, 1902.

² British Medical Journal, March 29, 1902.

³ Wiener klinische Wochenschrift, February 20, 1902.

⁴ Berliner klinische Wochenschrift, Vol. 39, p. 142, 1902.

¹ British Medical Journal, April 12, 1902.

² Berliner klinische Wochenschrift, Vol. 39, p. 122, 1902.

hysterectomy, or the partial closure of the abdominal incision after incomplete operations on cysts of gestation sacs, may be predisposing factors in the production of postoperative hernia. And the fact that hernia so frequently follows drainage through the abdominal incision, is a strong argument in favor of postural or vaginal drainage in cases in which it is feasible. Abel, who studied 665 cases operated upon in the Leipsic gynecologic clinic under Zweifel's directorship, did a vast amount of work in conducting an indefatigable investigation in order to secure accurate information in regard to the production of hernia. He noted that in 38% of the cases in which hernia developed, it occurred in the first half-year, 26% within the second half-year, 13% within the second year, and 23% still later. He carefully studied the results of different methods of suturing and the influence of varying degrees of suppuration, and concluded that undisturbed healing is the primary factor in faultless union of the cicatrix; that cases in which fascial sutures were introduced showed least amount of hernia; that the longer the incision the greater the chances for postoperative hernia; and that women with excessively fatty abdominal walls are specially prone to suppuration, and consequently more apt to have hernia. Abel believes that the abdominal bandage has absolutely nothing to do with the prevention of hernia.

Clark,¹ in reviewing Abel's paper, contrasts the results of incision through the rectus muscle and in the linea alba and is firmly convinced that it matters not where the incision is made, provided the fascia is firmly coapted and held so until perfect union has taken place. He calls attention to the silver wire sutures as used by Halsted, but finds this method not entirely free from criticism; for even in instances in which the wound may have healed per primam, the wires have worked out to the surface and have been spontaneously discharged or have been removed. Davison,² of Chicago, says that in suture of the abdominal wall after laparotomy the ideal method of approximation is that of layer-to-layer apposition, uniting peritoneum to peritoneum, fascia to fascia, and skin to skin by independent planes of suture. The ideal suture-material is one that can be rendered sterile by boiling in water, that will remain sterile while in the tissues, and that will cease to exist in the tissues when healing is complete and its function has been accomplished. He believes that the sterilization of catgut is difficult and uncertain; that the absorbable sutures eventually break down and pulpify, liberating imprisoned germs and making a line of culture-material, producing later infection in the wound, even after primary union has occurred. Permanent buried sutures are not ideal; for after healing has occurred and their function has ceased, they are either insistent in the tissue, or are surrounded by granulation tissue, and may be extruded months or years after the operation. He describes a method of closing the abdominal incision by suturing each layer with a continuous silkwormgut suture, the ends of which are left out at the angles of the wound so that the sutures may be removed by traction when healing is complete. The advantages of this method of suture are: Certainty that all suture or ligature material placed in the wound has been made sterile by boiling in water, accurate layer approximation of tissue, removal of the buried sutures when healing is complete, capillary drainage from each layer, safety of intestines from injury during the application of the sutures, rapidity of application, minimum line of irritation on the peritoneal surface and consequent adhesions to the viscera, slight scar in the skin, there being no perforation of the skin by sutures; all the advantages of a permanent buried suture without the danger of future irritation and extrusion of the knot, and the advantages

of an absorbable suture without the danger of sepsis from the suture, and without producing a nidus for septic germs from the blood current during absorption.

Fellenberg and Daniel, in the *Centralblatt für Gynäkologie*, No. 15, recommend the use of suprapubic transversal incision as less liable to postoperative hernia than the longitudinal. Daniel especially advocates Pfannenstiel's modification of the transverse incision, in which after cutting through the skin, fatty layer and fascia, the muscle and peritoneum are incised longitudinally, and the wound is sutured in three or four layers. He considers this method as an absolute protection from hernia in all classes of cases to which it is adapted, as inflammatory diseases of adnexa and malpositions of the uterus; but the transversal incision is not practicable in cases of large adnexal tumors, in uterine myomas, or ectopic gestation. Many American celiotomists have secured satisfactory results by using a continuous suture of fine chromicized catgut for the peritoneum and fascia, and by the use of interrupted silkwormgut sutures which include all of the abdominal wall except the peritoneum. The absorbable suture approximates accurately the peritoneum and the fascial layer, while the silkwormgut stronger suture bears the strain during the healing process. It is undoubtedly true that finer strand catgut can be so thoroughly sterilized that it does not produce either irritation or infection.

Surgical Treatment of Puerperal Pyemia.—Trendelenburg¹ discusses the different forms of pyemia, the difficulty of diagnosing puerperal pyemia, of differentiating it from other forms of puerperal infection, and its comparative frequency. Among 43 sections of women who died of puerperal infection, 21 had pyemic thrombosis. This is more difficult to treat surgically than otitis, or thrombosis of the transverse sinus, because it cannot be so readily and definitely located, since it may be in the hypogastric vein, or the ovarian vein or both, and on one or both sides. Trendelenburg, in conclusion, gives the history of a patient who suffered abortion in the second month, on August 31. September 16 there was a diagnosis of septic pyosalpinx. On the nineteenth the abscess was punctured and drained through the vagina, streptococci being found in the pus. As the symptoms continued, on October 12 there was a resection and ligation of the right hypogastric vein. Ten days later the chills returned, increasing in frequency and duration until November 12 when, through an incision from the angle of the eleventh rib backward, a piece 5 cm. in length was resected from the ovarian vein, a greyish yellow thrombosis removed and the vein ligated. The chills grew milder, but did not entirely cease until, 16 days later, a subcutaneous, metastatic abscess was opened in the region of the shoulder blade. Three weeks later the patient left the hospital still weak, but entirely well. Trendelenburg says this is the first case of puerperal pyemia cured by resection and ligation of the veins, but he thinks more will follow, and hopes that eventually not only the chronic, but also acute forms of puerperal pyemia will be successfully treated by surgical means. [W.K.]

Observations on the Menopause.—G. M. Cook² emphasizes the fact that the menopause is a physiologic change natural to the female, and should not cause ill health. The prevailing notion among women that any unusual disturbance occurring at this time is merely an incident of the period is an unfortunate belief; for it often leads them to neglect seeking medical advice until disease has made a disastrous advance. There is no reason why flooding should occur from a normal uterus at the menopause; and when it does, it is pathologic and not normal. Out of many cases he cites two in confirmation of this statement. [W.K.]

Present Position in Relation to Mammary Cancer.—Sir William M. Banks³ believes that cancer is increasing in frequency; that it is probably most common in low areas which are often flooded and are characterized by alluvium and subsoil; that it is not among the wretched and half-starved that

¹ *Progressive Medicine*, Vol. II, p. 179.

² *Annals of Surgery*, March, 1902.

¹ *Münchener medicinische Wochenschrift*, April 1, 1902.

² *American Journal of Obstetrics*, March, 1902.

³ *Liverpool Medico-Chir. Journal*, March, 1902.

this disease is most prone to occur, but rather among the healthy and well-fed; and that among men who eat heavy food in ever increasing quantities the proportionate increase of cancer is greater than among women. In England the classes most prone to this disease and among which the increase is most marked are those who eat and drink abundantly and do not take much exercise. Today the modern scientific inquirer asserts that there is nothing constitutional at all about cancer, that it is a purely local disease, but Banks thinks that a hereditary tendency to cancer is transmissible. Sometimes mammary cancer may be due to traumatism. Conditions closely simulating mammary cancer are chronic mastitis, a small, chronic abscess, or a small fibroadenoma. When there is any doubt, put in a small trochar and make the diagnosis sure. Recent investigations seem to have demonstrated the existence of cancer bodies or parasites, which are always found at the marginal parts of carcinomatous tumors where the most active growth is going on. They multiply by dividing into two by the process of budding, some say by spores. These structures are not found in any healthy tissues and in no other neoplasm except sarcoma. Many investigators regard this cancer body as a blastomycetes, which is a developmental stage of certain fungi. These parasites are mostly inside the epithelial cancer cells, and doubtless act as an irritant, causing them to proliferate. From these parasites cultures in certain media can be made, which injected into animals produce growths of a fatal character which contain these parasites. Banks is of the opinion that the infectivity of cancer has not been clearly proved, and that this is not the time for positive assertion but for patient experiment and collection of facts. [W.K.]

Prolapsus Uteri.—Operations for uterine prolapse must either rebuild the pelvic floor or strengthen the peritoneal support, and generally both are necessary. Wenning¹ reports the case of a woman of 38, who first consulted him in February, 1900. He found an enormous ulcerating mass nearly as large as a man's head, emitting a disgusting odor, protruding from the vagina. This was the prolapsed uterus, and associated with it the bladder and part of the rectum. It was treated with hot boric acid solution, etc., to cleanse and heal the surface and reduce the mass, after which the cervix of the elongated uterus was removed and vagina narrowed by anterior and posterior colporrhaphy and perineorrhaphy. When the patient left the hospital the uterus seemed in good position, but in 11 days she returned with a recurrence of the prolapse. The abdomen was opened, the much enlarged appendages removed, and the uterus was attached to the abdominal wall. It was now thought there could not be any relapse, but a few months later the woman returned suffering from a large cystocele, surmounted apparently by the descending uterus. The abdomen was again opened, but the uterus was intact as sutured, with the cervix high above the pelvis. The incision was closed, and an exploration through the bladder and vagina showed that the mass was a fibroid tumor of the anterior vaginal wall. This was carefully incised down to the bladder wall and the rent closed with silkwormgut. Three months later there was a recurrence of the cystocele, with uterine prolapse. Vaginal hysterectomy was now performed and the vagina narrowed. But the recurrence of the cystocele led to still another operation, the obliteration of the vagina. The patient is now in a fairly comfortable condition. A great difficulty in the entire management of the case was the sodden and edematous nature of the tissues. [W.K.]

Diphtheria in the Newborn.—Diphtheric infection of the newly-born child appears to be an accident of extreme rarity. G. A. Auden² reports a case of this kind. A full-term, healthy child began on the eighth day with a greenish, slightly blood-stained discharge from the left nostril. The next day both nostrils were affected, and on the tenth the breathing was difficult, both fauces were edematous and upon each tonsil there was a typical fold of membrane; 200 units of antitoxin were at once injected and repeated in four hours, three doses being given. The temperature, which had been 101°, soon subsided, and the child quickly recovered. A pathologic examination of

a swab taken from the throat showed the presence of diphtheric bacilli. The mother had suffered from a severe sore throat a few days before confinement, and this was probably the source of infection. [W.K.]

A Case of a Uterus Incarcerated in a Pessary.—G. Wiener¹ reports the case of a woman of 73 suffering from prolapse of the uterus which was relieved by the introduction of a pessary. Some days later the patient had a very difficult bowel movement, a few hours after which she was seized with severe pain in the genital organs and she herself perceived a partial return of the prolapse. When the case came under the observation of Wiener, he found that the portio vaginalis had been drawn through the ring pessary and was so swollen that the pessary, which sat like a ruffle upon the uterus, was immovable and pressed so firmly upon the urethra that a catheter could not be introduced. Chloroform was administered, the pessary was divided with bone-cutting forceps and removed; but the uterine membranes were so injured that amputation was necessary. This operation was a complete remedy for the prolapse. Neugebauer, in the *Archives of Gynecology*, has collected from literature 15 cases in which there was incarceration of the vaginal portion of the uterus by a ring pessary; in three of these, as in this case, the Schalen pessary was used. [W.K.]

Icterus of Pregnancy.—H. Benedict² reports the cases of two sisters who both suffered from icterus during pregnancy. In the case of the elder the symptoms would begin about the second month and terminate in abortion about the seventh month, when all symptoms of the icterus disappeared. The history of the younger sister was similar. As these instances could not be classed in either of the two generally recognized forms that due to mechanic compression of the bile duct or that ascribed to acute liver atrophy, Benedict discusses their etiology, and questions whether the trouble was caused by catarrhal affection of the mucosa of the stomach and duodenum spreading to the bile-ducts, or whether it was the result of emotional causes, etc., but reaches no definite conclusion. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

Sucramine, a New Sweetening Agent.—Bellier (*Bulletin Général de Thérapeutique*, October 23, 1901) finds that sucramine presents the following characteristics: It is very soluble in water; completely insoluble in ether, acetone and benzoin; slightly soluble in alcohol; neutral in reaction and leaves no residue after combustion in free air. Its sweetening power is 700 times greater than beet-sugar. In aqueous solution it does not mix with ether when added to this solvent, but if a few drops of sulfuric acid have been previously added to the aqueous solution, it is freely miscible with ether. When the ether is evaporated a very sweet, crystalline residue is obtained. Sucramine presents all the characteristics of saccharin, except the solubility in the solvents of this substance. This insolubility indicates that it acts as one of the salts of saccharin. By boiling the aqueous solution of sucramine with magnesia considerable ammoniac is formed, which shows that it is simply the ammoniacal salt of benzoic sulfamid or saccharin. [L.F.A.]

Cacodylic Medication.—Gallois (*Bulletin Général de Thérapeutique*, October 23, 1901) employs the cacodylates in the following manner:

Sodium cacodylate	30 grains
Spirit of peppermint	1 or 2 minims
Rum	5 drams
Syrup	5 drams
Distilled water	2 ounces

A teaspoonful after each meal for 10 days, then interrupted for 10 days.

When taken by the mouth, Gallois has never seen intolerance or the phenomena of intoxication follow its use. He considers it one of the best drugs in the treatment of pulmonary tuberculosis. In bronchial catarrh in patients over 40 years it is especially valuable. Good results have followed its use in

¹American Journal of Obstetrics, March, 1902.

²Lancet, April 19, 1902.

¹Münchener medizinische Wochenschrift, April 22, 1902.

²Deutsche medizinische Wochenschrift, April 17, 1902.

scrofula, cervical adenitis, otitis and conjunctivitis, but he prefers to first use local medication, which is usually sufficient to produce a cure of these conditions. [L.F.A.]

Electric Treatment of Lupus Vulgaris.—Ohmann-Dumenseil, in Jacoby's *Electrotherapy*, says that in this form of tuberculous infection of the skin two principal methods of electrotherapy are now employed. It matters not whether the form is ulcerative, tuberculous, or verrucous, the galvanocautery, carefully used, will usually cure a case at one sitting. Of course general anesthesia is required in some cases. The latest method is that wherein the x-rays are used. The plan is to cover all normal tissue with a mask of flexible sheet-lead or of cardboard lined with tin-foil. In this holes are made corresponding to the affected areas. The distance of the tube varies from 2 to 8 inches, and the time of exposure from 6 to 20 minutes. Cure occurs in from 6 to 10 weeks. In both methods described two or three sittings may be required.

Treatment of Senile Pruritus by Brushing.—Jänicke (*Bulletin Général de Thérapeutique*, July 23, 1901) obtained great success in treating senile pruritus by brushing the affected region with a soft brush for 10 or 20 minutes, at first three times a day, then twice, then once a day, and finally every two days. The brush removes a quantity of epithelial debris. Its contact at first increases the itching, which is only calmed when the operation is finished. A hard brush should never be used. The sedative effect of the brushing is increased by the application of alcohol, which is allowed to evaporate, but should be applied only during the first, second or third day's treatment; after that it causes disagreeable and even painful sensations. Inunctions of lard or of lanolin then replace the alcohol, vaselin having a slightly favorable action. Hot or tepid baths, by causing swelling, and softening the epidermis, militate against the good effects of brushing. [L.F.A.]

Microcidin (Sodium Naphtolate).—Berlioz (*Journal des Praticiens*, January 26, 1901) has used microcidin as a powerful antiseptic for several years. Its formula is:

Naphtol B	2½ drams
Liquid caustic soda, ½	4 drams
Distilled water	4 drams

Mix the liquid soda and water in a porcelain capsule, add the naphtol and dissolve it by the aid of heat. Evaporate over a stove, avoiding the flame by covering the capsule with filter paper. The powder thus obtained is nearly white, soluble in water, 1 to 3. Concentrated solutions are brown, but dilute solutions are colorless. Microcidin is employed in solution in the proportion of 3 or 5 to 1,000. [L.F.A.]

New Anesthetic Procedure.—Laborde (*La Médecine Moderne*, May 15, 1901) reports his results with the use of the method of Drossner for the production of anesthesia by nitrous oxid gas. This consists in fixing the patient's attention by means of music just before beginning administration of the anesthetic. Thus the dread of the anesthetic is greatly lessened, it is inhaled more freely and quickly, and during the anesthesia the music often forms part of an agreeable dream; furthermore recovery is much more rapid, without the sensations of fright so often experienced. Laborde thinks this procedure may be of great service in producing other forms of anesthesia. [L.F.A.]

The Employment of Cascarella.—Liégeois (*Journal des Praticiens*, August 10, 1901) has obtained good results with cascarella in the treatment of gastric hypoacidity. In adults he employs 15 grains of powdered cascarella in cachet half an hour before breakfast and before dinner. In children up to three years he employs 2 drops of the tincture; above this age the dose is increased 1 drop for each year up to the fifteenth year. In older patients 20, 30, or 40 drops may be given at a time. This treatment produces marked improvement if continued for eight days only; if continued longer, sometimes the appetite is lost and pyrosis and gastrointestinal distention occur; in such cases hydrochloric acid should be substituted after the eighth day. This should be taken during or directly after meals. [L.F.A.]

External Employment of Acetanilid in Obstetric Practice.—Prokopieff (*Bulletin Général de Thérapeutique*, July 23, 1901) uses acetanilid as an antiseptic dressing for obstetric wounds. In 150 cases of suture of the perineum, the

sutured surface was powdered with acetanilid, and in all cases the wound remained dry and healed by first intention, although in a certain number there were purulent secretions from the uterus. Acetanilid showed marked anesthetic properties in painful wounds in the region of the clitoris, urethra or vulva. Prokopieff considers acetanilid superior to iodoform for its antiseptic and other properties, and because of the absence of odor and toxicity. [L.F.A.]

Operative Treatment of Ascites Due to Hepatic Cirrhosis.—Koutnetzov (*Bulletin Général de Thérapeutique*, July 30, 1901) concludes that ascites of hepatic origin treated by the operative method of Talma shows very good results. This treatment consists in establishing artificially a collateral circulation, adhesions and false membranes, by suturing the omentum to the abdominal wall. This procedure of Talma is preferable to that of Delagenière who recommends fixation of the liver or the gallbladder to the abdominal wall. Experiments have shown that dogs die rapidly when the portal vein has been ligated without previous fixation of the omentum, while complete or incomplete ligation of this vessel is borne perfectly well if the great omentum has been previously fixed to the abdominal wall. By this latter operation there are false membranes and adhesions formed which are very rich in vessels of new formation. [L.F.A.] [F. A. Packard and Robert LeConte report favorably of this method from their experience at the Pennsylvania Hospital.]

Intramuscular Injections of Mercury Biniodid in Local Tuberculosis and in Rebellious Eczema.—Melis (*Bulletin Général de Thérapeutique*, July 30, 1901) has successfully used intramuscular injections of mercury biniodid in oil in the treatment of three patients with cold abscesses situated in different parts of the body; and in a man having adenitis of nearly all the glands of the cervical region. Injections of oil each containing $\frac{1}{8}$ grain of mercury biniodid were given once or twice daily. This treatment resulted in rapid disappearance of all the lesions. In four cases of rebellious eczema treated by this means the author obtained equally favorable results. [L.F.A.]

The Alimentary Cure of Tuberculosis.—Bernheim (*La Médecine Moderne*, August 7, 1901) insists on the importance of the alimentary cure in tuberculosis. Great discretion must be observed in its application. It is not sufficient to tell a patient that he must eat much at frequent intervals and take nutritious food. The physician must first study the condition of the stomach, which varies greatly in different patients; in some there may be hypoacidity, in others hyperacidity. Enormous dilation of the stomach may be present, or there may be marked diminution in volume; some patients may have complete anorexia, others absolute intolerance of food. Bernheim insists on the point, generally neglected, that the stomach is often the seat of tuberculous lesions, or at least the subject of toxic troubles, bacterial in origin, which necessitate variations in the mode of treatment with each patient. An exclusive meat diet should be avoided, for although such food contains a large amount of nitrogenous elements, it contains the least amount of the numerous salts and acids which are indispensable to the vitality of the organism. A mixed diet, rich in hydrocarbons and nitrogenous elements, should be prescribed. [L.F.A.]

Suprarenal Extract as a Hemostatic.—The successful use of adrenalin chlorid by enema (1 part in 1,000 of boiled water, at a temperature of 100° F.) in the treatment of intestinal hemorrhage is reported by Douglass MacDonald,¹ of Bettwys-Coed, North Wales. [C.S.D.]

Suprarenal Extract and Adrenalin in Internal Medicine.—Benedict (*Therapeutic Gazette*, Vol. xxv, No. 10, 1901, p. 664) suggests various uses for these substances in internal medicine. A condition which he calls "chronic shock" or general weakness of the vasomotor system, clinically associated with constipation, subacid dyspepsia, gastroptosis, movable kidney, and other conditions of depression, may be treated with small doses, say 8 drops, of a 1-10,000 adrenalin solution, corresponding to $\frac{1}{4}$ of a milligram of adrenalin, three times a day. On account of the local ischemia produced by suprarenal extract, it should be given three hours or more after eating, so as

¹ British Medical Journal, March 15, 1902.

not to interfere with the physiologic congestion necessary for gastric secretion. This precaution is, however, purely theoretic. Suprarenal extract is available when a vasomotor stimulant is demanded that does not stimulate the heart, as in cases of heart disease associated with arterial depression. A case of gastric ulcer is reported in which marked improvement was brought about by adrenalin. Hemorrhages, which had occurred several times, ceased after the drug had been administered 48 hours, although vomiting occurred several times afterward. In this case a test-meal, administered a few days before the hemorrhage appeared, showed an entire absence of free hydrochloric acid, although the total acidity was 90 degrees. This hardly agrees with the prevalent view that gastric ulcer depends upon the presence of free hydrochloric acid in excess. The adrenalin in this case was given by mouth and was well borne, although even bismuth salicylate and hydrogen dioxid had been refused. Takamine's preparation is recommended, as it can be administered in definite and minute doses, is nonirritating, and introduces no indigestible or fermentable material. It may be given either hypodermically or by mouth, and is at least as cheap as cruder preparations. Adrenalin should be preferred when the vasomotor system is to be stimulated, but in the empiric treatment of suprarenal disease it is better to use the cruder extracts which possibly contain other active agents. [R.M.G.]

Antihemolytic Substance in the Blood Serum.—Camus and Paguiez (*La Médecine Moderne*, July 10, 1901) call attention to certain globulicidal substances in human blood-serum which cause destruction of blood-corpuscles. The action of these substances on the blood of man and of rabbits is variable. If present in large quantities the human corpuscles are agglutinated, but any quantity is destructive to the corpuscles of the rabbit. Besides this destructive substance there exists also another element, which appears to protect the blood from the destructive action. This may be obtained by heating the serum to 136.5° F. This antihemolytic substance, when added to fresh serum and the whole mixed with the blood of rabbits, permits no alteration in the blood-corpuscles. [L.F.A.]

Guaiaquinol.—Castel (*Journal des Praticiens*, February 9, 1901) gives this name to the neutral quinin bromo-guaiaconate. This substance appears as yellow crystals, very soluble in water, glycerin and alcohol, almost insoluble in chloroform and ether. Analysis shows that it contains 48.79% of quinin and 18.67% of crystallized guaiacol. Guaiaquinol acts as an antiseptic, analgesic and febrifuge. The author considers it especially valuable in diseases of the respiratory tract when given in the dose of 15 grains in 24 hours. [L.F.A.]

Elephantiasis of the Scrotum.—A case successfully treated by operation is reported in *Revista de la Asociación Médico-farmacéutica de la Isla de Cuba*, Vol. ii, No. 3, 1901, p. 174. The patient was 70 years old, and had noted the gradual growth of the tumor for a number of years. The operation was performed by Dr. Ogberdi in the Hospital de la Ciudad de Santa Clara. Hemorrhage was quite severe at first, but was soon controlled, and no further trouble was experienced from this cause. The tumor was removed by means of a vertical incision carried downward from the point where the penis was buried in the tissue, and two lateral incisions running at right angles from the same point. The tumor weighed 16 pounds, and after it was removed the testicles and the cord were uncovered by dividing the adhesions that held them down. They were thus easily isolated and all the superfluous tissue was cut away except what was needed to leave a firm scar. The patient was discharged completely cured at the end of 33 days, the delay being due to suppuration that occurred at one point from the patient's own negligence. Three months later he reported himself as being quite well. The article refers to another case of elephantiasis of the scrotum cured by operation, reported in the *Journal of Tropical Medicine* (Volume and number not given). [R.M.G.]

The Employment of Aspirin.—Garré (*Journal des Praticiens*, Vol. xv, No. 51, 1891, p. 810) describes aspirin, which is acetylsalicylic acid, as an analgesic and antipyretic of agreeable taste, slightly astringent, and soluble in water in the proportion of 1 to 100. Good results have been obtained with it in articular rheumatism when given in the dose of 15 grains four

times a day. The average dose is 15 to 30 grains daily, the maximum should not exceed 60 grains daily. Large doses cause abundant sweating and a marked fall in temperature. No poisonous effects were observed from its use. Aspirin produced no irritation of the stomach, and none of the disagreeable effects sometimes observed after the administration of sodium salicylate. [L.F.A.]

Cure of Snake Bite by Antivenene.—A case is quoted (*Georgia Journal of Medicine and Surgery*, Vol. ix, No. 6, 1901) from the *London Times*, on the authority of "an Indian correspondent." The snake was supposed to have been a cobra. Although the patient's condition was apparently hopeless, a full dose of Calmette's antivenene was administered. Consciousness is said to have returned in 15 minutes after the first dose, and the medical man was encouraged to give another dose of the serum. The patient is said to have been well within three hours of the first injection. [R.M.G.]

Guaiaacol in Neuralgia.—For spasmodic contractions of the uterus 10 or 12 drops of guaiacol may be rubbed gently over the organ. It is also useful in facial neuralgia, 5 or 10 drops being gently stroked into the skin. Equally good results are said to have been obtained in cases of muscular pain. [R.M.G.]

The advantages of electrolysis in the treatment of urethral strictures are enumerated by Newman (*Advanced Therapeutics*, Vol. xx, No. 1, 1902, p. 22). Electrolysis is applicable to all strictures in any part of the urethra; it causes no pain or inconvenience and is devoid of danger; it is not followed by hemorrhage, fever or any other unpleasant consequences; it relieves at once; the patient is not prohibited from attending to his daily work or business while under treatment, and no relapse takes place. The article describes the technic and the instruments and appliances required, illustrations of which are given. [R.M.G.]

Cacodylic Treatment.—Gautier (*La Médecine Moderne*, July 3, 1901) considers that the best means of giving the cacodylates in tuberculosis and various cutaneous affections is hypodermically; in this way they may be given in doses of 7½ grains. In four patients who had received from 5 to 10 grains of sodium cacodylate by mistake, no untoward symptom developed, but on the contrary they were much improved. The ordinary dose is from ½ grain to 1½ grains daily, with an intermission of a week, every eight days. Absorption by the mouth should be abandoned, as the very poisonous cacodylate of cacodyl may easily be produced in the digestive tract. [L.F.A.]

The Treatment of Prostate Hypertrophy by Dilation.—Ciminger (*Therapeutic Gazette*, Vol. xxv, No. 10, 1901, p. 664) believes that urinary troubles accompanying enlarged prostate glands are often erroneously attributed to the latter cause, the difficulty being that the expulsive forces of the bladder are weak while the resisting force remains practically unchanged. Accordingly, one of two things must be accomplished: the expulsive force must be raised or the resisting force lowered. The first was found impracticable, but the second was attempted in the following manner: A urethral dilator was introduced and the neck of the bladder slowly but thoroughly stretched, after which the bladder was cleansed with boric solution. In doing this the cavity was slowly but forcibly enlarged as much as the presence of certain organic changes would permit. The relief that followed was quite encouraging. In a more hopeful case distention of the neck of the bladder was practised two or three times a week for several weeks with complete success. It is suggested that if a means could be found for exerting constant pressure without injuring the surrounding structures, the principle that pressure favors the absorption of enlarged glands might be utilized at the same time. [R.M.G.]

Treatment of Tetanus.—Maragliano (*La Médecine Moderne*, September 4, 1901) believes that bromids, chloral, and opium give the best results in the treatment of tetanus. The daily administration of from 200 to 400 grains of chloral, with absolute isolation of the patient, represents the best symptomatic treatment. The hot bath also gives good results. Maragliano has employed the antitoxin serum of Behring, and of Tizzoni, of Bologna. That of the latter gave the greatest satisfaction; out of 38 patients treated with the serum of Tizzoni, only 4 deaths occurred, while out of 19 cases treated with the serum of Behring there were 6 deaths. Extraordinary results have been

obtained by the hypodermic injection of carbolic acid, as recommended by Baccelli. Nine to 12 grains, and even 15 grains, may be injected daily without producing any symptoms of intoxication. Out of 31 cases treated by carbolic acid, there was only 1 death. The drug must be employed in very large doses, proportionate to the gravity of the case. Baccelli believe that this treatment of tetanus is the best. [L.F.A.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Echinacea (*Hahnemannian Monthly*, March, 1902) is praised in all conditions in which "blood poisoning" is a prominent feature. Typhoid fever cases treated by echinacea are said to run, as a rule, a mild course. [R.M.G.]

FORMULAS ORIGINAL AND SELECTED.

Bromid Elixir.—The *Bulletin Général de Thérapeutique*, Vol. cxliii, No. 6, 1902, p. 240, recommends:

Potassium bromid	} of each 2 drams
Sodium bromid	
Ammonium bromid	
Tincture of gentian	1 dram
Alcohol, 90%	6 drams
Syrup of bitter-orange peel	4 ounces
Water enough to make 6½ ounces.	

One tablespoonful contains about 30 grains of the mixture of the three bromids. [L.F.A.]

PATHOLOGY.

R. M. PEARCE

Primary Intradural Tumors of the Optic Nerve.

—The first report of growths of this kind is given by Scarpa in 1816. He describes an orbital growth which had origin apparently in the external sheath of the optic nerve. Wishart, however, in 1833 gave a much clearer description of this form of growth, and it is from this date our exact knowledge of these tumors begins. Goldzieher, 1873, was the first to treat the subject of primary tumors of the optic nerve under a general heading, though v. Graefe, 1864; in discussing the features of his first two cases had already given a careful description of the tumors with their diagnostic features.

Still further advance in the development of the subject was brought about in 1874, when Leber drew attention to a more exact classification of the tumors affecting the optic nerve. Since Leber's time the subject has been enriched by a large number of excellent pathologic and clinical reports, among which may be mentioned especially those of Willemer, Jacqs, Byers, etc. Intradural tumors of the optic nerve, though varying in minor details, possess in general a very characteristic structure. In every instance, of course, the capsule is formed by the dural sheath. As a rule, this capsule as it surrounds the tumor forms a uniform covering varying from 0.5 to 1 mm. in thickness, which can be, as a rule, stripped away from the structures beneath; exceptionally the capsule is thickened and adherent as it passes over the surface of the enlargement, or, on the other hand, thinned and attenuated. The tumors vary considerably in size; the largest reported cases having reached the dimensions of a goose-egg. A considerable difference is also present in the form of these growths, depending upon the situation and extent of the new tissue growth in the subcranial space as well as upon the changes in the nerve proper. What is generally the case is that a piece of normal or uniformly enlarged nerve exists between the globe and a more or less marked swelling upon the posterior two-thirds or three-fourths of the nerve, and the commonest appearance produced is that of a pear-shaped body. The tumor may, however, occupy that portion of the nerve next to the globe so that the posterior portion of the optic nerve is not involved. In numerous instances, on the

other hand, the swelling has extended the whole length of the nerve with the zone of maximum development falling somewhere in the middle third of its course.

The core of these enlargements is formed by the nerve proper and is pia, while between these structures and the dural sheath in the distended subdural space a layer of cell overgrowth is present. The nerve may, however, lie to one side of the growth. A study of longitudinal sections shows that while in a few cases the growth is entirely confined to the orbital portion of the optic nerve, in the great majority of instances the excised tumor is incomplete and must necessarily have been connected with a remaining portion within the cranium. In a large percentage of cases both within and without the nerve proper go hand in hand, yet in a very limited number of examples this structure may be more or less spared.

The consistence of the tumors varies from dense and firm to soft and fluctuating masses, though as a rule they possess an elastic feeling of varying degree. The presence of cysts also modifies the general resistance to touch. In color, they vary much in appearance, but are usually reddish-grey.

In studying the microscopic details of these tumors one may be confused by the large number of different terms which have been used to characterize the conditions present. The complexity is not so great, however, as would seem at first sight, for we must remember that the diagnosis has been incorrect in numerous instances because of the imperfectly developed examination methods of the past and because of our misconceptions as to the embryologic significance of different tissues. A striking example of this is the classification of so-called gliomas with the connective tissue tumors. Without entering into a discussion concerning the various errors which have arisen from such mistakes, it will be sufficient to draw attention to the fact that the growths under consideration have one feature in common, viz., their origin from mesoblastic tissue.

Various forms of mesoblastic tumors are found and even in the same growth different types of tissue are discovered. We may have bundles of fibrous tissue, masses of young connective tissue cells, areas of edema and mucoid degeneration, and dilation of the lymph spaces all in the same tumor.

We may say then in general that these tumors may be classified with the fibromas, sarcomas, or endotheliomas.

The Experimental Production of Edema and Dropsy.

—Albu¹ was able to produce, by infusion of physiologic salt solution into the jugular vein of rabbits, edema and dropsy. This was produced after extirpation of one or both kidneys, after destruction of the secreting kidney cells by calcium chromate, or with perfectly normal kidneys. It was necessary, however, in the last case to employ a greater quantity of fluid, since a very large part of the infused fluid was very soon secreted again. The temperature of the infused fluid also played an important role in the production of edema. A slow infusion produced no results, but when the fluid was introduced at the rate of from 3 to 4 cc. a minute a marked effusion took place. In nephrectomized animals edema appeared during the effusion but reached its highest degree somewhat later. The author considers hydermia, plethora, and abnormal permeability of the capillary walls as the important points in the production of edema. [W.F.H.]

Amyloid Substance and Amylaceous Bodies in Multiple Syphilitic Tumors of the Bones, with Remarks on the Relation of Amylaceous Bodies to Amyloid Substance.—W. Ophüls² gives an exact description of the pathologic findings in a case of multiple syphilitic bone tumors. He found these tumors in the sternum, ribs and vertebrae, with deposits of amyloid and amylaceous bodies in them and the surrounding tissue. The case also showed amyloid degenera-

¹ Virchow's Archiv., Bd. 166, S. 87, 1901.

² Journal of Experimental Medicine, Vol. v, 1900.

tion of the kidneys, heart and spleen; interstitial and parenchymatous nephritis, hydrothorax, ascites, hydropericardium, anasarca, and chronic passive congestion of the abdominal organs. He believes the amyaceous bodies are composed of a substance identical with, or at least very similar to amyloid. There is, however, a difference in that the material composing the amyaceous bodies is crystalline, while that of amyloid is amorphous. Ophüls proposes to use the old term "bacon-like," employed by Rokitsansky. [W.F.H.]

On the Origin of Muscular Spasm in Tetanus Poisoning.—L. Zupnik,¹ of Prague, calls attention to the experiments conducted by Pohl and himself as to the pathogenesis of tetanus and their resulting conclusion that tetanus toxin must possess some specific relation to muscular tissue in that in peripheral organs it seizes upon the muscular cells producing muscular rigidity, while in the central nervous system it affects only the motor ganglion cells of the spinal cord, producing increased reflex excitability and tonic spasm. These views are criticised and contradicted by Hans Meyer, of Marburg, in a subsequent article. [C.S.D.]

Some Pathologic Findings in Ricin Poisoning.—The fatal toxic dose of ricin for dogs in 24 hours, leads to a marked increase of eosinophile cells in the blood, and frequently products of cell-destruction are present in considerable quantity. In this cell destruction, there originate forms which cannot be distinguished from blood-platelets having origin in another manner. Franz Müller² assumes, therefore, that blood-platelets have origin not only from the destruction of erythrocytes, but also from leukocytes. The bone marrow is poor in acidophile elements. In the liver is found marked congestion, hemorrhage, and areas of necrosis. There is no marked fatty degeneration. The kidney reveals swelling of the epithelial cells, nuclear destruction, dilation of glomerular capillaries, and numerous hemorrhages beneath the epithelium of the pelvis. [W.F.H.]

New Pus-forming Bacterium.—Stefansky,³ of Odessa, has isolated from an abscess of the leg a pyogenic microbe which he has named *Bacterium pyogenes ramosum*. It adds to the interest attaching to sewage-tainted water supplied to cities to know that this organism flourishes in hydrant water. [C.S.D.]

Syphilis of the Spleen with Special Consideration of Splenic Tumors in the Secondary Stage of Lues.—Bruhus⁴ found by percussion and palpation in 60 cases of secondary lues a splenic tumor which disappeared with specific treatment. In four cases of malignant syphilis, a splenic tumor was present in two. Earlier statistics show a higher percentage of splenic tumors which is accounted for perhaps by the fact that percussion alone was employed in the detection. No relation can be found between the severity of the case and the condition of the spleen, or between the treatment and the disappearance of the tumor. [W.F.H.]

The relation of the Islands of Langerhans to diabetes mellitus is discussed by Schmidt⁵ of the Pathological Institute of Strasburg—and the fact of their being of an epithelial instead of a lymphatic nature is pointed out as well as their being permanent structures rather than transitory developmental stages, as held by Lewascheu. [C.S.D.]

Dermoid Cysts and Teratoma of the Anterior Mediastinum.—Christian⁶ reports a case of dermoid cyst of the anterior mediastinum occurring in a woman of 38. His work includes not only a careful description of the clinical as well as pathologic findings of this case, but a complete review of all cases of this class reported up to the present time. He has brought the results of this review together in a tabulated form, which, embracing symptoms, duration, signs, and a short pathologic description of each case, makes a very convenient work of reference. The autopsy of Christian's case showed a tumor mass in the anterior mediastinum lying between the pericardium and the inner surface of the right lung. The tumor extended from the diaphragm to a point 4.5 cm. above the

bifurcation of the trachea and was found attached to the whole inner surface of the right lung from its base to a point 6.5 cm. below its apex. It was found in apposition to the diaphragm over an area about 9 cm. in diameter but not adherent to it. Anteriorly it is bounded by the chest wall and a small part of the lower portion of the upper lobe of the right lung. Posteriorly it is in direct relation with the lower lobe and lower part of upper lobe of right lung. The right primary bronchus lies just behind and in close relation to the upper portion of tumor mass. No pedicle is found connecting it with structures of the chest. Incision into the tumor allows the escape of considerable fluid and solid material, which is greasy, soft, friable, and full of long, delicate, curly, blond hairs. In thickness, the wall of the cavity measures 2 to 3 mm. The cyst is lined with a smooth, glistening, whitish membrane in which, on the right side, are scattered small bony plates. The entire inner surface of the tumor is trabeculated and running out from the main cavity are several small culdesacs varying from 0.5 to 1.5 cm. in diameter. Between one of these and a medium sized bronchus there is an opening 0.5 cm. in diameter. At one point in the wall there is found a polypoid excrescence, the general dimensions of which were 4 x 2 x 2 cm. Microscopic examination of this excrescence shows the surface covered with stratified epidermis. In the corium are numerous well-developed sebaceous glands and a few hair follicles, but no sweat glands. There is only slight induration of papilla formation. In his summary, Christian emphasizes the fact that dermoid cyst and teratoma of the anterior mediastinum are located most frequently immediately behind the upper portion of the sternum from which they may grow out into the lung or down between heart and lung. [W.F.H.]

Mast Cells in Exudates.—Recalling the solubility of the granules of mast cells in water Dr. Alfred Wolff,¹ of Berlin, has succeeded, by the use of an alcoholic solution of methylene blue (Nakanishi's method), in demonstrating in pleuritic exudate the presence of mast cells which he holds to be derived directly from the blood. [C.S.D.]

The Etiology of Acute Dysentery in the United States.—E. B. Vedder and C. W. Duval's² problem was to establish the identity of the organisms isolated by Shiga, Flexner, Strong and Kruse from the stools of patients suffering from acute dysentery, and also to discover the cause of acute dysentery in this country and to identify it with the organisms of the above mentioned observers. Close comparisons of cultures obtained from the several observers showed slight, if any difference, between them. This was determined by the study of colonies, cultures, etc., over a considerable period of time. The study of the etiology of acute dysentery in this country consisted in the careful examination of stools from patients in the Philadelphia Hospital, cases in the Lancaster County Almshouse and Insane Asylum, and also in the Springside Home, New Haven, Conn. Many of these cases showed a bacillus present in the stools which agreed in all ways with *Bacillus dysenteriae* of Shiga. The results of this work are exceedingly interesting, and they clear up wonderfully the etiology and pathology of the dysenteries. [W.F.H.]

Hemorrhagic Septicemia of Pheasants.—E. Klein,³ of London, has recently isolated a new species of bacterium pathogenic to pheasants, to which he has given the name *Bacterium phasianicida*. [C.S.D.]

Modern Theories of Immunity.—Weichardt's⁴ paper is an excellent summary of this difficult subject from the standpoint of Ehrlich's theory. [D.R.]

Experimental Researches Upon the Pathogenesis of Aneurysms.—A. Fabris⁵ employed two methods to produce aneurysms experimentally in dogs and rabbits: First, with trauma, by introducing a sharp probe into the carotid or femoral artery through a branch and abrading the vessel wall, and further by cauterizing the vessel on the outer side. The first method did not succeed in producing a widening of the vessel. The degeneration of the vessel wall because of trauma being

¹ Wiener klinische Wochenschrift, January 23 and February 27, 1902.

² Ziegler's Beiträge, Bd. 27, S. 331, 348.

³ Centrbl. f. Bakt. Parasit. u. Infektkd., Bd. 31, Hft. 3, 1902.

⁴ D. Arch. f. klin. Med. Bd. 64, 5, 450.

⁵ Münchener medicinische Wochenschrift, January 14, 1902.

⁶ The Journal of Medical Research, Vol. vii, No. 54, p. 54.

¹ Münchener medicinische Wochenschrift, February 11, 1902.

² Journal of Experimental Medicine, Vol. vi, No. 2, p. 181.

³ Centrbl. f. Bakt. Parasit. u. Infektkd., Bd. 31, Hft. 3, 1902.

⁴ Münchener medicinische Wochenschrift, December 24, 1901.

⁵ Virchow's Arch., Bd. 165, 1901, S. 439.

followed by reparative regeneration. The elastic fibers were in part newly formed, in part especially in the media, by simple hypertrophy of the preexistent ones. Positive results followed, however, the second method of investigation, in which silver nitrate was used chiefly as a caustic. In such cases 1 to 1.5 cm. of the exposed vessel was cauterized, some segments severely. The results were then studied over a period of from two days to three months. A widening of the vessel wall occurred in a few days, by the proper gradation of the cauterization so that the vessel would not rupture, and at the same time sufficiently deep to produce an effect. The histologic changes consisted in a degeneration of the elastica, white fibrous tissue and muscle fibers of the vessel wall and in such a way that the nucleus disappeared first. The reparative process leads to the production of scar tissue without the restoration of functionally important tissue, especially elastic fibers, to an adequate degree. Thrombus formation occurred either not at all or to a very slight extent. [W.F.H.]

On a Cyst Originating from the Ductus Thyreoglossus.—In view of the small number of cases reported of cysts of the anterior median cervical region, that described by G. Canby Robinson,¹ of Baltimore, is of interest. The unilocular cyst, lying in the median line, was found to be firmly connected with the center of the hyoid bone, and to be lined with ciliated columnar epithelium, and may therefore be interpreted as derived from the ductus thyreoglossus. [C.S.D.]

The Theory of the Antibodies.—Gruber² continues his admirable discussion of the subject of immunity, dealing this time with bacteriolysis and hemolysis. The article does not lend itself to abstracting. [D.R.]

Osteomyelitis.—The etiology of osteomyelitis and phlegmon is extended by the report of a case by F. Schlagenhauser,³ of Vienna, the causative microbe of which he proves to be identical with *Bacillus pneumoniae*, Friedländer. [C.S.D.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended May 10, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Birmingham.....Mar. 1-31.....	11	
California:	San Francisco.....Apr. 20-27.....	3	
	Stockton.....Apr. 1-30.....	20	
Colorado:	Denver.....Apr. 19-26.....	7	
Illinois:	Belleville.....Apr. 26-May 3.....	5	
	Chicago.....Apr. 26-May 3.....	5	
	Galesburg.....Apr. 26-May 3.....	4	
Indiana:	Evansville.....Apr. 26-May 3.....	5	
	Indianapolis.....Apr. 26-May 3.....	8	
	Muncie.....Apr. 1-30.....	3	
	South Bend.....Apr. 26-May 3.....	4	
	Terre Haute.....Apr. 26-May 3.....	3	
Iowa:	Ottumwa.....Mar. 29-Apr. 20.....	18	
Kansas:	Wichita.....Apr. 26-May 3.....	4	
Kentucky:	Covington.....Apr. 27-May 4.....	5	
	Lexington.....Apr. 26-May 3.....	1	
	Louisville.....Apr. 27.....	2	
Maine:	Portland.....Apr. 26-May 3.....	1	
Maryland:	Baltimore.....Apr. 26-May 3.....	1	
Massachusetts:	Boston.....Apr. 26-May 3.....	28	4
	Brockton.....Apr. 26-May 3.....	2	
	Brookline.....Apr. 26-May 3.....	1	
	Cambridge.....Apr. 26-May 3.....	1	
	Malden.....Apr. 26-May 3.....	6	
Michigan:	Apr. 19-26 Present at	110	places
Minnesota:	Ludington.....Apr. 27-May 4.....	16	
	Minneapolis.....Mar. 29-Apr. 19.....	27	
	Winona.....Apr. 19-26.....	1	
Missouri:	St. Louis.....Apr. 27-May 4.....	39	2
Montana:	Helena.....Apr. 1-30.....	4	
Nebraska:	Omaha.....Apr. 26-May 3.....	30	
New Jersey:	Camden.....Apr. 26-May 3.....	4	1
	Newark.....Apr. 26-May 3.....	50	5
	Plainfield.....Apr. 26-May 3.....	6	1
New York:	New York.....Apr. 26-May 3.....	54	14
Ohio:	Cincinnati.....Apr. 26-May 2.....	18	
	Hamilton.....Apr. 27-May 3.....	3	
Pennsylvania:	Erie.....Apr. 26-May 3.....	10	
	Johnstown.....Apr. 19-May 3.....	3	
	Philadelphia.....Apr. 26-May 3.....	15	1
	Pittsburg.....Apr. 26-May 3.....	16	

¹ Johns Hopkins Hospital Bulletin, April, 1902.

² Münchener medizinische Wochenschrift, November 26 and December 8, 1901.

³ Centralbl. f. Bakt., Parasit'kd., u. Infektionsk., Bd. 31, Hft. 3, 1902.

Rhode Island:	Providence.....Apr. 26-May 3.....	4	
South Carolina:	Greenville.....Apr. 16-26.....	6	2
Tennessee:	Memphis.....Apr. 27-May 3.....	9	
Utah:	Salt Lake City.....Apr. 26-May 3.....	4	
Vermont:	Burlington.....Apr. 27-May 3.....	2	
	Rutland.....Apr. 27-May 3.....	1	
Virginia:	Roanoke.....Apr. 1-30.....	11	1
Washington:	Tacoma.....Apr. 20-27.....	9	
Wisconsin:	Green Bay.....Apr. 27-May 4.....	3	
	Janesville.....Apr. 27-May 4.....	4	
	Milwaukee.....Apr. 19-26.....	9	

SMALLPOX—FOREIGN.

Brazil:	Rio de Janeiro.....Mar. 16-Apr. 6.....	21	
Canada:	Hamilton.....Apr. 26-May 3.....	1	
	Quebec.....Apr. 19-26.....	10	
	Winnipeg.....Apr. 19-26.....	8	
China:	Amoy.....Mar. 8-27.....	Present	
Colombia:	Panama.....Apr. 21-28.....	50	5
Egypt:	Cairo.....Apr. 1-8.....	1	
France:	Paris.....Apr. 12-19.....	5	
	Rheims.....Apr. 6-20.....	7	5
	Roubaix.....Mar. 1-31.....	1	
Great Britain:	Birmingham.....Apr. 12-19.....	2	
	Dublin.....Apr. 12-19.....	1	
	Dundee.....Apr. 12-19.....	4	
	Glasgow.....Apr. 18-25.....	7	1
	Leeds.....Apr. 19-26.....	1	
	Liverpool.....Apr. 12-19.....	5	
	London.....Apr. 12-19.....	328	42
	Newcastle-on-Tyne.....Mar. 30-Apr. 19.....	1	
	North Shields.....Mar. 30-Apr. 19.....	27	
	Southampton.....Apr. 5-12.....	1	
	South Shields.....Mar. 30-Apr. 19.....	21	
India:	Bombay.....Apr. 1-8.....	6	
	Calcutta.....Mar. 22-Apr. 5.....	13	
	Karachi.....Mar. 30-Apr. 6.....	1	
Italy:	Bovino.....Apr. 12.....	Epidemic	
	Naples.....Apr. 5-12.....	10	
Mexico:	City of Mexico.....Apr. 13-27.....	3	
	Vera Cruz.....Apr. 19-26.....	5	1
Russia:	Moscow.....Apr. 6-12.....	5	5
	St. Petersburg.....Apr. 6-12.....	10	2
Spain:	Cartagena.....Apr. 15.....	Epidemic	

YELLOW FEVER.

Brazil:	Rio de Janeiro.....Mar. 16-Apr. 6.....	105	
Colombia:	Panama.....Apr. 21-28.....	5	2
Costa Rica:	Port Limon.....Apr. 14.....	3	1
Dutch Guiana:	Paramaribo.....Mar. 1-31.....	3	1
Mexico:	Vera Cruz.....Apr. 19-26.....	9	6

CHOLERA—INSULAR.

Philippines:	Manila.....Mar. 20-29.....	84	65
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CHOLERA—FOREIGN.

India:	Calcutta.....Mar. 23-Apr. 5.....	255	
Turkey:	Djiddah.....Feb. 19-Mar. 26.....	3,000 estimated, and 1,300 deaths.	

PLAGUE—UNITED STATES.

California:	San Francisco.....Apr. 20-27.....	1	1
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PLAGUE—INSULAR.

Hawaii:	Honolulu.....Apr. 19.....	1	
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PLAGUE—FOREIGN.

China:	Pokhol.....Apr. 25.....	Epidemic	
Egypt:	Apr. 7, 1901-April 7, 1902, 382 cases and 228 deaths		
India:	Bombay.....Apr. 1-8.....	830	
	Calcutta.....Mar. 22-Apr. 5.....	1239	
	Karachi.....Mar. 30-Apr. 6.....	111	100

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended May 8, 1902:

GASSAWAY, J. M., surgeon, granted leave of absence for three days under paragraph 179 of the regulations.

STONER, G. W., surgeon, granted leave of absence for one day, May 2, 1902, under paragraph 179 of the regulations.

WASDIN, EUGENE, surgeon, granted leave of absence for seven days from May 2, 1902, under paragraph 179 of the regulations.

CARRINGTON, P. M., surgeon, bureau order of April 30, 1902, detaching Surgeon Carrington to represent the service at American Congress of Tuberculosis revoked—May 7, 1902.

GUITERAS, G. M., passed assistant surgeon, relieved from duty at Matanzas, Cuba, and directed to proceed to Philadelphia, Pa., and report to medical officer in command for duty—May 5, 1902.

WERTENBAKER, C. P., passed assistant surgeon, granted leave of absence for three days from May 3, 1902, under paragraph 179 of the regulations.

ROSENAU, M. J., passed assistant surgeon, to proceed to Wilmington, Cape Fear Quarantine (Southport), and Beaufort, N. C., as inspector, and inspector of unserviceable property at Wilmington and Cape Fear—May 2, 1902.

VON EZDORF, R. H., assistant surgeon, upon being relieved by Acting Assistant Surgeon A. B. McDowell, to proceed to Matanzas, Cuba, relieving Passed Assistant Surgeon G. M. Guiteras—May 5, 1902.

FRICKS, L. D., assistant surgeon, relieved from duty at Chicago, Ill., and directed to proceed to Boston, Mass., and report to medical officer in command for duty and assignment to quarters, relieving Assistant Surgeon John McMullen—May 7, 1902.

LYDD, B. J., assistant surgeon, relieved from duty at San Francisco Quarantine and directed to proceed to Nome, Alaska, for special temporary duty, assuming command of the service—May 3, 1902.

VOGEL, C. W., assistant surgeon, granted leave of absence for 15 days by bureau letter of April 18, 1902, revoked—May 3, 1902. Relieved from duty at San Francisco, Cal., and directed to proceed to Dutch Harbor, Alaska, and assume command of the service—May 3, 1902.

BURFORD, HUGH, acting assistant surgeon, granted leave of absence for two weeks from May 5—May 7, 1902.

FOSTER, A. D., acting assistant surgeon, granted leave of absence for 14 days from May 17—May 6, 1902.

MCCONNELL, E. F., acting assistant surgeon, relieved from duty at Havana, Cuba, and directed to proceed to Nuevitas, Cuba, relieving Acting Assistant Surgeon O. W. Stone—May 5, 1902.

MCDOWELL, A. B., acting assistant surgeon, relieved from duty at Havana, Cuba, and directed to proceed to Santiago, Cuba, relieving Assistant Surgeon R. H. von Emdorf—May 5, 1902.

STONE, O. W., acting assistant surgeon, upon being relieved by Acting Assistant Surgeon E. F. McConnell, to proceed to his home and await annulment of appointment as acting assistant surgeon—May 7, 1902.

WALKER, A., acting assistant surgeon, granted leave of absence for 14 days from May 17—May 6, 1902.

WALKLEY, W. S., acting assistant surgeon, granted leave of absence for seven days from May 7—May 2, 1902.

HUME, LEA, sanitary inspector, granted leave of absence for 30 days from May 1—May 3, 1902.

MASON, M. R., senior pharmacist, relieved from duty at San Francisco, Cal., and directed to proceed to Dutch Harbor, Alaska, and report to Assistant Surgeon C. W. Vogel for duty—May 3, 1902.

HOLT, E. M., junior pharmacist, granted leave of absence for 30 days from May 1—May 2, 1902.

SPANGLER, L. C., junior pharmacist, granted leave of absence for 15 days from May 10—May 2, 1902.

Changes in the Medical Corps of the U. S. Army for the week ended May 10, 1902:

HARVEY, Lieutenant Colonel PHILIP F., is relieved from duty as chief surgeon, department of South Philippines, and will proceed to Manila, P. I., and report to the commanding general, department of North Philippines, for assignment to duty as chief surgeon of that department.

GARDNER, Major EDWIN F., surgeon, is relieved from duty in command of convalescent hospital, Corregidor Island, and will report to the commanding general, Seventh separate brigade, for assignment to duty as chief surgeon of that brigade, relieving Lieutenant Colonel George W. Adair, who will proceed to Cebu, and report to the commanding general, department of South Philippines, for assignment to duty as chief surgeon of that department.

DARNALL, Captain CARL L., assistant surgeon, is relieved from duty in the department of South Philippines, and will proceed to Manila, P. I., and report to the chief surgeon of the division for instructions.

DE MEY, Captain CHARLES F., assistant surgeon, and Contract Surgeon Edward H. Jordan, now in Manila, P. I., will proceed to Cebu and report to the commanding general, department of South Philippines, for assignment to duty.

RHODES, First Lieutenant THOMAS L., assistant surgeon, is relieved from duty at the First reserve hospital, Manila, P. I., and assigned to duty in charge of the Army Pathologic Laboratory, relieving First Lieutenant Walter D. Webb, assistant surgeon.

BREWER, Major ISAAC W., surgeon, granted leave of absence for one month, with permission to visit the United States.

TENNEY, EDWIN R., contract surgeon, granted leave of absence for two months, with permission to visit Japan.

BELL, LEONARD P., contract surgeon, is relieved from duty in the department of North Philippines, and will report to the commanding general, department of South Philippines, for duty.

HORR, Captain EDWARD F., assistant surgeon, will report to the commanding general, department of South Philippines, for assignment to duty. Contract Surgeon William V. Kellogg is relieved from duty in the department of North Philippines, and will report to the commanding general, department of South Philippines, for assignment to duty.

HALL, Lieutenant Colonel JOHN D., granted leave of absence for 21 days.

GLENNAN, Major JAMES D., surgeon, is relieved from further duty in the department of California, and will repair to Washington, D. C., and report to the surgeon-general of the Army for instructions.

CALVERT, First Lieutenant WILLIAM J., assistant surgeon, granted leave of absence for two months, upon completion of his temporary duty at Fort Barrancas, Fla.

MONCRIEF, WILLIAM H., contract surgeon, now at Atlanta, Ga., will proceed to Jefferson Barracks for duty.

SCHIER, ANTON R., contract surgeon, now at Burlington, Iowa, will proceed to Fort Worden for duty.

STOTTS, ARTHUR F., contract surgeon, now at Ehrenfeld, Pa., will proceed to San Francisco, Cal., and report to the commanding general, department of California, for transportation to the Philippine Islands for duty.

The following-named contract surgeons will proceed from the places designated after their respective names to San Francisco, Cal., and report to the commanding general, department of California, for assignment to temporary duty: Charles L. Baker, from Augusta, Ga.; Louis A. Molony, from Cincinnati, O.

LUDINGTON, PAUL H., contract surgeon, now at Omaha, Neb., will report to the commanding general, department of the Missouri, for assignment to duty as attending surgeon and examiner of recruits in that city.

PEAKE, WILLIAM, hospital steward, now at the office of the chief surgeon, department of Cuba, Havana, Cuba, when his services can be spared at that office will be sent to Fort Casey, with permission to delay one month en route, to relieve Hospital Steward James J. Cook. Steward Cook will be sent to Manila, P. I., for assignment to duty.

GREGORY, JUNIUS C., contract surgeon, now at Tunstall, Va., will proceed to Fort Myer for duty.

WALE, Captain PHILIP G., assistant surgeon, granted leave of absence for 15 days.

EWING, Major CHARLES B., surgeon, is detailed to represent the medical department of the Army at the eleventh annual meeting of the Association of Military Surgeons of the United States, to be held at Washington, D. C., from June 5 to 7, in addition to the officers designated in paragraph 14, S. O. 78, April 2, 1902, this office. Major Ewing will proceed at such time as will enable him to reach Washington, D. C., about June 5, and upon the adjournment of the association will rejoin his proper station.

HARVEY, Captain LUTHER S., assistant surgeon, granted leave of absence on surgeon's certificate, February 17, extended one month on account of sickness.

FORD, First Lieutenant CLYDE S., assistant surgeon, is relieved from duty in the U. S. general hospital, Washington Barracks, to take effect upon the expiration of the leave granted him March 18, and will then proceed to Fort Hancock for duty.

HICKS, JOHN R., contract surgeon, is relieved from duty at Fort Screven, to take effect upon the arrival at that post of Captain Charles F. Kleffer, assistant surgeon, and will then proceed to Fort Wingate for duty.

RAFTER, JOHN A., contract surgeon, now at West Winfield, N. Y., is relieved from further duty in the division of the Philippines, and upon the expiration of his present leave will proceed to Madison Barracks for duty.

ASHBURN, JAMES K., contract surgeon, granted leave of absence March 18, extended 14 days.

PETTYJOHN, JOSEPH, contract surgeon, now on temporary duty at Vancouver Barracks, is relieved from duty in the department of the Columbia, and will proceed to his home, Augusta, Ga., for annulment of contract.

HORNE, WILLIS S., contract surgeon, is relieved from further temporary duty at Fort McDowell, and will proceed to Fort Baker for duty, relieving Contract Surgeon Alvin M. Guitard. Contract Surgeon Guitard will proceed to Fort McDowell for temporary duty.

DUTCHER, Captain BASIL H., assistant surgeon, granted leave of absence for four months, to take effect upon the arrival of First Lieutenant Clyde S. Ford, assistant surgeon, at Fort Hancock.

FORD, First Lieutenant JOSEPH H., assistant surgeon, is relieved from further duty at Washington Barracks, and will report to the commanding officer of the U. S. general hospital at that post, for duty at the hospital.

MOUNT, JAMES R., contract surgeon, now at Kansas City, Kan., will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to temporary duty in that department.

ESPIN, J. M., contract surgeon, granted leave of absence from May 1 to May 19, both days inclusive.

FLICK, JOSEPH, hospital steward, now at No. 27 Pine street, Burlington, Vt., will report on or before expiration of furlough at Plattsburg Barracks for duty. Upon the arrival of Steward Flick at Plattsburg Barracks Hospital, Steward Oscar A. Manseau will be sent to Manila, P. I., for assignment to duty.

BLOCK, Captain WILLIAM H., assistant surgeon, granted leave of absence for one month.

LYSTER, First Lieutenant WILLIAM J. L., assistant surgeon, is relieved from further duty in the division of the Philippines, and will proceed to San Francisco, Cal., and report for assignment to duty with the hospital corps company of instruction at Fort McDowell.

TWEEDIE, HEDLEY V., contract surgeon, is relieved from duty in the department of the Columbia, to take effect when in the opinion of the commanding general of that department his services can be spared, and will then proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

SMIT, CHARLES L., hospital steward, now on duty in the office of the chief surgeon, department of Cuba, Havana, Cuba, when his services are no longer needed there will be sent to Washington, D. C., with orders to report upon arrival to the surgeon-general of the Army for instructions.

CROSS, WILLIAM A., hospital steward, Fort McDowell, having relinquished the unexpired portion of furlough granted him in the division of the Philippines, is relieved from further duty in that division and will report to the commanding officer, company of instruction, hospital corps, Fort McDowell, for duty.

Changes in the Medical Corps of the U. S. Navy for the week ended May 10, 1902:

DIXON, W. S., medical director, detached from duty on the retiring and medical examining boards, Washington, D. C., and ordered to continue other duty—May 3, 1902.

MCCLURG, W. A., medical inspector, detached from the Kearsarge upon reporting of relief, and ordered to the Olympia, as fleet surgeon of the North Atlantic station—May 3, 1902.

BOYD, J. C., medical inspector, detached from the Olympia and ordered to Washington, D. C., as member of retiring and medical examining boards—May 3, 1902.

STEELE, J. M., surgeon, detached from torpedo station, Newport, upon reporting of relief, and ordered to the Massachusetts—May 3, 1902.

AMES, H. E., surgeon, detached from the Massachusetts upon reporting of relief and ordered to the Kearsarge—May 3, 1902.

SNYDER, J. J., assistant surgeon, detached from duty with recruiting party when discontinued and ordered to the Torpedo station, Newport, R. I.—May 3, 1902.

PAGE, J. E., passed assistant surgeon, granted sick leave for two months—May 7, 1902.

PRYOR, J. C., passed assistant surgeon, ordered to the Massachusetts—May 14—May 8, 1902.

HURD, I. N., pharmacist, detached from the Wabash, and ordered to the Navy Yard, Portsmouth, N. H.—May 8, 1902.

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The West India Disaster.—So prompt and generous have been the relief measures that it is announced that further contributions are not needed. The majority of the 25,000 or 30,000 deaths at Martinique were doubtless due to suffocation from sulfurous and other gases. At St. Vincent, where about 1,700 lost their lives, the principal cause of death seemed to be from burns by the lava. The hospitals at Kingston proved inadequate and army tents had to be erected as annexes. The overworked hospital staffs had about reached the limits of their endurance when relief came from Barbados and elsewhere. The stench from unburied bodies is described as terrible, so that there have been great difficulties in securing men to bury the remains. But no outbreak of infectious disease has occurred. The strange fatality is again witnessed at which the wary have always marveled, the forgetfulness of catastrophies and the braving of the conditions which have invited them. It is said that there are numerous applications for appointments as consuls, etc., at Martinique. St. Pierre will doubtless be rebuilt the same as Galveston is being rebuilt; "Vesuvius still smokes over peaceful Naples," Lisbon is a great city, and the Chinese and Japanese have apparently forgotten the desolation they experienced but a few years ago, and which will return again sometime. The study of seismology has been stimulated by the Martinique outbreak, and if the scientific books and articles now appearing are an indication of discovery we shall soon better understand volcanoes and earthquakes than ever before.

The retirement of Surgeon-General Sternberg is to be celebrated by a complimentary dinner tendered to him in New York on June 13. The circular of invitation is signed by prominent physicians of the principal medical centers of the country. Subscribers may address Dr. Hermann M. Biggs, 5 West Fifty-eighth street, New York. General Sternberg's services to the country and to the profession are too well known to need detailed description. Entering the Army in 1861, Dr. Sternberg served through the Civil War, and rose by successive grades until in 1893 he became Surgeon-General, an appointment which recognized the merits of his special services to the corps. In this office he has borne great responsibilities and has improved in many ways the organization of the medical corps, notably by the estab-

lishment of the Army medical school. In the work of the general profession he has been deeply interested. Not only have his contributions to the science of bacteriology been important and numerous, but in this country he has, by strong personal efforts and by active work in our societies, stimulated the scientific study of medicine and fostered and encouraged those researches which in the case of malaria, yellow fever, and other infectious diseases have proved to be of such enormous value. During a long series of years Dr. Sternberg has been a warm advocate of all measures to promote the public health, and has unselfishly devoted much time to the work of national and local health societies and to the establishment of efficient legislation. His contributions to our knowledge of disinfectants are of special importance. We note with pleasure that preliminary action has been taken in Congress favorable to the retirement of General Sternberg with the rank of Major-General.

The hardship of State limitation of license to practise especially affects the following classes of physicians:

1. Those living near the boundary lines of States and whose patients live in two, three, or even in four States.
2. Those who because of ill-health, a professorial call, or any other reason, are compelled to change their residence from one State to another.
3. Those who are frequently called from their residence State to another in consultation.
4. Those who spend their vacations of several months each year in other States, or who own summer homes there.
5. Young graduates who spend one or more years at home or abroad in postgraduate study, hospital service, etc., before choosing a residence and entering upon practice.
6. Army and Navy physicians who after term of service in the Army or Navy or Marine-Hospital Service wish to settle in private practice.

When we reflect that, taken together, these six classes of physicians make up a not inconsiderable portion of the numbers, and of the best men, of the profession, it is no wonder that there is a loud demand for some method of lessening the hardship they must undergo from the demand of the separate States that each shall pass a rigid

examination before license to practise is allowed. The border-line physicians, at much expense of time and money, must undergo the examinations in two, three, or even in four States. Those moving into a new State must submit to an examination in branches which they may never have studied in their college days. To the consultant or the professor, even if he is able to answer the questions, the reexamination is highly irritating and undignified. To the summer resident it is absurd that he can not treat his own patients or neighbors because he and they are not at home. To the young graduate, the reexamination when he settles down is a punishment for his more thorough outfitting in special postgraduate study. Some rational and sensible method must be devised whereby so many honorable and capable men may be spared the duplicated and unnecessary examination. It is, in their case, unprofessional and unamerican; let us have done with it.

The Specialist and the State Boards.—The specialist may belong to either of the six classes of physicians we have listed, *i. e.*, he may live near the border-lines of two or more States, he may change his residence from one State to another, he may be a consultant, he may spend his vacations in another State, or he may take postgraduate studies or engage for a time in government service before locating his home. In either case the great hardships to which the general physician or surgeon must submit because of the State limitation of license is far greater for the specialist. His work and his studies have led him away from those subjects about which the examiners make nine-tenths or ninety-nine one-hundredths of their questions. Moreover, the field of medical study has become so enormously extended of late, and actual practice so divided, that almost every practitioner is in truth a specialist. Not even the so-called country physician always or generally combines both offices of surgeon and family physician, and even in the smallest cities almost all the specialties have their representatives. Worse still, in a very few years after graduation the *alma mater* has started a dozen or more new courses of study, and the State-board examiners are not slow in "elevating their standard," so that what graduate even of a few years ago can hope to pass a modern examination? But for the specialist proper, and how many sorts there are nowadays, it is outrageously beyond human ability. When we reflect that the splendid advances of modern medicine are due in great part to the specialist, the internist, the surgeon, the bacteriologist, the pathologist, the oculist, the gynecologist, etc., it is seen that the injustice and wrong done him by the demand for reexamination by each state is one that can not much longer be endured.

The Sovereign State Governs the Right to Practise Within its Borders.—The fundamental condition of that degree of medical civilization which we have, and of progress toward a better, resides in the establishing of State examining boards which control the licensure within the territory of each. This is in accord with the constitution of the United States which gives

to each sovereign State this inalienable right. In the professional zeal to do away with quackery by the State boards of examiners we forgot, as is our wont, our own proper selfish rights, and bound upon ourselves the intolerable hardships we have noted as resulting from the State's-right doctrine. Becoming acutely conscious of them there has lately arisen a clamor for a national board of examiners or for some general extra State authority empowered to grant licenses which will be received in all the States. It is, however, plain that nothing can or should annul the right of each State to govern absolutely the right to practise within its borders. It will never renounce this right, and the action of all other boards whatsoever may be accepted or rejected at its pleasure. However constructed and whatever their authority and exalted character, none can impose its decisions upon a State. It follows that only when the examinations of such an extra State, national, or general board, are absolutely of as high a standard as to purity and scholarship as the highest of the individual States will its licenses be accepted by the high standard States. But if the standards of the extra State boards are so high, of what advantage is the extra State board? The licensee may, with few exceptions, as well take the examination of the State with which he is particularly concerned. And especially if a plan can be secured whereby such high standard State licenses may be accepted in other States without reexamination.

Politics, Sectarianism, or Sectionalism in Examining Boards.—In the many and various plans that have been put forward for a general examining board for licensure most seem to have lost sight of the danger of politics, sectarianism, and sectionalism. It has, for example, been proposed (1) that the licensee of the Army and Navy examining boards be received by all the States without reexamination; (2) that a general board be constituted of the three Surgeon-Generals of the United States, with representatives of the A. M. A. and of the Congress of Physicians and Surgeons; (3) that the licensee of the A. M. A. be accepted by the individual states, etc. These and other similar proposals forget that it will still rest with the individual States to accept or reject, and that such general boards must at once admit members of the homeopathic, eclectic, and very probably other schools of medicine. The osteopaths and eddyites and the dowieites are gaining power every day, and are already legalized practitioners in many States. How may they legally and democratically be excluded? How, also, in the name of Demos, may politics, national and commercial and medical, be excluded from such boards? Already politics is sufficiently dominant in the State boards. A word to the wise should suffice. All recent American history shows that this road leads to degradation. Let us not enter upon it. And especially if a better and safer way is open to us.

The General Examining Board is not Feasible.—Such a general examining and licensing board if established must (1) hold its examinations in the principal medical centers of the United States; or (2) the candi-

dates must travel from all the States and territories to undergo their examinations in the one city where the board elects to hold all of the examinations; or (3) the board may subdivide or appoint branch-boards to hold local examinations in different parts of the country. In either case the difficulties of carrying out the scheme seem almost insuperable. If, as has been urged, the three Surgeon-Generals of the United States are members of such a board they cannot travel with the board to hold its examinations in the different medical centers, and hence all examinations must be held in Washington. This is a hardship to the candidates from all distant parts of the United States, which would so limit as almost to annul the general usefulness of such a board. Delegation of power to subordinates or to others merely increases the difficulties and dangers. Moreover, as we have emphasized, all legal "schools" of medical practice, together with "politics" and advancing quackery and commercialism must have their voice in such boards, and at once the board becomes unworkable, of dangerous tendencies, and breaks up by its own weight.

Interstate Reciprocity and Courtesy the Only Solution of Problems of Licensure.—All methods of attacking the question of licensure by general or national examining boards will inevitably fail, because they are not feasible, against the instituted methods of progress, and beset with danger. We must, therefore, fall back upon the good old Anglosaxon plan of adapting the present machinery to changing conditions and future needs. Evolution in all biologic and sociologic things proceeds by such advance, from past decisions through present conditions, to modifications whereby slow but orderly progress is assured. Reversals of methods are neither possible nor advisable. To modify, extend and perfect the method of State licensure remains the only certain plan for us to pursue, and it is the wise one. Surely we, as a profession, and our representatives, the State Boards of Examiners, are and need not be so narrow and exclusive as to deny the right to practise within each State of reputable physicians from another State. So far as keeping out the disreputables, of limiting self-advertisers and quacks, the individual State boards can devise rules which will effect this without subjecting the honorable and capable man from the other State to a cruel and foolish reexamination. There is a great advantage of protection in this multiplicity of State examining boards; if any one abuses the privilege, or fails in its standards, the reciprocating states have a remedy in their own hands. With proper certificates and testimonials from the state whence he comes, and also from that whereto he moves, the unnecessary and bigoted reexamination may be done away with. Let a large spirit of good-will and professional benevolence be extended by each State to the honorable and capable newcomer. Such a spirit is perfectly consistent with scrutiny and denial of the unworthy. The action of the New Jersey board, noticed in our issue of May 10, points to a method of interstate reciprocity meeting the requirements of a wise exclusion, and a no less wise inclusion. A national organization or congress of the presidents or representatives of all the individual State boards should

be effected, and the conditions of interstate reciprocity and registration established, with due regard to justice to the individual practitioner, and with an equally certain preservation of professional progress assured to us by the most valuable institution of the individual State Board of Examiners. It would be well also for the House of Delegates of the A. M. A. to appoint a commission or committee to investigate thoroughly and advise the Association and the profession as to the best course to pursue.

A Worthy Tribute to Professor von Leyden.—

Advance copies of the *Internationale Beiträge zur Inneren Medicin*, the Festschrift in honor of the seventieth birthday of Professor Ernest von Leyden, of Berlin, have just reached this country. The two volumes contain tidbits of the most important original work in internal medicine in which the heads of the great medical clinics of Europe are at present interested. There is not an important university clinic in Germany which is not represented by a contribution to the work. Besides there are contributions from Paris, St. Petersburg, Vienna, Buda-Pesth, Bucharest, Helsingfors, London, Rome, Lyons, and Athens. The opening article of the volume is a sketch of Professor von Leyden's career from the sympathetic pen of his great colleague and friend, Professor Nothnagel, of Vienna. The second article describes the development of the medical clinic at the Charité Hospital in Berlin, a work in which in recent years Professor von Leyden's personality has counted for so much.

A few examples taken from the articles written by those whose names begin with one of the first three letters of the alphabet will serve to illustrate very well how practically valuable are the contents of the book. Professor Baginsky, of Berlin, writes on "The Relation Between the Serous Pleurisy of Children to the Development of Tuberculosis in Later Life." From his own experience he is of the opinion that pleurisy is by no means uniformly followed by tuberculosis, and that any possible etiologic relation between serous pleurisy and tuberculosis of the lungs years afterward is at least extremely doubtful.

Sir William Broadbent, of London, has an article on "Chemical and Physiological Constitution and Therapeutic Action." Professor Broadbent has been investigating especially the significance of iron in therapeutics. The benefits derived from the administration of iron are not due to the fact that it replaces iron in the system, but to some much more complex set of rules. The food contains abundance of iron for all systemic purposes. Salts of manganese, cobalt, and nickel, elements that resemble iron in certain chemic characteristics, produce quite as favorable an effect as iron when administered in the same way. There is but one other English article in the work. It is by Dr. Knopf, of New York, on "The Social Aspects of Tuberculosis."

Professor Celli, of Rome, has a review of the recent literature of the etiology of dysentery. He is himself one of the most important contributors to that literature. It is interesting to find that he appreciates at their proper value the work of American observers, and

especially Flexner's investigations in the Philippines. Professor Bouchard, of Paris, discusses the changes that take place in arteries during cirrhosis of the liver and that make these vessels easily liable to rupture. This degeneration of the vascular system takes place not only within the abdomen but practically all over the body and the hemorrhages to which it renders the patient liable are important as diagnostic symptoms of the affection.

Professor Jules Courmont, of Lyons, discusses the diagnosis of the eruptive febrile diseases by means of the number and character of the leukocytes to be found in the blood. He seems confident that the leukocyte formula of smallpox will prove an important diagnostic aid in the very early recognition of that disease and especially in its differentiation from the other exanthems, notably varicella. Early recognition will allow of prompt quarantine and save many risks of infection.

The auxiliary volume containing contributions from von Leyden's former pupils is, if possible, more interesting than the principal volume. It serves to bring out very well the immense influence that Prof. von Leyden has exerted on the clinical medicine of our time. Most of his pupils feel that they owe determining influences in their investigation labors to the old master at whose feet they now lay so proudly the results of their own observations. Salkowski, Eichhorst, the Klemperers, Brieger, Jaffe, Bernhardt, are but a few of the men who began a successful clinical career with von Leyden. It must spread a glow of satisfaction over the closing years of a lifetime devoted to internal medicine to have such acknowledgment of the influence that has been exerted made so graciously by men who are themselves among the leaders of modern medical thought.

The new classification of causes of death of the Registrar-General of England is chiefly noteworthy for its attempt to make these causes more exact according to the recommendation of the Royal College of Physicians. Symptoms are never to be given if it is impossible to state more accurately the exact cause. Because of the great importance of the recommendation we give, in another column, the list as published in the *Lancet* of May 10, addressed to practitioners respecting certificates of death. The added suggestions are herewith appended:

1. The cause of death should be stated precisely and briefly, English names for diseases being used in preference to their equivalents in other languages. Vague terms such as decline, tuberculosis, tabes, cachexia, etc., should be avoided, and hemorrhage should not be assigned as the cause of death without indication of its origin and probable cause. Dropsy should never be returned as the cause of death without particulars as to its probable origin—e. g., in disease of the heart, liver, kidneys, etc.

2. *Smallpox*.—In certifying deaths from smallpox the patient's condition with respect to vaccination should be carefully stated—say, in one or other of the following forms: 1. No evidence of vaccination. 2. Vaccinated in infancy only—number of scars. 3. Vaccinated only after infection from smallpox. 4. Stated to have been vaccinated, but no scars. [If the patient has been revaccinated, the date should be given when possible.]

3. *Puerperal Fever and Other Septic Diseases*.—The term "puerperal fever" should no longer be used. Pyemia, septicemia, or sapremia occurring in puerperal women should be described as puerperal pyemia, puerperal septicemia, or puerperal sapremia respectively. In the new list of diseases provision exists for the separate entry of the several forms of septic infection.

4. *Diarrhea*.—Attention is especially invited to the subjoined decision of the Royal College of Physicians concerning the use of authorized names for this malady dated January 25, 1900.

"The Royal College of Physicians is convinced, after careful inquiry: (a) That various unauthorized and misleading terms, such as 'gastroenteritis,' 'mucoenteritis,' 'gastric catarrh,' etc., are now commonly employed to designate the disease officially known as 'epidemic diarrhea,' whereby its specific character is in danger of being ignored, and great confusion ensues; (b) that the present confusion of terms renders it impossible to determine accurately either the prevalence of the disease in special places and at special times, the extent to which it influences the public health, or the effects produced by sanitary measures; (c) that there is a widespread objection on the part of medical practitioners to the employment of the term 'diarrhea' in certifying the cause of death, probably because that term is generally held by the public to imply a mild disease, insufficient by itself to cause death.

"The College, therefore, has sought to discover as an alternative for the authorized term (epidemic diarrhea) some other name, which, while equally accurate, should convey to the public the idea of a more serious affection. But the College regards it as essential that the idea of specificity, intended to be conveyed by the term 'epidemic,' should be retained.

"As the result of much deliberation, the College has agreed to authorize the use of the term 'epidemic enteritis' (or if preferred by the practitioner 'zymotic enteritis'), as a synonym for epidemic diarrhea. The College has further decided to urge upon practitioners the entire disuse, in medical certificates of death, of such terms as 'gastroenteritis,' 'mucoenteritis,' or 'gastric catarrh,' as synonyms of epidemic diarrhea."

5. *Malignant Diseases*.—Among cancerous affections "carcinoma" is now distinguished from "sarcoma." This distinction should be observed wherever possible. A separate line is, however, still retained for those forms of malignant disease the nature of which cannot be specified precisely. The part of the body affected should always be stated in the certificate.

6. *Tuberculous Diseases*. "*Phthisis*."—When this condition is due to tubercle, the term "tuberculous phthisis" or "pulmonary tuberculosis" should be used instead of the ambiguous term phthisis, which is sometimes used to designate other besides tuberculous diseases of the lungs. "*Tubes mesenterica*."—The use of this term to describe tuberculous disease of the peritoneum should be discontinued, as it is frequently used to denote various other wasting diseases which are not tuberculous. "Tuberculous peritonitis" is the better term to employ when the condition is due to tubercle. *Hydrocephalus*.—In certifying deaths thus caused it would be advantageous if those due to tuberculous infection were distinguished from those due to meningitis or to other affections of the brain. "Congenital hydrocephalus" should always be returned as such.

7. *Convulsions*.—It is hoped that this indefinite term will henceforth be restricted to those cases in which the true cause of convulsions cannot be ascertained. At present more than 11% of the total deaths of infants under one year old are referred to "convulsions" simply.

8. *Paralysis*.—The classification of deaths would be much facilitated if brain paralysis were always distinguished from paraplegia. In certifying deaths from brain paralysis, the terms "hemiplegia" and "apoplexy" which denote symptoms merely, might usefully be replaced by the names of such definite lesions as "cerebral hemorrhage," etc., etc.

9. *Pneumonia*.—Three separate forms of acute pneumonia have now been added to the list, viz.: Croupous or lobar pneumonia, broncho, catarrhal, or lobular pneumonia, and epidemic pneumonia, the old line for undefined cases of pneumonia being still retained. The term "typhoid pneumonia" should never be employed, as it may mean either enteric fever, with pulmonary complication on the one hand, or pneumonia, with so-called typhoid symptoms, on the other.

10. *Croup*.—It were greatly to be wished that the use of the term "croup" to designate nondiphtheric affections of the larynx or trachea should be abandoned. Diphtheric croup or membranous croup should be returned as such.

11. *Childbirth*.—Whenever parturition or miscarriage has occurred within one month before the death of the patient the fact should be certified, even though childbirth may not have contributed to the fatal issue.

12. *Violence*.—In every case of death by violence, or by suspected violence, the medical practitioner, in addition to stating the fact in his certificate, should advise the friends of the deceased to inform the coroner forthwith.

13. When the cause of death has been verified by a postmortem examination the letters P. M. should be added.

Tuberculous Cows as Sources of Vaccine Lymph.
—Several years ago a movement was set on foot among

the local boards of health of Massachusetts for the establishment of a State vaccine plant, under the supervision of the State Board of Health. The plan was defeated by the active opposition of certain local producers. The present epidemic of smallpox, which has amounted to about 1,500 cases distributed throughout the State, has created a lively demand for vaccine material, and as might be expected, the question was again introduced at a hearing before the Legislative Committee on Public Health during the present session of the General Court. Organized opposition again became manifest, the principal remonstrants being certain druggists, both wholesale and retail, who were represented by counsel at the hearing in March of the present year. The Legislative Committee on Public Health before whom the hearing was held, being composed partly of druggists, and without a medical member, reported unfavorably upon the proposed bill. Meanwhile an incident had occurred which appears to have had a remarkable effect in changing the current of opinion. The question having been reopened, certain witnesses, one of whom was a U. S. Government inspector, testified that a cow, eight or nine years old, had been slaughtered in March at an establishment near Boston bearing the marks of recent vaccination. Upon examination after slaughter the cow was found to be tuberculous to such an extent that the carcass was committed to the rendering tanks for fertilizing purposes, being entirely unfit for use as food. It was also stated that this cow had been used for vaccine production at a prominent establishment near Boston. Further evidence showed that the precaution now usually adopted in the best vaccine establishments, of using young animals only and of slaughtering them for examination before issuing any vaccine material from them had not commonly been practised at this establishment. The counsel for the remonstrants at the second hearing introduced two prominent specialists with the intent of showing that no danger could arise from the employment of tuberculous animals for vaccine purposes. Meanwhile the public press has taken up the subject vigorously, and given the legislative committee a sound drubbing, as they richly deserved. The State Board of Health in Massachusetts has for several years produced and distributed free of charge a supply of diphtheria antitoxin to local boards of health and physicians throughout the state. The product has been kept up to a high standard and has had a very marked effect in lessening the mortality from diphtheria. It remains to be seen whether authority will be given to the Board to furnish a gratuitous vaccine supply also.

The Hepburn Pure Food bill has for its chief object the securing of uniformity in the laws of the country as to the adulteration of food, and to do away with the different constructions of the laws. There are now 19 different commissioners to construe, each after his individual judgment, the existing and varying laws as to what is harmful and what not. What is legally sold in one State is illegally sold across the border, etc. The bill provides for the appointment of a national commission of 12 men, 5 physicians, the others business men, manufacturers and scientists; 2 of the 12 are to be

chemists, one of whom is the chief of the Federal Chemical Department, the other the president of the body, made up of the official chemists of the several states. With such membership it is presumed that the commission will be able to pass judgment intelligently upon food preservatives, etc., whether they are harmful or not; but it will give a hearing before passing judgment on any preservative. The Hepburn bill, which is known in the Senate as the McCumber bill, has been reported favorably to both House and Senate, but it is strangely kept back by the Committee on Rules of the House, of which the speaker is an important member. The examination as to adulteration of foods is primarily and essentially chemic, and the experts in the Marine-Hospital Service are not chemists but sanitarians. The Agricultural Department has an excellent corps of chemists, and is in every way well equipped to carry on such work. Central authority has to be given into the hands of some department. The Marine-Hospital Service does not wish it, and the chemists of the Agricultural Department are well fitted to carry on the work. The Hepburn bill seems to have been drawn with great care and wisdom. The hearings on the bill brought out much valuable information, and Dr. Wylie, the chief chemist of the Agricultural Department, is admirably fitted to carry out the law. We think the bill is in the interest of the profession and the public health, and should be passed.

The financial investments of medical men are treated in a capital way by Dr. I. W. Heysinger in a recent number of the *Medical World*. It is made plain that physicians, in the language of the street, are "easy," and, therefore, are a constant prey of the promoters of flimsy enterprises. Hardly a day passes without bringing a flaming prospectus of some highly capitalized undertaking, in which the physician is given an opportunity to subscribe in advance of the general public. Not rarely, also, some grateful patient prompts the physician by revealing valuable secret information which he alone shares with the company's officials or the stock-broker. The result is that physicians are frequently led into unwise speculation, and squander their hard-won earnings in foolish investments. Many of the medical profession have had disastrous experiences in the stock market. The result could hardly be otherwise, since a physician who conscientiously devotes his time to his professional duties cannot familiarize himself with financial affairs, and his ignorance makes him gullible. Before making any investments he should carefully scrutinize the character of the enterprise in question and of its backers.

According to Dr. Heysinger, the safest means for investing are, first, the purchase of a practice of an established physician (this was a very prevalent custom in former days, and may still be advantageous in the country, but in cities it is not in vogue); secondly, building-loan associations. The returns from investments in these, while, in Dr. Heysinger's opinion, safe, are not so large as they were thirty or more years ago, when money commanded higher rates. Dr. Heysinger advises that every physician should own his home, and should, from the very

beginning, make plans for the eventual purchase of a house in a suitable location. Life insurance is not alone a safe investment, but also a duty that the physician owes to his family. If possible, he should also provide himself with an endowment policy, so that when he reaches the age of sixty he may come into possession of a large sum of money, which will leave his declining years free from care. An accident policy is also considered a good investment. Dr. Heysinger gives some valuable advice upon this subject. Dr. Heysinger's final advice should never be forgotten by the medical investor: it is that all financial investments should be made only from free, surplus funds.

The city floating hospital, or hospital boat, is another method of caring for sick children during the summer months. That which is planned for Boston is described by the *Boston Medical and Surgical Journal* as a great improvement upon the old one in use for a number of years. The treatment of all kinds of children's diseases is provided for, with room for the mothers, etc. One of the advantages of such hospitals is of course that for seaside cities they avoid the expense, time, and danger of the journey to more distant hospitals in the country, and still secure better, more quiet and cooler accommodations for the little sufferers than is possible in the city. The Boston boats and their support are provided by private benevolence.

"The new vessel is to have four decks. Forward of the main deck there are to be two wards, each with sixteen beds, together with the necessary examining and treatment rooms. Further aft is a room specially designed for the modification of milk. Various offices and special rooms for doctors, nurses and guests, with the requisite toilet facilities, are also provided for on this deck. On the lower deck the contagious wards are located. In this part of the boat there is also an atmospheric plant, making it possible to maintain an even temperature whatever the external conditions may be. An autopsy room and morgue are also provided for. The upper deck has four large wards, each with sixteen beds and the necessary accessories. The deck above this is to serve for the use of so-called out-patients, which no doubt will form the greater contingent of the total number of children treated."

Reading in bed is seriously advised, so the newspapers say, by a physician as conducive to "repair and resting," "relieving congestion," "emptying the veins overfilled by prolonged eye-work," etc.

"It is plain that placing the head back in a horizontal position so absolutely meets the whole problem of a relief of congestion by gravity—and it is such a very important problem—that it seems strange that people with weak eyes do not habitually practise reading in a recumbent position, with the head raised only so much as is necessary to make the position perfectly comfortable. Such advice, carried out with absolute care as to light and the position of the book, would in the case of a thousand busy people add largely to the number of hours which reading could be indulged in without detriment to the eyes or general health."

Certainly the one who gives this strange and pernicious advice could never have tried the plan. Some years ago there was described a patented device for suspending the book over the horizontally placed head of a sick person whereby reading would be possible without holding the book in the hands. Even then one wonders

how the light could be made to fall properly on the page. Without a method of the kind not even a well person could hold a book five minutes above the eyes. Reading in bed has ruined thousands of good eyes. Unless one sits up in bed as if in a chair it is impossible to hold the book in such a position that the arms are not quickly tired and so that the light falls on it properly. When reading lying down there is a traction upon the inferior recti muscles which is highly injurious. Every patient should be warned never to read in bed except when sitting up as vertically as in a chair.

The Treatment and Death of Dowie's Daughter.—We are sincerely sorry that the accident occurred which caused the death of Mr. Dowie's daughter, but cannot forbear noticing some of the attendant facts. An alcohol lamp, used for heating "curling irons," "exploded," the girl's clothes were set on fire, and she died from the injuries in 15 hours. In his testimony at the inquest Dowie says he had banished all alcohol and oil lamps from the building. It is sad that even Elijah's daughters will disobey their prophet fathers. But as if in illustration of an old proverb, the prophet hastened to send for a physician (who called himself an "Allopath"!), although several hours of prayer succeeded in making "the pains pass away." The suggestion seems pertinent that the rules in Zion City should be amended and made logical, or that the prophet should also excuse all disobedient followers who in time of trouble also turn to the banished "doctors" and hated "drugs."

EDITORIAL ECHOES

Mr. Schwab's Seashore Pleasure Ground for Poor Children on Staten Island.—The plan, so far as it has been announced, contemplates the free carrying to the beach of from 1,000 to 2,000 children a day through the whole summer season, and provision for their comfort and amusement while they stay there. The project will have the cordial approval of all who are interested in work for children, but undoubtedly Mr. Schwab will value more highly the gratitude of thousands of youngsters relieved from the killing heat of the city and transferred from bricks and asphalt to clean white sand and the refreshment of the sea.—[*N. Y. Evening Post.*]

A Colossal Mistake.—Now that the fever of enthusiasm caused in the public mind by the announcement of Mr. Rhodes' bequest of \$10,000,000 for scholarships at Oxford has had time to abate, and the details of his grand educational scheme can be considered in cold blood, it must, we think, be becoming clear even to his most thorough-going admirers that it is a colossal mistake. He has left a vast sum of money to increase by a few dozens the annual output of Oxford passmen. Oxford already is one of the best schools in the world for the acquirement of the knowledge which lies at the foundation of medicine, and for the study of the sciences which have been called its handmaidens. But for the study of disease in its infinitely varied manifestations, a country town naturally cannot provide sufficient clinical material. Oxford, therefore, can never be the equal of Edinburgh as a school for the study of practical medicine. Mr. Rhodes' benefactions will do nothing for the advance of medicine, and next to nothing probably to help men likely to further it to enter the profession.—[*The Practitioner.*]

AMERICAN NEWS AND NOTES.

GENERAL.

Cholera.—There has been reported 960 cases, with 769 deaths, in Manila. The provinces report 2,888 cases and 2,092 deaths.

Antioium Measure.—A bill introduced recently into Congress in response to a petition of the Chinese Reform Association, absolutely prohibits the importation of opium into the United States for smoking purposes.

Medical examinations of candidates to fill the 65 vacancies which exist in the medical corps of the Army have been going on since April 3, and nine candidates qualified for appointment have been sifted from the six classes examined.

Lepers on Guam Island.—Commander Seaton Schroeder, naval governor of Guam, reports to the Navy Department concerning leprosy there, that the discovery of four cases recently was followed by a systematic search and the finding of several more lepers. He requests that the sum of \$2,000 be apportioned from any available source for the foundation of a leper colony for which he has already secured a site of 12 acres at the west end of Tumon Bay beach, and steps have been taken to secure nurses from some religious organization.

A Manila training school for nurses under the government of the Cosmopolitan Hospital Association is proposed to meet the demands of a large floating population and to furnish a nursing corps to the various hospitals, civil, military or religious. A committee of members of the association will appoint an auxiliary board of women to raise funds for maintaining the training school, will appoint the officers and teaching force and have the entire control of the school, which will be truly cosmopolitan and represented by all creeds and nationalities. A proper educational qualification is required of applicants and the course of training covers two years.

Public Health and Marine-Hospital Service.—The compromise bill agreed on by the Marine-Hospital Service and the health authorities of the states was reported May 14 by Senator Spooner from the Committee on Public Health. The section relating to conferences with state authorities as finally agreed upon authorizes the Surgeon-General to hold conferences with state or territorial boards of health, quarantine authorities or state health boards, one delegate from each state or territory, provided that an annual conference of the health authorities of all the states be held, and provided that upon application of five or more states or territorial boards of health the Surgeon-General shall call a conference.

Cholera.—The introduction of the disease in Manila is attributed to the green vegetables imported from Canton. It is claimed that the disease existed for some time in that city before its presence was reported, and that as vegetables were being constantly shipped to Manila during this period and sold in the markets, the infection occurred. It is thought that if information concerning the disease had been received one month earlier the outbreak in Manila could have been averted. The board of health has instituted energetic measures to combat the disease. New stations have been established in various sections of the city and the number of inspectors and physicians increased. Inspection work is carried on day and night with the greatest vigor. All cholera cases are sent immediately to the hospital and all suspects to the detention camp, the infected house is at once disinfected, closed, and placed under guard. The worst center of the disease was the Farola district, and as the cases from this quarter continued to increase, the infected property was appraised and burned. A cordon was thrown around the city, ferryboats and passenger trains stopped, and all persons going to neighboring provinces by rail or small boat required to secure a permit from the board of health. All the old wells and cisterns in the city have been closed, a guard placed on the river supplying the city with water, in order to prevent pollution and infection. All green vegetables in the market that were considered liable to convey the disease have been bought and destroyed. Circulars have been issued advising the people what precautions should be taken and distilled water is furnished free at different stations throughout the city.

EASTERN STATES.

Against Osteopathy.—The Massachusetts House has refused to pass the bill authorizing the Boston Institute of Osteopathy to grant degrees.

Boston Insane Hospital.—In the fifth annual report lately issued, the importance of caring suitably for curable cases of insanity, their proper classification and early treatment is urged as explanation of the projected extensions for which plans are made. Statistics are given, showing that the average duration of life of the chronic insane is from 15 to 20 years, and that the expense to the community for maintaining an insane pauper during his lifetime is \$3,000 or \$4,000.

NEW YORK.

Long Island College Hospital, under the will of Henry W. Maxwell, receives \$20,000.

The Stony Wold Association has raised \$50,000 toward establishing a sanatorium in the Adirondacks for the treatment of the tuberculosis sufferers in the tenement districts.

A memorial tablet has been presented to the College of Physicians and Surgeons, Columbia University, by the alumni in honor of the graduates who lost their lives during the Spanish war.

Impure Baking Powders.—The New York Health Department has seized, as prejudicial to health, nearly two tons of cheap baking powders found to contain alum and pulverized rock. The whole quantity will be dumped into the river.

Commitment of Insane to Bellevue Hospital.—The recent order issued by the Supreme Court directing that Peter McKenna be released from confinement in the Manhattan State Hospital on the ground of illegal confinement, is of importance because it renders the present method of sending the insane to Bellevue Hospital illegal.

Lincoln Home and Hospital.—In connection with the unveiling of a bronze tablet in memory of Alfred Van Santrood, a benefactor at the Colored Home and Hospital in the Bronx, the name was changed to Lincoln Home and Hospital. A gift of \$10,000 from the Sweetzer estate was announced. An accident ward and ambulance service has just been added.

The New York Juvenile Asylum will be moved from its present site to a tract of 275 acres, including forest and lake, purchased on the heights above Dobbs' Ferry, and overlooking the Hudson River and Tappan Bay. In order to do away with the congregate system, which has proved full of evils, it is planned to erect here a number of shops, schools and cottages, and to make a model village according to the system now in use in England and in some of the states.

Antimosquito Campaign.—The work of mosquito extermination begun last year in Staten Island will be continued this season, but a different method will be adopted. Instead of using the oil tank and hose, as was done last summer, a series of experiments will be carried on at the Quarantine Laboratory. An exhaustive investigation will be made with a view to determine the best agent for destroying the larvas and eggs. The insect will be propagated and carefully studied.

Physicians Resign.—The medical staff of the Jamaica Hospital at Jamaica, Borough of Queens, is said to have resigned in a body, owing to a refusal of the women board of managers to rescind a resolution providing for a staff which included homeopathic physicians. The hospital was originally allopathic, but two or three years ago three homeopaths were admitted on the staff, and as their presence caused friction they resigned, and affairs went smoothly until now.

PHILADELPHIA, PENNSYLVANIA, ETC.

Unregistered Physicians.—A recent report states there are 112 in Allegheny county, Pa., and that all will be prosecuted.

A campaign against disease, especially smallpox, and against uncleanness, has been started in Jersey City by the Mayor and the health officials. The entire population of the city will be vaccinated and a thorough sanitary inspection will be made.

Insane Commission.—The committee appointed by legislature to investigate the condition of the insane in state institutions of Pennsylvania will be assisted by subcommittees whose business it will be to visit and report on all institutions not represented at the session of the commission. It is expected that a full report will be submitted to legislature next November.

The Free Hospital for Poor Consumptives has received a gift of \$2,500 from Henry Phipps, a member of the Carnegie Company, for their sanatorium at White Haven. During the past year 69 patients were cared for at this institution. Besides this the organization has cared for 238 patients in its various hospitals. The receipts for the year are placed at \$21,711.30, and the expenditures at \$21,045.91.

Against Mosquitos.—Governor Murray, of New Jersey, has \$1,000 from the State Emergency Fund to pay Prof. John B. Smith, State Entomologist, for an antimosquito campaign. A physician will investigate the malarial side of the question and work on that line will be begun in the vicinity of Harrison. An ex-member of the United States Fish Commission will investigate the vertebrate enemies of mosquitos and the fish that feed upon them at Allaire and in the Hackensack Valley neighborhood, while Professor Smith will conduct his work in New Brunswick and along the coast from Bay Head to Cape May and from there as far up the Delaware as the salt water extends.

SOUTHERN STATES.

The South Carolina Medical Association at the meeting held April 16, 1902, at Spartanburg, S. C., elected the following officers: President, M. Simons, Charleston; secretary, T. P. Whaley, Charleston.

Drug Combine Discouraged.—The Supreme Court of Georgia has declared illegal, under the common law, the attempt of a number of drug firms to prevent a certain pharmacy from buying goods from wholesale houses supplying the drug trade.

First Aid for the House.—The Wilson resolution providing for the purchase of a medicine chest and instruments for minor operations at an expenditure not exceeding \$500 for the use of the House in case of sudden illness of any of the members has been favorably reported. The chest will be in the keeping of the sergeant-at-arms and there is a proviso to the effect that the medicine purchased shall be approved by Representatives Wilson, of New York; Showalter, of Pennsylvania, and Ball, of Delaware, the three physicians who are members of the House.

Regulation Governing High Buildings.—A bill now pending in the Senate proposes to regulate the height of buildings in the District of Columbia. It provides that buildings to be used as residences, apartment houses or hotels must not exceed five stories in height nor be higher than 60 feet above street level. Business houses may reach a height of 75 feet. All structures exceeding these limits must be constructed of incombustible or fire-proof materials approved by the commissioners. Alterations made in standing properties will also be subject to the foregoing measure.

Sale of Milk and Cream.—Senator Stewart has introduced a bill in the Senate regulating the sale of milk and cream in the District of Columbia. It requires dealers in these articles to have a permit from the health officer of the District which permit may be suspended when the milk has been subject to any infection. Proper facilities for keeping milk and cream and for cleansing receptacles in the dairies are required. It provides for the exclusion of milk from unhealthy cattle, the guarantee that condensed milk comes from a healthy and hygienic source and that milk shall be handled only by persons who do not suffer from contagious disease or are not exposed to them. Milk shall not contain more than 88% of watery fluid nor less than 12% of milk solids of which 3% shall be butter fat. Skimmed milk shall not contain less than 9 $\frac{3}{10}$ % of milk solids, inclusive of fat.

WESTERN STATES.

Opticians Organize.—About 100 opticians of California have incorporated a state society, and adopted a certificate for issuance in the future to those that shall be judged qualified opticians.

A dustless street sweeper, consisting of a system of fans operating with suction tubes and run by a gasoline motor, it is said has been invented by Peter Green, a former city inspector of Chicago.

A physicians' defense company has been incorporated at Fort Wayne, Ind., with a capital stock of \$100,000. The company will contract to defend physicians for a specified sum for a stated period against prosecutions in civil malpractice suits.

The Society of the Internes of the Cincinnati City Hospital at a recent festal meeting elected officers for the ensuing year: President, Dr. J. C. Oliver; vice-president, Dr. Henry Bettman; treasurer, Dr. D. Wolfstein, and secretary, A. Freiberg.

Health of Chicago.—The report for the week ended May 10 shows an increase of 8.3% over the mortality of the week previous and 12% over that of the corresponding week of 1901. A change in the type of contagious diseases is noted; scarlet fever, diphtheria, whoopingcough and measles are much milder than a year ago, but smallpox has changed from a mild type to a much more violent form.

CANADA.

Medical Council.—Dr. Roddick's bill to provide for the establishment of a medical council in Canada passed the House of Commons after the adoption of an amendment purposing to make it necessary that all the provinces should agree to the establishment of the Council, otherwise if any province refused to come in the bill could not be operative.

Infant Mortality in Montreal.—A society aiming to instruct young mothers as to the proper care of their little ones will be organized in Montreal. This movement is undertaken with a view to curtail the excessive mortality which generally occurs among infants during the summer months. The statistics for the heated term of last year shows that nearly 200 deaths were reported for some weeks.

FOREIGN NEWS AND NOTES

GENERAL.

Cholera.—The report of the abatement of cholera in Canton is officially confirmed. Among the native victims there was the proprietor of six large drug stores and dispensaries who employed 1,000 workmen in the preparation of his medicines, among which was a specific for cholera in which he did a thriving business.

New Type of Human Fossil.—R. Verneuil presented at a recent meeting of the Academy of Sciences of Paris a note of the discovery by the Prince of Monaco in the celebrated Grotto des Enfants, at Baoussé-Roussé, near Mentone, of two human skeletons representing an ethnic type not previously found in quarternary beds. One skeleton was that of an old woman, 1.57 m. in height, the other that of a young man 1.55 m. high.

Medical Press Associations.—The meeting of the International Congress of the Medical Press, held in Paris, July 26 to 28, 1900, was to have been followed by a series of such congresses aiming to unite the medical press throughout the world. But owing to difficulties arising from various and opposite interpretations put upon the object of these congresses, it was decided to precede the second congress by a meeting of delegates to prepare a scheme to submit to the second congress for general discussion and adoption. This second congress was appointed for Brussels in 1901, but from diversity of opinion the plan had to be abandoned, and nothing further would have been done save for the intervention of Prince Albert I, of Monaco, in whose realm a medical society exists which is in itself a sort of international association, as its members represent a wide range of countries, and which suggested the congress should be held there. The Prince offered every hospitality and arranged so tempting a program that the difficulties which obstructed the Brussels meeting cleared away and the delegates met there April 7 to draw up a scheme of statutes for an International Medical Press Association, if such a body could be definitely established, and to fix upon a place of meeting. All this has been accomplished. A set of regulations was adopted and a decision reached that an International Congress of the Medical Press should be held a few days previous to the meeting of the International Medical Congress, which will assemble at Madrid during April, 1903. This action is endorsed by the delegates of the medical press associations of Austria, Bohemia, Belgium, Denmark, England, France, Germany, Holland, Italy, Norway and Spain.

GREAT BRITAIN.

New List of Causes of Death as Used in the Annual Reports of the Registrar-General for England and Wales.—The terms printed in *italics* being the names of symptoms merely, or being otherwise objectionable, should be used in medical certificates only when precise information is wanting.

GENERAL DISEASES.

Smallpox	(Vaccinated. (Not Vaccinated. (Doubtful.	Other Septic Diseases.
Cowpox.	Effects of Vaccination.	Tuberculous Phthisis (Pulm. Tuberculosis).
Chickenpox.		"Phthisis."
Measles.		Tuberculous Meningitis.
Epidemic Rose Rash, German		Tuberculous Peritonitis.
Measles.		<i>Tabes Mesenterica.</i>
Scarlet Fever.		Lupus.
Typhus.		Tubercle of other Organs.
Plague.		General Tuberculosis.
Relapsing Fever.		Scrofula.
Influenza.		Parasitic Diseases.
Whoopingcough.		Starvation.
Mumps.		Scurvy.
Diphtheria, Membranous Croup.		Alcoholism, Delirium Tremens.
Cerebrospinal Fever.		Opium, Morphia Habit.
Simple Continued Fever.		Potomane Poisoning.
Enteric Fever.		by Lead.
Asiatic Cholera.		Industrial by Phosphorus.
Epidemic Diarrhea, Epid. or		Poisoning by Arsenic and other Metals.
Zym. Enteritis.		Rheumatic Fever, Acute Rheumatism.
Diarrhea, Choleraic Diarrhea.		<i>Rheumatism of Heart.</i>
Dysentery.		Chronic Rheumatism.
Malarial Fever.		Rheumatic Arthritis, Rheumatic Gout.
Hydrophobia.		Gout.
Glanders, Farcy.		Carcinoma.
Anthrax, Splenic Fever.		Sarcoma.
Tetanus.		<i>Malig. Dis., Cancer.</i>
Syphilis.		Rickets.
Gonorrhea, Stricture of Urethra.		Purpura.
Puerperal Septicemia, Sappremia.		Hemophilia, Hemorrhagic Diathesis.
Puerperal Pyemia.		Anemia Leucocythemia.
Puerperal Phlegmasia Dolens.		Diabetes Mellitus.
Puerperal Fever.		Premature Birth.
Infective Endocarditis.		Congenital Defects.
Epidemic Pneumonia, Pneumonic Fever.		Injury at Birth.
Erysipelas.		Atelecasis.
Septicemia (not Puerperal).		Want of Breast Milk.
Pyemia (not Puerperal).		<i>Teething.</i>
Phlegmon, Carbuncle (not Anthrax).		
Phagedena.		

LOCAL DISEASES.

DISEASES OF NERVOUS SYSTEM.
Meningitis, Inflammation of Brain.
Softening of Brain.
General Paralysis of Insane.
Insanity (not Puerperal).
Chorea.
Epilepsy.
Convulsions.
Laryngismus Stridulus.
Locomotor Ataxy.
Paraplegia and Disease of Cord.
Neuritis, Periph. Polyneuritis.
Brain Tumor (not specific).
Nervous System, other Diseases.

DISEASES OF ORGANS OF SPECIAL SENSE.

Otitis, Mastoid Disease.
Epistaxis, Nose Disease.
Ophthalmia, Eye Disease.

DISEASES OF HEART AND BLOOD-VESSELS.

Valve Dis., Endocarditis (not Infective).
Pericarditis.
Hypertrophy of Heart.
Angina Pectoris.
Dilation of Heart.
Fatty Degeneration of Heart.
Syncope, Heart Disease (not specified).
Cerebral Hemorrhage, Emb., Thrombosis.
Apoplexy, Hemiplegia.
Aneurysm.
Senile Gangrene.
Embolism, Thrombosis (not Cerebral).
Phlebitis.
Varicose Veins.
Blood Vessels, other Diseases.

DISEASES OF RESPIRATORY ORGANS.

Laryngitis.
Membranous Laryngitis (not Diphtheric).
Croup (not Spasmod. or Membr.).
Larynx, other Diseases (not specified).
Bronchitis.
Lobar, Croupous Pneumonia.
Broncho, Catarrhal, Lobular Pneumonia.
Pneumonia.
Emphysema, Asthma.
Pleurisy.
Fibroid Disease of Lung.
Respiratory Diseases, other.

DISEASES OF DIGESTIVE SYSTEM.

Tonsillitis, Quinsy.
Mouth, Pharynx, Disease (not specific).
Gastric Ulcer.
Gastric Catarrh.
Stomach, other Diseases (not Malignant).
Enteritis (not Epidemic).
Gastroenteritis.
Appendicitis, Perityphilitis.
Hernia.
Intestinal Obstruction.
Other Diseases of Intestines.
Peritonitis (not Puerperal).
Cirrhosis of Liver.
Liver and Gall Bladder, other Diseases.
Digestive System, other Diseases.

DISEASES OF LYMPHATICS.

Spleen Disease.
Lymph. System, other Diseases.
Thyroid Body, Disease.
Suprarenal Capsules, Disease.

DISEASES OF URINARY AND GENERATIVE ORGANS.

Nephritis, Acute.
Chronic Bright's Disease, Albuminuria.
Calculus (not Biliary).
Bladder and Prostate, Disease.
Urinary System, other Diseases.
Ovarian Tumor (not Malignant).
Other Diseases of the Ovary.
Uterine Tumor (not Malignant).
Other Diseases of Uterus and Vagina.
Disorders of Menstruation.
Genital and Mam. Organs, other Diseases.

ACCIDENTS OF CHILDBIRTH.

Abortion, Miscarriage.
Puerperal Mania.
Puerperal Convulsions.
Placenta Previa, Flooding.
Other Accidents of Pregnancy and Childbirth.

DISEASES OF JOINTS.

Gout, Necrosis.
Arthritis, Periostitis.
Other Diseases of Locomotor System.

DISEASES OF SKIN.

Ulcer, Bedsore.
Eczema.
Pemphigus.
Skin Diseases, other.

Smallpox.—The returns of smallpox in London for the five days ended May 7 record 170 fresh cases.

Antimalaria Work.—A report of the work done by the expedition to West Africa under the auspices of the Liverpool School of Tropical Medicine has been furnished by Major Ronald Ross. At Freetown, Dr. Logan Turner with a force of 70 men drained the most pestilential areas of the town, which in the rainy season contained breeding places for myriads of mosquitoes owing to the hollows and illmade drains. The men detailed to collect old tins, bottles, etc., visited 16,295 houses and removed 2,257 cartloads of such rubbish. Since Dr. Ross visited the town, two and a half years ago, a great change has been wrought and the European inhabitants who felt a gloomy foreboding of sickness always hanging over them are now as cheerful as elsewhere. Arrangements have been made for Dr. Taylor to proceed to Cape Coast in order to start work there on the same line, as the mortality is very high.

CONTINENTAL EUROPE.

Nature Healing.—Vienna physicians have entered a formal protest and appealed to the Minister of the Interior against the erection of a proposed nature-healing sanatorium. A Vienna official who recently died had bequeathed \$100,000 for the construction and endowment of such an institution.

The Second International Congress for electricity in medicine and radiography will be held at the Physiologic Institute in Berne, September 1 to 6, 1902. Besides the communications made by members papers will be read on the Present State of Extrodiagnosis, by Drs. Cluzet, of Toulouse, and Mann, of Breslau; Surgical Electrolysis, by Dr. Guilloz, of Nancy; Radiography and Radioscopy of the Internal Organs, by Drs. Bécélère, of Paris, and Grunmach, of Berlin; Accidents Caused by X-rays, by Dr. Oudin, of Paris, and the Danger of Industrial Electric Currents, by Dr. Battelli, of Geneva. An exhibition of instruments will be held in connection with the Congress. The organization committee is composed of Drs.

Dubois, president; Asher, vice-president; Schnyder, secretary; Walthard, treasurer.

Concerning Syphilis in Asia and Africa.—Dr. Quennec, a French military surgeon, contributes in the *Archiv für Schiff's und Tropen-Hygiene*, No. 4, 1902, a study of syphilis which he found very prevalent among the Moors in the regions north of the Senegal river, though apparently the race as a whole does not suffer very much from the disease. Syphilis is diagnosed where iritis, retinal hemorrhages and neuritis, with or without amyotrophy, follow a venereal sore. These localizations are attributed to exposure to heat and light and muscular exertion. The treatment of the disease by mercury perchlorid is well known to all the tribes inhabiting the regions lying between Morocco, Algeria and Senegal, and the entire absence of salivation he attributed to the scrupulous care which the Moors bestow upon their teeth. From his observation among the negroes south of the Senegal and elsewhere, he concludes that that race is more resistant to the syphilitic virus, but that half-castes are more liable to the disease, and its virulence is in direct proportion to the amount of European blood. A negress who has not contracted syphilis from an infected European may take it from a mulatto. On the other hand, a negro who has become infected by a half-caste woman may be but slightly troubled and recover spontaneously, while a European contracting the disease from the identical source will suffer all its phases. Observations made in the Comoro Islands, Nossi-bé and Madagascar lead to the conclusion that pure Arabs and Hindoes are affected by it in the same way as Europeans and respond very quickly to specific treatment. The Sakalaves, like the negroes, are free from secondary symptoms, but are more liable to tertiary manifestations. He exonerates them from the charge of disseminating syphilis among the French troops, for in 1894-95 when Dr. Quennec was attached to the Majunga Hospital, no cases came under his observation in a garrison of 3,000 men, but when Creole women arrived from Réunion a great many cases occurred. Syphilis contracted by a European in China and French Indo-China is particularly virulent and resistant to treatment. Dr. Quennec combats Professor Fournier's opinion that this marked severity is due to the climate, and insists on the racial exaltation of the virus and the increased virulence of the disease when it occurs in half-castes (Chinese and Annamite).

OBITUARIES.

Marie E. Zakrzewska, the pioneer woman physician of Boston, founder of the New England Hospital for Women and Children, and for nearly 40 years a director there, died May 11, aged 73. She was born in Berlin, Prussia, and after a general education took up medicine in the hospital Charité, as far as permissible by law, and gained hospital experience. An opportunity for further study was offered in America, in 1847, in the Western Reserve Medical School, and in 1853 she went thither and took her degree of M.D. in 1856. Immediately after she associated herself with Drs. Elizabeth and Emily Blackwell in the enterprise of opening the New York Infirmary. In 1859 she was invited to become a professor in the New England Female Medical College, in Boston, and accepted on condition that clinical instruction should be provided.

Allen H. Hulshizer, a well-known physician of Philadelphia, May 19, aged 51. He was a native of New Jersey, was educated at Lafayette College, and in 1878 graduated from Jefferson Medical College. He was a director of the Ninth National Bank, vice-president of the Industrial Trust Company, ex-president of Jefferson Medical College Alumni Association and member of the State Board of Medical Examiners.

William Todd Helmuth, an eminent surgeon, and dean of the New York Homeopathic College, May 15, aged 69. He was born in Philadelphia and was graduated from the Hahnemann Medical College of that city. He was made a Doctor of Laws by Yale and the recipient of several honorary degrees in this and other countries.

John L. White, of Bloomington, Ill., May 13, aged 70. Dr. White, of Mayflower ancestry on both sides of the house and a graduate of Harvard Medical School in 1854, was one of the most prominent physicians in Illinois, and for 30 years was surgeon for the Illinois Central and Chicago and Alton Railroads.

C. P. Cathoun, of Altoona, Pa., May 13, aged 60. He served as first lieutenant in Company F, One Hundred and Thirty-eighth Regiment, Pennsylvania Volunteers, during the Civil War.

Philip Fine Fulmer, of Dingman's Ferry, Pike county, Pa., April 29, aged 72. He was graduated A. M. from Lafayette College in 1848 and M.D. from the University of Pennsylvania in 1853.

E. Fazio, of Naples, editor of the *Revista Internazionale d'Igiene* and author of many works on hygiene and bacteriology.

J. Habart, of Vienna, best known by his works on military surgery, April 19.

Edward Bagnicki, of Hungary, at Williamsburg, N. Y., May 16, aged 62.

G. Inzani, formerly professor of pathologic anatomy, at Parma.

B. Robert, professor of clinical medicine at Barcelona.

H. Schöbl, professor of ophthalmology at Prague.

F. J. Leadbrook, at Orofino, Idaho, May 15.

SOCIETY REPORTS

XX CONGRESS FOR INTERNAL MEDICINE.

WIESBADEN, APRIL 15-18, 1902.

[Specially reported for *American Medicine* by Dr. Albu, Berlin.]

[Continued from page 812.]

THIRD SESSION (Continued).

Investigations on the Solubility of Uric Acid.—Klemperer (Berlin). Uric acid occurs in urine in supersaturated solution. Heat and high pressure throw it down. The cause of this is to be sought in the internal pressure of the molecules among themselves, the so-called viscosity, which is measured by the rapidity of flow. He had found that uric acid dissolved in viscous substances such as gum-water, glycerin, etc., and showed the same properties as in urine solution. The viscosity of the urine was not sufficient to make the matter clear, there remained the colloidal property of the urine which he was able to account for by the isolation of urochrome, as a hygroscopic powder. This had the power when dissolved of maintaining a supersaturated solution of uric acid. Urine decolorized by animal charcoal allows the uric acid to precipitate. The kidneys certainly do not allow this colloid molecule to pass and it must be formed from bilirubin. Edinger (Freiburg) spoke of the action of the sulfocyanid of potash of the saliva in lowering the amount of uric acid in the urine. So that one may perhaps assume that the anomalies of the metabolism of sulfur play a role in the pathogenesis of gout.

A Simple and Exact Method of Clinical Hemometry.—Sahl (Bern). A demonstration was made of a new hemoglobinometer resembling the modification of Gowers' instrument previously devised by Sahl. As a colorimetric standard a solution of chlorid of hematin mixed with chloroform was used.

On the Pathology of the Kidney.—Rosenfeld (Breslau). (1) Microscopic estimation of the amount of fat in the human kidney is untrustworthy; (2) microscopically entirely normal kidneys may exhibit the highest amount of fat; (3) pathologic kidneys have, on the average, the same fat content as normal; there is also no difference in the degree to which the fat diminishes in normal and pathologic kidneys; (4) the normal dog's-kidney has, on the average, 21.8% fat; (5) the fat content of the normal dog's-kidney remains unchanged in poisoning with phloridzin, phosphorus, potassium bichromate and oleum pulegii, but is lowered to 17% by cantharidin and chloroform; alcohol alone appears to effect an increase; (6) if one reckons the amount of moist and dry kidney substances per kilo of the animal concerned, as well as the amount of fat pertaining to the same, it is seen that there exists no noxious substance which raises the amount of fat in the kidney, and that the lowering of fat by chloroform and cantharidin is explicable as an increase of the kidney substance; (7) in the sense of an increase in the alcohol-chloroform extractive, there is no such thing as fatty kidney.

Fatty Stools.—Salomon (Frankfurt a/M.) had found in simple intestinal catarrh that, as a rule, the absorption of fat is only slightly disturbed; for example, in a case of chronic enteritis with 8 to 10 thin broth-like discharges in 24 hours, 9.8% was absorbed in a feeding of 197 grams. Cases occur, however, in men under nearly normal conditions, in which there is a marked disturbance of fat absorption without icterus and without diabetes. In his observation, when the ingestion of food was limited to 240 and 280 grams, 20% to 37% of the fat was passed off in the feces. The splitting-up of the food was entirely normal. Iodoform-glutoid capsules prepared extremely hard, according to Sahl, were promptly absorbed. There was no alimentary glycosuria. In the first of the two observed cases there was also a lessening of nitrogen absorption, and the administration of pancreatic glands and of pancreon had no such marked effect as the speaker had previously observed in steatorrhea of pancreatogenic nature. The therapy which relieved the subjective features of the disease consisted of a diet poor in fats. He recommended the use of active preparations of pancreas for the purpose of diagnosis as to whether a chronic steatorrhea is due to an anomaly in the pancreatic secretion, or to some disturbance of absorption. Hirschfeld (Berlin). Such a marked disturbance of the absorption of fat did not usually appear in simple intestinal catarrh, and it is a question whether it relates to a diabetic disposition. Schmidt (Bonn), to ensure control of the fat absorption, recommended a permanent test diet in all cases.

Physiology and Pathology of the Renal Function.—Friedrich Straus (Frankfurt a/M.). The clinical method introduced by Korányi for ascertaining the osmotic pressure of the blood and urine, by determining their freezing-point, has thrown new light on renal surgery. The method serves to establish the limits for removal of a diseased kidney with assurance that the other kidney is in condition to take up its work. His own experiments establishing the relative function of the kidneys were performed with ureter catheterization and with a quantitative analysis of the urea, phosphoric acid, chlorin, sugar after the injection of phloridzin, and by means of concentration by a lowering of the freezing-point. Physiologically working kidneys are able, at regular intervals, to secrete urine

of great variability. He determined that the function of the normally active kidney is at the same time alike in both kidneys, and they are synchronously altered either physiologically or pathologically.

FOURTH SESSION.

Pathogenesis of Gastric Ulcer.—Adolf Schmidt (Bonn). The appearance of small defects in the gastric wall is of far less importance than the assumption of a chronic character in declaring the transformation into a genuine ulcer. The investigations of Schmidt on the healing process in artificially produced lesion has led to the recognition of the fact that the contractions of the stomach walls by means of which the lesion is covered over and completely shut off from the lumen of the stomach, are of particular importance if this reaction is absent. The lesion develops into an ulcer through the digestive action of the gastric juices. The usual site of ventricular ulcer on the lesser curvature and in the region of the pylorus may be accounted for by the lesser amount of folding of the mucous membrane at these points. In the most frequent cases of chlorosis, due to gastric ulcer, there is usually a defect in the contractility of the musculature. This condition (atony) may occur in the presence of normal expulsive conditions of the stomach. According to Schmidt the cause of gastric ulcer lies in the absence of the power of covering over defects in the mucous membrane of the stomach.

The Relation Between Gastric Ulcer and Cancer of the Stomach.—Hirschfeld (Berlin). According to the histologic investigations by Hauser, the conclusion is reached that from 5% to 6% of gastric ulcers lead to cancer; lately this view is supported by Fütterer, and also by Borrmann. Hirschfeld also maintained, on microscopic grounds, that the clinical aspect of the disease in cases of cancer of the stomach following gastric ulcer is dissimilar; furthermore, the statistics are opposed to any relation between these diseases, for example, in Vienna, out of 900 cases of cancer of the stomach, 5.6% appeared subsequent to gastric ulcer. The wide distribution of gastric ulcer, in certain districts, in no way indicates the more frequent appearance of cancer. Females are also most prone to gastric ulcer, whereas males are specially liable to cancer of the stomach. In cities where gastric ulcer is rare, as in Vienna, the number of women with cancer of the stomach is greater than in Hamburg, where gastric ulcer is more than twice as frequent.

Tuberculous Peritonitis and the Operative Procedure.—Köppen (Norden). The peculiarity in cases of tuberculous peritonitis following laparotomy, lies not so much in the fact that the exudate remains absent after the operation, but rather in the fact that it first disappears at that time. The speaker had, by means of experiments with animals, reached the conclusion that the checking of the exudate is attributed to imperfect immunization of the organism by tuberculotoxin, the peritoneum being rendered immune without having been brought back completely to its normal structure. Since laparotomy leads to this result, the exudate remains absent, the immunization of the organism is completed and the peritoneum returns to its normal condition, it is improper to ascribe to laparotomy any primary healing influence on tuberculous peritonitis. The therapy consists in the immunization of the organism, if this can be brought about, cure is certain, otherwise the effusion should be allowed to escape, by means of puncture followed by washing out with physiologic salt solution. Purulent general peritonitis should be relieved by the same method.

Influence of Mechanic and Thermic Stimulus upon the Circulation of the Blood and on the Vascular Tonus.—Frederick Pick (Prague) made investigations by direct measurements upon the blood flowing from the veins of the animal. It was found that the manipulations of massage resulted in a speeding of the blood current in the vessels of the extremities and a slowing of the current in the abdomen. Abdominal massage hastens the circulation in the abdomen but slows that of the brain. Passive movements hasten the circulation in the extremities and in the brain. Cold on the extremities causes a retardation of the circulation with a synchronous hastening of the abdominal circulation and a slowing of that of the brain. Cold packs on the abdomen cause a slowing of the abdominal current which soon gives way to acceleration. Warmth causes acceleration in the extremities and also in the abdomen and also in the jugular region; when applied directly to the skull it causes no acceleration in the jugular. The acceleration consequent to section of the sciatic nerve continues after the application of great cold. The direct action on the vascular musculature prevails.

Is There an Acute Dilation of the Normal Heart?—A. Hoffmann (Düsseldorf). The contradictory statements, particularly of recent investigators, on the occurrence of acute enlargements of the normal heart, which are said to disappear with equal rapidity, induced Hoffmann to bring under thorough investigation a considerable number of persons who had exposed themselves to the presumable causes of this acute heart dilation, which was carried out with an apparatus made by the speaker for the investigation of the heart by means of the x-rays. The apparatus depends on the principle that the source of light and the recording stilus remain opposite one another, and, like the orthodiagraph of v. Moritz, offers advantages equal to those obtained by the older apparatus of Grummach and Levy-Dorn. This apparatus has an arrangement by which the points of the body surface are marked directly upon the Röntgen picture by

wires movable at right angles, and so can be recorded simultaneously with the heart contour. The investigations undertaken have never made known an enlargement of the heart of any significance, either after special effort, the use of alcohol, or in the case of embolism. Among the cases reported more specifically were a few which demonstrated serious injuries to the cardiac rhythm without the least dilation. He sees the source of error by which a dilation may be falsely diagnosed, the elevation of the diaphragm in connection with *cor mobile* and in the increased action of a heart under unusual exertion and the hyperdiastole associated therewith. Lennhoff (Berlin) believes there can be no doubt of the presence of dilation of the heart following excessive exertion, as proved by himself in the case of wrestlers, and by Albu in bicyclers. He demonstrated further that the heart of a young man, who before was quite healthy, had an acute dilation in connection with an injury caused by overexertion. Von Criegern (Leipzig) had never been able to determine acute dilation in the x-ray examination of 500 diseased hearts. Rumpf (Hamburg) held acute dilation of the heart to be rare, in fact less usual than assumed. He reported an undoubted case. As a rule it occurs only in hearts that have been previously diseased. Hoffmann emphatically stated that actual heart dilation does not quickly disappear, but leaves a lasting stretching of the muscles.

Effect of Drugs on the Lesser Circulation.—Gerhard (Strasbourg). Experiments with animals have shown that digitalis has an independent influence on the lesser circulation, which for the most part is coincident with increased pressure, and is therefore not solely a consequence of an increased accession of blood. Experiments were made with suprarenal extract, which also showed an increased blood-pressure up to 12 mm. Also in the experiments the fall of blood-pressure after ergot and hydrastinin showed the similar influence on the greater circulation.

FIFTH SESSION.

Light Therapy.—Valdemar Bié (Copenhagen) said that a rational development of light therapy could be placed on a sound basis only when based upon experimentation. He considered it imperative to present a critical report, not alone of light therapy but on light biology, as follows: (1) The chemic rays, except the red, yellow, and green, can cause a burn of the skin (Bouchard, Widmark, and Finsen); (2) the ultraviolet rays produce an enlargement of the cutaneous vessels which may last at least five or six months; (3) there is nothing to show that light has any influence upon the quantity of hemoglobin of the blood; (4) the assertion of Moleschott and of others that light increases the excretion of carbon-dioxid cannot be counted as proved; (5) chemic rays of light have an exciting influence on lower animals, light has probably a similar exciting influence on men; according to some investigators red light has an exciting effect and the violet rays have a quieting influence on psychic processes, a property which has been made use of with success for quieting maniacal patients; (6) the red light-rays can penetrate the organism deeply; the blue and violet rays can only penetrate the tissues when they are bloodless; the ultraviolet rays cannot penetrate farther than the superficial layers of the skin; (7) the same is true of the power of light to kill bacteria in the organism, a power which pertains almost exclusively to the chemic rays, having therefore curative effect only on superficial affections; there can therefore be no use of talking about trying to kill tubercle bacilli in the larynx or in the lungs by transmitted light, as some American physicians have proposed doing. The speaker then gave a review of the therapeutic use of light: 1. Finsen's treatment of smallpox with red light is based on this, that, by the exclusion of the inflammatory influence of the chemic rays on the skin, the formation of pus in the vesicles and also secondary fever and pocks are prevented. 2. The treatment of other exanthematous diseases by red light has not yet been thoroughly investigated. Bachmann and Chatrière have obtained favorable results in the treatment of measles, and Krukenberg in the treatment of erysipelas. 3. The incandescent sweat-baths constructed by Kellogg must be considered as nothing more than sweat-baths which have no specific effects. In this connection, however, there seems to be unity of opinion that they are the most complete of all sweat-baths. 4. The local illumination by incandescent or arc-lamps, made by various Russian physicians, especially Minin, have no claim on our attention. 5. The general light therapy of the future will undoubtedly be sun-baths without subsequent packing, or electric arc light-baths of 150 to 200 amperes with sweating. We know at present too little of the general effect of light for us to be able to fix definite indications. 6. The only local application whose efficiency has been proved is Finsen's treatment of skin disease with concentrated chemic light-rays. A short account was given of the method of application which the author has several times described; the excellent cosmetic results obtained are to be ascribed to the fact that the method is the most complete imaginable; nothing is destroyed; there is no shrinking; the scars are white and smooth; also as the result of this treatment not only can the diseased tissues be treated, but the contiguous sound tissues as well; in this way danger of recurrence is lessened; the treatment is painless; the curative effect is remarkable. In 640 patients the treatment had to be stopped on account of bad results in only 1.7%, while 85% show an absolutely favorable result. Only in the case of

15% was the improvement so slow that the result could be considered as less favorable. The recurrence conditions are favorable under the treatment. In Lupus erythematoses the results were somewhat uncertain. In Alopecia areata, Nevus vascularis, Acne vulgaris, Acne rosacea, and Epithelioma cutaneum very favorable results were obtained, especially when it is considered that the cases were almost always severe, such as could be cured by no other treatment. Finally a series of lantern slides were demonstrated showing patients with Lupus vulgaris, Lupus erythematoses and Epithelioma cutaneum before and after treatment.

Jacksch (Prague) emphasized the quieting and soporific effect of blue light, and recommended the use of blue cobalt-glass chimneys for night lights in the sick room. The incandescent light-baths have no specific effect; they are only modified vapor baths. Quineke (Kiel) referred to his earlier investigations as to the influence of sunlight on morbid tissues, especially pus which showed a strong consumption of oxygen. In light therapy, without doubt, it is in great part a question of the influence of the sun's rays which not only cause subjective, but also objective improvement, and visibly influence the general condition and the metabolism. Rumpf (Hamburg) maintained the advantage of the incandescent-lamp sweatbath in that they effectually protect the heart by the lower temperature. Patients with skin disease are much more tolerant of the arc light than sound persons. In the case of arc-light treatment, with or without the blue-glass screen, he has seen erysipelas scattered and also occasionally good results in neuralgia. Hahn (Hamburg). The Finsen ray treatment is principally effective in skin diseases, particularly so in lupus. Recurrences are not to be avoided; the effect is not at all bactericidal, but causes an inflammation; as in the arc light it is only a question of the ultraviolet rays, the carbon electrodes can be replaced by iron, as in Bang's lamp. As an essential part of light therapy the value of Röntgen rays must also be recognized. The application can often with advantage precede the Finsen treatment.

Report on Experiments with Incandescent and Arc Lights on 400 Patients.—Marcuse (Mannheim). The treatment by means of incandescent lamps is not only a warmth procedure but serves to secure equal and sure perspiration. However, there comes at times accessory influences on the heart. It has no influence whatever on obesity. The arc-light has been demonstrated as of use in functional neurosis, possibly it is only due to suggestion. Local illumination, however, is ineffective for examination in neuralgias. Light therapy must first of all be sun therapy. The air first gives to the sun's rays their full effect. Van Niessen (Wiesbaden) demonstrated by means of projection apparatus culture preparations of syphilis bacilli obtained by him from the blood of fresh syphilis cases. He also showed pictures of the syphilitic affections artificially produced in apes and swine.

The Cure of Lupus Erythematoses.—Höllder (Berlin). The speaker went into a careful discussion of the disease and the differentiation of the same from Lupus vulgaris which it is possible to confuse with it, though capable of being etiologically distinguished from it. Höllder regards Lupus erythematoses as a disease of the glandular apparatus of the skin. He had cured a large number of cases by means of a combined therapy consisting of a persistent internal administration of quinin and the application of tincture of iodine externally to the diseased parts of the skin. By means of projection apparatus, the speaker demonstrated a number of pictures of patients before and after treatment, especially cases of facial lupus. In all cases a smooth white scar was visible. Touton (Wiesbaden) held that this method of treatment was not, however, desirable in some cases. Many cases heal slowly if one only prevents the access of germs to the skin by covering the same with zinc gelatin, lead water compresses, or the like. The course of this disease shows great individual variations. The speaker held that it is not yet proved that Lupus erythematoses stands in any relation to Lupus vulgaris.

The Tracking Therapy in Hemiplegia.—Paul Lazarus (Berlin). The tracking therapy of hemiplegia and motor aphasia consists in the compensatory utilization of available paths of conduction and in the development of new paths. The tracking therapy finds its basis in the existing anatomic and physiologic fact, that the pyramidal track is not the only motor conduction path; outside of this there still exists a series of reserve paths which lead to the spinal-cord through the subcortical ganglia and especially through the optic thalamus and corpora quadrigemina. In this way the sound hemisphere can act vicariously for the diseased one by means of the uncrossed anterior pyramidal track. All cerebral ganglion cells are in direct connection with one another, and by means of methodical exercise can be made to track. The tracking consists in enervation exercise. Each motor effort of the will clears a path for voluntary movement. One distinguishes pyramidal tracking, association tracking, and commissural or trabecular tracking. The exercise treatment should be commenced at the earliest possible moment after the close of the reaction stage of apoplexy.

On the Question of the Reciprocal Relations Between Abdominal and Pectoral Breathing.—Gützmann (Berlin). While previous investigations have been restricted to the possibility of voluntary alternations in respiration, the speaker had directed his attention to the actual and voluntary alternations. The investigations were made by means of a Gützmann-

Oehmcke girdle pneumograph. In sound persons it appears that the movements of inspiration and expiration in the thorax and abdomen are usually synchronous. The thoracic movements appear, however, to set in somewhat earlier on the average. This aspect, however, changes when the person speaks, then the movement of abdominal breathing is that of expiration, while the thorax still expands and does not reach its highest inspiration point, for about one second on the average. From this circumstance it is concluded that the voluntary influence of the breathing connected with the speech process gives predominance to the thoracic respiratory movement over the abdominal movement. In known defects in speech (motor aphasia, deaf-muteness, stuttering) and in psychic alternations, the curves show, on the contrary, synchronous characters during speaking, as well as during quiescent breathing.

The Center for the Salivary Secretion.—Kohnstamm (Königstein, i. T.). Following section of those fibers which come off from the Nervus lingualis and which pass to the submaxillary gland, with interruption in the submaxillary ganglion, there has been found a group of cells in dogs suffering from Nissl-degeneration for which the term of *Nucleus salivatorius* has been proposed, because they must be regarded as the source cells from which spring all the precellular fibers which end in the submaxillary ganglion. They begin just before the caudal pole of the facial nucleus and terminate at the frontal end of the masseteric nucleus. A limited number of these cells are strewn over a widespread area, which is bounded medially by the raphe, laterally by the Deiter's nucleus, and dorsally by the floor of the ventricle. Most of the cells lie compressed medially in the ascending peduncle of the facial root, also in the midst of the Nucleus reticularis lateralis. The *Nucleus salivatorius* attends to the innervation of the submaxillary glands. The cause of the small number of cells lies in a principle previously elucidated as applying, for example, to the diaphragm nucleus on one side and the optic-muscle nucleus on the other, according to which the number of cells of a nucleus depends not on the absolute amount of work done, but rather on the differentiation of the same. Here for the first time has been demonstrated in a direct way the source cells of precellular visceral nerves and also those of the anterior root type.

On Changes of the Spinal Cord in Pemphigus and on the Pathogenesis of this Affection.—Von Schrötter, Jr. (Wien). The disease had its inception in an affection of the mucous membrane, in a woman of 59 years, and ran through the stages of pemphigus up to the most serious aspect of pemphigus foliaceus. Death followed in three months. Throughout the spinal cord there was found an increase in the ependymal cells surrounding the central canal, with local injury to the canal and perforation of the tissues. In the cord of the upper dorsal region fissure formation and capillary hemorrhage had set in, especially in the gray substance. Von Leube (Würzburg) had an unanswerable argument for the neurogenous origin of pemphigus, which he had seen in the case of a 51 year old typhoid patient, who, in the second week, was suddenly seized with a motor aphasia and simultaneously with pemphigus with large vesicles in the mouth. Both phenomena disappeared together after eight days.

On the Antagonism Between Carbonic Acid and Pulmonary Tuberculosis and the Methods of Treatment Based Thereon.—Weber (St. Johann). Pulmonary tuberculosis begins almost always in the apices of the lungs. This distribution rests in a fault in the venous blood. According to Hamburger, the bactericidal power of venous blood is much greater than that of arterial. To this peculiarity recovery is due in cases of Bier's venous engorgement accompanying tuberculosis of the bones. Heart diseases which involve venous hyperemia give great immunity to the invasion of tubercle bacilli. During pregnancy, pulmonary tuberculosis comes to a standstill, because the fetus brings carbonic acid to the mother's lungs as a healing agent. About 50% of diabetic patients die of tuberculosis, because through the excretion of sugar the formation of carbonic acid is restricted. The deposition of fat and the production of carbonic acid are inseparable one from the other. Emaciation depends on imperfect formation of carbonic acid and is properly considered an early symptom of pulmonary tuberculosis. The commencement of cure shows itself first in the laying on of fat. If some readily combustible substance such as levulose be administered not only will the taking on of fat be increased, but also the formation of carbonic acid. Levulose acts almost as a specific in tuberculosis of the lungs. The results obtained at sanatoriums depend upon the increased production of carbonic acid through improved nourishment. Subcutaneous injections of carbohydrates (*Paraffinum liquidum purissimum*) increase the formation of carbonic acid.

[To be continued.]

THE AMERICAN THERAPEUTIC SOCIETY.

THIRD ANNUAL MEETING, HELD AT NEW YORK, MAY 13, 14 AND 15.

President's Address.—Dr. Wilcox congratulated the society upon the remarkable interest in therapeutics which had been awakened and which the society was in a large measure responsible for having awakened. The medical journals were devoting more space to the subject. The year books were

dependent on therapeutics for their chief interest. Practical papers were those sought for by the society. The practitioner demanded more of the consultant than a diagnosis. "How shall we best cope with his disease and health?" was a demand to which only the trained therapist could respond. Specialists of every kind were looking to them for aid. On the other hand, the society acknowledged its indebtedness to the labors of the specialists in their respective fields. The members of the society intended to have outspoken, honest and intelligent therapeutics, with all cranks, faddists and mediocrities eliminated. Dr. Wilcox then took up some of the remedies of special importance which had engaged the attention of the profession during the past year, beginning with the suprarenal extract, the active principle of which had been isolated on the one hand by Aldrich and Takamine and called adrenalin, and on the other hand by Abel, who called his substance epinephrin. The diphtheria antitoxin had established a secure position, notwithstanding the unfortunate tetanus epidemics probably due to carelessness in the preparation or putting up of the serum. If politics in and out of local boards could be eliminated, doubtless this objection would be removed. There was little encouragement, in his opinion, for the use of antitetanic serum, perhaps because the number of cases reported was too few. Antivenomous serum had been successfully used in a few instances. The antistreptococcal serum had made some though not very marked progress toward acceptance. It was certainly not a routine remedy, and should be reserved for desperate cases. Antipneumococcal serum was still sub judice, so far as known the results being in no case comparable to those obtained by large doses of creosote as an organic salt. The inoculation against enteric fever had been practised with a fair degree of success, and in spite of some unfavorable reports was well worthy of further investigation. Antiplague serum seemed to favorably influence the disease without danger to the patient. Experimenters were working on the mixed toxins of erysipelas and the bacillus prodigiosus in inoperable malignant growths; others were investigating the relationship of the leech extracts to the serums with a view to the development of an antibody; progress had also been made in the domain of local and general anesthesia, and carbolic acid had received much attention both as an internal remedy and as a local remedy. The author afterward touched on the uses that had been and were being made of cacodylic acid, gelatin, iodine, resorcin, atropin, vobimbin, formaldehyd, arsenic iodid, methylene blue, and a large number of other drugs. After dwelling on the importance of pharmacologic assay, he concluded by saying that the flood of new synthetics was sensibly abating, probably because professional credulity had been so overtaxed in the past. Should the report of the society's committee on a bureau of materia medica be accepted, and the plan therein proposed put into operation, for the first time in the history of medicine would an impartial and impersonal report be possible on new remedies. In this way it was hoped the future of valuable additions that were made to their resources would be assured. No one who had given this matter careful attention could fail to be impressed with the urgent necessity that existed for some recognized means of obtaining a scientific approval or disapproval of substances offered for the use of the profession. The plan suggested by the committee seemed to be the only one by which an authoritative verdict could be secured.

Proposed National Bureau of Medicines and Foods.—Dr. F. E. Stewart (San Francisco) presented the report of the committee on this subject. The objects of the proposed bureau are: 1. To establish the standards of the materia medica preparations on the market, and keep them under analytic and pharmacodynamic observation, with the aid and cooperation of the expert chemists, physiologists, biologists, botanists, pharmacologists, and clinicians connected with the medical schools and colleges, and the pharmacists and manufacturers of medicinal drugs and chemicals. 2. To act as the medium of communication between the scientific workers in the laboratories, hospitals and clinics engaged in the investigation of new materia medica products, and those engaged in manufacturing and marketing brands of them, to develop the knowledge of their origin or genesis, nature, composition, methods of manufacture, standardization, pharmacodynamic properties and therapeutic uses. 3. To collect the knowledge of materia medica products, reduce it to law, embody it in system, and publish it for the benefit of science. 4. To aid the manufacturers of materia medica products and preparations who comply with scientific and professional requirements by placing their brands under the auspices of the bureau. The report explained that the bureau would not be organized for money-making purposes, not because it was unprofessional for professional men to accept fees for their services, but because the bureau was designated to be a public institution, and manifestly could not be classed as such if it paid dividends on its stock. It would, however, pay its experts for their investigation whenever possible, and in this respect would occupy a very similar position to that of an educational institution in its relation to its teaching faculty. The bureau, it was further explained, would draw a clear line of demarkation between products and brands of products for the purpose of protecting science on the one hand and commerce on the other. All products should appear under their proper names, and be open to free competition. The bureau, in other words, would not deal with con-

trolled products, but only with brands of products which were free to science and commerce, and open to competition under generic titles common to all brands of the same product. The report also dealt with the necessity of establishing an American Sanitary League.

Discussion.—While there seemed to be practical unanimity among the members as to the correctness of the lines on which the proposed bureau was to be established, it was recognized that there were practical difficulties in the way which rendered hasty action undesirable, and therefore it was agreed to postpone the whole matter for another year.

Heart Disease.—A symposium on valvular diseases of the heart was introduced by Thomas E. Satterthwaite, New York. (See *American Medicine*, May 24, page 857.)

Discussion.—The paper was discussed by T. L. COLEY (Philadelphia), who dwelt on the importance of making a diagnosis of ascertaining the condition of other parts of the heart, and also of the state of the digestive organs, the blood, etc. The prime indication was prolonged rest, which was more important than drugs, though the latter had their specific uses and could not be dispensed with. WILLIAM HENRY PORTER (New York), speaking of treatment, said he differed from many of his colleagues. He rarely used the digitalis group of drugs, because they cut off nutrition from the heart and required the muscles to do more work, which was the very opposite of what they wanted. The remedies he depended on chiefly were strychnin, caffeine and camphor. He had never seen any bad effects from strychnin. Caffeine and camphor he reserved for pinches. These drugs used in conjunction seemed to give better results than anything else in building up the heart, and if they could succeed in this the patient would be almost as well off as if he had no insufficiency.

Prognosis of Valvular Diseases of the Heart.—Leonard Webber (New York) said this depended principally on two factors—first the local, and secondly the general conditions. As to the local conditions, the more he saw the more convinced he was that they should not pooch-pooch the subjective symptoms complained of by the patient—pain, shortness of breath, dry cough, palpitation, etc. All these were of consequence in connection with other symptoms. In making an examination it was important to make the patient first walk around the room or indulge in some other kind of mild exercise. If the heart went back to its original condition, it showed that there was no organic affection. As to the general condition, the first question was what work could the heart do under ordinary circumstances? The question was one which it was very difficult to answer, because it depended on the state of the arteries, the heart's muscle, etc. It seemed to him that in considering this point they should give more attention to the periphery than to the centers of the nervous system. The heart, instead of being relieved by drugs, was often overcharged. Another point was that the speed of a heart was not so important as its rhythmic action. The difficulty in arriving at a prognosis lay in the necessity of weighing and striking a balance between symptoms that seemed to point in opposite directions. He had often found that time and circumstances had cleared up a case and given a prognosis which there was no possibility of establishing earlier. Therefore it did not do to be in too great a hurry in expressing a decided opinion.

Discussion.—OLIVER T. OSBORNE, New Haven, said that many cases of cardiac lesion were found among the Yale students. As to treatment there were three conditions to be considered: (1) Failure with compensation; (2) failure without compensation; (3) dyspneic affections. As a rule what was most important was that the patients should regulate their lives, particularly avoiding the severe exercise and the use of stimulants. In the first class of cases the symptoms would probably disappear with rest and regular habits. As to those in which there was no compensation he differed from Dr. Porter. He considered digitalis the queen of remedies where there was no compensation, although no doubt there were some cases in which it should not be increased beyond a certain point. Strychnin, in his opinion, was not so much a drug that should be employed in every day use as one that should be reserved for emergencies.

The Capillary Area.—Eli H. Long, Buffalo, said we were in the habit of talking about vital organs, but as a matter of fact there were no such things as distinctive vital organs. The term was only a relative one and applied to every part where they had a large number of cells. This showed the importance of viewing the body functions from different points of view. Especially they should study them from the capillary as well as from the heart. It might be said that the whole mechanism of the system was designed to furnish the cells, and that the failure of the cell functions was the primary thing to guard against. The reduction of the number of cells and the hardening of the muscles which took place in advanced age threw extra work upon the heart. The treatment of the capillary area should begin early. As a rule a person who showed symptoms of loss of cell nutrition should be placed under restriction as to diet, alcohol, and mental work, and should have abundance of rest and sleep, a bountiful use of water and the salines. Cold baths, friction, gymnastics, and massage were all useful, and in advanced cases the nitrites were indicated, though they lacked the tonic effects of the cold bath.

Discussion.—Dr. BARNES mentioned a case he had seen recently with Dr. Gould in which temporary blindness and

other symptoms of petit mal were associated with if not ascribable to some deterioration of the capillary area. T. E. SATTERTHWAITE said the two subjects of heart disease and affections of the capillary area were closely connected. Their efforts in the treatment of heart disease should be directed to the restoration of the capillary circulation.

The Proper Introduction of Therapeutic Agents to Science and Commerce.—F. E. Stewart showed the necessity for cooperation between the medical profession and the manufacturers of drugs to ensure the organization of pharmacy and the standardization of drugs. Proper protection, the author contended, should be given to the manufacturer as regarded processes of manufacture, provided the products themselves were donated to science.

Discussion.—Dr. BARNES strongly denounced unscrupulous manufacturers for putting dangerous drugs on the market, and contended that the society should stand by Dr. Stewart in his efforts to provide a remedy for the evil. Dr. OSBORNE suggested that as the establishment of a bureau of materia medica would necessarily take considerable time, it might be possible as a preliminary measure to compel the makers of secret remedies to put a label on every package containing any ingredient which the profession was in the habit of regarding as a poison. ROBERT REYBURN thought the society should do certainly something in the way of endorsing the action of Dr. Stewart. The PRESIDENT said the plan of Dr. Stewart had already been endorsed in connection with the proposed bureau of materia medica. There were difficulties in the way, of course, as national legislation was desired, if possible. It had occurred to him that possibly something might be done by means of the interstate commerce law. Dr. STEWART said that those who were in favor of a national law did not intend to relax any of their efforts, but meanwhile he thought it would be well if the society could start the bureau under its own auspices. This would probably strengthen their hands with Congress, and they would be in a better position to propose national legislation. After further discussion the subject was allowed to drop on the understanding that the individual members would continue to agitate it, and that it would be taken up at other meetings, including that of the American Medical Association.

Treatment of Pulmonary Tuberculosis.—A symposium on this subject occupied the society the greater part of the forenoon session of the second day. The first paper was by Dr. George Edward Tyler, Denver, Colo., and dealt with **climatic treatment**, which he contended was the most important of all remedial measures. Properly selected climates caused many arrests and a considerable percentage of cures. Early diagnosis was essential. Cavity cases were seldom benefited by climatic changes, and they should not be sent to high altitudes. A rapid, weak heart, erethism and neurasthenia were contraindications for high altitudes. Profuse secretion was a contraindication for humid climates. Climates with high winds were to be avoided. The temperature should be selected in which the patient was most comfortable. The indigent, the rebellious, the nostalgic should not be sent away for climatic treatment. In all cases open air life and competent medical supervision at the place to which the patient was sent were essential.

Dr. Jesse Shoup, Washington, read the next paper, which dealt with the medical phase of the subject.

Dietetic Treatment of Tuberculosis.—William Henry Porter said that the more liberal use of meat diet in recent years had diminished the tendency to tuberculosis, and made the disease more amenable to treatment. If the Beef Trust succeeded in keeping up the price of meat, one of the results would undoubtedly be an increase in tuberculosis. A good variety in the diet was essential, but crowding the system with food which it could not digest did nothing but harm. A predisposition to tuberculosis was inherited, not the disease itself. The conditions could always be treated. The first thing was to overcome the general malnutrition, and then to direct special attention to the particular foci of the disease. The most difficult problem was due to the loss of appetite and the inability of the system to digest sufficient food. If this problem were solved recovery might be more readily accomplished than by change of climate or medicinal treatment.

Dr. D. Olin Leech, Washington, read a paper on the same subject.

Dr. Egbert LeFevre, New York, called attention to what could be done by **physical means** to arrest the progress of the disease and in some cases produce a cure in conjunction with other treatment. A patient, he said, should take exercise, but it should be well regulated according to the stage of the disease and the condition of the patient. Fatigue should always be avoided. In the first stage of the disease, rest was most important of all.

Discussion.—Dr. COLEY, in opening the discussion on the papers, spoke of the inhalation of formalin as being employed in Italy for the prevention of secondary infections. Dr. BARNES took issue with Dr. Porter's remarks, which he considered purely theoretic, as to the great advantage of animal over vegetable food. The important thing was to find out how much food and what kinds of food a patient could assimilate. Dr. LONG said he found the most effective medicinal treatment was along the lines of local medication. These were best applied by inhalation. General tonics were, of course, essential as well. Dr. NOBLE P. BARNES (Washington) said the

inhalation treatment referred to as being employed in Italy had been used in this country at least 10 years ago. He thought it a pity the prophylaxis had not been more dealt with, and referred especially to the good that could be accomplished by preventing the interchange of books, pencils, etc., in schools. Dr. REYBURN, speaking on the same branch of the subject, referred to the importance of attending to affections of the nasal organs in children.

"A Contribution to the Therapeutics of Iron and Silver" was the title of a contribution by Dr. A. C. Barnes. (See *American Medicine*, May 24, 871.)

The Causes, Prevention and Treatment of Puerperal Eclampsia.—Robert Reyburn, of Washington, D. C. This paper will be published in a future number of *American Medicine*.

Discussion.—MATTHEW D. MANN, Buffalo, said he would agree thoroughly with the author if he would include the fetus among the things that should be eliminated. Dr. REYBURN said all he had meant to convey was that the bringing about of premature labor had not always been as satisfactory as he could have wished. Therefore he said exhaust all other means first.

Advances in Special Therapeutics.—The afternoon session was given up to a series of 11 papers on this subject, contributed by specialists at the request of the society. Dr. D. B. St. John Roosa read the first, which had reference to **ophthalmology**. He thought there was an exaggerated idea as to the bad influence of atropin in persons over middle age; in entirely exceptional cases was glaucoma thus produced. Eucain was more apt to produce hemorrhage than cocaine. The author preferred sterilized water to mercuric chlorid. As to antiseptics for putting the eye into proper condition for operation, protargol was preferable to nitrate of silver, as being less irritating. The suprarenal gland had been used by the profession for several years, and now it was available in the form of chlorid of adrenalin, which was the active principle of the gland. Ophthalmologists, like their brethren in other specialties, were advancing in the use of therapeutic agents.

Therapeutic Agents Used in Gynecology.—Matthew D. Mann said that in no department of medicine had greater advances been made, especially since the introduction of listerism. Spinal cocainization should be confined to cases in which ether and chloroform could not be used. Ether was the safest anesthetic, but it was desirable to limit the dose as much as possible. Organotherapy had been found useful to a limited extent. Adrenalin had been used, principally for its constricting effects; it seemed to be a real and valuable addition to their materia medica. Mammary and ovarian extracts were of doubtful value. The silver of Credé had proved its value. There was little new in operations. In cancer, surgery still remained their only resource, but it was not satisfactory.

WILLIAM H. CARMALT, New Haven, Conn., dealing with the subject of **surgery**, said a surgical operation was in itself a confession of failure. Still operations were necessary, and so it was requisite that they should aim at correct and perfect procedure. The advances that had been made in anesthesia, both local and general, had been of great assistance to the surgeon. Though local anesthesia was sometimes demanded he thought it much better in most cases that the patient should know nothing about the nature of the operation. Antitetanic serum had proved efficacious in desperate cases, and he would be a bold man who would not use it in such cases notwithstanding the failures reported.

Obstetrics.—Charles Jewett, Brooklyn, said that most departments of therapeutics dealt with diseases. Childbirth was a physiologic process, and therefore only a limited number of advances had been made in connection with the therapy bearing specially on it. In the prevention of eclampsia, morphin, he thought, was deserving of more consideration than it usually received from American obstetricians, though possibly there was a danger to the child in the too free use of the drug. Chloroform was indispensable in emergency cases, but its continued use should be avoided. The great thing in eclampsia was to produce elimination, and for this purpose many agents were used. The best treatment of eclampsia, however, was prevention.

Advances in Therapeutics Related to Laryngology.—Charles H. Knight, Brooklyn, said that the suprarenal extract was only second in importance to cocaine, but there was a danger of adrenalin being so implicitly relied on as to encourage the too free use of the knife. There was no doubt adrenalin was a valuable agent in minor operations, but it had its limitations, and they were still awaiting information as to what they were.

The development in **orthopedics**, Newton M. Shaffer, New York, observed, had been more influenced by a few men than any other. There was, however, still too much tendency to cultivate surgery at the expense of the mechanical art. Medical schools should be equipped with mechanical laboratories, and more attention given to the study of anatomy.

Therapeutics in Genito-Urinary Work.—Eugene Fuller, New York, referred to the disappointing character of many new remedies, and said it was safer in the treatment of gonorrhea to leave it alone rather than abort it too abruptly.

Dr. William J. Morton, New York, spoke on **electrotherapeutics**.

Dr. Charles G. Kerley, New York, to whom the subject of **pediatrics** had been assigned, said it was a good rule to treat the child first and afterward the disease.

Dr. Charles W. Allen, New York, said in regard to **dermatology** that it could not be claimed that equal advances had been made as in bacteriology and other branches of study. Still distinct progress had been made in their knowledge of the value of the iodins, formalin, methylene-blue, etc. The x-ray was also a useful agent.

Therapeutic Advances Connected With Neurology.—Edward D. Fisher, New York, said that new drugs were, as a rule, palliative rather than curative, and were often substitutes for drugs that were notoriously dangerous. Sulfonal, trional, dionin and a variety of other remedies were good. He obtained good results from trional, and did not find any drug habit induced. Chloreton had proved useful as a hypnotic and apparently had very little deleterious effect. The danger of the day, however, was the indiscriminate taking of drugs by the public without the advice of a physician.

The president, in congratulating the society on the excellent series of papers it had heard, said that some of their guests had unwittingly broken one of their rules by speaking of certain remedies under their commercial instead of their scientific name. This would be remedied in the official report of the proceedings.

On motion of Dr. Stewart a vote of thanks was awarded the specialists for their contributions.

The Therapeutic Use of the Organic Extracts.—Dr. Oliver T. Osborne, New Haven, treated of the well-known and also of a few suggestive uses of the different extracts, and likewise gave a brief account of the physiologic chemistry of the drugs. The thyroid gland, being the most important, was the first to receive attention at the hands of experimenters, and was now most thoroughly understood. Besides the ordinary uses made of the gland, the author suggested that hypersecretion of the thyroid might be one of the causes of the troubles of the climacteric. He urged that the thyroid should be given like all other organic extracts, in small doses. After discussing the connection of the pituitary gland with acromegaly, the author referred to the thymus gland as of value in aiding in the normal cure of tubercles of the lungs by furnishing a physiologic salt which was necessary for the isolation of the diseased portion. Adrenalin, he proceeded to say, was the best cardiac remedy offered in the shops, and should be largely resorted to in all cases of shock and cardiac failure. The use of ovarian extract was still problematic, except in some cases after a complete ovariectomy, where decided amelioration resulted from its use, though not in all cases. Testicular extract, except for its value as a carrier of nuclein and physiologic phosphorus, had not yet been proved of any specific value.

New Officeholders.—The following were elected the officers for the ensuing year: President, Dr. Thomas E. Satterthwaite, New York; vice-presidents, Dr. H. H. Barker, Washington; Dr. J. N. Hall, Denver, and Dr. O. T. Osborne, New Haven; secretary, Dr. Noble P. Barnes, Washington; treasurer, Dr. John S. McLain, Washington; recorder, Dr. William M. Sprigg, Washington; curator, Dr. George C. Ober, Washington. (The last four officers were reelected.)

It was agreed to hold the next meeting in Washington immediately before the meeting of the Congress of American Physicians and Surgeons, or possibly overlapping that gathering.

Amendment to Virus and Serum Bill.—The Executive Committee of the District of Columbia Medical Society, in a report submitted to the District Commissioners, recommends that Section 4 of the bill pending in Congress, regulating the sale of viruses, serums, toxins and analogous products in the District of Columbia, and interstate traffic in said articles, be stricken out and the following inserted in its place:

Section 4. That the surgeon-general of the army, the surgeon-general of the navy, the supervising surgeon-general of the marine-hospital service, the chief of the bureau of animal industry of the Department of Agriculture and the health officer of the District of Columbia be, and they are hereby, constituted a board, with authority, subject to the approval of the Secretary of the Treasury, to promulgate from time to time such rules as may be necessary, in the judgment of said board, to govern the issue, suspension and revocation of licenses for the maintenance of establishments for the propagation of viruses, serums, toxins, antitoxins and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia, or to be sent, carried or brought for sale from any state, territory or the District of Columbia into any other state, territory or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States: Provided, that all licenses issued for the maintenance of establishments for the propagation and preparation in any foreign country of any virus, serum, toxin, antitoxin or products aforesaid, for sale, barter or exchange in the United States, shall be issued upon condition that the licensees will permit the inspection of the establishments where said articles are propagated and prepared, in accordance with section 3 of this act.

Section 5. That the Secretary of the Treasury be, and he is hereby, authorized and directed to enforce the provisions of this act, and of such rules and regulations as may be made by authority thereof, to issue, suspend and revoke licenses for the maintenance of establishments aforesaid, and to detail for the discharge of such duties such officers, agents and employees of the Treasury Department as may in his judgment be necessary.

It is recommended that the bill, amended as suggested, be endorsed by the Medical Society and that the Executive Committee be authorized to take whatever action is necessary to secure its enactment.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE ETIOLOGY AND DIAGNOSIS OF VALVULAR AFFECTIONS.¹

BY

THOMAS E. SATTERTHWAITE, M.D.,
of New York.

A brief review of the causes and diagnostic signs of valvular affections, based entirely on pathologic evidences derived from a large number of postmortem records, including his own, was given.

Apart from lithemia, which he found the most potent cause of organic endocardiopathies, arteriosclerosis, often due to syphilis, infections like diphtheria, the continued fevers, influenza and tuberculosis, with some minor disorders, centering about the gastrointestinal diseases of infancy, were probable etiologic factors. On the other hand, relative endocardiopathies were common in many men who trained for athletic sports, in the fatty heart, all forms of cardiac hypertrophies in pericarditis, thoracic aneurysm, pulmonary tuberculosis and malformations of the chest.

He found mitral affections rather the most common, if considered from the standpoint of combined and single lesions. The diagnosis of mitral insufficiency was made in about 75%, the four cardinal signs being a systolic murmur at the apex conveyed to the left; accentuation of the second pulmonary sound; faintness of the second aortic and increased transverse cardiac dullness. Inasmuch as obstruction was often combined with insufficiency, a thrill and a diastolic murmur might be recognized in a certain proportion of these cases. In failing compensation, however, the first two signs might fail, so that at this stage a correct diagnosis was problematic, and yet the highest degree of diagnostic inaccuracy was reached in mitral insufficiency. In many other valve affections the ratio of accuracy, even under the most favoring circumstances, was very great; far greater, he believed, than was commonly supposed by the profession. Mitral obstruction he found to occupy the fourth place in frequency, but according to his figures, in 70% it was associated with insufficiency. The total murmurs in the diastolic interval was only 40%. Fagge had put it at 43%; others as high 60% or 80%.

The maximum intensity of the bruit was over a limited area between the fourth left space and the apex in the neighborhood of or over the fourth costochondral articulation, less often in the fifth space, below or outside the nipple; but this area was not absolutely fixed, although, as compared with the tricuspid area, it was small. The bruit was of short duration, often but not always running abruptly into the first sound. In from 10% to 35% there was a thrill. Another feature was hypertrophy of the left auricle and right heart. Inasmuch as organic insufficiency was apt to precede obstruction, a history of this former affection was important.

Aortic disease was about as frequent as mitral in combined lesions, but singly was much less common.

Aortic insufficiency developed very insidiously. It was more common than obstruction. In well-established aortic insufficiency there was the "long heart," extending into the sixth, seventh or eighth space, occasionally to the axillary line, the "water hammer" and the "capillary" pulse, though neither of them were characteristic where the heart action was feeble. The diastolic murmur was clearly heard in the second right space or second left, close to the sternum, or between these points, usually with greatest distinctness in the middle sternal region on the line of the fourth left costal cartilage, sometimes at the apex or over the ensiform appendix. In dilation of the ascending arch the diastolic murmur might be carried well to the right of the aortic cartilage.

Aortic insufficiency was detected in from 60% to 70%, less often therefore than mitral insufficiency. A common error lay

in confounding fusiform dilation of the aorta, so often associated with aortic insufficiency, with true aneurysm of the arch, and therefore misapprehending the true relation of the valve to the arch.

Aortic obstruction was tolerably common in combined lesions but rare as a single lesion. From a study of about a dozen of the acquired form the following conclusions were reached: It usually occurred in males and after middle life. The heart was large and the apex was carried to the left. The pulse was slow, hard and of only moderate volume up to the time of failing compensation. There was a systolic bruit, up to the stage where the occlusion was extreme. The murmur was best heard in the second right inter-space and was carried up into the great vessels of the neck. The congenital form was one of the cardiac anomalies, that as a rule quickly ended an infant's life. It was barely possible that occasionally it might persist to an advanced age.

His records indicated that well-pronounced tricuspid affections were the rarest of all, except those of the pulmonary, representing 27% of all valvular affections. Sperling has made it 26%. Tricuspid insufficiency preponderated over obstruction in the ratio of about 9 to 1. It was seldom, however, recognized during life. In 10 of his cases it was only recognized in three (30%). In the Massachusetts General Hospital the ratio of success was said to be even less. Doubtless some clinicians thought the diagnosis of this affection of minor importance, as it was so generally secondary to more pronounced lesions.

The most distinctive sign was the systolic murmur heard over a somewhat indeterminate but extensive area, including the lower half of the sternum and ensiform cartilage, extending often an inch to the right of the sternum and even to the right axillary line, over the fourth and fifth left intercostal spaces along the line of the sternum, seldom as much as an inch to the left of it, the center of greatest intensity being the fourth left intercostal space close to the sternum. Now as this area covered to some extent the area in which the murmurs of mitral obstruction and aortic insufficiency were heard, in differentiation we should depend so far as the murmur was concerned on the difference in pitch, quality, duration and time, rather than on its position. Another important sign was epigastric pulsation. Another the jugular pulse, which was strongly corroborative, if not pathognomonic.

Tricuspid obstruction was very uncommon. Out of 164 recorded cases in only 6 had the diagnosis been made. The following points were to be considered: In about 25% there was a coexisting mitral obstruction. The right auricle was enlarged and dilated. In from 12% to 70% certainly there was a diastolic murmur, heard best over the fourth or fifth intercostal spaces to the left of the sternum, or fifth or sixth spaces to the right of it, over the intervening spaces and ensiform cartilage. There was palpitation, cyanosis, dyspnea, and edema. In about half the cases there was epigastric pulsation, and in an equal number a previous history of rheumatism. It was *par excellence* a woman's disease, while in mitral obstruction the preponderance in favor of woman was hardly appreciable, in his opinion.

Though a diagnosis was manifestly very difficult under the data at hand, still in a woman, with a diastolic murmur in the tricuspid area, as here outlined, which in quality, pitch, duration or time differed from the murmur of mitral obstruction or aortic insufficiency, a diagnosis of tricuspid obstruction might be made with probable certainty.

Of all cardiac affections the pulmonary were most rare. In a total of 175 valvular affections from one of his own tables, the pulmonary was only attacked four times, and all were instances of acquired pulmonary insufficiency. Pitt had only collected 99 cases.

Among the important signs were: Displacement of the apex to the left; occasionally a thrill over the second or third interspace close to the sternum conducted down its margin; in about 25% a double murmur; a diastolic murmur intensified by inspiration; embolism of the lungs in one-third of the cases; concomitant wasting disease of the lungs, sepsis, or arteriosclerosis; epigastric pulsation. At the best the diagnosis had not been made in more than half of the recorded cases verified

¹ Author's abstract of paper read before the American Therapeutic Association, May 13, 14, 15, 1902.

by postmortems. Pulmonary obstruction or stenosis was one of the most frequent of the congenital anomalies of the heart, and there were many recorded examples of it. The acquired form, however, was rare, but how rare comparatively was uncertain. The congenital form had certain well-defined characteristics, such as cyanosis, lack of mental and physical development, with the undersized body, bulging chest, protruding abdomen, prominent eyes and clubbed fingers and toes. The systolic murmur was often loud and heard over all the precordial area, occasionally as low as the fifth left space, usually with greatest intensity over the pulmonary valve area, extending up toward and sometimes under the clavicle. In acquired obstruction we should look for antecedent infection, especially venereal disease or rheumatism, but there was no arrest of mental development. Often there was cyanosis. The murmur was more definitely located than in the congenital form. There might be a thrill, and the apex beat was apt to be diffuse and forcible. Usually there was an attendant pulmonary or bronchial disease of a purulent nature. In any case, the diagnosis was not easy. In the acquired form it had seldom been made, though Paul and Mayer had recorded successes. In the congenital variety there was less difficulty, because the associated lack of mental and physical development were distinguishing features.

THE PROPOSED NATIONAL BOARD OF MEDICAL EXAMINERS.

BY

FRANK WOODBURY, M.D.,

of Philadelphia.

The soundness of the legal principle, that the regulation of the practice of medicine for the protection of the public comes within the general police powers of the state, is now regarded as fully established. Nearly four centuries ago the first statute was adopted in England for regulating medical practice. The preamble to this act (3 Henry VIII, cap. II) recites that physic and surgery were then practised by "ignorant persons who could tell no letters on a book, and by common artificers, smiths, weavers, and women, who took upon themselves great cures, partly using sorcery and witchcraft, partly applying very noxious medicines to the disease." This statute enacted, under penalty, that no one should practise medicine without going before a board of examiners and receiving its approval. Since 1511, the date when this law was passed, many others have been enacted, all assuming that the authority to regulate the practice of medicine belongs to the state, as a measure of protection of the community against incompetence and fraud. The recognition of this principle, and the acceptance of the implied obligation in this country has led to the establishment of the various state medical boards, and boards of examiners and licensers, which now exist in nearly every state of the union. The good work already done by these boards, in the direction of raising the standard of medical education among college graduates, and in keeping out of the ranks of the profession imperfectly trained and incompetent applicants, is now generally conceded and gratefully appreciated by those who are interested in the welfare, and have regard for the solidarity, of the medical profession.

In the practical working of the law under which the state boards act, however, there has been developed one very serious drawback owing to the fact that they are restricted in their jurisdiction to the geographic limits of the commonwealth from which their authority issues. The examining boards have their duties strictly defined. They are allowed no discretionary powers which would permit them to step beyond the letter of the law, which, as interpreted by them, requires only one form of examination to be employed, whether the applicant is a recent graduate, or he already possesses the right to practise in another state, under the license of that state board. No concession is made to the veteran, who already has good standing, and who may, in his former place of residence, have acquired distinction, or even conferred honor upon American medicine. This is an opprobrium to the entire profession of this country

so long as it is allowed to continue. Men of the highest attainments, who occupied professorial positions, being invited to membership in the faculty of a college in a neighboring state, have been compelled to sit down with neophytes, to be examined, possibly, by some of their own pupils. The situation is embarrassing both to the distinguished guest and to the members of the board, who are simply doing their duty under the law.

In point of fact, the legislation was never intended to apply to the higher ranks of the profession at all, but merely to guard the door of entrance against unqualified intruders. The president of the Pennsylvania State Board of Medical Examiners, Dr. Henry Beates, has given much time to the consideration of this unfortunate condition of affairs, and has labored to bring about a sort of interstate comity, by means of which the certificates of one state may be accepted as valid in another. He frankly confesses, however, that as matters are at present, owing to the varying standards in force in different states, this plan is impracticable. Dr. Beates has recently suggested that the state boards shall establish a practitioners' examination, which shall be entirely clinical and practical. In other words, that there shall be two examinations, one for recent graduates, the other for practitioners, and of the latter, at least five years' practice of medicine would be required. He believes that a certificate obtained by this special examination would be regarded as valid in any part of the country, by mutual agreement of the state boards.

An effort will be made at the Saratoga meeting of the American Medical Association to arrive at a solution of the difficulty by another route. Dr. William L. Rodman has made a very practical suggestion, which is detailed in the *Journal of the Association* of May 10. In brief, his plan involves the establishment of a voluntary board of national examiners, supplementary to the existing state organizations, to consist of six members, viz., the Surgeon-Generals of the Army, Navy and Marine-Hospital (public health) Service, and three representative civil practitioners, two to be elected by the House of Delegates of the American Medical Association, and one by the American Congress of Physicians and Surgeons. The proposed (voluntary) examinations are to be both theoretic and practical, and are to be held in Washington or some other convenient large city where hospital facilities can be utilized. It is hoped by the author of this plan that the diploma or certificate of such a distinguished board would be accepted as a matter of courtesy by state authorities anywhere in the union, as satisfactory evidence of the owner's professional attainments and personal worth.

It is said that this plan has been unanimously endorsed by the delegates from the several state boards meeting with the Committee on National Legislation, recently in Washington, and that it will be recommended to the House of Delegates at the coming meeting of the American Medical Association. It has been approved by the president of the Board of Examiners of Pennsylvania. As another evidence of the estimation in which it is held, it is significant that the editor of the *Journal of the Association* discussed it at length and earnestly commended it.

A number of years ago, while editor of the *Philadelphia Medical Times*, being impressed with the hardship imposed by this anomalous situation, I suggested tentatively a plan that had some of the features of Professor Rodman's. It similarly contemplated a voluntary examination before a national board and was based upon the acknowledged efficiency of the tests employed by the medical boards of the U. S. Army and Navy. It proposed that such examinations might be open to civilians who did not intend to enter the public service, but who simply desired the distinction that would accrue from passing such a government or national board. The successful candidates could have an endorsement of the fact upon their diplomas. When thus fortified, it was believed that a *modus vivendi* could be established, through the courtesy of the state boards, by which diplomas with such endorsement could be accepted as sufficient evidence of the owner's proficiency anywhere in the United States, without further examination except for personal identification. It is very evident that any solution that is offered, if it is to be carried into practice, will ultimately rest

upon the favor of the several state boards and their willingness to cooperate. Very probably additional legislation may be required in order to give them the power of discriminating, so as to recognize the distinction between the two classes of candidates, (1) those who are required to demonstrate their fitness for the responsibilities of medical practice, and (2) those about whose fitness there is no question whatever. As a means of affording present relief to the members of the latter class, I would make the suggestion that the state medical societies might consent to cooperate with the examining boards. For instance, if a reputable member of the profession who has been actively engaged in practice for, say ten years, desires to change his field of work, he can apply for a certificate from his state medical society, which could be endorsed by the medical society of the state to which he is going. Such evidence of professional attainments might well be accepted by the examining board of the state concerned, and thus aid in carrying out the idea of interstate comity or reciprocity, while recognizing and upholding the dignity of the profession.

A CASE OF EDEMATOUS LARYNGITIS.

BY

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of Erie, Pa.

On the morning of December 14, 1901, a man came hurriedly into my office seeming in great distress, complaining of inability to talk or swallow. Examination revealed an edematous uvula as large in all dimensions as a man's thumb. This condition was relieved by scarification and local applications. He gave his age as 43. Occupation, farm laborer. His previous health had been very good and he felt well on retiring the night before, but was awakened this morning by the choking sensation. He admitted drinking to excess during the few days previous and gave a history of similar debauches at long intervals. His arterial tension was high and arteries hard. Ice, quiet, and temperature were advised.

Three hours later I was called to come at once to a saloon three blocks away, and here I found the same man suffering from the most intense dyspnea. He was much excited, jumping about and throwing his arms in his frantic efforts to get air. Local applications being impossible and dyspnea and exhaustion increasing with stridor, cyanosis and unconsciousness, I immediately opened the trachea, using a tenotome from my pocket case. Not being equipped for such an emergency I had some difficulty in keeping the wound patulous, but found very serviceable a pair of Thomas' uterine dressing forceps, opened after insertion, with a finger placed between the blades to prevent their closing. Respiration was soon established through the opening, cyanosis disappeared and the patient regained consciousness.

An ambulance having been summoned he was conveyed to Hamot Hospital, about 1½ miles distant, the wound still being carefully held open by the forceps. Assisted by Dr. Kalb, of the hospital staff, hemorrhage was checked and a tracheal tube inserted. As a precautionary measure, Dr. Kalb also inserted a silk suture in the tracheal ring on each side of the opening. By these measures the dyspnea was relieved but the edema continued so that by the evening of the first day the whole anterior and lateral cervical regions were enormously distended, the edema extending down over the clavicles onto the chest. (This was not subcutaneous emphysema.)

The patient by this time appeared reasonably comfortable, except an occasional severe shooting pain radiating from the wound to the sides of his head. He received morphin and atropin hypodermically and was propped up in bed and given warm, moist air to breathe, at the same time his throat was sprayed at hourly intervals with adrenalin solution, and subsequently by a solution containing 3% antipyrin with 1% cocain. Sixty centigrams of calomel was placed on his tongue. A single sample of urine showed no albumin and one granular cast was found.

After the first day the edema began to subside, so that on the third day a cork was inserted into the tube and on the fourth day the tube was removed. The subsequent course was uneventful, except a slight attack of pleurisy at the end of a week which quickly subsided, and the patient left the hospital on the eleventh day.

The etiology of the complaint seemed at first rather obscure, but since the patient returned to his home, some distance from the city, he has reported some edema of the lower extremities, and a sample of urine showed quite a percentage of albumin.

Although no microscopic examination was made and nothing further has been heard from the patient, it seems probable that the kidneys are the organs at fault.

ADVANTAGES OF WRITTEN EXAMINATIONS.

BY

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of New York City.

To the Editor of *American Medicine*:—There has been an undoubted improvement in the methods of medical education, and New York State is foremost in the reformation. While written examinations are possibly not the best method of getting at the quality of a person's judgment and perceptions, as well as knowledge, nevertheless, they are often the only means that are reasonably feasible. In contrast to this general proficiency there are a few glaring exceptions which are amusing if not instructive.

For example, during an extensive examination made some time ago to fill vacancies in the municipal service, one person made a classification: "Infectious, cutaneous, and subcutaneous diseases." Another describes scabies as: "A disease of the skin due to the presence of a small *germicide*." Still another said: "A person to be vaccinated has the epidermis or skin or epithelium scraped from the body." To the question, "What is *trachoma*?" was answered: First, "Swelling of the *trachea*, causing pressure." Second, "Trachoma is a parasite introduced into the human system through food, mainly flesh of hogs." Third, "Trachoma is a severe disease of the eyeball, which may terminate in blindness." To the question, "What is the *habitat* of *tinea tonsurans*?" was answered: "Habitat, small intestines; diagnosis is made by examination of the stools." Second, "Tinea tonsurans, constipation, restlessness, picking of the lips, convulsions—worm may be passed." In *tinea circinata*, another said: "They have itching of anus, scratching—anus red, and may be able to see the worm externally." To the question, "What is the *habitat* of each variety of *pediculus*?" the answer was: "Usually a person very lax in the care of his head and body."

The following was the entire clinical history given of whoopingcough: "Patient has *diffused* eyes, often blue rings around, when spasms are strong the patient whoops, has asthmatic attacks." Here is an interesting specimen of natural philosophy in reply to a question about ventilation: "Fresh air is generally much cooler than foul air, and in consequence rushes through ventilators, windows, doors, etc., driving the warm air before it."

ALKALINE SERUM ALBUMIN.

BY

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of Kennett Square, Penna.

The object of the following remarks is twofold—first, to direct attention to the germicidal properties of alkaline serum albumin; and second, to develop its clinical importance as a factor in the transmission of nerve impulses. As a "practical" proposition for the general practitioner as well as the specialist, there is at present no more promising field for study and investigation, and in view of the simplicity and ease with which a demonstration can be made, there need be no hesitancy. Indeed, I have no doubt but that many patients derive benefit in this direction from medicines administered for some other condition, as when pepsin is ordered with an alkali, when sodium bromid is taken for the relief of ovarian neuralgia, or potassium iodid exhibited for syphilis, and a wellmarked illustration is found in the use of sodium bicarbonate for the relief of acid dyspepsia, since in all these instances the alkali plays an important part in restoring the physiologic equilibrium and making the cells work.

In a preliminary paper on the subject (*The Influence of Stimulants and Sedatives upon the Elimination of Cytotoxins, Wisconsin Medical Recorder*, August, 1901), I have pointed out the importance of taking into account the blood reaction when considering the propriety of administering stimulants or sedatives as a means of favoring the elimination of waste products, including cytotoxins, and I must confess that I have been greatly disappointed in observing the persistency shown for

the employment of acids, especially in the treatment of digestive disorders. The absolute failure to secure satisfactory clinical results from the continued use of HCl, given simply because an examination of the stomach-contents after a test meal shows a diminished percentage, should lead to an inquiry as to the probable cause. It is possible, and even probable, that these cases of diminished acidity may be due to alkalinity arising from decomposition (retrograde metamorphosis), secondary and consecutive to hyperacidity, since we know that blood-serum loses its germicidal properties when the alkalinity is neutralized; hence the suggestion relating to decomposition.

As showing the extreme delicacy of this albuminate—the form in which an alkali exists in the blood—should be noted the fact that while water destroys the germicidal properties (by dialysis), the normal salt solution does not. This scientific fact is further confirmed by the clinical fact relating to the successful employment of normal salt solution, say in the case of heat-stroke, when the excessive heat renders the serum albumin inactive, the high temperature breaking up the combination. In such instances we have evidence to warrant us in assuming that the saline restores the germicidal activity. A recapitulation of the researches, chemic, physiologic and electric, will not be necessary, because certain of the deductions are axiomatic, others are physiologic, and all may be tested clinically, so my first object has been attained.

The second portion of my inquiry is rather more formidable, unless I were satisfied to rest my case, by assuming that the foregoing demonstrates the clinical importance of alkaline serum albumin as a factor in the transmission of nerve impulses, since it shows the need for securing and maintaining a normal alkalinity of the blood as a preliminary measure in our efforts to restore cell-function.

In this connection, however, I desire to develop certain points with reference to the transmission of nerve impulses which are calculated to shed new light upon this subject. For example, even though not well grounded in physics, a person of ordinary intelligence would be warranted in assuming that nerve impulses were transmitted like waves of light and sound, and knowing the mathematic precision which has been applied recently to determine the length of electric waves, a superficial observer might come to the conclusion that it was a matter of small importance. On the contrary, it is a subject of vast significance to medical science, and yet we are only beginning to cultivate this promising field. As a matter of fact, the exact physiologic basis of nerve impulses has but recently been discovered and demonstrated. Of course, it has long been known that the transmission of nerve impulses is accompanied by an electric current; but it was Hardy, of Cambridge, England, who first demonstrated that this current, both positive and negative, is carried by the colloidal particles of which the nerve (protoplasm) is composed. Thus, these colloidal particles are charged with positive electricity, the effect of which is to create or produce a negative current in the fluids provided for the purpose of holding these particles in solution. As a consequence, therefore, we are prepared to appreciate the importance of electric phenomena in the transmission of nerve impulses; at the same time, we can understand how a slight variation in the reaction of the serum albumin is so liable to derange both the vegetative and mentative functions, because a variation from the normal will interfere with molecular changes (vibrations) and hinder metabolism.

Next in order to be mentioned is the recent announcement of Dr. Mathews, of Chicago, who confirms Hardy's conclusions, pointing out in addition that the electric phenomenon described enacts the role of a nerve stimulus—at such points in the nerve (center, trunk, or branches)—as the negative charges are in excess, and further, that chemic stimulation is identical with electric stimulation.

As a further contribution of science to practical medicine should be noticed the interesting fact brought out in this investigation that irritability is diminished in the positively charged particles by this action, the colloidal solution being rendered more permanent. The converse of this proposition is also true, the irritability being increased and the solution rendered less stable by negative charges, and the far-reaching influence

which these researches are calculated to exercise upon clinical medicine, it would be impossible to forecast. This demonstration, for example, showing that normal nerve stimulus lessens nerve irritability and promotes stability in nerve structure, is in direct opposition to the accepted therapeutic teachings although for years I have persistently advocated the small dose as best calculated to restore function, to be so regulated as to time and amount that the irritation which it sets up shall take the form of stimulation. I have even gone so far as to suggest "molecular vibration" as a working hypothesis in clinical medicine as a means of developing the subject of physiologic cell medication, the practical adaptation of this theory having been shown in upwards of 30 well-known and extensively used pharmaceuticals. For example, in the treatment of trifacial neuralgia by aconitin, we inaugurate a series of molecular vibrations in the sensory nerves which interfere with the nerve impulses transmitting the sensation of pain. In the case of acute hepatic congestion with nausea and vomiting, the abnormal condition can be promptly arrested by the judicious employment of mercury biniodid—which acts as a cell stimulant to the liver, together with the frequent sipping of hot water—to increase the pressure under which bile is secreted. A single dose of copper arsenite so small as 1-1,000 part of a grain is frequently sufficient to arrest the progress of a most forbidding case of intestinal colic, cholera morbus, or cholera infantum—through its influence upon cell function—and illustrations could be multiplied indefinitely to confirm the clinical adaptation of this theory. Happily, the researches of Hardy, Mathews, and Loeb are such that I shall no longer be compelled to advance it as a theory, but as a fundamental principle in normal physiology.

In this connection should also be mentioned certain deductions respecting other forces, as follows: "Chemic stimulation is, according to the electromagnetic theory of light, shown to be identical with stimulation by light waves," and "The long light waves and heat waves are in their action like the positively charged ions" (atoms or groups of atoms).

Thus, it will be observed that we have completed the circle, arriving at the starting point, having learned that certain molecular changes take place in protoplasm as a result of electric action, chemic action, or the action of light and heat, and that these forces are concerned in the transmission of nerve impulses, and we begin to realize the significance of maintaining a normal alkalinity of the blood serum, as otherwise, the cellular structures would be incapable of functioning. It should be stated here that nothing has been said relative to the character and functions of electrons, but we may assume that this also will be developed in due time.

Before closing this communication I should like to bring forward another instance in which scientific achievement has been discounted in the practical world, although it notably confirms the correctness of the working hypothesis. Thus Dr. Mathews says, "All anesthetics render the colloidal solution more permanent and prevent gelation. All dissolve fat. They reduce the irritability of the nerve or protoplasm, because the colloids in the nerve are largely fat compounds and more soluble in a mixture of ether and water than in water alone."

Now, among florists, a friendly rivalry exists in the production of new creations, and especially is it commendable to understand growing flowers out of season, so for some years past a working hypothesis has been successfully applied. Ether is used to chill the plant, thus securing for it an artificial winter. Subsequently, when the shrub or plant has had a forced rest, heat is applied gradually until a normal condition is restored, when it blooms or fruits in the usual manner. Thus we see the close similarity of cell-function in both animal and plant life, and I may add from personal observation and experience that I am fully convinced plant life suffers quite as much from the baleful effects of hyperacidity as does mankind.

Diphtheria Serum.—The general use of Prof. Behring's diphtheria serum in Berlin has been followed by a decided decrease in the mortality from the disease. Recently published statistics report the deaths from diphtheria during 1901 as 469, while before the introduction of Prof. Behring's serum the deaths ranged from 1,300 to 2,600 a year.

ORIGINAL ARTICLES

THE PHYSICAL AND DIETETIC TREATMENT OF VALVULAR HEART DISEASE DURING THE STAGE OF PERFECT COMPENSATION.¹

BY

PROFESSOR CARL VON NOORDEN, M.D.,

of Frankfort-on-Main.

All patients who suffer from valvular disease of the heart pass through a stage which, as regards the size of the cavities and the thickness of the wall of the heart, must be considered to represent the *optimum of compensation*. This favorable stage of compensation does not only differ in the various patients, but varies in every single case with the changes that take place in the general circulation. The heart of a patient suffering from valvular disease who takes little or no exercise, becomes much less able to do increased work and to resist unexpected strain than the valvularly diseased heart of a man who, in exercising his muscles, trains his heart for work. Equally marked is the different condition in flabby and in robust patients of the smaller arteries, whose tone is of such great importance for the promotion of peripheral circulation, for their power to react rapidly to stimuli greatly facilitates the work of the heart.

In former years the foremost principle in the treatment of valvular heart disease was that of absolute rest. It was believed that such a heart worked much harder than the healthy heart. If possible, all exertion had to be avoided; the more the heart was rested, the longer it was thought would the state of compensation last. The only result of this policy was the production of the smallest possible amount of compensation; the heart was left perfectly unprotected against unexpected calls for increased work, which are unavoidable even under the greatest precautions. The heart had to be treated with the greatest care, as if it were as fragile as a blown egg. It is one of the greatest therapeutic achievements that Oertel, emancipating himself from this doctrine, demanded that a heart with valvular disease should not be rested, but on the contrary, that it should be exercised as much as possible. I believe that this simple sentence characterizes the whole change which the treatment of heart disease has undergone since the year 1884.

All present teaching, then, amounts to this, that all undue exertions and all excitement from which the heart cannot derive an accretion of strength should be avoided; but that on the other hand, the heart be educated to do such work as it may without injury to itself. The rules of treatment may therefore be divided into those that tend to rest, and others that tend to exercise the heart.

1. *Rules as to Resting the Heart.*—First of all, the patients will have to be warned not unduly to exert themselves. Except in cases of very slight valvular affection, all professional work that demands continued muscular exertion must be given up; moreover, such exercises as walking, especially uphill, or certain outdoor games or sports, must be undertaken with great moderation. Palpitation of the heart and shortness of breath must under no circumstances be produced. A healthy subject does not suffer any damage to his heart when he gets palpitation of the heart and shortness of breath after a run or a climb; but a patient suffering from valvular heart disease must never be allowed to get into such a condition, for even if he emerge from it the first time without any material damage to his heart, a repetition of such undue strain on the heart is invariably accompanied by evil consequences. Many examples could be quoted in corroboration of this statement. Such regrettable instances are constantly happening in places where the so-called "terrain-cures" are taken. Patients whose

hearts have acquired a certain amount of power often throw caution to the winds, and attempt more than their medical man has allowed them to do. One single excess of that kind may possibly throw them back weeks or months.

Patients suffering from valvular disease of the heart always bear moderate exercise which is adapted to their strength, and lasts longer, much better than great exertions of a short duration. Applied to the conditions of everyday life, this experience teaches us to take care that such patients do not hurry or exert themselves unduly in their daily exercise, or try to do the greatest possible amount of work in the shortest possible time, or out of politeness or regard for others, undergo strain which might do harm to the heart. Among the exertions that are to be avoided I should count the following: A patient with valvular heart disease, wishing to be polite to a lady, fetches a heavy chair for her from the other end of the room; or for the same reason, another patient, while walking uphill with a friend who is a quick walker, tries to keep pace with him. I mention these instances simply because I have known cases when such or similar exertions have disturbed a compensation which up to then had been good.

Not less important than the avoidance of muscular exertion is that of mental excitement. Unfortunately, it is not in our power to avoid the latter altogether; but the medical man, the patient, and his friends must know how detrimental mental excitement can be. Severe mental shock produces even in the healthy subject feeble action of the heart, accompanied by a sensation of imminent stoppage of the heart and fainting. Many cardiac patients have died more or less suddenly from shock. Grave anxiety about the welfare of relations, financial difficulties, great disappointments, often cause good compensation of the heart to be lost. Only a few days ago I encountered such a case. A patient with mitral disease who, as late as the month of September, 1901, could with the greatest ease mount hills 1,800 to 2,000 feet high, was soon after his return home faced by a financial crisis. He at once developed palpitation of the heart, irregular pulse, nocturnal dyspnea, followed by edema and dropsy. At first good compensation was restored by means of digitalis, but the improvement was very short-lived, and now there is no hope of restoring the power of his heart. How this disorganization of the mechanism of compensation of the heart is brought about by mental shock is absolutely unknown to us; but however it is produced, we must acknowledge that such a disorganization does take place, and in our capacity as medical advisers do our best to keep mental worry as much as possible from our patients, or if this is not altogether possible, we must see that the bad news is broken to them with the greatest care.

One of the most important rules which must be adopted in the treatment of patients with valvular heart disease is the prevention of obesity. Such patients have a tendency to overproduction of fat. This must be prevented under all circumstances, for all patients feel better and preserve their strength longer if their production of fat remains below the average amount. Much fat makes breathing difficult, and in many instances impairs the action of the heart; the increased weight of the body demands also increased muscular weight in order to lift the body and the limbs. All this permanently imposes more work upon the heart, because every increase of the work of the muscles of the body finds its correlative in an increase of the work of the heart muscle. It is important to emphasize the expression "permanently." Its duration, its daily—nay, hourly—repetition, its unavoidable nature, materially distinguishes the increase of the work of the heart caused by obesity from the muscular work which for the purpose of treatment we prescribe to the patient with heart disease, and the duration and intensity of which can be adapted to the condition of strength of the patient. Out

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of regard for the requirements of the heart of such patients we must oppose degrees of stoutness which, in persons with sound hearts, would not cause anxiety or call for treatment. I have, in my book on "Obesity,"¹ shown that in treating valvular heart disease one must proceed with the greatest caution and try to reduce the fat by degrees. If we put the quantity of food which is necessary to maintain the weight of a patient at x , then the quantity of food ingested should not be reduced to below two-thirds of the "maintenance" quantity x . It is a mistake to reduce the daily quantity of food to $\frac{x}{2}$, or even $\frac{2x}{5}$, as prescribed by the dietetic schedules of Banting, Harvey, Oertel, Ebstein, Kisch, and others. Energetic antifat treatment is often demanded by the patients, or undergone by them against medical advice; but the result is invariably debilitating, incapacitates them for work and makes them liable to palpitation of the heart, fainting attacks and loss of compensation. I must here draw attention to the harm done by the dietetic schedules drawn up by this or that "celebrity," which are only too often accepted by the practitioner without criticism, and are given to patients indiscriminately, whether the dietary suits the case or not. Oertel's antifat treatment specially has won for itself an enormous popularity; but today we are bound to admit that Oertel's régime has cost many a patient his life. I see every year a large number of patients who, on the advice of their medical man, had dieted themselves after Oertel and who have consequently become so weak that they can never completely regain their strength. Consultants who see a large number of heart cases will be able to bear out the correctness of this statement. If we want to utilize the advantages which dietetic treatment based on calorimetric principles offers us, then we must free ourselves from schismaticism and shape our course according to the requirements of each individual case. When this is done, it soon becomes obvious that the arrangement of the dietary differs in every case. In some instances there is no reason at all why there should be a reduction of weight or a readjustment of the quantity of food taken by the patient; in others the weight of the patient has to be increased, while in a third group it has to be lowered. In every case, however, where an alteration of the weight of the patient is required, that change must be wrought slowly and with great caution, whether there is to be an increase or a decrease of the quantity of food taken by the patient.

Besides the regulation of the quantity of the food there must in every case be a supervision of the selection and distribution of the various items of the patient's dietary. First of all, copious meals must, under all circumstances, be avoided, for they produce not only distention of the stomach, but also embarrassment of respiration and circulation, useless congestion of various organs and palpitation of the heart. Patients with valvular heart disease should, during the day, take frequent and light meals in preference to a few copious repasts. This may be best arranged by the interpolation of a light meal between breakfast and luncheon, and of another between luncheon and dinner, whereby the appetite of the patient at luncheon and dinner will be considerably reduced.

It has been much debated whether certain articles of diet should be banished from the table of cardiac patients, and whether some special articles of food are preferable to others or not. I believe that it is impossible to lay down hard-and-fast rules with regard to any of them, and, above all, I cannot make up my mind to recommend a purely vegetarian diet. My impression has always been that a reasonably mixed diet suits cardiac patients best. On the other hand, I cannot advocate an almost exclusively meat diet, on account of its constipating influence. Constipation is

the worst enemy of patients who suffer from heart disease. The most important measure in the treatment of such patients is the regulation of their diet in such a manner that each meal leaves the stomach as soon as possible, and is quickly passed into the duodenum. This object can only be achieved if the meal is not too copious and is not composed of too many different dishes. Each meal should be small in quantity, nutritious, and simply prepared. What menu will be most digestible to the stomach, and yet produce normal peristalsis under avoidance of weakening diarrheas or troublesome constipation, must be found out in each individual case. How much good in this direction may be done by observation and a carefully individualizing régime only those of us can appreciate who are in the habit of giving the utmost attention to these details. Others who heedlessly prescribe think this subject of minor importance, much to the detriment of their patients. I must add here that often the very spas to which cardiac patients flock in quest of cure or improvement are conspicuous for the absence of arrangements for the dietetic treatment of such patients. Many hotels and boarding-houses advertise ever so loud that their cooking is "adapted to the requirements of the cure," and even when they take the utmost pains really to cook "according to the requirements of the cure"—an occurrence which is much rarer than one thinks—it is clear that they can only cook for the "average" patient, but they cannot pay attention to the requirements of each patient under their roof—in short, they cannot individualize. I should therefore consider it a great advance if patients with heart disease would more frequently than has hitherto been done be sent to sanatoriums, where, besides taking the waters, bathing, and other curative factors, they receive a careful and strictly individualizing dietetic treatment.

Starting from the proposition that overloading the stomach with food must under any circumstances be avoided, we have now to raise the question of the ingestion of liquids. The first point to be considered is that of the distribution of daily quantity of liquids. As a matter of principle I think it right, in cases of heart disease, to forbid the ingestion of large quantities of liquid during meals. Nothing overloads and delays the evacuation of the stomach more than the ingestion of much liquid along with solid food. But one must not go too far in this restriction, for many patients lose their appetite more or less completely if they are forbidden to drink during meals; in consequence they eat too little. On this fact, and not on an alteration of the fat metabolism—as Schweninger taught, relying on untenable hypotheses—rests the fact that the prohibition of drinking during meals often reduces stoutness. The effect which the prohibition of drinking during meals has upon the appetite of the individual patient varies considerably; it again requires careful individualization lest slavish adhesion to a principle induce us to prescribe that which may be harmful to our patient. There are cardiac patients whom one simply has to allow a certain quantity of liquid with their meals. I have seen many patients with heart disease who lost flesh rapidly and became very weak because they were rigorously forbidden to drink during their meals.

Of no less importance is this regulation of the daily total quantity of liquid allowed to each patient. If absolutely necessary in cases of lost compensation of the heart, the curtailment of the daily quantity of liquids is eminently desirable in cases of heart disease in the state of perfect compensation, and must be considered as an important prophylactic measure. Oertel originally demanded this restriction only in those cases of heart disease when there was a certain amount of obesity. Since then we have learned that a certain amount of restriction of liquids may advantageously be imposed on all cases of valvular heart disease, and including even cases of arteriosclerosis. Every particle of water which

¹ Nothnagel's "Handbuch der Specialen Pathologie und Therapie," Wien, 1900.

has to be excreted by the kidneys, lungs, and skin, must pass through the vascular system, thus increasing the quantity of matter to be pushed along by the heart, and calling for increased work on the part of this organ—permanent inundation, as it were, of the vascular system with liquid weakens the heart, whereas carefully regulated restriction of liquids eases the heart and blood-vessels and saves cardiac force for other purposes.

It may appear somewhat like a contradiction in terms that we are so anxious to avoid all unnecessary overloading of the bloodvessels on the one hand, while on the other—as we shall see later on—we advise the patient to undertake more or less fatiguing muscular “work” in order to strengthen the heart. This apparent inconsistency finds its explanation in the fact that the muscular “work” is limitable, and is limited both as to extent and duration, while the inundation of the system with liquid means a permanent tax upon the heart. As regards the quantity of liquid that may be allowed, I would not advise, as Oertel does, to include in the calculation the percentage of water contained in solid and semisolid food which the patient is ordered to take; for it only means constant worry to the patient who, from one day to the other, does not know how much water he may be allowed to drink. It is quite sufficient if we order that the total quantity of liquid which the patient is allowed to drink during 24 hours should not exceed $1\frac{1}{2}$ liters ($2\frac{1}{2}$ pints). More stringent orders are superfluous, and only lead to great and unnecessary discomfort for the patient. Within these limits ($1\frac{1}{2}$ liters) the patient may be allowed considerable freedom as to the choice of what he wants to drink. Strong alcoholic beverages, or strong infusions of tea or coffee, should, of course, be avoided, unless there is some therapeutic reason for their continued use. These beverages represent stimulants which excite the heart to increased action, without at the same time, as muscular exercise does, strengthening the cardiac muscle; the consequence is, not an accretion, but a decided loss of cardiac force. Moreover, these stimulants frequently disturb the automatism of the heart, the intactness of which is of utmost importance for the maintenance of compensation. The loss of automatism manifests itself by an alteration of the pulse-rate (acceleration or retardation), more frequently so in cases of aortic incompetence than of mitral disease.

I am, however, not of opinion that one should absolutely forbid patients with heart disease even the use of small quantities of stimulants, in which I include tobacco. Taken in small quantities, they do not excite the heart, for their stimulant effect remains below the limbo of tolerance. This limbo of tolerance varies enormously both as regards the individual disposition of the patient and the individual action of the various stimulants, as may be seen even in healthy persons when one compares their relative degrees of tolerance for coffee, tea, cigars, alcohol, and other cardiac stimulants. The heart of patients who suffer from vascular and renal disease is infinitely less tolerant of such stimulants than that of healthy subjects; therefore, if, out of consideration for the comfort of the patient, and in order not to be more exacting than is absolutely necessary, we intend to allow the consumption of small quantities of these comforts, then we must, from a consideration of the previous history, and by careful observation of the patient, first assure ourselves of the effect which these stimulants have on the patient's heart, especially on the pulse-rate, the force of the apex-beat, and on the subjective sensations of the patient.

2. Rules Regarding Exercise.—Hitherto we have spoken of the rules which are intended to rest the heart with valvular disease and to save it from spending its nervous and muscular energy. Formerly those preventative rules exhausted the medical advice that was given patients who suffered from well-compensated valvular heart disease. That one should not give them “cardio-

regulating” remedies has been well known for a long time. Yet one has with regret to register the fact that a large number of medical men are still in the habit of prescribing digitalis whenever they detect a cardiac murmur in a patient, as if it were impossible for cardiac patients to live without digitalis. Such procedure is a grave mistake. Each dose of digitalis which is given to a patient with perfectly compensated valvular heart disease drives a nail into his coffin.

Since Oertel's fundamental work on the treatment of heart disease we do not any longer confine ourselves to a régime of cardiac rest, but in addition take measures which are intended to exercise and thus strengthen the heart. The stage of perfect compensation is the most auspicious time for this purpose. The means at our disposal may be divided into two cardinal groups—systematic muscular exercise and hydropathic treatment.

(a) *Systematic Muscular Exercise.*—Of the various forms of muscular exercise, those are under all conditions to be preferred which at the same time lead to exercising and strengthening of the respiratory muscles, can be graduated to a nicety, allow of a gradual increase and make excessive efforts impossible. With these points actively before one's mind, one will always know what to allow and what not.

The most perfect form of exercise for cardiac patients whose muscular system, and withal the heart, needs strengthening is walking uphill. The cardiac patient should ascend slowly, breathing deeply and regularly; but he should not talk while walking. It is well known how nicely this form of walking exercise can be graduated (so-called Oertel's terrain cure), and what really astonishing improvement may be wrought thereby in patients who previously had suffered from palpitation of the heart when attempting to walk on level ground. Of the more sport-like exercises I consider rowing the best, because here again the amount of work can be accurately gauged and, with the oars properly held, deep and regular respiration practised. Even where no pond or river is available for this purpose, rowing may be practised by means of one or the other of the many portable rowing apparatus now on the market, which by means of steel springs offer an elastic resistance that can be varied according to the strength of the patient. I use these rowing apparatus a great deal, both at my hospital and in private practice, and should like to emphasize that no other apparatus has in my experience proved itself equally serviceable for the treatment of well-compensated heart disease. Other kinds of sport are less suitable. Bicycling, tennis, golf and so on, are all combined with an amount of exertion that cannot be graduated, and invite to excessive efforts.

Unfortunately, one cannot at all times of the year and in all places make use of the most natural and useful of all muscular exercise—viz., that of walking in hilly country. We must, therefore, look out for a substitute, which may be found in gymnastic exercises. Among these I mention the various exercises classed under the heading of “room gymnastics,” practice on elastic pulley and weight apparatus, and practice with active and passive manual and mechanical resistance. These various exercises allow of great variation and exact graduation. Their efficacy is, of course, limited, as the practice thereon cannot be increased beyond a certain limit or continued beyond a certain time; but their usefulness in the beginning of the systematic treatment is great, especially so with weakly or overanxious patients, whom one would never get to practise the more difficult and strenuous exercises had not their courage and self-reliance been previously awakened by successful practice of the above mentioned lighter and shorter gymnastic exercises. In specially anxious cases the medical man will do well himself to furnish the manual resistance during the patient's practice of resisted movements, because thus he will be enabled to keep his patient under careful and immediate observation, while the patient will be

convinced that no undue exertion is demanded of him.

Massage is generally included among the methods of the "exercise treatment," but this holds good only within certain limits. The usual massage of the muscles has hardly any influence on the general circulation and the heart, and for this reason cannot serve as a substitute for gymnastic exercise. On the other hand, certain forms of massage (such as friction, vibration, tapotage) which exercise a strong stimulus on the small bloodvessels may be employed with the greatest advantage, in order chiefly to strengthen the functions of the vasodilators and vasoconstrictors, which in cardiac patients are often sadly deficient. Their effect is therefore much more similar to that of the various hydropathic methods than to that of the gymnastic and other muscular exercises. Principally there is no difference between manual massage and that done by means of mechanical contrivances. Special mention must here be made of the massage of the heart, the best and most effective form of which is that by means of vibration. Manual vibration demands perfect technic on the part of the masseur, which very few medical men possess; and I am strenuously opposed to allowing nonmedical masseurs to vibrate the heart. It is therefore very important to know that of late some excellent electric vibration apparatus has been constructed which is very easily handled. I myself use the very handy and smoothly working apparatus "Tremolo," which is manufactured by the Electrotechnic Institute of Frankfort-on-Main. My experience with this apparatus is that vibratory massage of the heart has no direct strengthening influence on the heart. But in patients whose heart is very excitable, and who have most disagreeable sensations at the slightest exertion, which makes the gymnastic treatment almost impossible, vibration is one of the best cardiac sedatives.

I do not intend here to discuss in detail all the methods which are available for exercising and strengthening the muscular system, and especially the heart—their number is legion—and the medical man who is experienced in the physical treatment of heart disease will have no difficulty in choosing the right method; but whatever method may be chosen, it is necessary always to exercise the greatest caution, and to keep the patients under constant observation, not only at the beginning of the treatment, but whenever, and as long as, increased demands are made on the heart. Just as with regard to the proper dietary of heart patients, so must here a regrettable laxity of supervision be deplored, for in many spas and other places where patients with heart disease are treated the medical supervision of the individual patient leaves much to be desired. Generalization has led to some patients being exercised too severely, while others are not exercised enough. It is impossible for the medical man to do justice to his heart patients during the few minutes which he can spare each of them during his hours of consultation, when his waiting-room is crowded by those that seek his advice. Nay, the medical man should take an opportunity of seeing and examining his patients before and after their practice, of whatever kind this may have been, and he should be able at all times to inform himself of their condition, and the effect of his therapeutic and other directions. Again, I beg to point out the advantage that accrues to the patient from his treatment in a proper sanatorium, where all the conditions which I have just mentioned can be fulfilled, and it is my firm conviction that by the adoption of the sanatorium treatment of patients suffering from heart disease the benefit at present derived by those patients from their stay in certain watering and terrain cure places will be materially increased.

(b) *Hydropathic Treatment.*—The hydropathic treatment of valvular disease of the heart of late has become even more popular both with medical men and patients than the systematic treatment with gymnastic and other

exercises. This is undoubtedly due to the phenomenal development of Bad Nauheim, where the number of heart patients treated by far exceeds that of all other watering-places put together. To be quite frank, we have as yet no exact scientific explanation of the therapeutic action of the Nauheim baths and of other hydropathic measures in the treatment of heart disease. All methods which we employ, and which have stood the test of time, have one quality in common—namely, the stimulation of the nerves and smaller vessels of the skin. This at least explains the powerful stimulation of the peripheral circulation which attends the Nauheim baths. Immediately after the baths, the rubbing, and douches, etc., the skin becomes not only red and warm, but, what is more important still, in a large number of favorable cases cutaneous instability is permanently restored. Patients who prior to the baths had a cool skin and indications of cyanosis of the most peripheral parts of the body regain normal cutaneous temperature, normal sensation and color. That the stimulation of the peripheral circulation must, under all circumstances, have a beneficial effect on the heart is clear; but that is not sufficient to explain the widespread effect of the Nauheim baths, and until we know more about them we shall have to fall back on the assumption of a reflex stimulation of the heart.

Of the large number of hydropathic methods, I intend to enumerate here only the most important. In the first place must be mentioned the carbonated brine baths, the prototype of which are the waters of Bad Nauheim. Whoever has seen the extraordinary permanent beneficial effect which the Nauheim baths have on suitable cases will at once admit that the introduction of these baths into the system of treatment of disease of the heart denotes an enormous progress in the right direction. Unfortunately, not every case of heart disease is fit for the Nauheim treatment. I will not here enter upon a detailed discussion of what cases should or should not be sent to Nauheim, but I should like to emphasize that the class of patients which are most suitable for being sent to Nauheim are those whose heart is as yet in a state of perfect compensation, especially patients who have only recently acquired an affection of the valves. The more recent the heart lesion, the more suitable is the case for the Nauheim brine baths. But patients whose compensation is just beginning to fail, or who have already gone through one or two short attacks of loss of compensation, still profit a great deal from the baths. It is, however, a fact which cannot be sufficiently deplored, that patients suffering from severe loss of compensation are in ever-increasing numbers sent to Nauheim and similar places. This is, of course, unavoidable, for the patients themselves strive to go there, and it is often cruel to rob the patients of the hope which they place on such a treatment. It is, therefore, the duty of the medical men who practise in such watering places—*solatii causa*—to conduct the treatment so that the patients do not derive any harm from it.

It has been attempted to replace the natural carbonated brine baths by artificial brine baths. When I compare my experience with natural and artificial brine baths, then I must say that everything speaks in favor of the natural baths. Under all circumstances must I warn against prescribing patients with heart disease artificial carbonated brine baths at home while they stand in the midst of the duties of their professional life. Unless the whole routine of daily life is arranged so as to suit exactly the requirements of the bath treatment, the patients will often become more excited and weaker, instead of growing calmer and stronger.

Hydropathic treatment at home is by no means to be neglected by patients with heart disease, but here are required baths of quite a different kind—namely, the so-called half-baths, the temperature of which is gradually lowered while the patient is sitting in the tub. The bath has to be followed by energetic friction of the skin.

There is no reason why such baths should not be taken for months, or even years, perhaps two or three times a week. I consider them the best form of giving hydro-pathic treatment at home, and prefer them in cases of heart disease to douches and sponging. On the days on which no bath is taken ordinary friction with a towel wrung out of cold water should be applied; in any case friction with rough-dry towels should follow. This produces a considerable reaction on the part of the vessels of the skin, which is not only rapidly dried, but becomes bright red, and a pleasant glow is felt. For this reason the patients should not themselves undertake to rub themselves dry, but should leave this to another person. Besides systematic muscular exercise, this and similar hydiatic measures are best able to stimulate the circulation anew and to strengthen the heart.

I must here mention another method which I have for the last two years employed with great success—namely, the electric baths after the system of Dr. Schnée. The apparatus consists of four porcelain tubes, in which the four extremities are immersed. An excellent switchboard permits of the employment of galvanic and faradic currents of whatever strength and direction. During the bath the patients sit on a comfortable chair. In cardiac patients one sees often that during the first few baths, even when using currents of the highest voltage that can be tolerated, the skin of the extremities shows no trace of reaction. After a few baths, however, the reaction sets in promptly, and from that moment the patients derive great benefit from the electric four-cell bath. The momentary as well as the permanent effect are similar to that of the carbonated brine baths, so that I can warmly recommend them as a supplement of the bath treatment proper. I prescribe these electric baths (electric four-cell bath, Otto Schnée, 40, Kaiserstrasse, Frankfort-on-Main) after four to six weeks during the winter for the same patients who in the summer months go to Nauheim for the brine baths.

I have endeavored to give a survey of the indications which have to be observed in the treatment of patients who suffer from heart disease, and whose heart is yet in a state of perfect compensation. Whereas in former years we let things drift and did not much trouble about treating such cases, we now know better. We know that such patients require in many respects medical advice and close supervision. By a proper distribution of rest and exercise and diligent observation of the diseased organ, we are practising that branch of treatment which for ever has been considered the noblest and most important—prophylaxis. We shall thereby save numerous patients for many years, and perhaps altogether, from that terrible visitation, loss of compensation.

SYMPTOMATOLOGY, DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF NEURITIS.¹

BY

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For the purposes of this discussion it will be convenient to assume that in the various groups of symptoms commonly attributed to disease of the peripheral nerves, the lesions in the latter represent the essential and primary changes; a fact which has not been demonstrated beyond the possibility of a doubt. We have positive evidence that in some of the toxic forms at least, as for instance in neuritis due to poisoning with lead and arsenic, the cells of the spinal cord as well as those of the spinal ganglia and brain may be diseased, and

it would perhaps be more in accord with the neuron theory—so generally accepted today—to assume that the toxic substances attack these cells before the nerve-fiber itself is altered. Such an assumption would enable us to understand more readily why pronounced degeneration of peripheral nerves may occur without causing any appreciable symptoms. Pitres and Vaillard were the first, if I am not mistaken, to call attention to the fact that after typhoid fever a large number of nerve-fibers may be found degenerated in cases in which during life the signs of neuritis were absent. About one year later the same authors reported having found a similar state of affairs in the nerves of persons who had died from tuberculosis, and since then their observations have not only been verified but extended to numerous other diseased states such as diphtheria, syphilis, alcoholism, carcinomatosis, inanition, marasmus, arteriosclerosis, the senium and leprosy.

If there is any one symptom which is absolutely pathognomonic for neuritis, it is a perceptible enlargement of portions of the nerve-trunk, usually spindle-shaped and often multiple. Unfortunately, it is but rarely demonstrable, partly because it is not present very often, partly because it can be shown to exist only when the affected portion of the nerve is near the surface of the body. It is found most commonly in leprosy but has been seen in the so-called rheumatic form of neuritis of the facial nerve and in inflammations due to articular rheumatism, gout, puerperal infection, tuberculosis, syphilis, etc.

While ordinarily both the sensory and the motor fibers are affected in disease of the nerves, many instances have been recorded in which only one of these groups suffered. In the vast majority of all cases the sensory symptoms are the earliest. Most prominent among these is pain. But while we would expect it to be most severe in the area of peripheral distribution of the nerve (following the law of excentric projection) we find more often, excepting in traumatic cases, only paresthesiæ in this area while the pain itself is most violent over the course of the nerve-trunk. Hence it is not, as a rule, superficial but rather localized in the deeper tissues. It is usually described as either darting, burning, drawing or boring and is increased by active and passive movements in the affected parts or by placing the same in a position in which the nerve is stretched; our patients, therefore, prefer a semiflexed position of the extremities. This pain is most pronounced, in most instances, in the earlier stages of the disease and sometimes precedes the occurrence of paralysis and atrophy of muscles, by months or even years. It often exacerbates during the night even in nonsyphilitic cases and is very probably due to inflammation of the peri- and endoneurium.

Very commonly the nerve-trunk proper is sensitive to pressure, especially where it approaches the surface of the body and can be pressed against osseous structures, and this sensitiveness as a rule persists for a long time; a point of some little importance in the differential diagnosis of the disease, as we will see later on. Care must be used in considering this symptom in the diagnosis, as pressure upon the nerve-trunks normally produces rather unpleasant sensations, especially in sensitive and hysteric persons. In unilateral affections the healthy side offers a welcome opportunity for comparison with normal conditions.

As has already been stated, pain is somewhat infrequent in the area of peripheral distribution of the nerve, but here hyperalgesia is very frequently found, often associated with "glossy skin," especially in traumatic neuritis, in neuritic herpes zoster and in certain toxic forms (alcohol, arsenic). When once the destruction of nerve-fibers begins, sensibility decreases, but this loss of feeling may readily escape the patient's attention when but partial, and must be sought for. Often only certain qualities of sensibility are affected, as for instance that for tempera-

¹ Read at a joint meeting of the Chicago Medical Society and Chicago Neurological Society, April 2, 1902.

ture and pain, or else one or more qualities may show a greater loss than others. Delayed sensation and disturbance of the sensibility of muscles and joints are rare in mononeuritis but are rather frequently found in polyneuritis. All of these changes are found in areas corresponding to the peripheral distribution of the diseased nerve or nerves, excepting in cases of neuritis due to leprosy, in which only irregular patches of skin of varying size may be anesthetic or hypesthetic.

These disturbances of sensibility, as has been stated, usually precede the motor symptoms and very often disappear only some time after the muscles have returned to their normal state.

Of the higher senses, that of sight not infrequently suffers through optic neuritis, while the auditory nerve has been found affected in but very few instances, possibly, in part at least, because symptoms were not sought for.

Both excess and defect of motility may occur in neuritis, though the former is rare. Trauma and the occupation-neuroses seem most often to cause twitching, slight spasms and contractures, which occasionally persist for years. In about one of every 100 cases of sciatic neuritis some such symptom can be observed, but whether they are in reality of peripheral origin may perhaps seem doubtful. In those rare instances in which a double athetosis has been described as one of the signs of a peripheral neuritis, such a doubt can hardly exist; here a central affection must certainly have complicated matters.

More often than excess of motility we see a deficiency, in fact paresis or paralysis is one of the most frequent signs of disease of the peripheral nerves. A fact perhaps not generally known is that this paralysis may have a very sudden ("apoplectiform") onset. The loss of function is of course limited to the muscles supplied by the degenerating nerve or nerves and is usually most pronounced in the muscles nearest the distal distribution of the nerve. The paralysis is flaccid and the muscle itself very often sensitive to pressure and percussion. Atrophy follows in the severer forms sooner or later and attacks primarily the paralyzed muscles. When pain prevents the use of an extremity for a longer period, a more extended secondary atrophy from disuse may develop. That persistent neuritic muscular atrophy can, after some time, cause deformities in the affected limb, is a matter of course.

Even before weakness of the muscles becomes evident, certain changes in the electric irritability of muscle and nerve can be demonstrated in some instances. An increase of this irritability, both to the galvanic and faradic current, in rare cases precedes the loss of power; more often we see the reverse and within the first twelve days after the appearance of paralysis the various stages of reaction of degeneration become evident in a large number of cases, a symptom of the greatest importance both in establishing the diagnosis and the prognosis of a given case. A point of considerable interest is the occurrence of quantitative and qualitative changes in the electric irritability in parts in which no weakness is demonstrable.

Besides the loss of muscular power, another factor interfering with motility is occasionally met with, a disturbance of coordination. This has been seen in a few cases of neuritis of the median nerve only, in all of which there existed also marked loss of sensibility. In some forms of polyneuritis it is very much more frequent.

The cutaneous reflexes are usually normal; in cases with hyperesthesia and intact muscular apparatus they may be increased. An increase of the deep reflexes is rather exceptional; it can, of course, occur only when the reflex arch is intact, *i. e.*, when no paralysis exists, and it is then due to increased irritability of the sensory fibers. If the muscles involved in the reflex are paralyzed the latter must be abolished and this constitutes by far the most frequent change found in neuritis.

Of trophic changes, those occurring in the muscle have already been mentioned. They occur early and are commonly quite marked. The skin is often altered. Perhaps the best known of these cutaneous changes is that first described by Weir Mitchell under the name of "glossy skin," said to be the most common in traumatic cases but not at all rare in alcoholic and arsenic neuritis. According to Mitchell it is found only when the nerve-fibers are not totally destroyed: a statement which has been disputed by other authors. Among the rarer trophic disturbances, conditions resembling ichthyosis, pemphigus, edema of the skin, local cyanosis, circumscribed lowering of the surface temperature, deserve to be mentioned. We may occasionally see a change in the nails from the normal reddish hue to white; they may be dry, brittle and show longitudinal furrows. Onychogryposis, too, has been reported. Bed-sores do not occur in uncomplicated neuritis, a point which often aids in distinguishing spinal from peripheral disease. While herpes zoster is undoubtedly due to lesions in the spinal ganglia in the majority of cases, there seems to be no doubt that occasionally a neuritis may produce it. It is more common in mononeuritis than in polyneuritis excepting in the form due to arsenic poisoning.

Both anhidrosis and hyperhidrosis are rare symptoms. The latter occurs most frequently in disease of the cervical sympathetic together with oculopupillary and vasomotor symptoms. I have observed it very recently as a transitory symptom in a patient with tuberculosis of the lungs. On the tendons we sometimes find circumscribed swellings, especially where wrist-drop exists. They usually disappear soon after the return of voluntary movements. When paralysis persists for a long time the tendons of the muscles antagonistic to the paralyzed ones often become shortened.

Occasionally swelling of the joints has been noted, but in most instances it seemed doubtful whether this was due to neuritis or to a rheumatic trouble. Within the last few weeks I examined a case of traumatic neuritis of the sciatic nerve, in which both the knee-joint and ankle-joint were enlarged and in which no signs of a complicating rheumatism could be discovered.

Some authors believe that mal perforans, scleroderma, Raynaud's disease, and Dupuytren's contracture of the palmar aponeurosis, are neuritic in origin, but it seems impossible to state with certainty at this time whether the changes in the peripheral nerves found in these diseases are primary or secondary.

A group of symptoms which deserve a more detailed description are the mental disturbances seen not infrequently in multiple neuritis and first described by Korsakow, who believed them to be characteristic of alcoholic neuritis; but they have since been seen in other forms, especially in inflammation of the nerves during puerperium.

The mental changes usually become evident at the same time at which the first symptoms of a polyneuritis appear and are often ushered in by persistent violent vomiting. At first the patient merely becomes more moody and exacting in his demands upon those who minister to his wants, or perhaps he is apathetic. Soon, however, great irritability and restlessness develop and often increase to veritable maniacal attacks with clouding of consciousness and a highly characteristic disturbance of memory. The patient is depressed, afraid that something dreadful is going to happen to him, hence refuses to be left alone even for a short time. Every now and then he becomes violently abusive. The excitement is usually worst during the night. While in some instances consciousness remains intact for quite a while, in others confusion becomes marked within the first few days. The patient uses the wrong words in conversation, relates all kinds of fantastic events supposed to have happened to him, mistakes occurrences of the past for those of very recent date. Occasionally visual and auditory hallucinations exist

which add materially to the patient's confusion. Almost always we find a marked defect of memory with the following characteristics: While the patient remembers more remote occurrences perfectly well, the most recent events are forgotten almost as soon as they have happened. Even after the confusion has disappeared there still remains a pronounced amnesia, which is shown by a continuous repetition of the same questions and stories. While at first glance the patient may appear quite normal mentally it soon becomes evident that he does not remember what happens about him. He does not know whether he has just dined or not, whether he has gotten up and when this happened. A minute after a visitor has left the room the patient no longer remembers that he was there. Such patients sometimes will read the same page over and over again for hours because it always seems to contain something entirely new to them. They do not even know the physicians and nurses who have charge of them, always mistaking them for absolute strangers whom they have never before seen. At the same time, as already stated, the patient's memory as to more remote events is quite, or almost intact. Events, which in reality happened decades ago, are often supposed to have just occurred.

The characteristics of this mental disturbance are the peculiar form of amnesia, especially marked when the patient is fatigued, and the falsification of memories.

It is most important to know the significance of these mental symptoms, because those of multiple neuritis may be but very slight and particularly difficult to recognize on account of the patient's mental condition (absence of complaints).

The course of this psychosis is usually tedious, but the prognosis is not absolutely bad. In the more chronic cases there is usually permanent defect of memory and a certain amount of mental weakness. Cases complicated by tuberculosis usually terminate fatally in a short time.

Constitutional symptoms are usually absent in mononeuritis. When there is intense pain, insomnia results and this in its turn exerts the usual baneful influence upon the patient's general health. In polyneuritis, fever, chills, profuse perspiration, general malaise and tachycardia are frequently observed.

The diagnosis of disease affecting a single nerve is seldom difficult, and is based principally upon the localization of the symptoms, both motor and sensory, and the sensitiveness of the nerve-trunk to pressure. In the later stages the occurrence of flaccid paralysis of muscles, associated with sensitiveness to pressure, atrophy, and changes in the electric irritability of the same; objective disturbances of sensibility, and loss of deep reflexes, aid in establishing the diagnosis. But we must remember that paralysis is quite frequently limited to the muscles supplied only by one or several branches of the diseased nerve, and that such changes in the reactions to the electric current as we usually find in neuritis have been seen in some few cases of cerebral, and in many of spinal trouble; and that on the other hand they do not always develop in peripheral paralysis. The diagnosis is furthermore rendered difficult in some instances by the fact that neuritis may be associated with disease of brain or spinal cord (tabes dorsalis, dementia paralytica).

Rheumatism, or disease of the bone or periosteum will not readily be mistaken for neuritis by those who will but think of the possibility of such an error.

Hysteria is readily distinguished from organic disease of the nerves. Though the paralysis of the former may mimic that of the latter in extent, the areas of disturbed sensibility are very different. Marked atrophy of muscles develops rather rapidly in many cases of the one disease, is rarely pronounced in the other, and when present develops very slowly from disuse. The presence of reaction of degeneration, or absence of deep reflexes, is an important indication of organic disease, the stigmata of hysteria an equally valuable sign of functional disease.

In neuralgia, both pain and the sensitiveness of nerves to pressure are more or less distinctly intermittent; in neuritis both symptoms are as a rule permanent. Bilateral pain is very rarely neuralgic, but is frequent in multiple neuritis. Loss of sensibility—as we have seen—is commonly met with in neuritis, never in neuralgia; besides that, of course, any indication of organic disease, such as were just enumerated, would exclude the diagnosis of neuralgia.

In cerebral disease the unilateral occurrence of paralysis of motility and of sensibility, the spasticity and increase of deep reflexes, preclude the possibility of an error.

Paralysis of the facial nerve due to brain lesion leaves the upper branch of the nerve relatively intact; paralysis from disease in the peripheral nerve does not spare any one group of muscles supplied by it.

Of the difference between central and peripheral ophthalmoplegia I have said in a previous paper on cerebral localization that "If an ophthalmoplegia is bilateral and affects all ocular muscles, whether they be paralyzed or only paretic, it is almost certainly nuclear in its origin; the same symptoms may occur, but are very rare in lesions at the base. If ophthalmoplegia is unilateral and affects all muscles of that one side it may be due either to disease in the region of the third ventricle or to some disturbance at the point at which the nerves enter the orbit, more probably the latter, and is then often combined with some degree of exophthalmus."

In spinal disease with symptoms of spasticity this symptom alone would exclude all thoughts of neuritis. In other lesions of the same organ the differential diagnosis may be more difficult.

Acute anterior poliomyelitis is rare in adults at the age at which multiple neuritis is most likely to occur. In the latter the paralysis is usually symmetrical, in the former hardly ever; in the one there is always a very acute onset, in the other very rarely; after the acute stage there is usually a tendency to improvement in the one, at the same period the other continues to progress; disturbances of sensibility are absent or so slight in the spinal disease that their presence is rarely noticed, while in diseases of the peripheral nerve they are among the early and persistent symptoms.

Chronic poliomyelitis is also rarely seen in adults; its development is even more gradual than that of most cases of polyneuritis. The pneumogastric nerve, which suffers so often in neuritis, is seldom affected in poliomyelitis. Optic neuritis has never been met in the spinal trouble, while in neuritis it is not a rare symptom; the same is true of cramps. Fibrillary twitching is common in affections of the anterior horns, almost unknown in peripheral lesions. In poliomyelitis changes in electric irritability are found only in the paralyzed muscles, in polyneuritis often also in those with normal motility. The occurrence either of Korsakow's psychosis or of ataxy would exclude a central origin.

There is no spinal disease which so closely mimics polyneuritis as does locomotor ataxy, the so-called neurotabes peripherica. The two diseases have the following symptoms in common: Ataxy, loss of deep reflexes, similar disturbances of sensibility, impairment of vision, Romberg symptoms, absence of reaction of pupils to light, girdle sensation; the last three are very rare in neuritis, hence their presence would speak rather for the existence of a central lesion. Primary atrophy of the optic nerves and crises are never seen in uncomplicated cases of neuritis, but optic neuritis is not rare and the vomiting of inebriates suffering from alcoholic neuritis has been mistaken for gastric crises. In tabes not complicated by disease of the nerves the latter are not sensitive to pressure, the muscles react normally to electricity, are neither paralyzed nor atrophic. In pseudotabes the disturbance of coordination is usually somewhat different from that which we meet in locomotor ataxy, difficult to describe, but something between a

spinal and cerebellar ataxy with steppage added to these. Korsakow's psychosis could not, of course, occur in central disease. The onset is usually more rapid in neuritis, though I have seen two or three cases of tabes in which the patients claimed that the symptoms developed very suddenly. Finally, the etiology of the two diseases can sometimes be utilized in a measure in distinguishing them. Alcoholism, acute infectious diseases, diabetes and arsenic poisoning may cause pseudotabes; if we can exclude them, the existence of this trouble becomes highly improbable.

Muscular dystrophy develops very slowly, is progressive, often affects several members of one family. The paralysis has a very gradual onset, is in most cases associated with quantitative changes of electric irritability only, not with reaction of degeneration; sensibility, both subjective and objective, and psyche, remain intact; the atrophy in most instances begins near the trunk of the body, while in neuritis the distal ends of the extremities are more liable to become affected first.

In polymyositis we find together with sensitiveness of muscles to pressure an increased consistency and swelling of the same, while the skin above them is red, edematous and inflamed.

THE VERMIFORM APPENDIX AS A CAUSE OF INTESTINAL OBSTRUCTION.¹

BY

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Intestinal obstruction as a complication of appendicitis is a not uncommon occurrence. This may happen in one of three ways: 1. That part of the bowel most concerned in the immediate neighborhood of the inflammatory process may become parietic because of the inflammation. 2. A knuckle of small intestine may be so angulated by adhesive inflammation either to the diseased appendix itself or portions of the bowel or omentum participating in the inflammatory condition, as to cause narrowing of its lumen. The extension of peritonitis may result in ballooning of the intestine above the angulation until paralysis of peristalsis ends in complete obstruction. 3. After drainage by incision of an appendiceal abscess, or its discharge into the lumen of the bowel, or the subsidence of all acute symptoms, bands of adhesions may form so as to make compression of the intestine sufficient to produce obstruction.

To these may be added postoperative obstruction, a kind of obstruction not present at the time of operation, but having for its cause the formation of adhesions or bands between peritoneal surfaces, one of which possibly not having participated in the diseased condition prior to operation.

The above complications of appendicitis have been mentioned simply to call attention to them as belonging to every-day surgery and all of these varieties have been met by every one whose experience is extensive in operative work.

The vermiform appendix may, however, cause obstruction of the bowels in other ways and they, too, not associated with the well-recognized symptoms of inflammation of this dangerous little bit of human anatomy.

When the appendix is long and its mesentery allows of great motility, the tip of the appendix may become attached by adhesive inflammation to some point of the peritoneum so as to form a band or arch and thus produce intestinal obstruction. Loops of the small bowel are most commonly constricted by this mechanism. Treves records several such cases; the most common point of adhesion being the mesentery of the lower ileum. The appendix has been found attached to the ileum itself, the cecum, the pelvic organs, the iliac

fossa, and in each of these situations it acted as the constricting band of an intestinal obstruction.

Senn says: "From a surgical standpoint in the causation and treatment of intestinal obstruction the appendix vermiformis must be looked upon as a diverticulum." This seems to me to be proper, because its action under such circumstances is analogous to that of an intestinal diverticulum. Indeed, the appendix has been known to invaginate into the cecum and drag the ileum into the cecum, causing an ileocecal intussusception.

Pitts (*Lancet*, June 12, 1897) reports such a case; likewise Waterhouse (*Path. Soc. Trans.*, 1898, p. 108). Treves in reporting a similar case refers to these and calls attention to them as "allied to the invagination associated with an inverted Meckel's diverticulum."

Although I had been familiar with the vagaries of the vermiform appendix I was surprised recently at the findings when responding to a summons from Dr. Talbot, of Broken Bow, Neb., to operate upon a patient with acute intestinal obstruction.

A multipara, aged 52, had been suddenly seized with acute abdominal pain accompanied by vomiting. When the doctor saw the patient next day, the pulse and temperature being normal, he had regarded the condition as one of indigestion because of the constipated habit of the woman and a history of overfeeding, and had prescribed the usual remedial measures. Notwithstanding the best directed efforts there was no response. When I saw the patient five days from the beginning of the attack (she had been brought into Broken Bow from her home seven miles in the country) her condition was becoming serious. The pulse was 112, the temperature 100° F.; the vomitus was feculent, the facial expression was not good; the abdomen was much distended, obstruction was absolute. There was nothing in the woman's history nor in my examination which enabled me to make a diagnosis as to the cause of the obstruction. Under chloroform narcosis, upon opening the abdomen in the lower middle line very much distended coils of small intestine presented. Investigation disclosed a collapsed portion of the small intestine which proved to be the ileum, and at about two feet from its lower end the constriction was discovered—a long vermiform appendix surrounded the intestine. The end of the appendix had adhered to the mesentery close to the ileum and curled itself into a constricting ring, completely occluding the bowel. Relief of the constriction was accomplished with considerable difficulty, and the integrity of the intestinal coats under the constricting ring appeared in doubt. After waiting some minutes the circulation cleared and apprehension regarding the necessity of a resection was dispelled. All raw surfaces were covered by peritoneal flaps and the appendix removed. In order to facilitate the return of the distended intestines (I always try to keep them in the abdomen in such cases but could not in this one) I had an enema given which was immediately followed by the expulsion of large quantities of gas so that the return of the bowels and the closure of the abdominal wound were very much facilitated. The woman made an uninterrupted recovery.

Since my first operation in 1885 for "perityphlitis" I have had a goodly number of cases with complications attributable to the vermiform appendix, but the one just narrated is the first in my operative observation in which the appendix acting as a diverticulum caused an acute intestinal obstruction.

ELECTROTHERMIC HEMOSTASIS IN VAGINAL HYSTERECTOMY FOR CANCER: REPORT OF TWO CASES.¹

BY

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As regards ultimate results few operations are more pessimistically described than hysterectomy for cancer. To the various methods of removing the cancerous uterus I need not refer. I will, however, state that results seem to corroborate Dr. John Byrne's claim that amputation and hysterectomy within the peritoneal covering of the uterus by means of his galvanocautery knife while minor operations, give as good if not better results than any of the other numerous major operations. The

¹Read before the Medical Society of the Missouri Valley, March 20, 1902, at Lincoln, Nebraska.

¹Read before the Philadelphia Obstetrical Society, March 6, 1902.

reason is that the cautery knife destroys cells in direct contact with it and seals the lymphatic vessels and thus adds something to the severed tract that prevents absorption or dissemination through it. Of course, cancer much beyond the lines of division is not influenced, hence it is possible to improve Byrne's results. We cannot perform a complete hysterectomy, going through the broad ligament with a cautery knife, for the arteries in it will bleed under such severance as if cut by a scalpel. Hence this galvanocautery method has its limits in cases in which there is not much migration beyond the mucous lining of the cervix. Its good results must have followed partial resection of the uterus, the lines of separation being beyond the diseased area. In recurrent cases so treated the disease must have been without the severed area. Who should take the chances, even in very early cases, of believing the diseased area confined enough for this method, when the electrothermic method original with Dr. Skene, similar in hemostatic and cautery effect, enables us to go widely into the broad ligaments and remove the uterus as completely as by the ligature? And this method has decided advantages over the ligature. The tissue under and without the ligature soon organizes, proper bloodvessels and lymphatics soon become active; the slightest defect in the technic, an escaped cell in contact with the ligatured stump, or cells in it, follow their natural life. An agent cauterizing, desiccating or cooking the lines of separation as in the method herein advocated produces in these hemostased and compressed surfaces a barrier to the entrance of the specific of malignancy, for the lymphatics are seared and sealed. By the method thus briefly outlined I have twice performed vaginal hysterectomy for cancer.

CASE I.—Mrs. E. H., aged 48, the mother of nine children, all living, was in apparently good health, and had had no menstrual trouble until March, 1901, when bleeding began to occur every two weeks. The duration of the hemorrhages increased gradually so that the intervals between were but a few days. She was admitted to St. Mary's Hospital the last of October. She complained of pain in the lower part of the back and abdomen, hemorrhages, and stated that she had been rapidly losing weight and strength. Shortness of breath followed any exertion. Her face is pale, but there is no distinct appearance of cachexia. Examination showed a subinvolted movable uterus, the cervix large, excoriated, and ectopic. The uterus was quite low, and the pelvic floor markedly prolapsed. On the lower lip of the cervix was a suspicious, highly congested, easily bleeding nodule. This was excised, examined, and reported upon as negative. My diagnosis was carcinoma.

Operation November 5, 1901. A large, specially-made platinum knife requiring 60 amperes was made to encircle and sever, at a dull-red heat, the mucous membrane covering the cervix, the line of section being nearly an inch above the os uteri. While strong traction was made on the cervix the same platinum knife, at a dull-red heat, was made to slowly effect a wedge-shaped amputation, the final circular incision being on a much higher level than the beginning incision. The uterine cavity remaining was filled with gauze, both peritoneal reflexions entered, and the fundus delivered from the posterior incision. My electrothermic angiotribe was made to include in one grasp the whole length of the left broad ligament, the ovary to the inner uterine side. The current was allowed to act for a minute until the tissue was seen to cook and section was then made along the inner side of the blades. The application of the blades to the right side was easier, but the same in effect. Section and delivery of the uterus followed. Excepting a little oozing as the mucous membrane was severed, and an occasional spurt because of the knife being too hot or being made to traverse too quickly the cervical tissue in the amputation, the operation was bloodless. The removal of the uterine body and control of the broad ligaments was bloodless. In this case not a ligature was used; gauze was inserted through and above the vaginal vault and an Emmet perineorrhaphy, all sutures catgut, immediately performed. All gauze was removed and new gauze inserted to prevent prolapse of the broad ligament stumps and intestine. There was no postoperative pain. The gauze was removed on the third day, and was serum tinged only. The patient made a rapid, comfortable recovery. There is no prolapse of the pelvic contents, and the perineum is practically normal and effective. There has been a remarkable gain in appearance, strength, and weight. The specimen on examination proved to be adenocarcinoma, the area of disease being closely limited to the endocervical mucous membrane and closely adjacent tissue.

CASE II.—Mrs. B., aged 45, the mother of eight children, all boys. Her labors were prolonged and difficult, but none

required instruments. Her menses were regular and painless until seven years ago, when they became frequent and gradually too profuse. Last June she had several severe hemorrhages, and they continued until she was admitted to St. Mary's Hospital early in December. On admission she was feeble and cachectic in appearance, and had lost considerable weight. She suffered from rheumatoid pains. Her chief complaint, aside from the hemorrhages, was very severe pain in the lower abdomen and pelvis. Examination revealed an eroded, friable, easily-bleeding, and large os uteri. The reflexion between the cervix and postvaginal wall was lost and the friable necrotic growth on the post lip merged into and formed part of the post-vaginal wall. There was some thickening of the paracervical tissue. The uterus was large and the fundus freely movable. The perineum was relaxed. Diagnosis: Carcinoma uteri, advanced stage.

Operation December 11, 1901, the same as in Case I, amputation of the cervix with the cautery knife encircling the cervix as far from the os uteri as possible. The cone-shaped amputation of the cervix was made to come from as high in the uterus as possible. Care was taken to remove deeply the infiltrated postvaginal surface and to cauterize freely the fresh surface. The peritoneal reflexions were entered, the fundus delivered posteriorly, the electrothermic angiotribe applied first to the left broad ligament section on the inner side, then to the right broad ligament section on the inner side, and delivery of the uterus performed. Gauze was applied to support the stumps and the intestine. No postoperative pain followed. The gauze removed on the third day was only serum stained. In this case a few ligatures of fine catgut were required for the posterior vaginal cuff where the soft necrotic tissue was removed. A wider gap than in Case I was made in the vaginal vault in the endeavor to go as far from diseased areas as possible. As in the first case no sutures were used to close the opening, dependence being placed upon the gauze inserted through it into the pelvis, to act as a temporary support to the intestines.

This patient was entirely relieved of her preoperative pain and distress and was out of bed in 3 weeks. At the writing of this paper the improvement in her appearance is remarkable, and she has no pelvic distress. Examination of the specimen shows advanced adenocarcinoma.

Electrothermic hemostasis is objected to and not much used because of the amount of apparatus required. The great success of absorbable ligatures makes the objection a strong one. In this one instance, of cancer of the uterus, the ligature must, however, be supplanted or better results obtained. The more recent radical operative procedures in which by a vaginoabdominal operation the entire uterus, the broad ligament as widely as possible, and all the pelvic lymphatic glands, are removed will always be slow and a highly fatal operation if properly performed, and the proportion of ultimate nonrecurrence must be very great to justify the primary mortality. Leaving out of consideration these more radical procedures there is little question as to the relative value of the procedure advocated in the cases here reported and the ordinary hysterectomy for cancer by the ligature. Most of the arguments have been already given in this paper, yet a recapitulation, with addition, may not be out of place.

The ligature grasps a small amount of tissue, or should, and thus leaves between the hemostased large bloodvessels much raw surface with open lymphatics. Escaped cells, or cells remaining in these raw surfaces, even if sutured over grow naturally. By the electrothermic method, in the first stage all cut surfaces are seared and cells in contact and some distance beyond are killed and the resulting surface is not actively absorbent for some time, if at all. In the second stage a section of the whole broad ligament is compressed and cooked, as it were, and the hemostasis extends further from the uterus than if effected by ligatures. A very great advantage of the electrothermic method is that with proper instruments and familiarity with their use, vaginal hysterectomy can be made a nearly bloodless operation, a great point in cancer subjects. A further point is that the broad ligament stumps out of the grasp of the heated blades consist of a cooked, nonexuding surface, very little if at all adherent. The nerves in these stumps are nonsensitive. There is no absorption through the stumps.

It has long been noted that the actual cautery has a very retarding influence on the growth of cancer. I have already referred to this as the reason for the unques-

tionably good results from the minor operations of Byrne. Is it not logical to expect a much greater ultimate benefit from the electrothermic hysterectomy? As regards mortality from the operation, it should be little or nothing, the same as with the ligature when we are dealing with a movable uterus. I have performed electrothermic vaginal hysterectomy four times, including the two cases here reported, for cancer. All the patients recovered. One case in a woman of 72, with heart disease, performed under spinal anesthesia, shows the practicability of the method.

TWO CASES OF STENOSIS OF THE PYLORUS.*

BY

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My object in reporting these two cases is for the purpose of comparison. Both patients were men of the same age, and up to the time of operation their histories were very similar. The physical examination as well as the chemic analysis of the gastric secretions, pointed in each case to a benign stenosis of the pylorus.

The subsequent history of these patients, however, is very different. Today one is alive and in excellent health; the other is dead from carcinoma of the stomach.

CASE I.—On August 31, 1898, Mr. W., aged 47, a farmer by occupation, consulted me in regard to stomach trouble, from which he had suffered at intervals for 15 years.

During 1892-93, he had attacks of severe pain, which usually came on at two or three o'clock in the morning, and were only relieved by vomiting. He was free from these attacks during 1894-95; had one attack in 1896, and none afterwards. In February, 1897, he had a profuse hemorrhage from the stomach, the loss of blood being so great as to cause syncope. The hematemesis was not repeated, and in four weeks he was able to be out of bed. For the past two years he has vomited almost every day, the vomitus frequently containing food. His appetite is poor, his bowels are constipated, but he sleeps well. He has lost altogether 40 pounds in weight, and has not been able to do any work for five years.

Examination showed that his lungs, liver, and heart were normal. His stomach was greatly dilated, measuring when inflated, eight by eleven inches. There was peristaltic unrest, large waves passing from left to right. His stomach was never empty, but always contained food particles eaten the previous day. Examination of the stomach contents after Ewald's test-meal showed that free hydrochloric acid was present in excess, being 48, with a total acidity of 76. That evening he ate a cup of boiled rice; and the next morning, fasting, I obtained by expression 200 cc. of a thin fluid containing free hydrochloric acid. I then washed the stomach, and obtained as much rice as he had taken the evening before. A diagnosis of benign stenosis of the pylorus was made, and an operation advised. On September 13, gastroenterostomy was performed by Dr. R. W. Steward, in the Mercy Hospital. The patient made a good recovery, and was able to leave the hospital on September 27. On October 3 he ate a second test-meal, and now free hydrochloric acid was present in about normal amount, being + 28.

In November he had gained 40 pounds in weight, was feeling strong and well, and his gastric secretions were normal. I saw this patient a few months ago, and he was still in good health.

CASE II.—Mr. B., aged 47, hotel-keeper, consulted me on June 8, 1898, on account of stomach trouble, of which he had been complaining at intervals for eight years. During the early part of 1895 he was very much out of health, could do no work of any kind, and was practically confined to the house on account of weakness. He went to California in the spring, and soon began to improve, and during the summer entirely regained his health. In October of the same year he went shooting in Dakota, was taken ill a second time, and suffered much from distress in his stomach and nausea. He came home in November, and during the winter of 1896 quite recovered. The following summer he had a second attack of stomach trouble, with much distress, but no nausea. In 1897 he returned to California, and was there able to partake of all kinds of food with impunity, until October, when for the third time he began having distress in his stomach, of which he is still complaining. For the past two months he has taken very little solid food, experiences burning pain in his stomach, which comes on two or three hours after meals, and which is relieved by taking nourishment. He also suffers much from severe attacks of pain at 1 or 2 o'clock in the morning, which wake him up, and

which keep him awake until 4 or 5 o'clock, when he is usually able to go to sleep again. The nausea of which he complained formerly has disappeared, and he is not troubled with vomiting. He has lost 20 pounds in weight, and feels weak and ill. His appetite is poor, his bowels move every day, and he sleeps well when free from pain. Examination showed that his lungs, liver, heart and kidneys were normal, his stomach was in normal position, and only slightly dilated; and a smooth mass, as large as a small orange, which moved on respiration, could be felt about two inches below the xiphoid cartilage.

June 9.—Last evening he ate for supper, bread, boiled eggs, and boiled rice. This morning, before he had eaten anything, I obtained by expression 200 cc. of dark-brown, ill-smelling liquid, in which many rice grains could be seen, and which contained free hydrochloric acid in rather more than normal amount being + 32 with a total acidity of 80. Lactic acid was absent.

June 10.—This morning fasting, I obtained by expression 200 cc. of dark fluid, containing many rice grains eaten on the previous evening. This also contained free hydrochloric acid in excess, being + 40, total acidity 80. I then washed his stomach; and at 1 o'clock he took Boas' test-meal of oatmeal gruel. At 2 o'clock I took the stomach contents, and found free hydrochloric acid + 28, total acidity 64. Lactic acid absent. Stenosis of the pylorus, probably benign, was diagnosed, and on June 21, gastroenterostomy was performed by Dr. Steward.

On June 30, he left the hospital. On July 2, I examined his stomach contents after Ewald's test-meal, and found free hydrochloric acid present in nearly normal amount. I did not see this patient again for a year; when on June 12, 1899, he presented himself at my office. He was emaciated, cachectic, and very weak, but was yet able to walk about. The whole epigastric region was found occupied by a hard nodular mass, evidently carcinoma. Examination of the stomach contents showed that free hydrochloric acid was absent; but lactic acid was present in large amount. He died in two weeks.

In comparing these two cases it will be seen that in Case I there was absolutely nothing to throw doubt on a diagnosis of benign stenosis. The long duration of the illness, the attacks of severe pain, the vomiting of food, the hemorrhage from the stomach, the isochymia, the peristaltic restlessness, and the presence of free hydrochloric acid in the stomach contents rendered an error impossible. In Case II the only points that suggested carcinoma were the presence of tumor and the slight dilation of the stomach. The history of this case was decidedly against malignant disease. The patient had suffered from stomach trouble for eight years, and during the last three years had three severe attacks, with intervals of perfect euphoria.

Ewald¹ has observed cases in which the process seemed to stand still or even to retrograde; but, as a rule, the course of carcinoma is progressive, irresistible and advances to a fatal termination. He places the duration of the disease at from three months to two, three, or more, years.

Einhorn,² on the contrary, states that in all cases of cancerous stenosis of the pylorus, there is a more or less short period of illness, five months to one and a half years at the utmost, with no periods of perfect euphoria, but constant and gradual aggravation of all the symptoms.

Hemmeter³ places the duration of cancer of the stomach at from six months to one year; and Fenwick⁴ at from 12 to 18 months.

In regard to tumor, Rosenfeld states that a palpable tumor of the pylorus with only slight dilation of the stomach favors a diagnosis of malignant disease. But thickening of the pylorus caused by the cicatrization of an ulcer may produce a tumor which can be palpated through the abdominal wall, and the amount of dilation depends more on the degree of stenosis than on the length of time it has existed.

In cancer of the stomach the bowels remain regular in only 4% or 5% of the cases. In the vast majority there is constipation, or constipation alternating with diarrhea. This patient's bowels were perfectly regular.

The absence of free hydrochloric acid in the stomach, if taken as a separate symptom, is of no importance in the diagnosis of gastric cancer, because it is constantly absent in other conditions, notably achylia gastrica. Its presence, however, is strongly against malignant disease,

* Read at a meeting of the Pittsburg Academy of Medicine, January 27, 1902.

and may indeed be the only point in favor of a benign stenosis; as in the following case, related by Fenwick:⁴

A middle-aged woman was admitted to the London Hospital, for cancer of the stomach. She was emaciated, cachectic, and suffered from constant retching and vomiting. Her illness was supposed to have lasted about a year. There was no history of hematemesis or melena. The stomach was greatly dilated, there was peristaltic restlessness, and a tumor as large as an egg, which moved on respiration, could be felt immediately above and to the right of the navel. These signs, taken in conjunction with the general appearance of the patient, seemed to indicate carcinoma of the pylorus; but an examination of the vomit showed that it contained a large amount of free hydrochloric acid. The case was consequently diagnosed as one of chronic ulcer with inflammatory thickening. The patient died three days after admission; and at the postmortem examination a deep ulcer was found on the posterior wall of the stomach, near the pylorus, surrounded by great induration of the tissues, which the microscope proved was purely inflammatory in origin.

The invasion of an ulcer or its scar by carcinoma was first observed by Cruveilhier. According to Lebert,⁶ 9% of all gastric cancers originate in a simple ulcer; but Rosenheim reduces this estimate to 6%, and Häberlin⁷ to 2% or 3%. Zenker,⁸ on the other hand, believes that most cancers of the stomach are preceded by an ulcer; and Rosenheim⁹ has especially urged that if cancer has developed in the scar of an ulcer, there may be normal or increased amount of free hydrochloric acid at the beginning of the disease.

Taking into consideration then, all the facts in the case, it would seem almost certain that this man had at some time a chronic gastric ulcer, which in healing had caused a stenosis of the pylorus; and that cancer had developed on the site of the ulcer about the time, or a few months after, the operation had been performed.

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CONTRIBUTIONS TO PRACTICAL THERAPEUTICS.¹

BY

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AND

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During the past eight years we have been engaged constantly in original research work in chemistry and experimental therapeutics in America and at the Universities of Würzburg, Berlin and Heidelberg. The results of this work, notably that done at Heidelberg, have been published in German scientific journals² whose pages are reserved for the record of original experimental investigations conducted principally in the laboratories of European universities. Most of our work has been of a purely scientific character, but nevertheless interesting to the modern physician. For instance, we have shown for the first time the exact location of the convulsion center; suggested and proved practically that cocaine is the most rational antidote in cases of morphin poisoning (since corroborated by Professor Reichert, of the University of Pennsylvania), and have shown that the urea group of bodies may be produced synthetically by new and original methods; this last-mentioned work was suggested to us by Dr. Th. Curtius, professor of chemistry

¹ Presented at the third annual meeting of American Therapeutic Society, May 14, 1902, at New York.

² Jour. für prak. Chemie.

Archiv für exper. Path. und Pharmacol.

at the University of Heidelberg, and was carried out in his laboratories.

The object of this communication is to call the attention of the medical profession to four new synthetic compounds (produced for the first time by ourselves), which after extensive clinical tests in the United States and Europe have proved to be of more than ordinary practical value in the treatment of disease. In accordance with the code of ethics of the medical profession we have refrained from patenting these products and they are, therefore, eligible to incorporation into the United States Pharmacopeia as official standard remedies.

The chemie methods of production of these compounds have been published by us in detail in various journals, but the essential features of them are herewith presented.

A Substitute for Silver Nitrate.—This compound which is chemically silver vitellin (a dark brown powder), contains 30% of silver—twice the quantity in any silver proteid heretofore produced; the significance of this fact is apparent when it is recalled that the therapeutic value of a silver compound depends upon its silver content, *i. e.*, the greater the amount of silver the greater its therapeutic value.

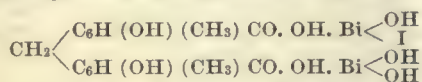
Silver vitellin does not precipitate albumen or sodium chlorid, hence it differs from silver nitrate in that it has no coagulating effect upon mucous membranes and is not chemically changed by their secretions. A further advantage of silver vitellin over silver nitrate is that the action of the latter is confined to the surface of mucous membranes, whereas silver vitellin has an intensely penetrating action (without causticity or irritation) whereby the antiseptic effects of silver are exerted deep into the submucous structures, where, as is well known, gonococci and other pathogenic organisms find and maintain a lodgment in spite of energetic measures to eradicate them. That silver vitellin possesses this penetrating action to a much greater degree than any other agent may be easily proved by immersing a thick strand of catgut in a solution of silver vitellin for a few hours, after which upon cutting the catgut it is seen to be impregnated through and through with the silver.

Clinical results indicate that silver vitellin will replace the other silver compounds in the treatment of gonorrhea, and in diseases of the eye, nose and throat. In 40 cases of gonorrhea treated at the University Hospital by Dr. H. M. Christian, surgeon-in-chief of the genitourinary department, cessation of discharge was obtained in 15 cases within 10 days. Although the strength of the solution employed was as high as 5%, in no instance did it produce irritation, but was of distinct value from the start in allaying inflammation, diminishing the discharge, reducing the number of gonococci and shortening the duration of the disease. Dr. George Knowles Swinburne, of New York, treated 66 cases of gonorrhea at the Good Samaritan Dispensary with our silver compound. Dr. Swinburne states: "In 64 of these cases unpleasant symptoms were done away with entirely, the amount of discharge was markedly diminished from the start, the gonococci were reduced in number, and the course of the disease shortened; the silver solution is not in the least degree irritating." A similar trial of our silver compound was made by Dr. Edward Martin, professor of clinical surgery, University of Pennsylvania. Professor Martin authorizes us to quote him as follows: "I consider your silver preparation the best I have ever used; it is remarkably effective and absolutely nonirritating." In the above cases the strength of the silver solution used was from 1% to 5% by hand injections, deep instillation or irrigation. Complications such as swelled testicle, bubo, etc., never occurred, and the symptoms of inflammation—pain, chordee, *ardor urinae*, etc., were completely controlled by the injections. It was also used, in strength of 1 to 1,000, for irrigating the bladder in cases of cystitis, with excellent results.

The solubility of silver vitellin is remarkable—one

ounce of it is completely soluble in less than a dessert-spoonful of water; consequently, it may be employed in solution in any desired strength. Because of its non-caustic, nonirritating and deeply penetrating action and because of its high content of silver (nearly one-half that of silver nitrate) it is safe to predict that silver vitellin will revolutionize the treatment of many inflammatory diseases of the eye; indeed, clinical tests thus far made in cases of ophthalmia neonatorum, purulent conjunctivitis, dacrocystitis, etc., bespeak for silver vitellin a unique field in ophthalmology.

A New Dry Surgical Dressing.—This compound, which is a dusting powder, is chemically mono-iodid-di-bismuth-methylene-di-cresotinate and has the formula



This body is a pink, impalpable, odorless, tasteless and insoluble powder containing 45% of bismuth, 15% of iodine and 3% of formaldehyd in definite chemic combination.

It is a well-known chemic law that when iodine and formaldehyd are combined, as they are in this compound, the iodine and formaldehyd are *gradually* set free by the chemic and physical conditions present on wound surfaces; this fact is easily demonstrable experimentally and clinically.

The effects of this compound on a wound-surface are those of bismuth, iodine, formaldehyd and cresotinic acid, *i. e.*, antiseptic astringent-dessicating and granulation-producing.

For the past year the clinical effects of the powder have been studied at various hospitals in Philadelphia, New York, London, Berlin and Munich, as a primary dressing after operations and in the general class of out-patient surgical cases in which are present active inflammatory processes accompanied by disorganization of tissue and excessive discharges. In the postoperative cases, union by adhesion was the uniform rule. The employment of the powder in infected wounds (burns, scalds, abscesses, suppurating surfaces, leg ulcers, etc.) showed remarkable effects in checking pus formation, drying secretions and in promoting granulation and cicatrization.

At the out-patient department of the Pennsylvania Hospital, where the powder has been tried side by side with iodoform, aristol and several other dusting powders, it was noted our compound uniformly cleans a wound better than any of the others, has an equal if not greater influence upon granulation and induces more rapid healing. In no case have toxic effects of any kind resulted, nor has it been necessary to discontinue its use because of disagreeable symptoms. The powder is absolutely non-toxic used externally or administered internally to dogs, in doses of 30 grains three times daily.

An Easily-Assimilable Organic Iron.—This iron compound, which we designate, tentatively, iron vitellin, has the elementary percentage formula $\text{C}_{47.51}\text{H}_{5.1}\text{N}_{17.14}\text{Fe}_8\text{S}_{.83}\text{O}_{21.42}$; it is a red powder freely and completely soluble in water forming a beautiful clear red solution, neutral in reaction, tasteless and odorless.

Practically all of the so-called "organic" iron compounds heretofore produced synthetically are nothing more than simple combinations of iron salts with albuminoids; that this is true of ferratin, iron peptonate and the large number of similar preparations may be readily proved by the addition of a solution of silver nitrate, which reagent precipitates albuminoids. With our iron compound, however, silver nitrate causes no precipitate.

Now, a few words as to the meaning of the term "organic iron": This designation, all authorities assert, should be restricted to those compounds in which the characteristic iron tests are not produced by certain reagents. The most reliable and the most delicate of these tests is what is known as MacCallum's and consists in adding a small quantity of a $\frac{1}{2}\%$ solution of hema-

toxylin to the iron to be tested; if the iron is *inorganic*, a characteristic blue-black color is produced, while if the iron is *organic*, no color reaction results. This test applied to the best-known of these alleged "organic" iron compounds produces the characteristic hematoxylin reaction for inorganic iron; on the other hand, our iron compound does not yield this reaction, so that it is in the most accurate scientific sense a true organic iron.

Authorities teach that organic iron has by reason of its chemic construction the following clinical advantages over inorganic iron: It cannot provoke digestive disturbance, is not astringent, is more readily assimilated, and is in the complex form required by the tissues.

Our iron compound further differentiates itself from ferratin, iron peptonate, etc., by the fact that it is not decomposed in the stomach. Digestion of our iron compound with an artificial gastric juice for four hours at body temperature fails to split off even a trace of iron; hence it cannot be astringent or irritating to the gastric mucous membrane as are the other compounds.

The greater facility with which iron vitellin, compared to Bland's mass, iron peptonate, etc., is assimilated, we have demonstrated by animal experiments; there is three times more of iron vitellin absorbed and stored in the liver than of the usually-employed forms of iron.

Clinical experiments with iron vitellin have been made by several physicians in private practice and at the medical out-patient departments of the University and Polyclinic Hospitals, the detailed records of which will be published elsewhere. In 8 cases of severe chlorosis, two of secondary anemia, and two of primary anemia due to diminution of the total quantity of blood, restoration of normal conditions occurred in from ten days to six weeks. To quote from the hospital records made: "Physically the patients were improved, and with the increase in appetite felt better and more buoyant and the clinical results are, on the whole, better than those obtained from any other form of iron."

A summary of the results obtained thus far indicate that the advantages of iron vitellin over Bland's mass, iron peptonate, etc., consist of its more easy assimilation, its freedom from digestive disturbances and its greater general beneficial influences upon the signs and subjective symptoms of blood impoverishment.

An Intestinal Antiseptic and Astringent.—This is hexamethylenetetramin tannin proteid and contains 50% of tannin and 10% of hexamethylenetetramin in definite chemic combination. It is a well-established fact that tannin is one of the best intestinal astringents available if it can be so combined that it passes out of the stomach into the intestines chemically unchanged and gradually releases free tannin by contact with the alkaline intestinal contents. As pointed out by Professor Nicolaier, of Göttingen, and more recently by Loebisch, of Innsbruck, hexamethylenetetramin exercises potent inhibitory influences upon intestinal putrefaction and that under its influence indican, the acknowledged index of intestinal decomposition, disappears from the urine.

Clinicians have availed themselves of the use of this drug in cases of typhoid fever because it sterilizes the urine to the extent of complete disappearance of typhoid bacilli from that fluid.

The essential feature of our compound is that it so combines a nontoxic antiseptic and astringent that the compound is uninfluenced by the gastric juice, but is gradually split up into its components as it passes downward through the intestines; hence it cannot disturb the stomach and it exercises antiseptic and astringent properties in the lower part of the intestinal canal—facts easily demonstrable experimentally and clinically.

This remedy has proved of marked value in a large series of cases of acute catarrhal enteritis, chronic diarrhea due to lesions in both the small and large intestine and in infantile diarrhea; it produced prompt cessation of bowel movements and relief from symptoms of inflammation. Its inhibitory influence upon

intestinal putrefaction was established by careful observations in severe cases of typhoid fever in the Philadelphia Hospital, in which it was noted that after the administration of several one gram doses of the drug, indican, which had previously been present in large quantities, disappeared completely from the urine.

The field of application of this compound is typhoid fever and inflammatory diseases of the intestines associated with diarrhea and the symptoms of autointoxication dependent upon intestinal putrefaction. Hexamethylenetetramin tannin proteid is a yellowish brown fine powder which is odorless and tasteless.

All of the above compounds are the results of long and careful detailed study of the laws of the relationship between chemic construction and therapeutic activity; all of them are of the scientific character which entitle them to official recognition in the Pharmacopoeia. Inasmuch as these products fulfil acknowledged desiderata in therapeutics and embody clearly demonstrable advantages over remedies for similar purposes now available, they constitute material contributions to the progress of medical science.

SUPPURATIVE OTITIS MEDIA AND SOME OF ITS DANGERS.¹

BY

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The prevention of disease is probably the highest ideal of the physician. That we will ever reach our ideal, and prevent even all of the preventable diseases is not probable; nevertheless, we must exert our utmost endeavor to attain this end, for so long as such diseases occur, blame will be attached to our profession and to those responsible. Suppuration of the middle ear will occur notwithstanding our greatest precautions, but most of its complications must be considered preventable and consequently should not occur. The laity appear to be lamentably ignorant of the serious nature of a "running ear," and frequently say they thought it was dangerous to stop it. Even many physicians regard it very lightly.

It is with a view of impressing upon the profession, and through them the laity, the seriousness and dangers that may attend any case of earache and suppuration of the ear, that this paper is prepared. Only recently I reported the fatal termination of a case in which the physician attached so little importance to the trouble that he only advised syringing the ear with soap-suds, and paid no further attention until the mastoid was involved and the patient ill with pyemia. Will not this physician suffer pangs of remorse when he fully realizes that his criminal carelessness allowed this patient to go to an untimely grave?

Bürkner and Bezold found that in 50,000 cases of intracranial disease, 66% had middle ear trouble; and statistics show that between 1% and 2% of all cases of aural suppuration terminate fatally through some cranial complication. In this country, 4,000 deaths which occur annually from abscess of the brain, are attributed primarily to suppuration of the middle ear. Aside from the deaths more or less directly caused by this trouble, how many nonfatal cases there are with other complications which seriously handicap the patient for life—such as impaired hearing, facial paralysis, deafmutism, etc. Some authors hold that 50% of the cases of deafmutism are acquired, and it is well known that a very large proportion of these cases are due to suppuration of the ear. About 20% of the pupils in our schools have defective hearing. Do we realize that many children who appear stupid and fall behind in their studies may be partially deaf, and are thus misjudged and kept behind in their studies through not hearing the instructions of

their teachers? How many useful vocations are closed to them on account of impaired hearing? Who is responsible? A very large number of these cases are due to suppuration of the middle ear. Is it not a fact that in many cases, when the family physician is told by the mother that the child has a discharge from the ear, he simply directs her to syringe the ear with boric acid solution and inquires no further about the case? With the danger of deafmutism in those under 5 years, and impaired hearing in all cases, should he not continue to supervise such cases until the discharge has stopped and hearing has been restored to normal? Is it not probable that morbid material is left in the ear in many of these instances, or that adhesions of the drum membrane to the promontory, or ankylosis of the ossicles, or a permanent perforation of the membrane are allowed to result? Even a slight discharge is allowed to continue indefinitely in some cases when it is a wellknown fact that it is dangerous, being the most common cause of intracranial complication.

To emphasize more pointedly the danger and seriousness of suppuration of the middle ear, I will enumerate briefly some of its complications, and allude to its causes, prevention and treatment. With proper care nearly every patient can be cured. With neglect and lack of proper attention any case may result in one or several of the following conditions—impaired hearing, adhesions, permanent perforation of the drum membrane, deafmutism (in children under 5 years of age), granulations, polypi, caries, mastoiditis, facial paralysis, thrombus of the sigmoid or lateral sinus, or of the internal jugular vein, meningitis, abscess of the brain, pyemia, death. How can we admit that there are such possibilities and yet regard a "running ear" so lightly? As to its causes, cold in the head, grip, sore throat, adenoids, the exanthematous diseases, especially measles and scarlet fever, diphtheria, typhoid fever, tuberculosis, and sea bathing, are the most common.

The prevention of suppuration of the ear must depend upon watching the condition of the nose and throat in these diseases and giving them prompt treatment by the use of antiseptic sprays, upon the first indication of trouble. Keep the patient warm and comfortable and free from draughts. With the onset of earache give an active cathartic and apply heat and anodynes; do not use chloroform ointment, or blisters about the ear. One or two leeches may be applied in front of the tragus. If relief is not soon obtained, pus is probably forming in the middle ear, and the drum membrane should be examined; if found bulging a paracentesis should be done and the ear irrigated with warm boric acid solution. After the discharge has begun, irrigation should be practised as frequently as necessary to keep the ear free from pus. Gentle inflation of the eustachian tubes should be done occasionally as the acute symptoms subside.

If there is a sudden cessation of the discharge, with rise of temperature, increase of pain, and tenderness or swelling about the mastoid, the latter is probably involved. An ice-bag should be applied at once to the mastoid, and any obstruction in the auditory canal should be removed. If the symptoms do not subside in 24 hours, the mastoid antrum and cells should be opened. Pus penned up in the middle ear or mastoid means imminent danger of meningitis, brain abscess, or involvement of the sinuses, and as the mastoid operation in skilled hands is comparatively safe, it is better to err on the safe side by an early operation.

These complications, however, are much more liable to occur in chronic cases of otorrhea, when we so frequently have granulations, polypi, caries, etc.

If chronic suppuration does not yield promptly to cleansing the ear with boric acid solution, some of these complications probably exist. Polypi should of course be removed, carious bone should be cureted or removed, and granulations can be destroyed usually by instillation of alcohol and strong formalin solution.

¹ Read before the Medical Society of the District of Columbia, October 30, 1901.

Occasionally we have a case which defies any and all local and constitutional treatment, but in most cases suppuration of the middle ear, whether acute or chronic, is amenable to treatment, and we should not have so many of these exceedingly serious complications. People are generally ignorant of these dangerous possibilities. We must depend upon the family physician to enlighten them, and as specialists we feel that we must remind this most highly valued friend and family counsellor that he should not be satisfied with simply arresting a discharge, but should see that the ear is healthy and the hearing fully restored before discharging these patients.

SPECIAL ARTICLE

THE DIFFERENTIATION OF THE FIVE GENERA OF NORTH AMERICAN MOSQUITOS, WITH ESPECIAL REFERENCE TO ANOPHELES.¹

BY
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of Baltimore,

AND
FRANCIS CAREY BAYNE,
of Baltimore.

From the popular and from the scientific points of view, the mosquito today occupies a prominence that he has never before attained, even though his presence and his proboscis have been for ages thrust to the fore.

In the files of two of our leading medical journals for the year 1900 reference was made to this insect in 24 instances. We cannot recall any subject pertaining to medicine that in so short a time has taken such hold upon the nations, as the destruction of this pest. Simultaneously it extended to both hemispheres and into lands above and below the equator. Entomologists, hygienists, medical men, improvement associations, municipalities, states, even, have taken hold of this problem. You all know what has been done in the city of Havana, Cuba, by the medical corps of the U. S. Army, so that from being a pest-hole of yellow fever and malaria, a constant danger to our country, positions have been reversed; and many of our southern cities could well be declared a menace to her. Major Gorgas, in his last report to the Surgeon-General, gives a mortality rate to Havana so low that none of our chief cities can match it. Much of this good can be ascribed to methods of mosquito destruction.

It is our purpose to point out the essential distinctions between the genera of our indigenous mosquitos and to lay especial stress upon the Anopheles.

The mosquito family belongs to that order of insects known as Diptera, or true flies. They possess but two wings, a second pair being represented by two small projections called poisers. The early stages differ radically from the matured insects, and the true mosquitos are distinguished by the possession of antennae having whorls or hairs. In the males these hairs are long and profuse, in the females short and sparse. Mayer and Christopher Johnston have shown these antennae to be organs of hearing. They are two slender processes, curving outward from the anterior borders of the head, one on each side.

From the lower central edge of the head projects a proboscis or beak covered with scales, single in appearance, and containing the biting and sucking armament of this pest. It consists of the labium, or upper lip, two mandibles for piercing tissues, two maxillae or jaws, an epipharynx, a hypopharynx, and the labium or lower lip. Close to the beak at either side are noted two palpi or feelers. It is these structural formations about the head that constitute the specific differences of these insect groups.

I shall adhere to Howard's original five classes and shall not at the moment follow Theobald of the British Museum into his four additional divisions of *Stegomyia*, *Conchylastes*, *Toxorhynchites*, and *Uranotenia*. They are based on minute mor-

phologic points that do not weaken our ability to appreciate the malarial-bearing type of mosquito, for therein Theobald makes no change. His placing *Culex fasciatus* or *teniata* in a group apart, *Stegomyia*, appeals to reason. For as far as experiments have gone, all Anopheles are able to harbor the protozoon of malaria; and to find that a single individual of a large family like *Culex* possessed the same potentiality as regards yellow fever would be a unique experience. So there must be morphologic differences and Theobald believes he has discovered such.

The five genera of North American mosquitos, *Aedes*, *Anopheles*, *Culex*, *Megarrhinus*, and *Psorophora*, are not by any means complete. It was only a year ago that the larvae of *Psorophora* were found. Of *Megarrhinus* other than the finding of the adult we know nothing, and for that matter, many points need to be investigated in all these groups.

Aedes are the smallest of these Diptera. In both male and female the palpi are less than one-half as long as the beak and are shorter than the antennae. It could only be confounded with the female *Culex*, since their palpi are also less than one-half as long as the beak. Inasmuch as there are but two varieties of *Aedes*, the pronouncement would be easy from the peculiarities of these two individuals and especially from their small size.

The female *Culex*, as above noted, might be mistaken for *Aedes*, but certainly never for *Anopheles*, whose palpi in both sexes are as long or longer than the proboscis. The male *Culex*, however, would have to be distinguished from *Anopheles*, its palpi being like theirs in length. The individualities of *Anopheles*, particularly the spotted veins, would soon settle the point; but just here it would be wise to quote Major Giles, who says that a certain number exhibit wing markings as brilliant and distinct as in the most typical members of the genus *Anopheles*; so that it is a mistake to suppose that the presence of wing spots is conclusive of a mosquito belonging to that genus.

Of *Megarrhinus*, the strongly curved beak, and of *Psorophora*, the scaly legs would offer no difficulty.

Anopheles, in which physicians are most interested, are unlike the other mosquitos, from ova throughout their larval and pupal stages. The adults are no larger than *Culex*, and are smaller than *Megarrhinus* and *Psorophora*. The palpi in both sexes are almost as long or even longer than the beak. The wings of the majority are noteworthy by reason of dark spots upon many of the veins. These spots are due to greater massing together of scales more pigmented than the scales of the rest of the vein. There are five species, however, lacking such spots.

Unlike *Culex*, whose ova are deposited in masses of from 200-400, stuck together, the ova of *Anopheles* lie on their sides, close to or touching some 30-60 more of their fellows. They are elliptic in shape, black, with a whitish wrinkled membrane clasping their centers. Both float on the surface of the water, maturing sooner or later, according to the weather—*Culex* in from 12 to 24 hours, *Anopheles* in from 2 to 3 days (?).

The larvae differ radically. *Culex* float at angle, head downward beneath the surface, and breathe through a long respiratory siphon, which, jutting out from near its extremity, give them the appearance of an irregular Y at the anal end.

Their heads are noticeably bigger and broader than any of the body segments. *Anopheles* float on the surface in a straight line. They taper gently from their head to their tail end, and move backward when in motion. At rest they back-in, as it were, against any floating object, this being the result of a current produced by the continuous action of their antennae wafting food particles to their mouths. *Anopheles* pupae are somewhat smaller than the ordinary *Culex*. They have short breathing tubes, which jut out from the anterior portion of the thorax, and the abdominal segments are attached more nearly at a right angle. *Culex* pupae are more vertical in appearance.

With *C. punctipennis* we have noted a peculiarity that marks these pupae from all the *Culex* at our command. It consists of two pigment spots upon their anal flaps, a spot on each, which to the naked eye against the light are minute milky points. We have picked these pupae from many others by it, have reared them and have not yet failed to find this distinction

¹ Read before the Medical and Chirurgical Faculty of Maryland, at Elkton, Md., at the semiannual meeting, November 19, 1901.

verified. We are unable at the present moment to speak positively as to this being a class distinction or one of this species only. We have not had the chance of looking it up in other species of *Anopheles*, and we have seen no mention of it in the literature of the subject. We have noted a pupal development to maturity in two days. The Sierra Leone expedition report likewise, and Drs. Dohme and Hirshberg, of the Johns Hopkins Medical School, speak of two days as being common in warm weather. From this we are forced to conclude that, in the heat of summer, such maturation takes place even more quickly, for one seldom, if ever, finds in any pool a number of pupas in keeping with the number of fully-grown larvae.

In the United States but three species of the *Anopheles* are found, *A. quadrimaculatus* (identical with the European *A. maculipennis*), *A. punctipennis*, and *A. crucians*. Incidentally, mention might be made of *A. bifurcatus* of Canada, and the *Anopheles argyritarsis* sent from Cuba by Dr. Reed, of the United States Yellow Fever Commission.

A. maculipennis has wings which are nearly clear, but marked with four rather insignificant dark spots, and its palpi are wholly black. *A. punctipennis* is a beautiful mosquito, which has a yellowish-white spot about three-quarters of the length of the front margin of the wings. The ends of the wings are also tipped with yellow. Singular to relate, we found no other form of *Anopheles* but this in our neighborhood north of Baltimore, while Dr. Thayer's workers, Drs. Dohme and Hirshberg, to the east and southeast of the city, found only the *A. maculipennis*. With us, the scales of the last vein of *A. punctipennis* were white only in the central third. Scales also are massed on some of the other veins. *A. crucians* has palpi marked with white at the bases of the four last joints, and the last vein is white with three dark spots.

We are more interested in calling notice to the breeding places of *Anopheles* than to go further into details about them. This part of the subject is a practical one, especially to those of us who live in the country. With ability to recognize them in all their stages, each one of us can do excellent service in noting details of their life-history. Again, by noting the presence or absence of malaria in such localities; for with this disease present (of course I mean endemically), and *Anopheles* absent, other modes of transmission must be sought. From these suggestions you can see there are many moot points awaiting final settlement. It has not yet been proved that *Anopheles* represent the only means of transmission, nor even that it is the only mosquito serving as the intermediate host of *Hæmaphysoides*. Investigations have simply shown that some of the *Culex* do not, while all the *Anopheles* examined do provide a suitable environment for the extracorporeal cycle of the hematoozon; so that any quantum of knowledge can be of service to this end.

Woldert, of Philadelphia, calls *Anopheles* "a rural mosquito;" and so far as our observations go, we heartily agree with him. We are convinced that *Anopheles* will be found everywhere in open neighborhoods. At Roland Park, our home, we have found them on all sides. In two instances not more than 200 feet from dwelling houses. We have found them at Govans-town, one mile away, in a running stream, and again in a roadside gutter. In Stony Run, which meanders to the east of Roland Park, in half-a-dozen places. We have found them in a clear, running-water pond; in an old box on the golf course of the Baltimore Country Club; in clear, graveled, or sandy-bottomed streams in a grassy swamp and in a swamp at Dundalk, connecting with the Patapsco River. I draw your attention to some of these instances to disabuse your minds of the old notion that stagnant water is a *sine qua non* of breeding-grounds.

Our observations are confirmatory of the work done in England by Nuttall, Cobbett and Pigg, as to companionship to *Culex*; for with one exception we have always found them together in the same pool. Again, we have grown them together, an experience contrary to Young's, of the Indian Service, who claims that one form of larva will destroy the other, the *Anopheles* disappearing in the presence of *Culex*.

Save at Dundalk, the localities wherein we have found *Anopheles* have been free from malaria. From inquiry there, malaria is not so common now, although it was common six or

seven years ago, as I know from experience among laborers there.

Nuttall concludes that districts in England once subject to paludism are free now, from causes other than the actual extinction of *Anopheles*. He ascribes it to various cooperating factors—to drainage decimating their numbers, to reduction of population, and to the use of quinin shortening the periods of the disease and thus lessening possibilities of dissemination.

Our findings accord with these observers, who disprove Grassi's contention of the concomitance of ague and *Anopheles*. In other words, Grassi promulgated the view that where this type of mosquito is found malaria will be found.

This certainly is shown to be false teaching in the experience of the Englishmen and our own. We can well understand, however, how the presence of *Anopheles* must be looked upon as a menacing danger at all times with the occurrence of this disease.

Knowing that they abound in any given locality we should do our utmost to destroy them.

Noting that J. F. Brakley and Dr. Smith, of the New Jersey Experimental Station, have called attention to the possibility of the hibernation of *Culex* larvae in frozen pools, we have experimented with larvae of *Anopheles* toward the same end. Enveloping some of this species in powdered ice, it was frozen by pressure into a solid ball and therein they were retained for an hour or more, to find that in a short interval after thawing these larvae became as active as any of their fellows. On a second trial we kept them in this condition for 10 hours and found that a third of them were alive afterward. These were but crude experiments and did not approach the natural conditions of freezing, and we believe that those that succumbed did so not from the fact of being frozen but by damage done them by pressure of ice particles.

At the Vacuum Ice Company's plant conditions again were against us. Here the ice is frozen by subjecting the water to an intense vacuum, every particle of air being exhausted. The consequence may be imagined—our larvae were soon destroyed.

From an analysis of their habitat and from the experience of a very careful treatment in Spain directed to that end by a worker of the University of Paris, reported in his graduation thesis, the extermination of *Anopheles* or their practical extinction throughout country districts is not to be looked for. They do not require stagnant water for their perpetuation, and we are sure they will be found along all streams under the following conditions: Quiet water off from the main currents, where grass or rootlets abound. Again, where a snag or low-sweeping branch catches the flotsam and jetsam of the surface and makes a still pool. One spot in Stony Run holding less than a gallon of water, where we found the greatest numbers of larvae and pupas, was made by an inappreciable eddy of the stream.

Notwithstanding these facts, much can certainly be done toward their destruction, as instanced at Havana and Sierra Leone, by draining swamp lands, by filling in surface pools, by the creation of currents in sluggish drains, and by using kerosene upon water surfaces when the other methods would not be available. Without comment, we may say that over a section of Stony Run, including two ponds, where we had used kerosene, no *A. punctipennis* were found, and yet higher up the stream we found them in abundance in many places. Later on, below the petrolized portion, after an interval of perhaps a month they were discovered. We are not sanguine, however, that such treatment could be made effective in running water.

Careful isolation of the malarial sufferer from chance bites of *Anopheles* in a room freed from mosquitos by fumes of sulfur or pyrethrum powders and kept free by careful screening of windows and doors, and by nets about the bed, will be the most potent method of finally banishing this disease.

Knowledge upon this subject should be more widely disseminated. It is one in principle with the destruction of tuberculous, pneumonic and influenzal discharges, with the disinfection of typhoid stools and urine, the boiling and filtration of drinking water, and all the other means of prophylaxis. If the profession were a unit not only in holding to the truth in these affairs, but also in insisting on its practice, thousands of deaths from preventable diseases would not rise up as a monument of scorn to the medical profession.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

May 17, 1902. [Vol. XXXVIII, No. 20.]

1. The Evolutionary Aspect of Infectious Diseases, with Especial Reference to the Local Venereal Diseases. G. FRANK LYDSTON. (Continued.)
2. A Preliminary Report of the Transmission of Pathogenic Germs by the Common House Fly. JACOLYN MANNING.
3. The Fixation of a Movable Liver and Report of a Case of Hepatopexy. J. H. CARSTENS.
4. Some Acute Diseases of the Ear; Their Diagnosis and Treatment. PHILIP HAMMOND.
5. Improved Method of Examining the Female Bladder. J. CLARENCE WEBSTER.
6. The Differential Diagnosis of Typhoid Fever. WILLSON O. BRIDGES.
7. Grave Abdominal Injuries without External Evidences of Traumatism. R. HARVEY REED.
8. Unprecedented Constipation. D. GEIB and J. D. JONES.

2.—Germ Transmission by the House Fly.—Manning briefly reviews the literature of the subject and reports his own laboratory experiments. Forty-four culture tubes were subjected to infection, 41 showing colonization at the end of 48 hours, 3 tubes remaining apparently sterile. Pure cultures of the following pathogenic germs were obtained: *Bacillus pyocyaneus*, *B. typhi abdominalis*, *B. coli communis* and *Staphylococcus pyogenes aureus*. Many nonpathogenic germs, molds, and fungi were also obtained. [H.M.]

3.—See *American Medicine*, Vol. II, No. 12, p. 438.

5.—Improved Method of Examining the Bladder.—Webster points out the disadvantages of elevating the hips by pillows and of the genupectoral position. He places the patient on a Boldt table in the lithotomy position, fastening the ankles to upright rods, the buttocks projecting over the edge. A steel bar with padded supports attached to the top of the table prevents backward slipping when the lower end is elevated. In this way the trunk is not bent, respiration is free and anesthesia easy. The examiner stands on a stool. The position is satisfactory also in examining the rectum. [H.M.]

7.—See *American Medicine*, Vol. III, No. 2, p. 53.

8.—Unprecedented Constipation.—At 20 it was a common occurrence for the patient to go three weeks or three months without an evacuation. At 20, five months and three days passed and after a few months of regularity there was no movement for six months and fourteen days. He ate full meals and did a good day's work. Evacuation weakened him; he was troubled with gas, and partly disabled for work. The abdomen was greatly distended. There was no movement from June 18, 1900, to June 21, 1901, when some of the fecal matter was removed with a curet and hot water. By June 28 about eight gallons of feces were passed. Death occurred while at stool six months later. The autopsy revealed a distended colon 19½ inches in circumference in one place with hardened feces in the rectum acting as a valve. [H.M.]

Boston Medical and Surgical Journal.

May 15, 1902. [Vol. CXLVI, No. 20.]

1. Birthrate and Deathrate as Influenced by Obstetric and Gynecic Progress. GEORGE J. ENGELMANN. (Continued.)
- I. Statistic Evidence of Medical Progress. II. Statistic Evidence of Obstetric and Gynecic Progress.
2. Amaurosis (Atrophy of the Optic Nerve) and its Treatment by the Subcutaneous Injection of Strychnia. HASKET DERRY.
3. Diseases of the Ear of Interest to Insurance Examiners. PHILIP HAMMOND.

2.—Strychnin Subcutaneously in Optic Atrophy.—In 26 cases of optic atrophy treated, 15 terminated in blindness; in 2 there was temporary relief, in 1 doubtful relief, and in 8 (30%) there was arrest of the process, with occasionally slight increase in the field and visual acuity. This was due alone to strychnin injected in the temples. Internal administration is not as effective. The beginning dose is gr. .04, increased daily by gr. .01 until constitutional effects are observed. By the tenth day the temples are sensitive, and after 10 days intermission the course is repeated. Sometimes a third course is advantageous. Injections are made in each temple alternately with aseptic precautions. [H.M.]

3.—Ear Diseases and Insurance.—No exact statistics are available as to the number of persons who die annually from ear diseases, but the list is undoubtedly long. A chronic dis-

charge which baffles treatment is very unfavorable; one which stops under treatment leaving an open perforation may be accepted conditionally; and a suppurative ear which heals by forming a new cicatricial drum may be accepted without reservation. Cerumen and moist eczema are sometimes mistaken for suppuration. Many patients are unconscious that their ears are diseased. Tuberculosis can be detected sometimes before it has manifested itself in other organs. Acute ear disease is sometimes rapidly fatal. Other causes to be included in the dangerous list are nodules or tumors of the auricle in elderly persons, or ulcerated areas which may be due to epithelioma, lupus, and stenosis of the external canal from old traumatism or abscess. Persons partially deaf or with aural vertigo are more liable to accident. [H.M.]

Medical Record.

May 17, 1902. [Vol. 61, No. 20.]

1. So-called "Joint Derangement" from Movable Bodies in Joints. JOSEPH D. BRYANT.
2. A Few Cases of Penetrating Stab Wounds of the Abdomen. JOSEPH B. BISSALL.
3. Prophylaxis in Pneumonia. H. R. TUTHILL.
4. The General Complications and Sequels of Measles. ADOLPH RUPP.
5. Eye Complications of Measles and Their Treatment. D. H. WIESNER.
6. Cerebral Abscess. C. E. RUTH.
7. A Report of Experiments Made with Cargile Membrane, for the Purpose of Determining Its Value in Preventing the Formation of Peritoneal Adhesions. ROBERT T. MORRIS.

1.—Movable Bodies in Joints.—Bryant says a free incision into the kneejoint for the removal of a supposed movable body should not be indifferently attempted, since the contingencies incident to the operation may be of greater moment to the patient than the inactivity of the limb. Exploration should not be made until there is assurance of the presence of an offending body by manipulative examination, or until repeated attacks expose the patient to dangers equal to those of the operation. The operative results under the best regulated practice is practically devoid of danger to life and limb, but the failure to employ a perfect technic invites a disaster which the patient is too often compelled to bear alone. [A.B.C.]

2.—Stab Wounds of the Abdomen.—Bissell reports 12 cases which came under his observation and treatment, in nine of which there was recovery. He says that from a study of the cases at hand it is reasonable to infer that wounds made with a small instrument with a point or short cutting edge do little or no injury to the abdominal contents, and if there are no symptoms pointing to such after the first six or eight hours the wound may with reasonable safety be closed. It is well known that small injuries of the intestines will take care of themselves by means of the prolapse of mucosa into the puncture or the collapse of the muscular and serous walls over a wound, thus closing it, together with rapid adhesions which occur in slight injury to serous surfaces. If doubt exists as to injury to abdominal contents explore with the cleansed finger. [A.B.C.]

3.—Prophylaxis in Pneumonia.—When lobar pneumonia has gone on to the second stage and exudation has become well established, nothing probably will shorten its course. Before this much can be attempted internal antiseptics are indicated. Creosote and its carbonate have been advocated. Tuthill has had good results from 10 grains of salol every two hours in the first stage. He reports several cases in which the disease was apparently aborted by this treatment. [H.M.]

6.—Cerebral Abscess from Middle Ear Disease.—Ruth reports four cases, in two of which operation was done and recovery followed. In one operation was refused and the patient died, and in the fourth the patient died during postponement of operation, with the hope of bettering his physical condition. The author urges that in every case of middle ear disease in which cerebral symptoms develop, accompanied or not by suppression of discharge, the skull should be opened and search made for the abscess. In every case of suspicion of involvement of the mastoid, it should be opened thoroughly, starting with the attic and if necessary continuing backward and downward to its extremest limitations, to evacuate all infected areas. Serious consequences could be avoided in many if not in all cases of middle ear disease if the membrana tympani were removed sufficiently to provide free drainage. The

dangerous complication arises from granulation material filling the tympanum and plugging the drainage point. [A.B.C.]

7.—The Use of Sterilized Animal Membrane to Prevent Peritoneal Adhesions.—Morris reports the results of a number of experiments made with thin sterilized animal membrane, obtained from the peritoneum of an ox, and sent to him by Dr. Cargile, of Arkansas. His conclusions are as follows: Cargile membrane seems to resist absorption in the peritoneal cavity for more than 10 days and less than 30 days. Its presence apparently causes the formation of temporary loose adhesions, which are harmless, and which become absorbed for the most part in less than 30 days. The membrane seems to cause very little disturbance to the peritoneum, it does not furnish a good culture medium for bacteria, and it protects areas of peritoneal surface that have suffered injury to their endothelial covering, until new endothelial cells have repaired the injury without involving neighboring peritoneum. It is not necessary to suture the membrane in place, as it becomes instantly adherent to moist surfaces, and is not readily dislodged afterward. In this connection it may be well to give warning against handling the material with wet hands or instruments. Used on open wounds his conclusions are: As an animal membrane it seems to be particularly agreeable to the tissues of open wounds. It serves as an excellent conductor of epithelium when placed next the wound beneath absorbent dressings. It is not impervious to moisture, and in that regard possesses advantages over gutta serena tissue or silver foil. In brain surgery the membrane adheres closely to exposed brain tissue, and it makes a very good *dura mater* for temporary purposes. It can be used to keep severed and sutured tendons from uniting *en masse*. [A.B.C.]

New York Medical Journal.

May 10, 1902. [Vol. LXXV, No. 19.]

1. A New Study of Mitral Obstruction, with Illustrative Cases. THOMAS E. SATTERTHWAITE.
2. Toxic Dosage in the Treatment of Some Nervous Disorders. WILLIAM C. KRAUSS.
3. Technique of the Operation and Results of Tendon Transplantation at the Hospital for the Ruptured and Crippled. V. R. GIBNEY.
4. Neurologic Questions in the Operation of Tendon Transplantation. JOSEPH COLLINS.

1.—Mitral Obstruction.—In this interesting discussion, Satterthwaite expresses the opinion that most of the errors committed by writers on this condition is due to the fact that the views expressed are based on clinical data unsupported by pathologic. Conceptions of mitral obstruction originated with Corvisart, Napoleon's able physician and Laennec's teacher, who first called attention to the "purring thrill"; the discovery of a diastolic bruit in mitral obstruction was made by Bertin, a contemporary of Corvisart, while Fauvel was the first to call attention to that subvariety of the diastolic bruit, now known as the presystolic, which he defined as a "loud rasping bruit" preceding the first sound or murmur and ending with it. In England this is usually attributed to W. T. Gairdner, of Edinburgh, having been defined by him under the name "auricular systolic bruit." It may be laid down as a fact that mitral obstruction in general implies regurgitation; in fact, advanced obstruction seems to be almost impossible without regurgitation, certainly in stenosis where the orifice or leaflets or their attachments are rigid. Given a mass of vegetations about any valve, let them continue to develop, and the patient will surely have stenosis if he lives long enough. From the study of a series of cases, the following points appear: (1) Mitral obstruction is usually fatal before the age of 40 is reached; (2) females are little more prone to it than males; (3) there is apt to be a marked contrast between a strong cardiac impulse and a feeble, radial pulse; (4) the true presystolic murmur occurred in 15% of my cases. It comes and goes, but is usually inaudible in the last stage; (5) it is apt to have a loud, rasping or sawing quality, but may be "gushing" or "whirring." It may also be faint or inaudible; (6) in about 40% there is some sort of diastolic murmur; (7) these murmurs are best heard over a rather limited area, somewhat oval in form, having for its center an area between the fourth left space, inside the nipple and the apex, and extending an inch or so to the right or the left. Occasion-

ally this murmur is heard best as low as the fifth, sixth or even seventh left space; more rarely it is heard as high as the second left rib; (8) in 10% to 35% there was a thrill over this area; (9) the first sound at the apex is short and abrupt; (10) the second pulmonary sound at the base is usually intensified; (11) occasionally a murmur with the second sound at the base is heard over the left auricular appendix; (12) at first there is hypertrophy of the left ventricle. Then atrophy of it with hypertrophy of the left auricle. Then follow dilation and hypertrophy of the right heart; (13) mitral insufficiency must, to some extent, accompany mitral obstruction; (14) in distinguishing the presystolic murmur of mitral obstruction from the Flint murmur of aortic insufficiency, we should rely on the "long heart" and the strong impulse, or the "Corrigan" of insufficiency, rather than auscultatory signs. In case there is both aortic insufficiency and mitral obstruction, a differential diagnosis is impossible with the means we have now at our command. [C.S.D.]

2.—See *American Medicine*, Vol. III, No. 7, p. 257.

3.—Tendon Transplantation.—This is a description by Gibney of the operative technique followed at the Hospital for the Ruptured and Crippled and is based on 92 operations done at that institution since 1896. Special emphasis is placed on the importance of a thorough preparation from 24 to 48 hours before the operation, because in this aseptic day no cutting operation is to be considered without these preliminary steps. Statistics do not as yet show which is better, grafting or transplantation of one tendon into another tendon or into bone or periosteum. The aim should always be to correct deformity, to place tendons where deformity may not easily recur, and where the best functional results are to be expected. Good results were obtained in 34%, fair in 45%, negative in 21%. [C.S.D.]

4.—Neurologic Questions in Tendon Transplantation.—Inability to answer the neurologic questions regarding the operation of tendon transplantation for function transference is held by Collins to be due to our ignorance of neurophysiology and neurodynamics. In the treatment of anterior poliomyelitis there is too much of the *laissez faire* attitude. The number of cases that are allowed to go on to wretched deformity for the need of appropriate mechanical treatment is enormous. Efforts should be made to keep up the irritability of voluntary muscles cut off from their nerve supply, as in anterior poliomyelitis, by the use of hypodermic injections of strychnin and the use of galvanic electricity. During this time the inflammatory process in the gray matter of the spinal cord constituting the basis of the disease having had time to subside, it may be found that some neuraxons have been saved and can take up their function in a small way. Treatment by the physician may be of sufficient help in maintaining the mechanical irritability of the muscle so that a tendon of a healthy or only partially impaired muscle may be transplanted into it with the result of marked functional restoration. It is important that a clear differentiation should be made as to the cause of infantile cerebral palsies. An attempt should be made carefully to distinguish between cerebral palsies due to grave destruction of tissue, such as from hemorrhage and porencephaly, and palsies due to encephalitis and absence of development of the medullary sheath, such as occurs in the condition usually known as Little's disease. The operation of tendon transplantation for deformities resulting from anterior poliomyelitis provokes questions that are easier to answer satisfactorily than those of cerebral palsies. How a flexor muscle imbedded in the tendon of an extensor muscle can cause extension of the hand or the foot, for instance, has been the subject of considerable speculation, but in reality there is very little difficulty about it. When a nerve impulse goes down from a spinal cord anterior horn cell, no matter for the moment where it starts, it has neither predetermination nor choice whether it will cause flexion or extension. It may be destined for a flexor muscle if it arises from cells that are the origin of fibers going to flexor muscles, but if the flexor muscle is attached to an extensor tendon, extension will be the result. This conception in no way does violence to the teachings that the cells of the ventral horns of the spinal cord have grouping according to function, but, in the case of tendon transplantation, there is also functional transference. The question, In what

way is the movement-giving muscle incited to its new activity? is one that has been answered differently. As the result of transplantation there must be developed a new muscle individuality, as it were. This individuality is the result of adaptation not only coordination of the brain cortex, but in peripheral parts as well. From what Collins has seen of the results of the operation, he is inclined to believe that the field of its applicability is wider than most physicians have heretofore supposed. The surgeon should be urged to utilize it, not only in the deformities of infantile palsies, but in similar deformities of cerebral spastic hemiplegias and possibly also of spinal traumatic spastic palsies. [C.S.D.]

Medical News.

May 17, 1902. [Vol. 80, No. 20.]

1. Etiology of Paresis. ARTHUR W. HURD.
2. The Comparative Frequency of General Paresis. CHARLES G. WAGNER.
3. The Early Diagnosis of Paresis. F. X. DERGUM.
4. Treatment of Paresis; Its Limitations and Expectations. EDWARD COWLES.
5. Sclerotomy, Anterior and Posterior; When Indicated in Glaucoma; Method of Operating. DAVID WEBSTER.
6. A Danger from the Employment of the Weighted Vaginal Speculum. FREDERIC GRIFFITH.
7. Orthopedic Operations for Intractable Cerebrospinal Cord Lesions, with Report of Two Cases. HOMER GIBNEY.

1 and 3.—See *American Medicine*, Vol. III, No. 6, p. 217.

4.—See *American Medicine*, Vol. III, No. 6, p. 218.

2.—**Frequency of General Paresis.**—Wagner gives a brief survey of the statistics, showing that it forms about 8.75% of all cases of insanity; that it occurs oftenest between the ages of 30 and 50; that it is gradually increasing in frequency; that men are seven times as liable as women; that it is invariably fatal, and usually so in less than two and one-half years; that it is nearly twice as frequent in large cities as in the country; that heredity, syphilis and alcohol are important factors in its production; that no special occupation predisposes, but general cerebral strain with more or less hereditary influence exists in most cases. [H.M.]

5.—**Sclerotomy in Glaucoma.**—Webster considers anterior sclerotomy entirely unsatisfactory. It may have a place in glaucoma supervening upon nephritic retinitis. Iridectomy fails in such cases. He reports a case of chronic glaucoma with acute exacerbation relieved by an incision in length three times the width of the Graefe cataract knife extending backward from the ciliary region between the rectus externus and the rectus inferius. [H.M.]

6.—**Danger from Weighted Vaginal Speculums.**—Griffith gives the history of a patient whom he was called upon to treat after an abortion caused by the introduction by herself of a woven catheter into the uterine cavity. She had had three chills prior to his visit. As curettement was necessary, the woman was placed in the lithotomy position and a bulb-weighted, irrigating vaginal speculum of medium size, weighing 24 ounces, was placed in position, hanging down over the perineum from the posterior commissure. The irrigation and curettement, during which time the speculum was in place, occupied 30 minutes. Upon the fourth day, without systemic reaction, the discharge became very fetid. An examination showed the floor of the vagina to be sloughing in an outline fitting the speculum first used. A weak solution of hydrogen dioxide caused the slough to disintegrate rapidly, and the ulceration healed in the course of three weeks. From this experience the writer feels justified in extending the warning against the use of such weighted instrument for any length of time in a case in which pressure opens the way for the assaults of infection. [W.K.]

Philadelphia Medical Journal.

May 17, 1902. [Vol. IX, No. 20.]

1. A Case of Hematoporphyrinuria. JAMES TYSON and ALFRED C. CROFTAN.
2. Polyhydramnios; Its Differential Diagnosis and Treatment, with the Report of Cases. EDWARD P. DAVIS.
3. Diabetes Insipidus, Twin Pregnancy, Polyhydramnios and Postpartum Hemorrhage. GEORGE DE TARNOWSKY.
4. Some Problems in Municipal Sanitation from an Executive Standpoint. WILLIAM C. WOODWARD.

5. The Importance of the Lacrimal Reflex in the Diagnosis Between Organic and Hysterical Anesthesia of the Face. WILLIAM G. SPILLER.
6. Some Reasons for Considering the Vermiform Appendix as a Gland. CLARENCE L. KILLBOURN.
7. Report of a Primary Sarcoma of the Small Intestine. ARTHUR W. BOOTH.
8. Asthenopia. Graduated Tenotomy Prisms. NORBURN B. JENKINS.

1.—See *American Medicine*, Vol. III, No. 19, p. 763.

2.—**Polyhydramnios.**—Davis details five cases which illustrate the clinical history, diagnosis and treatment of this condition. One of the cases illustrates the theory that the fluid is an excessive secretion from the cerebrospinal canal of the fetus. It is observed clinically that acute polyhydramnios begins about the sixth month of gestation and may readily be confounded with abdominal dropsy, ectopic gestation (which may be complicated by polyhydramnios in its early stages), ovarian cyst and encysted dropsy or localized tubercular peritonitis. It is often extremely difficult to make a diagnosis of this condition, and when a positive diagnosis cannot be made, abdominal section is justifiable to complete a diagnosis and to deal with any condition requiring removal. It is of interest to note that the increased amount of liquor amnii does not cause a tensity of the bag of waters, but on the contrary the membranes remain relaxed. Treatment by the administration of drugs is without known value. If the amniotic liquid is accumulating but slowly haste is not imperative, and in mild cases it may not be necessary to interfere; but if the fluid is increasing rapidly and the patient's general health and comfort are suffering pregnancy must be terminated. This is accomplished by rupturing the membranes high up by a pair of uterine dressing forceps, which can be introduced through the cervix and carefully passed high up between the membranes and the uterus and the former ruptured. [F.C.H.]

3.—**Diabetes Insipidus.**—Tarnowsky reports the case of an unmarried girl, age 17, who was admitted to a maternity under his charge five months pregnant. A diagnosis of diabetes insipidus was made. A few days after her admission labor began. When the bag of waters ruptured about four quarts of liquor amnii escaped, immediately followed by the expulsion of a five months' fetus: five minutes later a second bag of waters ruptured and about two quarts of liquor amnii was discharged, followed by a second fetus. Quite a profuse hemorrhage occurred, which was not checked until the uterus was emptied of its contents, which proved to be two placentas. Delivery caused no change in the quantity or quality of the urine, except that the albumin which was present in addition to the sugar disappeared in two days. The patient now drinks from 10 to 12 liters of water a day, and daily excretes 6,080 to 10,500 cc. A review is given of the meager literature of diabetes insipidus from an obstetric point of view. [F.C.H.]

5.—**The Importance of the Lacrimal Reflex in the Diagnosis Between Organic and Hysterical Anesthesia of the Face.**—By the term lacrimal reflex Spiller refers to the secretions of tears produced reflexly by irritation. The most satisfactory way of testing the lacrimal reflex is by irritating the nostril. If the nostril on the right side—the anesthetic side—is irritated by a probe placed within it no increase in the secretion of tears will be seen on either side, but if the left nostril is irritated the left eye will water freely and the tears flow over the left lower lid, whereas little or no increase in the lacrimal secretions will be noticed on the right side. [F.C.H.]

6.—**The Vermiform Appendix as a Gland.**—Killbourn makes comparison between the appendix and the glands which contribute their productions to the various parts of the digestive tract (the accessory glands of secretion). [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Intercommunicability of Human and Bovine Tuberculosis.—In an admirably lucid address, unquestionably the most important pronouncement on the subject since Koch's famous deliverance at the London Tuberculosis Congress in July, 1901, Ravenel (Univ. of Penna. Medical Bulletin, May, 1902) seeks to

answer and to controvert Koch's startling and revolutionary theories. The reader will remember the gist of Koch's address, which was reviewed at length in these columns, and in which he entirely abandoned his original position that "bovine tuberculosis is identical with human tuberculosis, and is thus a disease transmissible to man." Instead of this he enunciated the statement, based on experiments which Ravenel as well as others consider inconclusive, that "human tuberculosis differs from bovine and cannot be transmitted to man," and that if a susceptibility to bovine tuberculosis on the part of man exists at all, it very rarely leads to infection. Koch estimated the extent of infection by the milk and flesh of tuberculous cattle and by the butter made of this milk as hardly greater than that of hereditary transmission, and, therefore, deemed it inadvisable to take any measures against it. The important bearing of these statements need not be emphasized; it was realized by Ravenel, who rose in that historic meeting and ably defended the older view.

In the present address, which was delivered at the Annual Conversational Meeting of the Pathological Society of Philadelphia, this defense is broadened and so strengthened that Koch's views can no longer hold sway. Regarding the first question, Ravenel adduces abundant evidence from the literature and details his own experiments to prove that tuberculosis may be transmitted from man to cattle. Of four calves inoculated with human tuberculous sputum, three at autopsy showed the lesions of tuberculosis. Specimens from these important cases were exhibited.

In a case of primary intestinal infection in a child, the supposition that the infection resulted through the ingestion of milk from diseased cattle is warranted, and one would expect to find bacilli of the bovine type in the intestinal and mesenteric lesions. Having obtained cultures from such a case, Ravenel inoculated two calves and one cow, and obtained a rapidly fatal tuberculosis in these animals, the calves dying in 19 and 27 days respectively, the cow in 18. As in addition the organism corresponded, morphologically and culturally, with the bovine type, Ravenel concludes that the bacillus isolated from the mesenteric glands of the child was, in all probability, the bovine germ. The bovine bacillus, it will be remembered, is far more virulent for cattle and for experimental animals than the human tubercle bacillus. Ravenel and Pearson have found, however, that the virulence of the human bacillus for cattle can be readily increased by successive passages through calves. Starting with an organism killing in 106 days, they so enhanced its virulence that the duration of life in the calf was reduced to 23 and 24 days. From all the evidence no other conclusion is possible than that Koch's statement that human tuberculosis cannot be transmitted to cattle is erroneous and untenable.

The second proposition of Koch, calling in question the possibility of the transmission of tuberculosis from cattle to man, does not admit of direct experimental investigation, and argument must rest upon collateral evidence. In the first place, Ravenel shows that there are no essential anatomic differences between human and bovine tuberculosis. There are, however, cultural, morphologic, and biologic differences between the two types of bacilli—the principal one consisting in a greater virulence on the part of the bovine germ. Virulence is, however, such a variable quality and so much under the influence of environment that it cannot be considered a fundamental or final criterion.

That the bovine germ is capable of being pathogenic for man is demonstrated by the numerous instances of local infection with this organism—Ravenel has himself reported four cases, and has collected a number of others from the literature. Koch bases his opinion as to the nontransmissibility of bovine tuberculosis to man largely on the alleged rarity of primary intestinal tuberculosis, but Ravenel shows con-

clusively that the proportion of tuberculosis caused by food is by no means correctly revealed by the lesions of the intestine or mesenteric glands. Conclusions based on the rarity of these lesions leave out of consideration a very important avenue of infection—namely, the tonsils.

He quotes from the literature to show how common tonsillar tuberculosis is in children, and at the meeting exhibited specimens from four pigs which had been tubercularized by feeding, and in all of which there was a general tuberculosis, most marked in the lungs. In three there were lesions in the tonsils, and in only one could any lesion of the intestine be found. In the tonsils of the fourth pig, which showed no macroscopic change, many tubercle bacilli and areas of caseation were discovered.

Clinical observation has not revealed many instances in which infection could be traced to tuberculous milk, but there are some in the literature which have "almost the value of an experiment." There is, however, a good deal of evidence, based upon autopsies, that in a certain proportion of persons dying of tuberculosis, and especially in children, the infection takes place through the intestine. As our method of determining the portal of entry is not entirely satisfactory, the true frequency of infection by the intestinal route is not known. The belief that the lymphatic glands in children give evidence of the duration and extent of the tuberculous disease in the organs with which they are in relation, is to a large extent fallacious. Tubercle bacilli can penetrate the wall of the intestine in the absence of any demonstrable lesion; they may be carried with the lymph stream from the intestine through the thoracic duct almost directly into the lung. Ravenel showed specimens from a cow rendered tuberculous by feeding, in which the lungs were extensively diseased, even to the extent of cavities, and yet there was no lesion either in the intestine or in the mesenteric glands. An almost identical result was obtained in a monkey—the lungs were involved throughout, while the intestine contained only one point of injury. There was here an undoubted food tuberculosis, and yet the respiratory tract showed the chief involvement. "Does not the same thing," Ravenel rightly asks, "occur in children, and more often than we suspect?" It seems not impossible that an infection gaining entrance through the intestine may appear first in the lung, and thus be erroneously attributed to infection through the respiratory tract. The extent of intestinal tuberculosis varies in different countries and in different parts of the same country, a fact which of itself indicates a local factor, such as the greater or less prevalence of tuberculosis in cattle. A report made to the Council of the British Medical Association is important in this connection. It is shown that the mortality from tuberculosis in childhood is not decreasing, as it is at other ages in the United Kingdom, and the opinion is expressed that the great prevalence of the disease in childhood is due to infection through the alimentary canal by milk from tuberculous cows. Ravenel quotes statistics to show the frightful extent of tuberculosis in cattle. There is sufficient proof that the milk may contain bacilli, even when the udder is free from tuberculosis, and when the disease in the animal is latent and only demonstrable by the tuberculin test.

After a brief reference to the acid-proof bacilli and to the experiments of Nocard and Moeller, in which the possibility of transforming the human tubercle bacillus into one resembling the avian or the piscian type is shown, Ravenel closes his address, which will mark an epoch in the tuberculosis problem, with the following words: "The evidence at hand forces us to conclude that human and bovine tuberculosis are but slightly different manifestations of one and the same disease, and that they are intercommunicable. Bovine tuberculosis is, therefore, a menace to human health. We are not in a position to define positively the extent of

this danger. In the past there has probably been a tendency to exaggeration, but however great this may have been, it does not now justify any attempt at belittling the risk and it is folly to blind ourselves to it. The eradication of bovine tuberculosis is amply justifiable from a purely economic standpoint; viewed in its bearing on human health it becomes a public duty."

The Causes and Varieties of Chronic Interstitial Pancreatitis.—Opie,¹ from an exhaustive study of 29 cases of chronic interstitial pancreatitis, concludes: 1. Chronic interstitial pancreatitis is slightly more frequent in males than in females; two-thirds of the total number of cases occur between the ages of 40 and 60 years. 2. The most frequent cause of chronic pancreatitis is obstruction of the duct of Wirsung, due to pancreatic calculi, to biliary calculi in the terminal part of the common bile duct, or to carcinoma invading the head or body of the gland. Duct obstruction may be followed by the invasion of bacteria, which take part in the production of the resulting lesion. 3. Ascending infection of the unobstructed duct of Wirsung may follow an acute lesion of the duodenum or of the bile passages, and may cause chronic inflammation. In cases which have given a history of long, persistent vomiting, chronic diffuse pancreatitis may be found at autopsy, and is probably the result of an ascending infection of the gland. 4. General or local tuberculosis is occasionally accompanied by chronic diffuse pancreatitis, affecting chiefly the interstitial tissue of the gland. 5. Chronic interstitial pancreatitis is not infrequently depended upon the same etiologic factors, notably, alcohol, which produce cirrhosis of the liver, and in about one-fourth of the cases the two lesions are associated. 6. Following duct obstruction and ascending infection the lesion affects principally the interlobular tissue, only secondarily invading the lobular tissue, and sparing the islands of Langerhans. Diabetes results only when the lesion is far advanced. 7. Accompanying the so-called atrophic or Laennec's cirrhosis of the liver, the pancreas is at times the seat of a diffuse chronic inflammation, characterized by diffuse proliferation of the interacinar tissue, which invades the islands of Langerhans. A similar lesion accompanies hyalin degeneration of the islands of Langerhans and the condition known as hemachromatosis. 8. Interacinar pancreatitis is usually accompanied by diabetes mellitus. When diabetes is absent the lesion is of such slight intensity that the islands of Langerhans are little implicated. [A.O.J.K.]

Pigmentary Hypertrophy and Atrophy of the Skin, in Association with Pernicious Anemia: A Contribution to Our Knowledge of Vitiligo.—Von Decastello² reports five cases of pernicious anemia associated with more or less marked anomalies of pigmentation of the skin. In one of the cases the distribution of the pigmentary patches seemed to correspond with the spinal sensory zones of Head, and indicated that the pigmentary disturbance might be dependent upon changes in the central nervous system. The condition may antedate the anemia by many years; may coincide with it; or may even appear later, as in one case reported in the literature during a stage of remission. [D.R.]

Sterilization of Milk for Nurlings by Relatively Low Temperatures.—Erwin Kobrak³ (Berlin). In view of the fact that freshly-drawn milk has been proved to contain labile compounds, such as specific serum bodies, diastatic ferments, proteolytic enzymes, etc., which affect the taste and wholesomeness of the milk, and which are destroyed by the heat necessary to sterilization by the present methods, Kobrak has been led to devise a pasteurization apparatus by which he is able to employ the lowest temperature with which it is possible to obtain sterilization, viz., 60° C. The apparatus is figured and described. [C.S.D.]

The Feeding of Children During the Second Year.—In a very practical article upon this subject, Southworth⁴ lays down some valuable suggestions. The hot summer months should be avoided for the weaning period, which comes some-

where toward the end of the first year. One of the first additions to the dietary should be well-cooked and strained gruel or jelly of one of the cereals—oatmeal, barley, or wheat. A tendency to constipation indicates the use of oatmeal; while diarrhea, eczema or intestinal indigestion make its use inadvisable. Milk or cream may be served with the cereal, and salt in preference to sugar. Boiled or steamed rice is more suitable for the midday or evening meal. Cows' milk should be the basis of the child's food during the second year. It is well to increase the quantity at each nursing, larger bottles, holding as much as 12 ounces, being obtained for the purpose. The bottle should be retained for quite a while as it facilitates the 10 p. m. feeding. The milk should not be taken from the bottle at all of the feedings, except during the first half of the year. At the more important meals the milk should be poured into a cup, so that the child may learn to drink it in that way. Soft-boiled eggs may be given; and bread, zwieback, and simple forms of crackers or biscuits, if the child has sufficient teeth. Of fruits, the orange is the first to be given; or, rather, its juice. Prunes have the advantage of cheapness and availability. A soft baked apple, entirely freed from the skin and hard portions of the core, constitutes the last of the usual trio of fruits. Vegetables may be added by the middle of the year; and sometimes earlier, if there is constipation. Spinach, carefully passed through a sieve, green peas, asparagus tips, and string-beans, treated in the same way or mashed, may be given. Toward the end of the year stewed celery and boiled onions may be added. Potatoes, when given, should be baked and mealy. Meat awaits the development of the masticatory powers; but beef-juce may be given before the twelfth month, and in anemia is an excellent hematinic. The finely minced white meat of poultry may also be given. Southworth very properly inveighs against the custom of allowing children of this age or during the next year to come to the family table. Desserts scarcely enter into the question of feeding during the second year; and the longer they are deferred the better for the child. Tea, coffee, and beer must be specifically forbidden among the poor, while the giving of candy and sweets is almost as much of a vice among the well-to-do. With due attention to proper hygiene, pure milk, and the simple diet here outlined, the much-dreaded dangers of the second summer will not materialize. [D.R.]

The Effect of Change of Color Upon Pigment Bacteria.—Oliver¹ undertook an experimental study of the effects of change of color upon pigment bacteria, the investigation consisting of the interposition of transparent sheets of definitely gauged colored glass upon bacteria that had received their designative names from their characteristic hues. His conclusions are as follows: (1) Color changes, both of kind and intensity, take place in and around many chromogenic bacteria when such microorganisms are placed under different color conditions; (2) rehabilitation of chromogenic bacteria into old color environments after having later obtained a new color value under any particular color condition, is quite frequently accompanied, sooner or later, with a return of the germ's color equivalent to that which it primarily held while in its original situation; (3) differences of color conditions in pigment bacteria most probably signify in part relative changes in the various methods of obtention of sustenance, peculiarities in the kinds and the ratios of foodstuffs, and irregularities in the character of resulting excreta; each species of color bacterium exhibiting its chromogenic change in a typical and relevant manner, a behavior that has its determining effect upon the very life of the germ itself; (4) the naming of bacteria by specific coloration is only of value when the actual habitat of the microorganism is understood; and (5) as a postulate conclusion based upon these facts it is most certain that all living faunal and floral color-changes of true objective type are expressions of biochemic peculiarities taking place in and around such organisms—a mere difference of molecular motion, as it were, in part dependent upon the relationship existing between active life force and coexisting conditions. [A.O.J.K.]

Plasma Cells in Cerebral Cortex.—Franca and Athias²

¹ American Journal of the Medical Sciences, Vol. cxxiii, p. 845, 1902.

² Wiener klin. Woch., December 26, 1901.

³ Berliner klinische Wochenschrift, March 3, 1902.

⁴ Archives of Pediatrics, May, 1902.

¹ American Journal of the Medical Sciences, Vol. cxxiii, p. 647, 1902.

² La Semaine Médicale, February 26, 1902.

point out the presence of plasma cells in the walls of the vessels of the cerebral cortex, the lesions of the cortical vessels being almost identical with those seen in paralytic dementia. [C.S.D.]

The Progressive Principle in Rational Infant-Feeding.—Coit¹ pleads for consideration of the principle of progressive advance in infant-feeding, not only as regards the capacity of the infant for bulk, but also in increasing the nutritive strength of the mixtures. Progressive infant-feeding has its chief justification in the fact that the great majority of cases that require to be fed are not well, but sick. The feeding cases should be seen at least once a month, even though they are well, in order that a new set of formulas may be written; while, when the patients are suffering from some form of malnutrition, daily visits are often necessary. Coit uses the decimal system in calculating formulas. His standard solutions are: *Decimal sugar solution*, which consists of a solution of sugar of milk, in the proportion of one ounce by weight in sufficient hot water to complete 10 fluid ounces. *Decimal Cream No. 1.*—The top six ounces from one quart of 15-hour bottled milk, plus water three fluid ounces. This mixture equals nine fluid ounces, and contains 10% of fat. In using Cream No. 1, it is sufficiently accurate to estimate the proteids and sugar carried by it as one-fourth of the fat. *Decimal Cream No. 2.*—The top 11 ounces from one quart of 15-hour bottled milk. This top milk contains 10% of fat. In using Cream No. 2 it is sufficiently accurate to estimate the proteids carried by it as one-third the fat, and the sugar as one-half the fat. Four sample formulas are given, which are easily understood, but cannot be reproduced here. [D.R.]

A Case of Polyneuritis Following Malaria, with Autopsy.—A. M. Luzzatto² (Padua). The author calls attention to the increasing number of cases of polyneuritis following malaria and standing in some etiologic relation to it, and refers to the bibliography of the same. The pathogenesis of malarial polyneuritis is attributable to a malarial toxin, the investigations of Marchiafava, Celli, Baccelli, Golgi, Bignami, Lueirolo, Pensuti, Roque, Lemoine, Lo Monaco and Panichi all demonstrate the fact that the malaria parasite can give rise to a toxin. Other sources of toxic substances must be looked to; the breakdown of many erythrocytes and tissue-cells (spleen and liver) occurs in malaria cases, and Lasio and Amenta have shown that the nerve-cells are injured by hemolysis. [C.S.D.]

The Blood in Filariasis.—Gulland³ shows the occurrence of eosinophilia (up to 8%) in filariasis. [A.O.J.K.]

On a Rare Form of Osteomyelitis Gravis.—Dr. Lannelongue⁴ calls attention to a case of nonsuppurative polymicrobial osteomyelitis. The bacteriologic examination of the blood taken at the operation of trephining revealed the presence of staphylococci, streptococci, colon bacilli, and of short bacilli the identity of which remains undetermined. [C.S.D.]

Three cases of meningitis in which Kernig's sign was persistently absent are reported by Clark.⁵ One was a case of acute cerebrospinal leptomenigitis of unknown bacteriology, and the other two were cases of tuberculous meningitis. [A.O.J.K.]

Spindle-cell Sarcoma of the Thorax in a Child.—Fisher¹ reports a case of multiple spindle-cell sarcoma of the thorax of a child of eight. The tumors had existed for several years. There was one large tumor, 15 cm. in length, on the front of the thorax, in the precordial region. The heart was displaced far to the right. There was intense dyspnea as the result of pressure by the tumor, as well as cyanosis, and edema of the lower extremities. Fisher emphasizes the rarity of these tumors in childhood. [D.R.]

Do Alexins Act with Uniformity.—Hans Sachs⁶ (Frankfurt a/M.). Modern hemolytic investigation has shown that Buchner's alexin is not a uniform substance, but the sum of manifold molecular systems. The globulicidal function of the normal serums depends upon two interacting bodies, one a heat-resisting, the other a thermolabile substance. A compara-

tive study of serums leads to the conclusion that normal and artificially-produced hemolysins act by means of the same mechanism. [C.S.D.]

A Case of Primary Intestinal Tuberculosis.—In a female child of two years and three months, which had died suddenly as the result of acute pulmonary congestion, bronchopneumonia, and inanition, Nicoll¹ found a tuberculous ulcer of the ileum, its tuberculous nature being proved by the discovery of tubercle bacilli in sections. There was no tuberculosis elsewhere, except in the lymphnodes in the immediate neighborhood of the ulcer. The child had lived on the milk furnished to the New York Foundling Hospital. This case constitutes the sixth example of undoubted primary intestinal tuberculosis occurring at that institution among a very large number of autopsies. [D.R.]

Diphtheria of the Conjunctiva Treated by Antitoxin.—A successful case of this kind, in an infant of six months, is reported by Holt.¹ [D.R.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

Exploratory Celiotomy.—In a paper entitled "Some Surgical Tendencies from a Medical Point of View" Fitz² gives some facts which, disagreeable as they are, are worthy the attention of surgeons and physicians everywhere in these days when exploratory surgery is so common. Beside being a limited study of the interrelation of physicians and surgeons, it is a protest against imposition upon this relation. A danger pointed out is that both physician and surgeon may become careless in their diagnosis and less careful in their observation because of their interdependence. Their relation to each other should conduce to greater carefulness and should benefit not alone the patient, but likewise each other; combined experience should be less fallacious and judgment less difficult. Hasty diagnosis and hasty decision for operation are of evil tendency. Operation for diagnosis tends to degrade a therapeutic measure to a diagnostic one. Care in regard to details, greater pains in observation and in the use of clinical methods may in many cases lead to a diagnosis that will make the exploratory operation needless and save the patient from the danger of the operation, the discomfort of his preparation for it, and convalescence from it. One reason for the tendency to resort to exploratory operations is a relative disregard or ignorance of the pathologic aspect of things. Fitz speaks of the inappropriateness of operation such as those sometimes performed in cases of pneumopyothorax when the other lung is badly diseased or when there is well marked amyloid disease present. Other examples are given, and in such a way that we would almost believe that unnecessary operating tends to bring surgery to the level of vivisection. In this line of argument it is stated that prolongation of lives is not a sufficient vindication for operation when suffering is not to be diminished. The cases that he cites makes a long and interesting list, and the study of them brings the conviction forcefully that in the main, at least, Fitz is quite right in his attitude if the statistics which he uses are an indication of the general conditions existing at present in the medical profession.

The cases tabulated are those classified as exploratory laparotomies done at the Massachusetts General Hospital during the 10 years from 1890 to 1899.

In these the percentage of malignant disease found was 30-80%
The "deaths was 28-61%
The "failures to cure or relieve was 60-90%

He says, in speaking of such cases, "What is the use of an operation to see what can be done if metastases have occurred?" In most cases the patient can live out

¹ Archives of Pediatrics, May, 1902.

² Berliner klinische Wochenschrift, April 28, 1902.

³ British Medical Journal, April 5, 1902.

⁴ La Semaine Médicale, April 2, 1902.

⁵ American Journal of the Medical Sciences, Vol. cxxiii, [p. 783, 1902.

⁶ Berliner klinische Wochenschrift, March 8 and 10, 1902.

¹ Archives of Pediatrics, May, 1902.

² Boston Medical and Surgical Journal, cxiv, 693, 1901.

a fairly comfortable life with no added discomfort from the knife. Certainly here the exploratory operation, and the palliative one, is to be considered, and in both these due attention must be paid to the pathologic processes present—conditions of the heart and bloodvessels, and of the kidneys, metastases of tumors, and the post-operative conditions that may arise. In the series of cases that he gives the postoperative condition was generally bad, and relatively few of the patients were relieved of suffering. The general results are startling, and are as follows:

Alimentary cancer	77 cases.	
Death in 1 week after operation	28	36%
“ “ 1-4 weeks “ “	15	19%
“ “ 1-6 months after “ “	14	18%
“ “ 6-12 “ “ “ “	4	5%
“ “ 1-2 years “ “	9	11%
“ “ 2-3 “ “	4	5%
Living after 3 “ “		3%
Of all these, then, 54% died within 1 month.		
and 72% “ “ 6 months.		

These figures are not used as a warning to surgeons not to do exploratory or palliative operations, but to set forth the value of a careful consideration of the general condition of the patient and the tendencies of the process at work within him, so that the best can be done, not toward prolonging life alone, but toward the establishment of a more comfortable life. To make a life more miserable is not included in the license of a physician. Any operation which does not better the condition of the patient must be regarded as a therapeutic error, since the knowledge thus obtained shows that the operation should not have been performed. "The advance of knowledge in the future should be in the direction of limiting these unnecessary and harmful operations; for the wisdom of the surgeon should serve as well to restrain him from operating as to enable him to operate successfully. Especially to be cultivated for the purposes are greater accuracy in diagnosis and prognosis and a more widely-spread knowledge of pathology and pathologic anatomy. The surgeon thus will become a better adviser, although the number and variety of his operations thereby may materially be lessened."

Operation for Aneurysm of the Arch of the Aorta.—Tuffier¹ recently reported to the French Surgical Society the case of a woman of 40 upon whom he performed this operation for the cure of an aneurysm of the ascending part of the arch of the aorta. The patient entered the hospital with a small tumor situated in the second right intercostal space. There was definite pulsation and after a careful examination diagnosis of aneurysm of the ascending portion of the arch of the aorta was made. A radiograph was of considerable value in confirming the diagnosis. The aneurysm seemed to be sacciform and as a considerable number of such aneurysms have a small communication with the aorta surgical intervention seemed justifiable. The dissection for exposure of the tumor was relatively easy, although there was adhesion to the pleura which necessitated opening the pleural cavity. The only difficulty encountered was in reaching the portion of the sac of the aneurysm which was directly connected with the aorta. After expressing the contents of the sac a double ligature was placed about the neck of the sac and was tightened carefully. The excision of the sac was not considered justifiable. The patient did well until the twelfth day after the operation when there was a rise of temperature and on examining the wound gangrene of the sac was discovered. The woman died five days later, 17 days after the operation, from secondary hemorrhage following the gangrene. The remainder of the aorta was found to be healthy. Tuffier believes that had the sac been resected at the time of the operation a cure would have resulted. [M.B.T.]

Epithelioma Complicating Lupus Erythematosus.—**The X-ray.**—Taylor² reports that a laborer of 59 had well-marked lupus erythematosus and at the same time had epitheli-

oma of the lower lip. The epithelioma was removed surgically. A year later the patient returned with an epitheliomatous ulcer of the tip of the nose and this was treated with potassa fusa. Nine years later the patient returned, still having the lupus erythematosus, but with an epithelioma involving the whole surface of the nose. Some of the tissue was necrotic. This was scraped away and the x-ray treatment applied, eventually the healing was completed. At first ten-minute exposures were given daily except Sunday, but this was found too much. Recovery followed under five-minute exposures, twice weekly. The lupus was not exposed to the x-rays and hence remained as it was. [A.B.C.]

Cicatricial Stenosis of the Pylorus.—Quenu and Petit¹ give results of experience in the treatment of this condition in 35 cases. Four different operations were practised—Loretas' operation of dilation of the pylorus, resection, pyloroplasty and gastroenterostomy. The entire mortality in 35 cases was 22.8%. The poorest results were obtained by Loretas' operation, one case out of 3 resulting fatally and the remaining 2 proving unsuccessful. Resection of the pylorus was performed successfully in 4 cases. Pyloroplasty was performed 23 times with 5 deaths, a mortality of 21.7%, and gastroenterostomy 7 times with 5 successful results, a mortality of 28.8%. The permanent results of cases in which pyloroplasty was performed were good in every case. Of the patients in which pyloroplasty was performed the results were good, except in 3 cases in which gastric trouble recurred after the operation, and in one of these cases an ulcer of the lesser curvature was found after death by suicide. Of the 5 cases in which gastroenterostomy was performed there was complete relief from gastric disturbance after the operation. Considering the results in these cases it would at first sight seem as if pyloroplasty were the preferable operation, as there was no mortality and the functional results were good in all cases. However, they consider gastroenterostomy the more suitable operation for the majority of cases, the statistics in the cases of gastroenterostomy reported being unfavorably influenced, no doubt, by the condition of the patient at operation. Posterior gastroenterostomy with sutures they consider the method of choice. [M.B.T.]

Subcutaneous Injection of Paraffin to Correct Deformities of the Nose.—Downie² reports two cases of a type of saddle nose, due to syphilitic caries. One was a woman of 26 and the other of 41 years. The surface of the nose was prepared as for surgical operation. The sterilized paraffin used has a melting point at 104° F. It was injected beneath the skin by means of a serum syringe, the nose being kept warm by hot, dry sponges, and the needle kept hot by an electric current. The needle was inserted in two places, one on either side just above the ala, while pressure was applied around the nose to confine the paraffin in the desired region. As it cooled the paraffin was molded into the desired shape. The overlying skin at first was white and glazed, and the next day red and glazed, but soon reached the normal. There was no pain. The result was satisfactory. [A.B.C.]

The Operative Treatment of Chronic Bright's Disease.—Primrose³ reports operation in a case of chronic nephritis with advanced symptoms. There was albuminuria with the presence of hyalin, granular, fatty and epithelial casts in the urine, together with edema, anasarca, and ascites. Paracentesis abdominis had been performed seven times before the patient came under Primrose's care, and was repeated twice afterward. November 21, 1901, incision of the capsule of the right kidney was performed. There was an increased amount of urine voided with a lessened percentage of albumin following the operation. December 20 decapsulation of the left kidney was performed. Pneumonia followed the operation, but after the patient had recovered, great improvement in his general condition was noticed. The amount of albumin diminished until 62 days after decapsulation, when only a trace was noticed, and but a few casts were still present in the urine. The anemia had nearly disappeared, and there was no return of edema or ascites. Primrose attempts no explanation of the result in this case, and is at an entire loss to explain how that this operation can so

¹ La Semaine Médicale, March 19, 1902.

² British Medical Journal, May 3, 1902.

¹ Revue de Chirurgie, 1902, Vol. 28, p. 176.

² British Medical Journal, May 3, 1902.

³ Canadian Journal of Medicine and Surgery, March, 1902.

affect the secretory activity of the kidney as to increase the amount of urine, diminish the amount of albumin and remove edema and ascites. [M.B.T.]

Foreign Body in the Esophagus.—McKenzie¹ reports that a girl of 12 swallowed a penny and was brought to the hospital. By means of the fluoroscope a small, dark object could be seen at about the level of the sternal notch. All attempts to remove it having failed, ether was administered, and with the aid of the fluoroscope the blades of laryngeal forceps were passed down until they could be seen to come in contact with the coin. They could easily be seen as they were separated and made to grasp the object. By making traction much beyond what was expected, the coin was dislodged and removed. Recovery was uneventful. [A.B.C.]

The Lithotrite for the Canine Species.—Reginald Harrison² reports removing a stone by lithotripsy from the bladder of a large collie bitch without the use of an anesthetic. Symptoms of stone had existed for two weeks, and a sound introduced revealed the true condition. An attendant held the animal while the lithotrite was introduced. The grasped stone was too large to remove without crushing. It was phosphatic and therefore easily crushed and removed. The dog appeared to suffer little or no pain. Her recovery was uneventful. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

The Renaissance of the Round Ligament Operations.—Retrodeviations of the uterus are far more frequent than any other variety of displacements. Sanger among 700 gynecologic patients found 108 cases of retrodeviation; Winckel noticed about 19% and Lohlein observed from 17% to 18%. In a series of 1,000 women applying for treatment at the Gynecologic Dispensary of one of our large Philadelphia hospitals, 199 were found to have retrodisplacement of the uterus. The fact that these cases occur so frequently and produce such marked symptoms makes the best method of treatment an important consideration. Many years ago, Alexander, of Liverpool, devised an operation for restoring and elevating the uterus by shortening the round ligaments. About the same time, Alquié, of Montpellier, and Adams, of Glasgow, suggested independently the same operation. In 1885, Alexander reported 26 cases of retroversion and retroflexion upon which he had operated with permanent success. Since that time many different procedures have been advocated for the relief of this particular form of uterine deviation: First, a series of modified round ligament operations by intraperitoneal methods, such as that suggested by Wiley, doubling up from 2 to 4 inches of the ligament on each side of the uterus and uniting it by sutures; or by Mann, who folded the ligaments in three parts which were united by sutures; or that by Dudley, of New York, who devised an operation, which he calls desmopycnosis, in which the ligaments are sutured to an oval denudation made upon the anterior uterine wall; or the Ries operation in which the ligaments are drawn through a tunnel or channel made in the anterior uterine wall. Second, various modifications of the true Alexander-Adams operation have been suggested. Edebohl splits up the entire length of the inguinal canal, draws the ligaments out at the internal ring and closes the wound as in Bassini's operation. Newman makes his incision directly over the internal ring and draws the ligament straight out, after which it is fastened in the wound. Martin and Duret do not use sutures, but pass a pair of dressing forceps beneath the skin and subcutaneous tissue from one wound to the other, draw the ligaments through and tie the two together in a knot and close the tissue over it. Many others have modified and extended the same operation. Third, the round ligaments have been

shortened through the vagina after an anterior vaginal incision has been made. Of 86 cases operated on by this method by Wertheim, only 2 have had recurrence of the retroversion at the time of discharge and these were complicated cases. The operation by the vaginal route presents greater difficulties than by the abdominal and has not been so generally employed. Vento-fixation or suspension of the uterus, as employed by Olshausen, Kelly and others, has attained a marked popularity and many patients have received permanent relief from the procedure. But this operation, in common with that of vago-fixation as suggested by Duhrssen and Mackenrodt, has certain disadvantages; and a number of cases have been reported in which unpleasant sequels were observed, particularly during pregnancy and parturition.

The ideal operation is one which will restore the uterus to its normal position and yet permit of a certain degree of mobility which characterizes the normal uterus. For a time our journals were filled with reports of series of operations by ventro and vago-fixation. Later we noted occasionally some candid operator would record disastrous results following these procedures. And still more recently there seems to be a renaissance of the round ligament procedures, which some operators had temporarily abandoned in their efforts to test the newer methods. Baldy,¹ of Philadelphia, describes a new operation, or rather a modification of Webster's operation, in which the round ligaments are utilized for the uterine restoration. In Baldy's operation the round ligament on each side of the uterus is picked up and a ligature thrown about it close to the uterus, so placed as to secure the artery. The round ligaments are then severed close to the ligatures. This leaves the uterine ends of the ligaments ligated and the other ends free and bleeding. The bleeding is controlled by a fine ligature to each vessel, or by the sutures which fasten them in the next step of the operation. A pair of forceps is now made to perforate the broad ligament from its posterior aspect (at the point at which the round ligament is cut on the anterior surface), and the cut end (the pelvic end) of the round ligament is grasped in the bite of the forceps and pulled through the hole in the broad ligament (made by the forceps in perforating) until it protrudes on the posterior side of the broad ligament. The opposite side is treated in a similar manner. The cut ends of the round ligaments are now attached by means of sutures to the cornua of the uterus on the posterior aspect of the uterus directly back of the original point of attachment of the normally attached round ligament. The point of attachment may be higher or lower than this, as the surgeon may find necessary to accomplish the result. If necessary as much of the round ligament is cut off, before suturing it to the uterus, as is necessary to take up any slack and give the proper amount of tension and support to the uterus. This ends the operation. The suture is a continuous one and may be either chromicized gut or silk. The effect of this procedure is to draw the fundus of the uterus upward and forward into a perfect position. The uterus remains a pelvic organ. It has no artificial support. It is as free to expand in pregnancy as it was originally, with no greater danger of the tearing away of its supports. There are no adhesions to give future trouble from pain or possible strangulation of the bowels. This procedure, in common with that of Ries, Dudley and others, seems deserving of commendation. Its true value, however, can only be estimated after the observation of a large series of cases in which a considerable length of time has elapsed since the operation, and in which the patients have passed through pregnancy and parturition.

Laceration of Perineum Produced by the Obstetrician's Finger at the Patient's Birth.—Royster² reports a case in which a complete laceration of the perineum had occurred

¹ British Medical Journal, April 19, 1902.

² British Medical Journal, April 26, 1902.

¹ American Journal of Obstetrics, May, 1902.

² American Journal of Obstetrics, March, 1902.

at the delivery of the child by the obstetrician introducing his finger by mistake into the fetal vagina, and, in exerting traction, producing a complete laceration of the baby's perineum. As no immediate harm came from the accident, it was not repaired until the child had reached the age of nine years, when a perfect restoration of the perineum was effected. [w.k.]

Treatment of Puerperal Eclampsia.—Herman¹ disagrees with those who contend that emptying the uterus is an almost certain means of arresting eclamptic convulsions. Schauta quotes from the records of the lying-in clinic of Vienna 342 cases of eclampsia, in 185 of which the fits began during labor. In only 62 of these did they cease on delivery, while they continued in 123, in 50 with increased violence. Brummerstadt gives a record of 63 cases, in 18 of which the fits ceased on delivery, in 17 became less severe, and continued unaltered in 28. Herman cites the figures of Dührssen, Olshausen and others showing similar results, and then reports from his own experience two cases of eclamptic fits with a temperature of about 105°. In the treatment the use of tepid baths reduced the temperature and resulted in the abatement and early cessation of the convulsions and final recovery of the patients. [w.k.]

Surgical Treatment of Lacerated Perineum.—Bovée² describes his method of performing perineorrhaphy and gives the following principal points: (1) The use of buried and absorbable material for the principal sutures; (2) placing the deep ones in such a manner that no skin suturing is required; (3) placing them so that the tension of the levator ani and its auxiliaries is restored; (4) avoidance, to a high degree, of infection from the rectum; (5) the facility of the operation; and (6) emptying the bowels every day after the operation. [w.k.]

The Proportion of White Blood Corpuscles as an Aid in Gynecologic Diagnosis.—Max Dutzmann,³ in a series of studies, demonstrates that any decided increase in the number of leukocytes usually found in the blood of any individual indicates the existence of pus. In six reported cases of pelvic exudates, the tests showed a high proportion of white blood corpuscles which rapidly decreased after the emptying of the pus. In a case in which the history and appearances indicated carcinoma only the high proportion of leukocytes indicated the existence of the pus which operation revealed. In four cases the clinical diagnosis was purulent sacrosalpinx; the blood examination, however, showed a small proportion of leukocytes and the subsequent operation proved the absence of pus. Hence Dutzmann concludes that the presence or absence of leukocytosis may be relied upon as a certain and indispensable aid in the differential diagnosis of gynecologic disease. [w.k.]

Operation for Lacerated Perineum.—Kreutzmann⁴ emphasizes the view that the rational and uniform principle in operating for the restoration of injuries of the pelvic outlet for rectocele, or cystocele, with or without prolapse, is the exact union of those layers of tissue which belong to each other. In the practical application of this principle the operation may be divided into four acts: First, dividing the vagina and cutting down into the septum between vagina and bladder or rectum. Second, the detachment of the prolapsed diverticulum of the bladder from the vagina, if necessary from the uterus, or separation of the rectum from the vagina. The third act is the careful apposition of the fascial tissue and of the muscles which belong to each other, by direct, exact, buried suture. Fourth, to finish the operation the vaginal flaps may be resected and united, or they may be united without any resection, as the individual operator sees fit in every single case. [w.k.]

Stricture of the Rectum in Women.—Although stricture of the rectum has its origin chiefly in some pathologic condition of the rectal walls, yet among women it may be caused by some inflammatory process of adjacent structures as perimetritis, parametritis, pyosalpinx, suppurating hematocele or ovarian cysts. These inflammatory conditions, however, though often causing obstinate constipation, rarely produce stricture unless some infiltration of the rectal walls has resulted. Rothrock reports three instances of stricture of the

rectum observed in the last five years due to pelvic exudates. In the first case, that of a woman of 42, an exploratory laparotomy showed the pelvis filled with a hard inflammatory exudate in which the uterus and adnexa were completely lost and there was a marked infiltration of the rectal walls causing the stricture. As there was no evidence of pus, relief was sought by inguinal colotomy and the establishment of an artificial anus through which the entire bowel movement passed for some months. The patient's health gradually improved, the exudate slowly disappeared and the stools again began to come by the natural passage. The second case was similar, but the stricture not being so great, relief was obtained by passing a flexible rectal catheter through the obstruction and by the use of a high enema a liquid stool was secured. The patient was advised to keep the bowels moved daily by saline purgatives and as a result the exudate subsided and the rectum resumed its normal function. In the third case an abscess was present which was drained through the vagina, and the rectal stricture was relieved by rectal dilation and the introduction of a flexible rubber bougie. [w.k.]

Placenta Prævia.—Lemarchand¹ reports a case of placenta prævia in a primipara of 30. He first saw her at the end of the sixth month of pregnancy, when she had had a sharp hemorrhage but no labor pains. He ordered rest in bed, and during the next two months there were two more sharp bursts of bleeding, but no pain. Warning was given of the condition, and he was to be summoned as soon as any pain was felt. When sent for, however, about an hour was consumed in getting an assistant and preparing to turn and deliver, when appearances seemed to indicate that the head was about to slip by the placenta, and he did not interfere. In about 1½ hours after his first arrival the whole ovum was expelled and the placenta was found to be spread over the head and shoulders of the child, the center of the vertex corresponding to the center of the placenta. The child was dead, and efforts to make it breathe were of no avail. There was no unusual loss of blood, and the uterus readily contracted. He believed that if he had turned and delivered he would not have saved the life of the child, and that the non-interference was justified. [w.k.]

Gonococcal Peritonitis.—The opinion held by many abdominal operators that the presence of gonococci in the pus of infected fallopian tubes is a matter of little importance, is not accepted by Frank and Koehler,² who from observation of cases, postoperative and autopsy findings and investigations, are forced to believe that the gonococcus is, in fresh cases, a dangerous factor, and even in old cases may become so. Though it is true that the gonococcus is essentially a parasite of the mucous membrane, it does invade other tissues, as has been abundantly proved. It penetrates the submucous tissue; it attacks the synovial membranes and tendon sheaths, the endocardium and pericardium; and it produces metastatic abscesses in muscles and subcutaneous connective tissue. They report a case in which the gonococci appeared to have invaded the whole system, another in which death resulted from gonococcal peritonitis, and a third in which death was due to gangrene of the leg, accompanied by severe swelling of the parotid gland. Subsequent examination of the blood and pus showed pure culture of gonococci. The extensive activity of the gonococcus in regions formerly considered immune to its infection is pointed out. Metchnikoff's investigation of the nervous tissue according to Nissel's method has shown that the toxin of the gonococcus has an undoubted deleterious effect upon the cord, as demonstrated clinically by the occurrence of neuralgias (ischias). The circulating toxin alone probably cause the cutaneous lesions at times observed. Wasserman's investigations point out that the toxin of the gonococcus has marked phlogistic powers, and is bound during life to the bodies of the cocci. After their death its liberation may produce an active suppuration, the bacteria themselves disappearing by disintegration. This may explain the inability at times to find the organisms, though we may be firm in the belief that the condition or death may have been caused by their action. [w.k.]

¹ Lancet, April 26, 1902.

² Am. Jour. Obstet., March, 1902.

³ Centralblatt für Gynäkologie, April 5, 1902.

⁴ St. Paul Med. Jour., May, 1902.

¹ Lancet, April 26, 1902.

² American Journal of Obstetrics, March, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

Experimental and Clinical Chologogs.—It has long been known that drugs commonly denominated chologogs by the clinicians, such as calomel or podophyllin, fail, in the pharmacologic laboratory, to show any stimulant effect on the liver. The clinical evidence, however, of their therapeutic value in morbid conditions, especially of the intestine, apparently resulting from the absence of bile is so uniform that pharmacologists and clinicians have both been driven to assign all sorts of reasons, reasonable and unreasonable, for the failure of these drugs experimentally to increase the flow of bile. One of the arguments most dwelt on to explain this disparity between laboratory and bedside results has been to assert that the liver of the dog does not react to the same influences as does that of the human being. If this were true it would tend to throw great discredit on all pharmacologic investigation on the lower animals; for there is no more reason to suppose that the liver of the dog should differ so essentially from that of the man than that there should be an important discrepancy in the reactions of the circulatory apparatus in the two forms of animal life. However, in the last few years several observers have had opportunity to study the changes of the formation of bile in the human being in cases of biliary fistula; these studies have, with remarkable unanimity, shown that the results obtained in the dog were true of the man.

One of the most careful of these studies is the series of observations made a few years ago by Doctors Pfaff and Balch on a woman with a biliary fistula, the result of a gallstone operation. These gentlemen showed that in the human being, as in the dog, the so-called chologogs, the mercurials and the alkalies, were absolutely without effect upon the secretion of bile either in quantity or composition. They reached the conclusion that there are but two hepatic stimulants, bile itself and the salts of salicylic acid.

There is, therefore, little room for doubt that the drugs which have held our confidence so long and so deservingly in cases of hepatic trouble have no direct effect on the liver. Nevertheless the clinical evidence of their power in some way to increase the amount of bile in the intestinal tract is too convincing to admit of any ambiguous interpretation. How may we reconcile the antagonistic statements of the scientific investigator and the practical physician?

It will be noted that the researches on the effect of drugs upon the liver both upon the dog and in the human being have been made with permanent fistulas into the gallbladder, the ductus choledochus being presumably closed. Experiments done along this line leave out of the reckoning a very important factor, that is the gallbladder itself with its reserve of bile. It is evident that any influence which causes a contraction of the muscular coat of this organ in the normal animal will cause an expulsion of its concentrated bile into the intestines. The result will be twofold, first, there will be an immediate counteraction of the morbid processes which have resulted from the absence of this secretion, and second, the excess of the bile will be reabsorbed; and since all observers have found that the bile salts are most powerful stimulants to the liver, there will be a permanent reestablishment of the hepatic activity. That such an explanation is not unreasonable H. C. Wood, Jr., has demonstrated:

Some years ago, while studying the effect of cholin, an active stimulant to involuntary muscles, he noted that this drug increased remarkably the amount of bile which passed through the common duct, but when the gallbladder was excluded there was no alteration in the amount of bile secreted, showing that the drug had no

direct effect upon the liver. Or it may be that the clinical chologogs when applied to the intestine, as has been shown to hold true at least for nitrohydrochloric acid, cause reflexly a relaxation of the gall ducts along the route of entrance of the bile into the intestine.

There has been a good deal of illogical therapeutics practised in various conditions associated with diseases of the liver. Fortunately, the premises upon which the therapeutic reasons have been based were just exactly as foolish as the logic, so that the two errors counteracted one another and resulted in no harm to the patient. As, however, we come to know more of the action of drugs upon the liver, there is a certain amount of danger that our faulty reasoning, if based on accurate facts, will lead to bad results. It is common practice in many cases of jaundice to administer the chologog drugs, supposing that they will affect the secretion of bile. As the most of these substances have been shown to have no effect upon the liver, the results have not been untoward. The mere fact that the patient is jaundiced shows that there is more bile being secreted than the system can temporarily take care of. If, for example, the jaundice is due to an obstruction of the bile-duct by a catarrhal process or by a stone, the bile being unable to escape into the intestines is carried away by the bloodvessels. Since the biliary salts are not innocuous substances to the general system, anything which tends to increase the secretory activity of the liver is bound to prove harmful. Moreover, any idea that the increased secretion of the bile will force out a stone into the intestines is a false hope, for as Stadelmann remarks, "bile does not flow in streams;" the pressure in the bile-ducts never rises above 220 millimeters of water. The great clinical value of sodium phosphate in catarrhal jaundice is due to its solvent action on mucus, and its mild purgative effect. In cases, however, in which the lack of bile in the intestines is producing great disturbances, the use of inspissated bile, although it is a powerful stimulant to the hepatic function, may be justified, in that its presence in the intestine is necessary for the proper function. In cases of "biliousness" not dependent upon an obstruction of the gall ducts, oxgall is likely to prove of great value both by the presence of the amount administered and also by its stimulant effect upon the liver.

The Antiseptic and Eliminative Treatment of Typhoid Fever.—Hubbard (*Georgia Journal of Med. and Surg.*, Vol. ix, No. 6, 1901, p. 283) strongly advocates the administration of intestinal antiseptics in typhoid fever. In his opinion, mild purgation is entirely safe and assists in removing the poison of the disease through the natural sewer. In fact, the good effects of urotropin, which is recommended even by the most outspoken opponents of the antiseptic method of treatment, are due quite as much to disinfection of the bowel as of the urinary tract. It seems more rational that a drug given internally should destroy the bacillus in the bowel than that it should do so after the bacillus has been excreted in the urine. The bacillus can be attacked directly if the proper drug is selected. Reasoning by analogy with syphilis, it is urged that mercury given internally will be absorbed and attack the germ and its products much more successfully than is possible by the application of cold water to the skin. Hubbard therefore gives mercury for its stimulating action on the emunctories, without, however, discarding rational hydrotherapeutic measures, which it is well known act as stimulants to elimination. He does not resort to antipyretics of any kind after the first two or three days of this treatment. On admission the patient is given a capsule containing $\frac{1}{2}$ grain of calomel, 2 grains of guaiac carbonate and $\frac{1}{10}$ grain of podophyllin every two hours for 24 to 48 hours, depending upon the condition of the bowels. This is continued until four or five evacuations a day for two successive days have been obtained, when $\frac{1}{2}$ grain of menthol is substituted for the calomel. If the bowels become inactive a small dose of salts or Hunyadi water is given in the morning, the object being to secure at least two evacuations daily. If after three or four days' treatment the temperature remains

high, or rises after having remained stationary, calomel is again given for 24 hours, as it invariably reduces the temperature. Guaiacol and menthol are given throughout the course of the disease. Hubbard believes that guaiacol carbonate has some specific action in addition to its antipyretic effect, just as in tuberculosis. [It is both instructive and useful to read the views of a pronounced supporter of the medicinal treatment of typhoid fever. While the water treatment of that disease has now become firmly established, cases will always occur in which for some reason it will be impossible to carry it out, and it is well for the physician to have another string to his therapeutic bow. There is too much purgation in Dr. Hubbard's plan, however.] [R.M.G.]

Prophylactic Value of Health Resorts Against the Late Lesions of Syphilis.—There is another point, however, on which we must lay special stress in regard to the action of health resorts in syphilis. Every one nowadays admits that tabes dorsalis and general paralysis of the insane seldom occur in persons who have not had syphilis; there is equally little doubt that a causal connection frequently exists between syphilis and localized inflammatory changes in the arch of the aorta, which lead to aneurysms; between syphilis and precocious degenerative changes in the bloodvessels at the base of the brain and in the coronary arteries of the heart; and between syphilis and early fibrous changes in the viscera. It seems that the toxins of syphilis circulating in the blood may permanently lower the vitality of certain nervous and other tissues in such a way that overwork and other harmful influences, though not sufficient to act injuriously in the case of ordinary persons, lead subsequently, in the case of a few of those who have had syphilis, to the occurrence of atrophic and fibrous changes in various organs. If these views be correct, it is obviously of great importance during the active stages of syphilis—the primary and the secondary—to rid the body of the injurious toxins as quickly as possible after they are produced, and thus diminish the length of time during which they exercise their bad effects on the vitality of the various cells. This object is probably best accomplished by the eliminative action of hydrotherapeutic and balneotherapeutic methods employed during the early stages of the disease, in association with specific treatment. According to the same theories, an almost equally important indication is to protect syphilitics from overwork and mental worry. For certain patients this can be accomplished only by having them treated at some health resort during the active stages of the disease, and by advising them as to the danger of excessive bodily and mental strains, and the value of regular holidays in suitable climates; they must understand that this advice applies not only to the period when they show obvious signs of the disease, but that the same hygienic mode of life must be continued for many years after every trace of the disease seemed to have vanished, or even for the whole life.—[F. Parkes Weber, in Cohen's "System of Physiologic Therapeutics."]

An Operation to Replace Enucleation in Children.—Danoux (*La Médecine Moderne*, Vol. 13, No. 1, 1902, page 429) believes that the operation of enucleation in children is much abused. Except in cases of malignant tumors or infectious iridocyclitis he prefers the following procedure, which he has used for 20 years, especially in hydrophthalmia with staphyloma: With a cautery point heated to a dull red, he practises a star-shaped cauterization of the cornea, extending the arms of the star beyond the corneal border, care being exercised that the depth of the cauterization does not exceed the thickness of the cornea. The center is then perforated so as to allow the aqueous humor to escape. By the end of 15 days the wound is generally healed with sufficient retraction. The cicatricial tissue may then be tattooed. The result is remarkable, and at a certain distance the eye appears normal. Sympathetic ophthalmia is very rare, it having occurred in only one case. Panas prefers enucleation, which leaves a stump suitable for a glass eye; sympathetic ophthalmia is almost certainly avoided, and the cosmetic result also appears better. [L.F.A.]

The Denutrition Cures of French Authors.—Kisch (*Therapeutische Monatshefte*, Vol. xvi, No. 1, 1902, p. 9) reviews briefly the methods of treating obesity in use among French

physicians. Dancel was the first to restrict the quantity of fluid; he allowed only 800 grams of wine and water, with a small cup of black coffee twice a day. Robin restricts the quantity of water in excessive assimilation, but advises free drinking of water when there is deficient "disassimilation." He orders his patients five meals a day, and permits plenty of cold lean meat, but restricts the quantity of bread and leguminous vegetables. Sée advises his obese patients to drink freely, preferably tea and coffee. He orders hot tea at breakfast and between meals, beside water, lemonade and carbonated waters. He gives albuminous foods and fats in ordinary proportions, 120 to 130 grams of the former, and from 60 to 90 grams of the latter; carbohydrates are practically forbidden, but vegetables are freely allowed. Bouchard prohibits the eating of fat, and depends chiefly on milk and eggs, 1,250 grams of milk and five eggs being given in five meals. A strict diet of this kind is to be kept up for 20 days, after which a limited and selected diet must be continued for several weeks. Dujardin-Beaumetz allows 300 grams of red or white wine, or carbonated waters, during meals, or, if the patient does not drink during meals, a somewhat larger quantity between meals. Proust and Mathieu have prepared three graduated diet-lists for the use of obese persons. These, as well as the list advised by Dumont, are given in full. With the exception of Germain Sée, all the authors cited agree on the necessity of restricting the quantity of fluid to be ingested. Kisch defines the indications for withdrawing fluids as follows: In the plethoric class, including high-livers, those who have an hereditary tendency to obesity, women at the menopause, and certain alcoholics, the use of water should not be restricted. In the case of anemic persons suffering from obesity, in whom the total quantity of fluid in the body is increased instead of being diminished, there is no objection to a moderate reduction of the fluids allowed. The systematic withdrawal of water is of the greatest value finally, when the blood has already become hydremic, and beginning fatty degeneration of the myocardium has led to cardiac insufficiency and congestive phenomena. [R.M.G.]

Treatment of Gastric Stasis Accompanied by Hypersecretion.—A. Mathieu (*Journal des Praticiens*, Vol. 15, No. 50, 1901, page 793) directs that the contents of the stomach be evacuated as freely as possible, in the same manner as a test-meal is extracted, before breakfast. If the stomach contents are too thick, or if there is a large quantity, slight lavage may be performed. In cases of excessive fermentation, a 3% solution of sodium salicylate should be employed. At the end of three or four days, the accumulated liquid should be removed by expression, by aspiration if necessary, but without lavage. However, if notable amelioration does not occur after several days of this treatment, slight lavage may be performed once or twice a week. From the beginning of this treatment, evacuation of the accumulated liquid is followed by gavage of two ounces of finely chopped meat, carefully mixed with ten ounces of milk. This quantity is increased daily until 3½ ounces of meat and 13½ ounces of milk are being taken. When there is intense pain with marked stasis, an absolute milk diet should be prescribed; for patients in whom the painful phenomena are less marked, soups and eggs may be added. The diet may be modified during the treatment, depending on the results obtained. The duration of the treatment does not depend so much on the relief of the painful phenomena as upon the modification of the quantity and quality of the accumulated liquids, and upon the general condition of the patient. [L.F.A.]

Gelatin injections in melena neonatorum are recommended by Holtschmidt,¹ of Dresden. The prognosis of this form of intestinal hemorrhage in infants has hitherto been uniformly unfavorable, but it is found that some 50% of cases may be saved by the subcutaneous injection of 15 cc. at a time, of a 2% sterilized gelatin solution at bloodheat. [C.S.D.]

Treatment of Puerperal Eclampsia.—Dérivaux (*Jour. de Méd. et de Chir.*, Dec., 1901) lays down a definite plan of treatment: The patient may be either in the prodromal stage or in the eclamptic state. After an initial rectal irrigation, about 300 grams (ten ounces) of blood are drawn. An absolute milk diet is, of course, enforced. In the eclamptic state the fol-

¹ Münchener med. Wochenschrift, January 7, 1902.

lowing treatment should be begun immediately: Copious blood-letting (400 to 600 grams—13 to 20 ounces) followed by a hypodermic injection of 1,000 grams (33 ounces) of artificial serum and rectal irrigation repeated until a flow of bile is secured. The results of this treatment are said to be almost uniformly good; the tension is lessened, the kidneys are stimulated and the visual symptoms become less marked. Venesection and rectal irrigation may have to be repeated several times. If rectal irrigation is properly performed it will, after a few quarts have been injected, bring out an abundance of fetid fecal matter. After the injected fluid comes away clear, bile-stained fluid makes its appearance and is soon followed by a regular flow of almost pure bile, after which the liquid again becomes clear and the irrigation should be discontinued. The patient is placed in the obstetric position, with hips elevated, to facilitate the escape of intestinal gases. The fountain syringe should not be raised more than two feet above the patient's level and a return current canula should be used. [R.M.G.]

Nephritis Following Grip in Children.—Soumaripas (*Journal des Praticiens*, Vol. XV, No. 50, 1901, page 795) has observed nephritis following grip in children in about 5% of cases, it coming on during convalescence rather than during the course of the disease. The quantity of albumin varied from 7.5 to 60 grains. The duration of the nephritis varied usually from three to five weeks; but in one case it was prolonged for one year. If the patient is cured readily, it is necessary to watch lest it recur upon slight provocation. In a boy of six, the nephritis was produced by an attack of measles three years after the attack of grip. In these cases Soumaripas recommends that careful prophylaxis be observed by maintaining antisepsis of the mouth, pharynx, nasal fossas, and intestinal canal; and he prescribes as of especial value an absolute milk diet with hygienic precautions. The milk must be continued for more than one week after disappearance of the albuminuria. In addition to the diet counterirritation should be practised by means of mustard poultices, dry cups, and even by wet cups if necessary, in the older children. In grave uremia, general bleeding may be employed, always in the older patients. Sodium benzoate, caffeine, purgatives, subcutaneous injections of normal saline solution, hot baths with chloral and the bromids, may be employed as necessary in the acute and subacute stages. [L.F.A.]

Massage of the Drumhead.—According to Dr. Schwabach (*Therapeutische Monatshefte*, Vol. 15, No. 12, 1901), good results may be hoped for in the following conditions: Chronic simple hypertrophic catarrhal otitis media, with opacities and retraction of the drumhead; subacute catarrhal otitis media; deafness coming on after an acute otitis media, especially when due to influenza; and in the remains of a chronic otitis media in which ordinary methods of treatment failed to bring about an improvement in the subjective noises and in the power of hearing. Massage is of little use in sclerosis of the drumhead, although it is usually recommended in this condition. [R.M.G.]

Treatment of Blennorrhagia with Picric Acid.—H. de Brun (*Montréal Médical*, September, 1901) employs picric acid in solutions varying from 1 to 200 to 1 to 100, in the treatment of blennorrhagia. No pain is caused by the 1 to 200 solution; with the 1 to 100 solution pain is sometimes sharp, but never intolerable. Injections are made with a glass syringe holding from 1½ to 2 drams, two or three times a day when not painful, or once a day when the pain is severe. The solution is retained for about three minutes after each injection. In acute blennorrhagia a cure is affected in four or five days. By means of this treatment, de Brun also obtained a rapid cure of a case of chronic blennorrhagia which had resisted all other forms of treatment. These results obtained only when the seat of the disease could be reached by the injection. [L.F.A.]

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Picric Acid in Smallpox.—Romaro (*New York Medical Journal*) reports that out of 162 cases of smallpox 46 patients recovered without visible scars, and 101 without any trace of

pitting. These good results are attributed to picric acid, which was applied as a lotion or in the form of an ointment. The substance is supposed to act by destroying the pyogenic germs in the pustules. Even confluent pustules are said to have been removed without leaving a trace. It was noticed that other members of the family did not contract smallpox from patients duly treated with picric acid. The formula for the lotion is 2 grams of picric acid in 15 grams of alcohol and 185 grams of water.

FORMULAS ORIGINAL AND SELECTED.

Formulas for Medicated Baths.—The *Bulletin Général de Thérapeutique*, May 8, 1901, gives the following formulas for various medicated baths:

Sulfur bath—

Potassium sulfid 2 ounces
Hot water 45 quarts

Bathtubs should be made of wood or zinc, or enameled.

Gelatin bath—

Gelatin 4 ounces

Add enough hot water to dissolve it, and then mix with 20 quarts of water.

Acid bath—

Nitric acid 1 ounce
Hydrochloric acid 2 ounces
Hot water about 60 quarts

This bath must be prepared in a wooden tub. Duration of bath 10 minutes.

Alkaline bath—

Sodium bicarbonate 3 ounces
Water 60 quarts

Glycerin bath—

Glycerin 5 ounces
Gum tragacanth 1½ ounces

Boil till smooth in a quart of water, then add to 20 quarts of hot water.

Arsenic bath—

Sodium arsenate (for one bath) . . . 75 to 150 grains

Useful in some chronic dermatoses and in the treatment of certain rheumatic nodules.

Mercurial bath—

Mercuric chlorid 20 grains
Alcohol 2 drams
Distilled water 1 ounce

Pour this solution into a bath of water. Mercurial baths should not replace the internal treatment of syphilis. They are useful against the cutaneous manifestations and as antiseptics. [L.F.A.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended May 17, 1902:

SMALLPOX—UNITED STATES.			Cases	Deaths
Alabama:	Mobile.....	May 10.....	21	
California:	Los Angeles.....	Apr. 19-May 3.....	11	
	San Francisco.....	Apr. 27-May 4.....	7	
Colorado:	Denver.....	Apr. 28-May 5.....	3	
Florida:	Jacksonville.....	Apr. 26-May 10.....	4	
Illinois:	Belleville.....	May 3-10.....	3	
	Chicago.....	May 3-10.....	10	1
	Galesburg.....	May 3-10.....	5	
	Peoria.....	Apr. 1-30.....	26	
Indiana:	Evansville.....	May 3-10.....	1	
	Indianapolis.....	May 3-10.....	6	
Kentucky:	Covington.....	May 4-11.....	13	
	Lexington.....	May 3-10.....	1	
Maine:	Portland.....	May 3-10.....	1	
Maryland:	Baltimore.....	May 3-10.....	5	
Massachusetts:	Boston.....	May 3-10.....	28	6
	Brockton.....	May 3-10.....	1	
	Cambridge.....	May 3-10.....	1	
	Everett.....	May 3-10.....	2	
	Lowell.....	May 3-10.....	2	
	Malden.....	May 3-10.....	2	
	Newton.....	May 3-10.....	1	
	Northampton.....	May 3-10.....	1	
	Somerville.....	May 3-10.....	1	
Michigan:	Detroit.....	May 3-10.....	2	
	Grand Rapids.....	Apr. 26-May 10.....	7	

Minnesota:	Winona	Apr. 26-May 3	1	
Missouri:	St. Louis	May 4-11	48	
Montana:	Butte	Apr. 27-May 4	4	
Nebraska:	Omaha	May 5-12	29	
New Jersey:	Camden	May 3-10	1	2
Hudson County, including Jersey City:	Apr. 27-May 4	32	6	
	Newark	May 3-10	40	7
	Passaic	Apr. 26-May 10	2	
	Plainfield	May 3-10	3	
New York:	New York	May 3-10	58	9
Ohio:	Cincinnati	May 2-9	11	
	Cleveland	May 3-10	4	
	Toledo	May 3-10	1	
	Youngstown	Apr. 19-26	1	
Pennsylvania:	Columbia	May 5-12	5	
	Erie	May 3-10	3	
	Philadelphia	May 3-10	24	2
	Pittsburg	May 3-10	17	1
	York	Apr. 1-30	3	1
South Carolina:	Charleston	May 3-10	2	
	Greenville	Apr. 26-May 3	1	1
South Dakota:	Sioux Falls	May 3-10	1	
Tennessee:	Memphis	May 3-10	21	1
	Nashville	May 3-10	1	
Texas:	San Antonio	Apr. 1-30	3	
Utah:	Ogden	Apr. 1-30	3	
	Salt Lake City	May 3-10	1	
Washington:	Tacoma	Apr. 27-May 4	3	
Wisconsin:	Green Bay	May 4-11	2	
	Janesville	May 3-10	3	
	Milwaukee	May 3-10	9	

SMALLPOX—FOREIGN.

Great Britain:	Birmingham	Apr. 26-May 3	7	
	Gateshead	Apr. 26-May 3	1	
	Leeds	Apr. 26-May 3	1	
	Liverpool	Apr. 26-May 3	6	
	North Shields	Apr. 26-May 3	7	
	South Shields	Apr. 26-May 3	4	
	Sunderland	Apr. 26-May 3	2	
India:	Bombay	Apr. 8-15	16	
	Calcutta	Apr. 5-12	7	
	Karachi	Apr. 6-13	3	2
	Madras	Apr. 5-11	3	
Italy:	Naples	Apr. 12-26	11	
Mexico:	City of Mexico	Apr. 27-May 4	1	1
	Vera Cruz	May 3-10	2	
Spain:	Malaga	Mar. 1-30	5	

YELLOW FEVER.

Costa Rica:	Port Limon	Apr. 23-30	1	
Mexico:	Vera Cruz	May 3-10	17	9

CHOLERA.

China:	Amoy	Mar. 29-Apr. 5	2	2
India:	Bombay	Apr. 8-15	1	
	Calcutta	Apr. 5-12	172	

PLAGUE—INSULAR.

Hawaii:	Honolulu	Apr. 29	1	
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PLAGUE—FOREIGN.

China:	East Honam	May 2	Epidemic.	
India:	Bombay	Apr. 8-15	664	
	Calcutta	Apr. 5-12	603	
	Karachi	Apr. 6-13	153	116
Japan:	Nagasaki	Apr. 1-20	1	

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended May 15, 1902:

MURRAY, R. D., surgeon, granted leave of absence for 25 days from June 1—May 13, 1902.

WASDEN, EUGENE, surgeon, leave of absence for seven days from May 2, 1902, under paragraph 179 of the regulations, amended so that said leave shall be for three days.

GUIERAS, G. M., passed assistant surgeon, bureau order of May 5, 1902, directing Passed Assistant Surgeon Guieras to proceed to Philadelphia, Pa., amended so that he shall proceed to Cienfuegos, Cuba, for temporary duty; upon completion of temporary duty at Cienfuegos to proceed to Philadelphia—May 12, 1902.

HASTINGS, HILL, assistant surgeon, detailed to represent the service at meeting of Southern California Medical Society at Idyllwild, May 22 and 23—May 13, 1902.

McMULLEN, JOHN, assistant surgeon, granted leave of absence for 14 days from May 14—May 13, 1902; relieved from duty at Boston, Mass., and directed to proceed to London, England, for duty in office of U. S. Consul-General—May 7, 1902.

HOLT, J. M., assistant surgeon, relieved from duty at St. Louis, Mo., and directed to proceed to Honolulu, Hawaii, and report to medical officer in command for duty, stopping en route at San Francisco quarantine for special temporary duty—May 14, 1902.

DUFFY, FRANCIS, acting assistant surgeon, granted leave of absence for six days from May 19—May 15, 1902.

RODMAN, J. C., acting assistant surgeon, granted leave of absence for three days—May 15, 1902.

ROWLES, J. A., acting assistant surgeon, granted leave of absence for 30 days from May 12—May 13, 1902.

Changes in the Medical Corps of the U. S. Army for the week ended May 17, 1902:

PETTIGRHS, JOSEPH, contract surgeon, is assigned to temporary duty at Vancouver Barracks.

BARNEY, First Lieutenant CHARLES NORTON, assistant surgeon, is granted leave for 20 days, to take effect May 31.

MAUS, Lieutenant Colonel LOUIS M., is relieved from duty in the division of the Philippines, to take effect about June 30, and will then repair to Washington, D. C., and report to the surgeon-general of the Army for further instructions.

DUVAL, First Lieutenant DOUGLAS F., assistant surgeon, is granted leave for one month.

GRISWOLD, W. CHURCH, contract surgeon, now at Albany, N. Y., will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

BELT, HARRY D., contract surgeon, is relieved from further duty in the department of Cuba, and upon his arrival at Fort Robinson will proceed to Fort Keogh for duty.

AUSTIN, EMMETT R., contract surgeon, now at Fort Robinson, is relieved from further duty in the department of Cuba, and will report to the commanding officer of that post for duty.

FLICK, JOSEPH, hospital steward, now at No. 27 Pine street, Burlington, Vt., will report on or before expiration of furlough to the commanding officer, Plattsburg Barracks, for duty. Upon the arrival of Steward Flick at Plattsburg Barracks, Hospital Steward Oscar A. Manseau will be sent to Manila, P. I., for assignment to duty.

APPEL, Major DANIEL M., surgeon, is detailed to represent the medical department at the fifty-third annual meeting of the American Medical Association, to be held at Saratoga, N. Y., from June 10 to 13, 1902, in addition to the officers designated in orders of April 2. Major Appel will proceed to Saratoga at such time as will enable him to reach that place on or before June 10, and upon the adjournment of the association will return to his proper station.

WATERS, JOSEPH, hospital steward, Army general hospital, Presidio, is transferred to the general hospital, Fort Bayard, for duty, to relieve Hospital Steward Mathew Galvin. Steward Galvin will be sent to Manila, P. I., for assignment to duty.

HAVARD, Lieutenant Colonel VALERY, is detailed to represent the medical department of the Army at the Second International Conference for the Prevention of Syphilis and Venereal Diseases, to be held at Brussels, Belgium, from September 1 to 6, 1902. Lieutenant Colonel Havard will proceed to Brussels at such time as will enable him to reach that place on or before September 1, 1902, and upon adjournment of the conference will return to his proper station at Fort Monroe.

KIEFFER, Captain CHARLES F., assistant surgeon, is granted leave for one month.

VAN POOLE, First Lieutenant GIDEON MCD., assistant surgeon, now under treatment at the Army and Navy general hospital, Hot Springs, Ark., will report to the commanding officer of that hospital for temporary duty.

STRAUSS, JULIUS, hospital steward, Fort Apache, upon expiration of furlough authorized May 9, will report to the commanding officer, Army general hospital, Washington Barracks, with a view to being sent with the first detachment of the hospital corps leaving that station for the division of the Philippines.

PERSONS, First Lieutenant ELBERT E., assistant surgeon, Fort Snelling, will proceed to Fort Assiniboine in time to reach there not later than May 14, and report for duty to accompany troops A and C, Thirteenth cavalry, to Fort Yellowstone for temporary duty with troops in the national park during the tourist season.

LUDINGTON, PAUL H., contract surgeon, is assigned to duty as attending surgeon at headquarters department of the Missouri and examiner of recruits in Omaha, Neb.

UPDIKE, ROBERT P., contract dental surgeon, is granted leave for 15 days.

CARR, Major LAWRENCE C., surgeon, is granted leave for one month.

BROOKS, JOHN D., contract surgeon, now in Washington, D. C., will proceed to St. Paul, Minn., and report to the commanding general, department of Dakota, for assignment to duty.

The following named assistant surgeons will report on board the U. S. S. Dixie, New York city, for the purpose of proceeding to Maritime to distribute medical supplies and render the necessary medical attendance to the inhabitants at that place, and upon the completion of this duty will return to their proper stations: First Lieutenants Jere B. Clayton, James R. Church, John J. Reilly.

JOHNSON, Major RICHARD W., surgeon, is assigned to duty as sanitary inspector of the department of California, relieving Major James D. Glennan, surgeon, to enable the latter to avail himself of the leave heretofore granted.

ROBERTS, First Lieutenant WILLIAM, assistant surgeon, is granted leave for one month.

WOOD, Major MARSHALL W., surgeon, is granted leave for 12 days from about May 19.

MCCORD, Captain DONALD P., assistant surgeon, leave granted April 11 is extended one month.

BROWN, H. L., contract surgeon, now at Fort Sheridan, will report at that post for temporary duty.

MOSES, H. C., contract surgeon, leave granted April 10 is extended one month.

ASHBURN, JAMES K., contract surgeon, is relieved from further duty at Fort Grant, and upon the expiration of his present leave will proceed from Batavia, Ohio, to Fort Crook for duty.

BELT, HARRY D., contract surgeon, is granted leave for one month.

LYON, WILLIAM H., hospital steward, who accompanied the squadron of the Second cavalry to Fort Ethan Allen, is assigned to duty at that post to relieve Hospital Steward Le Gare J. La Mar. Steward La Mar will be sent to Manila, P. I., at the first opportunity.

Changes in the Medical Corps of the U. S. Navy for the week ended May 17, 1902:

ARNOLD, W. F., surgeon, detached from duty at Guam and ordered to the Naval hospital, Yokohama, Japan, for treatment—May 11, 1902.

BELL, W. H., assistant surgeon, detached from the Naval hospital, Norfolk, Va., and ordered to the Chesapeake when that vessel goes in commission—May 14, 1902.

Doctors E. M. BROWN, H. F. STRINE, J. P. TRAYNOR and R. E. HOYT, appointed assistant surgeons—May 8, 1902.

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The 1902 Meeting of the American Medical Association will open a new epoch, not only in the history of the organization, but in that of the American profession as a whole. The ruling spirit of other medical organizations has been too frequently either that of personal selfishness and advertisement, or that of a too great singleness of devotion to scientific medicine irrespective of medical politics good or bad. There has been long growing a conviction in the minds of the best members of the profession that both of these extreme tendencies are wrong. Organization must not be the tool of personal ambitions and piques, neither must its power for good be ignored. This conviction has resulted in such a change of methods in the Association organization that henceforth its instrumentality cannot be used selfishly and shall be put forth for the realization of the noblest medical ideals. Everyone is looking forward to the test now to be made at Saratoga for the outworking of the new scheme. So profound and united is the feeling of good-will and sound professionalism that already there is the greatest confidence in the future. The lodging of legislative and administrative authority in the House of Delegates has been early and persistently advocated by *American Medicine*, and we expect the results will be of the greatest significance in medical and in general sociology.

A union of medical societies is one of the clearest demands of the new spirit of American medicine. Too many societies have grown up, which, according to their success detract just so much from the desirable power of those that must and will go on, and only from which the profession and people can expect relief from the medical evils that close the way of progress. The reorganization of the American Medical Association and the immense strides immediately to be made in the revivification of the local State organizations, the proper and fundamental units for representative organization, will at once render useless and even worse than useless many organizations which have heretofore had some more or less consistent excuse for being. The test of genuine professionalism in their members will now come in their acceptance or rejection of the vote to continue or to merge their existence in that of the great central organization. We trust that the wisdom of unity will be recognized at once and that thus the combined forces of our professional life may quickly be felt in a too-long-

delayed resolution for American medical reform and progress.

Harmonizing the Injustices of Individual State Licensure.—Interest in this important subject increases and it is evident that the profession must come to some common conclusion and recommendation. If we cannot, as is plain, have a nationalization of control we must secure some uniformity of action in the different State boards whereby the present inequities and hardships shall be avoided. Here at once is an early duty of the newly organized and harmonized representatives of the American medical profession, the House of Delegates. We earnestly hope that our suggestion will be acted upon that this body take as one of its first functions the construction of a plan whereby the reexamination of legal and honorable practitioners from other States shall be avoided. No such a plan we fear can be thought out at the coming session, but a capable committee appointed by the House could by earnest work be prepared to report a feasible method of procedure in 1903. Such a committee will have an arduous task, but one not more so than that which has given us such a praiseworthy reorganization of the Association itself.

An evening for popularizing medical science seems to us a commendable suggestion to make to our national societies. We are too prone to neglect our duty of teaching the people as to medical truth, and there is no better occasion than the annual meetings to bring home to them a right conception of what we are doing. Our associations must necessarily meet in cities where a large intelligent lay audience would be glad to gather to listen to the leading men of the profession upon subjects lay people can understand and should be made to understand. The lecture can be made both scientific and popular at the same time, and reproduced in the newspapers would be a means of great good to the people. It would also help to bridge that hateful gulf which more than in any other calling separates medicine and the community. There is no dearth of subjects, none of lecturers. The British Association (of pure science, not of medicine) has long pursued the plan here suggested with inestimable benefit to all concerned.

The Improvement of the Milk Supply.—We have referred more than once in our editorial columns

to the necessity of some improvement in the control of the milk supply of cities (Cf. *American Medicine*, July 27, 1901, page 122; August 31, 1901, page 313; and October 12, 1901, page 556), and we take occasion at this time to call attention to a plan for the improvement of market milk offered by Raymond A. Pearson, Assistant Chief of the Dairy Division, United States Department of Agriculture, and recently published in the Seventeenth Annual Report of the Bureau of Animal Industry. Any rehearsal of the reasons for securing a supply of pure milk is unnecessary for medical readers, to whom the deleterious effects of altered or contaminated milk supply are matters of daily observation. Any project rendering the milk supply pure and unobjectionable must begin with the cow and the dairy, and can only be brought into effect gradually and as a result of persistent and determined agitation on the part of those who best understand its need. The paper to which we refer offers a practical plan which may be readily adapted in many cities which place a premium on the enterprise and honesty of dairy farmers, and it would serve to create public confidence and to increase the milk consumption. The plan involves the organization of a milk commission from among the responsible citizens interested in an improved milk supply. This commission should secure the advice of experts, a veterinarian, a physician, a bacteriologist, and a chemist, all of them familiar with the conditions and possibilities of the dairy farm. The commission should send to each dairyman who supplies milk to their city a circular, mentioning all the particular conditions which should be found on farms where milk is produced for city use, and announcing that when any dairyman notifies the commission that he is fully conforming to the conditions specified, or endeavoring to do so, his dairy will be inspected, and if it is found to comply in letter and spirit to all the requirements, his name will be placed upon an "approved" list and he will receive an official endorsement in the form of a certificate which he can use in any proper manner to assist in securing new trade. Dr. Pearson calls special attention to the very satisfactory work that is being done by the milk commission of the Philadelphia Pediatric Society and by the commission of the Medical Society of the County of New York.

The Selection of Resident Hospital Physicians.

—There is hardly a hospital trustee who is not more or less concerned at this time of year in the matter of the choice of one or more resident physicians. The interne plays a very important part in hospital economy, and the selection of the right or wrong man has a very important bearing, not only on the reputation of the hospital itself, but on the comfort of the patients, the staff, and also the executive force. The best process by which to secure the right man is still a mooted point. There seems to be almost as many methods of choosing a resident as there are hospitals. The first point to be decided is whether the resident shall be chosen primarily for his own good, or for that of the hospital and patients. Some physicians claim that the hospital exists primarily for the benefit of its medical staff, that it gives the finishing touches to the work of the undergraduate

college. On the other hand, the hospital trustee is more likely to insist that the hospital exists mainly for the benefit of the patient. In the choice of a resident physician it is essential, first, to have a man with gentlemanly instincts and executive ability, and lastly, with medical knowledge; their importance is in the order given.

Among the more general methods in vogue in the choice of resident physicians are competitive examinations, direct appointment by the board of control, and a combination of both. These three ideas obtain, more or less, in most hospitals. Where a system of competitive examination is made the sole test, exceedingly unfortunate results often happen. The man with a parrot-like memory, while able to pass a perfect theoretic examination, is often utterly unable to do the practical work required of a resident physician. Many a hospital superintendent has passed anxious and weary hours undoing the mistakes which the man who stood at the head of his class has perpetrated. On the other hand, when the appointment is made by a board of trustees or medical staff, without any safeguards, political and social influence, and expediency, may often play an undue part in the choice of a resident physician. When a qualifying examination is practised and a certain list of eligibles are recommended to the appointing power, many difficulties are removed. The applicant feels that he is doing something, that he is being given a chance to show what he really knows, while the trustee does not feel obliged to appoint the man with unpleasing personality but good memory; at the same time he escapes the man whose medical ability is below the standard.

Whatever the system employed may be, too great care cannot be exercised in the choice of the hospital interne. We wish to emphasize the importance of a careful personal examination in each case; the individual applicant should be required to see each member of the appointing body; to make his application in writing and to furnish letters as to his moral character and fitness for the position sought. His record during his college course should be carefully scanned and used in conjunction with the result of a qualifying examination. General fitness for the position should be given quite as much weight as medical knowledge; the former cannot be taught in twelve months, while the latter under the instruction of able chiefs, will be rapidly acquired. Great care should be exercised by the hospital trustee not to allow his judgment to be warped by the importunity of friends and those who, for social, political or business reasons, he may desire to placate. The best man, and always the best man, must be the constant rule, otherwise troubles of many sorts and possibly the death of unoffending patients may be in store.

The Druggist's Responsibility for the Quality of Drugs Dispensed.—A prominent pharmaceutical publication, *Southern Drug Journal*, May, 1902, takes the eminently proper stand that "*The competent druggist is licensed because he is supposed to know when the drugs he offers are right, and to withhold them from the public when they are wrong.*" The practising pharmacist is obliged to produce evidence of a special education and training in pharmaceutical technic and in the knowledge of drugs.

His proficiency having been determined by legally constituted authority, he is granted a license involving rights not enjoyed by others as to traffic in drugs. This restriction to certain men of the right to sell certain drugs carries with it the responsibility that they shall guarantee the quality of the drugs sold. The physician relies on the drug to bring about certain physiologic effects and human life depends upon it having its normal efficiency. Hence the physician looks to the pharmacist for a guarantee that every drug dispensed is possessed of its full potency. The plea often made by the retail pharmacist that he has relied on the manufacturer or jobber and is ignorant of the actual quality of the drugs dispensed, is invalid and should in no case shield him from legal penalty or public contumely. In cases where he is called to account for the inertness or unaccountable behavior of a given drug, he may, of course, seek satisfaction from the manufacturer whose dupe he has been. The licensed druggist should, however, be held to strict responsibility for the quality of every drug dispensed and the sale of drugs should be restricted to qualified men, as is already supposed to be the case. Now let the druggist shoulder his responsibility and insist on having full knowledge of every preparation that leaves his hands. Let him refuse to sell proprietary remedies as to the ingredients of which he is ignorant and as to the quality of which he is prevented from satisfying himself. This will throw the responsibility for nostrums where it belongs, on the manufacturer and the non-licensed vendors, and will lead to the requirement that other proprietary remedies shall be accompanied by an exact formula and a guarantee of the purity and activity of the incorporated drugs.

The Unexpected in Science.—When Lord Raleigh announced that the air contained other gases besides those which had for long been known to enter into its composition, there was for the moment a gasp of almost incredulous surprise. If anything were well known by chemists, surely it was the composition of the air. One new constituent suggested, however, the gas argon, was proved by many observations to have a real existence. A little later other elements, some of them hitherto unknown, were found to exist in appreciable quantities in the atmosphere. Among them was the gas of the metal helium, whose presence had been originally detected in the sun's atmosphere by means of the spectroscope. This metal received its name from its supposed existence in the sun alone, as no trace of it had ever been noted on the earth, yet it was now found to be present in the air we breathe. Ramsay and Travers have recently devoted their attention to five new gases in the air. These are, besides argon and helium, neon, krypton, and xenon. The chemic relations of these substances are now being determined, and their atomic weight varies from that of helium, which is 4, up to that of xenon, which is 128. The lesson of the unexpected discovery of these substances would seem to be that the truly scientific mind must hold itself in constant readiness for the acceptance of scientific progress even in the most unanticipated directions. Professor Liebreich, the distinguished Professor of

Materia Medica and Pharmacology at the University of Berlin, and the well-known discoverer of a number of extensively used remedies, especially in the coal-tar series, says that our knowledge of the ingredients of remedial mineral waters is certainly not nearly as complete as our knowledge of the air was supposed to be before the discovery of these new gases. He insists that the mystery of the difference in therapeutic effect between genuine natural mineral waters taken at their source and artificial preparations supposed to represent them completely, may very well be due to the fact that our analytical knowledge of the substances dissolved in the mineral waters is as yet incomplete. It seems clear, too, that other mysteries of therapeutics may be due to such incomplete analytical knowledge. There remain many important questions with regard to which careful clinical observation and an attitude of expectancy, rather than satisfaction with present knowledge, may well prove the source of precious progress in practical medicine.

Habitual Criminality as a Morbid Condition.—The criminal records of New York City during last week illustrates very forcibly how true is the contention that the habitual criminal cannot be reformed by successive terms of imprisonment and that society must take some other means than that at present employed to protect itself against him. Three men were discovered by a watchman burglarizing a store. He followed them for some time after they left the building until finding two policemen the party were in a position to demand that the burglars halt. Instead of doing so the thieves at once opened fire at their pursuers and some forty revolver shots altogether were exchanged. One of the thieves was instantly killed. The other two were, after a long chase, captured with the help of two additional policemen. They surrendered only after a severe hand-to-hand encounter. The records of the men show that all three of them had been in prison for burglary at least three times. The dead man had been in prison four times, the last time in the Eastern Penitentiary in Philadelphia for six years, and had been released scarcely a year ago. We called attention toward the end of last year to the declaration of Sir Robert Anderson, of England, who has been for a long time connected with the Parliamentary direction of the detective force of England. In an article in the *Nineteenth Century and After* for December, 1901, Sir Robert said:

"I am speaking seriously and deliberately and appeal to all those who have any confidence in my judgment and knowledge of the subject to accept my assurance that if not 70,000, but seventy known criminals were put out of the way, the whole organization of crime against property in England would be dislocated and we should, not ten years hence, but immediately enjoy an amount of immunity from crimes of this kind that it might today seem Utopian to expect. The criminal statistics-cult blinds its votaries. It is the crimes committed by professional criminals that keep the community in a state of siege. The professional criminals are few and, I may add, they are well known to the police."

Habitual criminals, it is evident, must be dealt with from the standpoint that they are not quite normal individuals, but on the contrary are possessed of a certain pathologic bias of mind that makes them a constant

source of annoyance or even danger to the community. After a man has shown by an almost immediate return to the kind of crime for which he was originally committed that he is one of the moral defectives, lacking in the moral stamina that would enable him to live an honest life, then it is foolish to commit and recommit him for comparatively short terms of imprisonment. He should be kept under the vigilant eye of the authorities for all the rest of his life. This may involve even the necessity for lifelong detention. No other sensible method of dealing with such defectives is free from the absurdity of our present irrational system. When criminal lawmaking will be approached from this point of view we shall avoid our present inconsistencies and afford something more than passing and temporary protection to the community.

The Economic Waste of the Smoke Nuisance.—

The money loss from unburned smoke may be estimated from an experiment made in Manchester, England, last February. At a point about three miles from the center of the city a sample of snow, which had been lying on the ground for ten days, was melted and the dry residue weighed and analyzed. It was found to be equivalent to something over ten pounds to the acre, and consisted of 48.6% carbon, 6.9% grease, and 44.5% ash. Another sample taken from near the center of the city showed about three times the amount mentioned, or nearly one ton of soot per square mile per day. The grease mixed with the soot makes it stick to the buildings or whatever else it falls upon. In Chicago the Edison Company, recognizing that "smoke is horsepower going up the chimney," has appropriated \$20,000 to carry out plans to save some of the loss it sustains in this way. In London the Coal Smoke Abatement Society is making an inquiry concerning domestic grates which promises to yield valuable results. Although financial self-interest should spur on the reform, it is generally found that law and governmental regulation are required to bring about reform. Why do not the American Women's clubs take up the subject? It is in the line of their avowed function as to National housekeeping and public health. They have the time and the ability to bring the nuisance to an end.

The Alcohol Question in Germany.—Anyone reading the report of Dr. Erich Flade¹ on the spread of the temperance movement in Germany will note with some surprise that the apocryphal remark of Tacitus, "Sie trinken immer noch eins," is no longer strictly true. There are at least three active journals devoted to the spread of temperance doctrines, one of them being the organ of the Antialcoholic League and of the Association of Abstinent Physicians of the German-speaking Countries. A modified form of local option has been adopted throughout the German empire, prohibiting the establishment of taverns and retail liquor-stores unless there is a distinct demand. Hotels with bars attached cannot be opened in towns of less than 15,000 inhabitants, unless there is a necessity for them. Towns above 15,000 have the privilege of enacting laws similarly regu-

lating the licensing of liquor-selling hotels. In some towns transfers of licenses are granted only after reopening the question of the necessity for the particular tavern. A bill has also been introduced into the Prussian Diet, prohibiting the sale of whisky before seven or eight in the morning, to persons under sixteen, to drunkards, etc. In some of the canteens of the army the sale of spirits has been entirely forbidden, as also in some of the government ordnance factories. In Bavaria, however, the consumption of beer is still on the increase, particularly in the Bavarian army. Many of the recruits drink daily from 10 to 15 liters (20 to 30 pints) of beer. Flade also refers to the experience of English assurance companies, which have adopted the custom of dividing the assured into abstinent and general. According to recent statistics the expected mortality among the former was much less than among the latter. The report contains other items of interest, but we have no space to give further details.

The season of the terrible "banquet," if it has any season, is again at hand. But what a dearth of inventiveness, what a slavish following of fashion is exhibited in the humdrum, insanitary and expensive dinners! America, it has been said, is the land of banquets, and of all banqueters the least imaginative and the most health-disregarding are said to be those of the medical variety. The poor president or toast-master must take up his dreary duty of impressing into service the tormented postprandial orators. The manufacture of after-dinner speeches and stories has become a calling, a profession in itself, in which the wit shall not be too impure, nor too witless, and whereby the desperate speakers may get through with the disagreeable duty as they best may, and then vow once more eternal renunciation. If it must be why not adopt the custom of hiring professional actors and entertainers to amuse the company after its several-hour-long feast? But must it be? Is there no variant to be devised? If none is thinkable would not the members of medical societies after sweating all day in the scientific meetings enjoy much more an evening of rest and quiet in simple social converse with chosen companions and friends? Physicians over-entertain and are over-entertained at the annual gatherings of medical societies, and the week of hard work is in reality health-wrecking for many. One of the greatest benefits of such meetings might be the leisurely chat with acquaintances, the renewal of old friendships, and the formation of new ones, with those living far away, and whom the duties of arduous practice keep years apart. The banquet by no means favors such social reunions. Why not leave our evenings more to individual choice and pleasure?

The indictment against the English nurses, to which allusion was made in our issue of May 10, has been fittingly answered in the May number of *The Nineteenth Century and After* by two writers, one a trained nurse of long experience in London hospitals. The gist of the defence is that Miss Johnston has not told the truth, or has exaggerated the truth to such a degree that it becomes entirely misleading. As to the long

¹ Hygienische Rundschau, February 15, 1902.

hours, it is pointed out that the 12 hours' working day or night is necessary unless the patient pays for three nurses a day, and that during the 12 hours the work is often easy, or often interrupted. As to overwork and broken health by the severities of the training schools, the fact is denied absolutely. The alleged dislike of the community is disproved by the fact that one hospital had over 1,000 applications for its nurses from private citizens. The ground of the complaint is deftly shifted from that of the nurse's character to that of the families in which she works. In brief this reply is that the nurse is too often treated harshly, stupidly, even as a servant, by the family. Whatever truth or error there may be in the criticism or answer as to English nurses, we think that with few exceptions affairs in our country are better than in England. As a nation we have not the hateful and silly fashion of considering as inferiors and servants every one we can possibly so classify, and we have little delight in harsh and dictatorial treatment of servants. We think we have little to complain of in our nurses, and that relief of their just complaints is coming fast.

Whistling to keep up antivivisection courage may aptly describe the proceedings of the annual meeting of the National Antivivisection Society of England. There was not a word of regret uttered at the wilful and mendacious vilification of scientific men which has been kept up for many years. There was the same stupid persistence of apparent unconsciousness of the real cruelties against animals of the meat-eaters, the hunters, and fashionables, the same repetition of the allegations of "torture," although we all know there is no torture in laboratories nowadays. There was the same frenzied "determination never to sheathe the sword," the cry of "the sacred cause" was cried many times, the comparison of themselves to antislavery martyrs was again recompared. The wild-eyed lords and ladies before going home to "elegant" meat dinners again prided themselves that they were "incorrigible," and that they were much pleased to be called "fools and fanatics." Mr. Victor Horsley, if they only could, would have been really vivisected, and with as much glee as accompanied their present expressions of hatred. The mythical medical man who testified that "he never did much good until he forgot all that vivisection had taught him," was once more said to exist, but he was, we are sorry, not brought upon the platform. He should be quizzed as to his treatment of smallpox, diphtheria, etc. What a waste of breath and of wishy-washy emotion! How clear the subconsciousness of failure!

Working Girls' Vacations.—We wonder in how many cities there are organizations similar to that excellent one in New York for aiding working girls to have a little season of rest and recuperation during the summer. This society is now at the beginning of its eighteenth year of successful work. Last year 729 girls were given vacations of about two weeks each. While it is a rule of the society to assist only those to whom a term of rest will mean renewed strength to take up their work, and though care is taken in all its benefactions, there is still

a vast army of girls who could be helped, if sufficient means were provided. The majority of the girls helped by the society give the larger portion of their wages for the support of their families, but each one pays what she can for her vacation. These amounts are usually very small and, under the circumstances, pathetic. The society has under its charge eight houses, two at Santa Clara, in the Adirondacks, where girls with a tendency toward lung troubles are sent; the other six at Grey-court, Orange county; Thompsonville, Sullivan county, and Farmington, Greens Farms, Westport, and Southport, Conn. It is an old aphorism that the prevention of disease is better than the cure. How many "break-downs" might be prevented by the admirable expedient of two weeks in the healing quiet of the country or seashore!

Nagana Serum.—The serums of animals possessing a natural immunity to a given disease is ordinarily inefficient in the treatment of that disease; but an exception has been found in the case of Nagana, the disease produced by *Trypanosoma brucei*, a flagellate hematozoon transmitted by the tsé-tsé fly or zimb (*Glossina morsitans* Westwood). A. Laveran¹ has recently reported the successful results of his experiments in search of a means to combat this disease which has done so much to retard the progress of African discovery. Contrary to expectations the serum of human beings possessing natural immunity to Nagana was found to be active in overcoming the disease in animals by destroying the *Trypanosoma*, while the serums of other animals has no parallel action; the same doses being tried with the serum of horses, swine, sheep, birds, and monkeys (*Cercopithecus*). That the power of destroying the parasite is a property of the human leukocytes is shown by the fact that the blood plasma is inactive and that heating the serum to 52° C. for one hour causes it partially to lose its activity.

Smallpox is due to overwork says Dr. Pfeiffer of himself in his statement in the first number of *Our Home Rights* issued since he has recovered from the disease. In the same defense he says that he did not expect to contract the disease by his visit to the smallpox hospital. He thought himself immune, and he wished to show that smallpox is not a contagious disease. This he still believes, despite his sad experience; and he farther says that about "5% will get the disease by coming in contact with it, or otherwise." How kind, therefore, was he to 5% of his friends when he flaunted and swished his smallpox smeared handkerchief and self before their faces! Moreover, 5% of the American people would be about 3,500,000. Universal exposure and nonvaccination therefore, according to this insane logic, would be very expensive. It is fortunate that the people have at least better logic if not better statistics. The limit of the ridiculous is an editorial quotation from "Dr. Hubbard, of East Aurora," writing in the *Medical Brief*, that he ("Dr. Hubbard") "has known persons, even clean and tidy, to contract smallpox spontaneously, although it is essentially a disease

¹ Comptes rendus hebdomadaires des séances de l'Académie des Sciences, Paris, April 1, 1902.

of filth, as nobody will deny." Quotation, quoter and quotee, together with the two "medical" journals concerned constitute the grandest American aggregation, as the circus men would say.

The market price of patent medicine testimonials, like those of any staple commodity, do not vary much. The industry of getting these "puffs" is well organized, and because of the success of pretty women, has largely drifted into their hands. The testimonial of a member of Congress or the Governor of a State is worth from \$25.00 to \$50.00, while that of a member of a state legislature is somewhat less, from \$10.00 to \$15.00. "Mayors and councilmen are steady at about \$5.00." Beauties and actresses are so anxious to have their photographs reproduced that their testimonials are comparatively cheap. Ministers, it is said, are not now of much value, as "they have been overworked" in the advertising business. Bishops, however, are still sought out. The higher the game the less is it safe to attempt direct purchase. The testimony is secured, as a rule, in such cases by wheedling and "influence." There are, however, plenty of direct purchases in the lower walks of life. Some time ago a disgusted testimonialist who had sold his glowing praises of many panaceas to many and at all prices, made a delightful exposure of the system.

EDITORIAL ECHOES

Reform in Death Certifications.—In the Massachusetts Registration Report for 1900 comment is made on alleged improvement in the registration of returns from indefinite causes, and yet in this same report it appears that 2,384 persons lost their lives in Massachusetts in that year; from such indefinite causes as atrophy and debility 1,072, cephalitis 1,215 and unknown 97, and out of these it is a significant comment that 1,449 deaths, or more than half, were those of infants under a year old. How many cases of infanticide and murder are concealed under these indefinite terms no one can tell. It is only when a score or more of persons are known to have been put out of the way beneath the green sod of the churchyard, through the agency of such persons as Robinson and Toppan, that public attention is called to the matter.—[*Boston Medical and Surgical Journal*.]

As to Boards of Health.—To the medical men and women of a community belongs unmistakably the real responsibility of seeing to it that that place has a board of health which represents the talent and energy adequate in securing for the greatest number the greatest amount of hygienic good. The possible amount of this today far outweighs in value all those considerations which usually restrict the possible services of medical officers in any community, yet the chief of these considerations are only money and a knowledge of how to use it productively for the intended purpose. The former of these no community values deliberately in comparison with its health; the latter of these the medical profession should supply. What is requisite here (as is the case with vaccination, animal experimentation, and other strenuous themes) is public enlightenment, accurate information spread widely, among the people, so that they can neither thus deceive themselves nor be deceived by others. More than almost anything else the public needs medical information of the right sort. This information it is the privilege, as well as the duty, of the physician continually and abundantly to supply.—[*Medical News*.]

BOOK REVIEWS

Anatomy Descriptive and Surgical.—By HENRY GRAY, F.R.S., Lecturer on Anatomy at St. George's Hospital, London. Thoroughly revised American, from the fifteenth English, edition. In one imperial octavo volume of 1,246 pages, with 780 illustrations. Price, with illustrations in black, cloth, \$5.50 net; leather, \$6.50 net. Price, with illustrations in colors, cloth, \$6.25 net; leather, \$7.25 net. Lea Brothers & Co., Philadelphia and New York, 1901.

The new century brings us a new edition of this standard work on human anatomy, a favorite textbook for nearly fifty years among all English-speaking medical students. This fifteenth edition shows the careful editorship of Drs. T. Pickering Pick, H.M., inspector of anatomy in England and Wales, and Robert Howden, professor of anatomy in the University of Durham, who have brought the entire work up to date and have in particular made valuable additions by text and illustration to the sections on histology and embryology, some 60 illustrations having been introduced from the works of His, Kollman, Duval and others. In the anatomic terminology a middle course has apparently been adopted, the polynomial Latin terms are mostly discarded in favor of simpler designations, but it is evident that no attempt has been made to adopt the terminology of His or Wilder or of the International Congress of Anatomists, or to employ terms of identical significance in all branches of comparative anatomy whenever possible. There is, however, no uniformity in the use of simple English expressions, as we find mid-gut and hind-gut in use, while mid-brain, hind-brain and tween-brain are omitted in favor of mesencephalon, epencephalon and thalamencephalon, while eponymic terms are used in many places where a more scientific term would have better answered the purpose: thus *Chiasma* is preferable to *Tissue of Rolando*, *Pons* to *Pons Varolii*, *Porta* to *Foramen of Monroe*, and *Torcular* to *Torcular Herophili*.

International Clinics.—A Quarterly of Illustrated Clinical Lectures and especially prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose, and Throat, and other Topics of Interest to Students and Practitioners by Leading Members of the Medical Profession throughout the World. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U.S.A., with the Collaboration of John B. Murphy, M.D., Chicago; Alexander D. Blackader, M.D., Montreal; H. C. Wood, M.D., Philadelphia; T. M. Rotch, M.D., Boston; E. Landolt, M.D., Paris; Thomas G. Morton, M.D., Philadelphia; James J. Walsh, M.D., New York; J. W. Ballantyne, M.D., Edinburgh, and John Harold, M.D., London, with Regular Correspondents in Montreal, London, Paris, Leipzig and Vienna. J. B. Lippincott Company, Philadelphia and London. Cloth, \$2.00. Vol. I, 12 Series; 84 Illustrations—3 colored plates.

This volume maintains the high standard of the series. Among the most interesting articles are biographical sketches of Drs. Weir Mitchell and John A. Wyeth, by Guy Hinsdale; The Use of Opium in Daily Practice, by Arthur V. Meigs; On the Significance of Basophilic Granules in Red Corpuscles, with Special Reference to Their Occurrence in Chronic Lead Poisoning, by Charles E. Simon; Cases of Pleurisy with More or Less Permanent Pneumonic Induration—Are They Tuberculous? by Robert H. Babcock. The Review of the Progress of Medicine During the Year 1901, by Edward Willard Watson, deserves particular mention, not only for its thoroughness and its discrimination, but for its clearness and its scientific spirit; of especial interest is the article on tuberculosis.

Transactions of the College of Physicians of Philadelphia.

The twenty-third volume of the third series of the "Transactions of the College of Physicians" has just appeared, and contains a large number of exhaustive papers on a variety of important subjects. The papers are all of such value that it would be invidious to mention any without mentioning all. An appendix contains the papers read before the various sections of the college and the Nathan L. Hatfield prize essay of Dr. H. F. Harris. The editorial work by Dr. William Zentmayer has been well done.

AMERICAN NEWS AND NOTES.

GENERAL.

Death Penalty.—Senator Howland's bill on abolition of the death penalty, substituting life imprisonment, is now before the Senate.

Reading Matter for the Blind.—Congress is now considering a bill decreeing that reading matter for the blind shall be sent through the mails free of postage.

Smallpox in the United States—as officially reported from December 28, 1901, to May 23, 1902, amounted to 34,170 cases, with 1,048 deaths. For the corresponding period of 1901 there were 24,921 cases, with 408 deaths.

Quarantine Officer for Cuba.—Dr. Eduardo F. Nuffez has been appointed chief quarantine officer for the island of Cuba. Dr. Nuffez is a graduate of the University of Pennsylvania, and was for five years a practitioner in Philadelphia.

The Antituberculous Movement.—A comprehensive statement of this subject recently presented by Dr. S. A. Knopf, of New York, shows that the work of this country does not compare favorably with what has been done in Europe where societies for the prevention of tuberculosis or for the establishment of sanatoriums exist in nearly all the countries. England has its National Association to that end, with King Edward as patron, and the Prince of Wales as president. In Germany the movement inaugurated by the Empress Augusta Victoria is supported by princes and the leading men of the empire. In France the union of 76 antituberculous societies has formed an active national federation. In Russia, Austria, Italy, Portugal, Spain, Holland, Denmark, Sweden, Norway and Japan similar work of a less extensive scope has been done. What is being done in other countries by national federation this country is attempting through a few scattered associations. They are the Pennsylvania, the Colorado, the Ohio, the Maine, the Minnesota, and the Illinois Societies for the Prevention of Tuberculosis. Besides these State associations, there exists in Baltimore a Laennec Society for the Study and Prevention of Tuberculosis; a similar one in St. Louis, composed of the alumni of the City Hospital; a Cleveland City, a Buffalo City, and Erie County (N. Y.) Association, and in New Hampshire the Suncook Association for the Prevention of Tuberculosis. There exists as yet no American or United States society for the prevention of tuberculosis.

EASTERN STATES.

Brigham Hospitals.—The Peter Brigham Hospital and the Robert B. Brigham Hospital for Incurables will soon be begun in Boston. For founding these hospitals there was bequeathed \$3,000,000 for the former and \$2,000,000 for the latter.

Positions Vacant.—Announcement has been made by Prof. W. T. Porter that three of the places offered by the Harvard Medical School to men properly qualified who are desirous of training in physiologic research and in conducting large laboratory classes in experimental physiology are still unfilled for the next collegiate year. The holders of these places are afforded excellent opportunities, and besides the acquisition of valuable scientific knowledge from association with a large staff engaged in research work. The sum of \$400 is paid annually to each assistant. Applications should be sent to Professor Porter, at the medical school, No. 688 Boylston street, Boston.

Nurses for the Insane.—At a recent meeting of the State Board of Insanity of Massachusetts, the relations of nurses to the hospitals was the chief subject of discussion. Dr. Howard, of the Massachusetts General Hospital, stated that one way of increasing the efficiency of nurses would be to eliminate the servant girl class. This had been done by lowering wages. Pupils receive \$6 per month, and there are prizes for the higher positions, some of the head nurses receiving \$50 per month. Trustee Hopkinson, of the Danvers Insane Hospital, believes in a graded system of pay for length of service. Dr. Knapp, of the Boston Insane Hospital, said that the service of male nurses had been generally unsatisfactory. He comments the employment of female nurses for male wards, male attendants being within call. The general opinion of the meeting was that better service could be obtained by making a lower rate of wages for nurses upon entering, and holding out better inducements in three or four years.

NEW YORK.

Bequest to Cancer Hospital.—Mrs. Collis P. Huntington has offered \$100,000 to the General Memorial Hospital for the treatment of cancer and allied diseases, the interest of the fund to be used in pathologic research.

Hospital Patients Sued.—Dr. George R. Fowler has instituted suits against a number of patients of hospitals of which he is visiting surgeon. The patients are those who refused to pay their bills when presented, on the ground that they were patients at the hospitals and the doctor's service must be

rendered as a servant of the institution. Dr. Fowler states that he brought the suits to stop the general imposition on physicians by persons who can and will not pay for medical attendance.

A new material for surgical dressing said to be far more absorbent than cotton or gauze was exhibited lately before the Surgical Section of the New York Academy of Medicine by Dr. Robert T. Morris. It was found in the market under the name of "sulfite laps," is a product of the action of sulfuric acid on wood and is used in paper manufacture.

An antisputting ordinance, which has been adopted by the New York Board of Health, and which becomes effective in two weeks, makes spitting upon the sidewalks or upon the floors of public halls, of tenement houses, theaters, hotels or other public buildings a misdemeanor, and the offender will be liable also to pay a penalty of \$50, recoverable in a civil action by the city. Other provisions of the new law are that all tenement owners, hotel men or theatrical managers shall have printed notices stating the law posted in prominent places, and that they shall supply sufficient cuspidors.

Alcohol Physiology in the Public School.—Professor W. O. Atwater, in an address given before the New York State Science Teachers' Association, said that pupils should not be taught that alcohol is either a food or a poison, as those words are ordinarily used. Boys know that people accustomed to moderate drinking live in excellent health to good old age. It may be said truthfully that moderate drinking is fraught with danger. Presenting "horrible examples" as a common result of drinking is illogical, contrary to right temperance doctrines, and injurious to the children so taught.

Violations of the Smoke Ordinance.—The president of the New York City Board of Health has announced the intention of that body to proceed against all persons found violating the smoke ordinance. It is believed that, owing to the impending anthracite famine, bituminous coal will be introduced into the factories, steam plants, etc., and violations will be frequent. It is claimed that the burning of soft coal without smoke consumers is a nuisance, as the atmosphere becomes charged with smoke, which causes catarrhal troubles and sore throats, and inspectors have been appointed to watch for violations of the law. A resolution adopted recently by the Central Federated Union also requests the municipal authorities to enforce strictly the ordinance against soft coal.

Hospital Without Angles.—New ideas in hospital construction have been carried out in the building for the clinic maintained by St. Bartholomew's Church, New York, opened recently for inspection. The window and exterior door frames are covered with copper, the sash and interior doors are covered with kalsomined iron, the interior door frames are of cast iron and the shelving, table tops, etc., are of stone or steel held on iron supports, so that no woodwork appears. The building above the basement is marked by the entire absence of any angles or projections. All intersections of all surfaces meet with a uniform curve; this has been carried out not only in the walls, ceilings and floors, but also on the stairs, shelf and table standards, window recesses, etc., throughout. The sash and doors are so constructed that there are no moldings or broken surfaces between the frames and glass or panels. The surface of the frame meets the glass with a feather edge, and the corners of the sash and door panels are also rounded, so there may be no lodging place for the collection of dirt or foreign matter. The angles or corners above wainscot line are run in plaster. All furniture used in the building is of steel of unusually exact workmanship after special designs and finished in white enamel.

PHILADELPHIA, PENNSYLVANIA, ETC.

A civil service examination for physicians in the Philippine service will be held in the Federal building, Philadelphia, June 17 and 18.

Bequests to Charity.—The will of J. H. Grier, Doylestown, bequeaths \$10,000 each to the Presbyterian and Hahnemann Hospitals of Philadelphia.

Women's Medical College.—At the fiftieth annual commencement, held May 21, a class of 28 received degrees. The formal address was made by Dr. W. L. Rodman.

The immigrants inspected at the port of Philadelphia during the month of April, 1902, amounted to 2,345; of these 26 were deported on account of dangerous or loathsome diseases or other physical causes.

Jefferson Medical College.—The election of Drs. Julius L. Sallinger and Thomas G. Ashton as professors of clinical medicine is announced. Both are graduates of Jefferson and have been demonstrators of clinical medicine in the college.

Municipal Hospital.—The site recommended contains 62 acres of ground, the major part of which lies in the Thirty-fifth ward about 6½ miles from the City Hall on the Oxford turnpike. The proposed price is \$115,000, and in the event of its purchase

the sum will be taken from the appropriation of \$1,200,000 to the Department of Charities and Correction for a site and the erection thereon of a new almshouse, City and Municipal Hospital.

SOUTHERN STATES.

Hospital for Consumptives of Maryland.—During the year 1901 the number of cases treated was 54, of whom 7 were cured, 16 very much improved, 16 unimproved, 15 still under treatment. This is the only hospital of the kind in the State.

Memorial to Dr. Johnston.—A plan has been formed to make the new Columbian University Hospital at Washington, D. C., a memorial to the late Dr. W. W. Johnston. The new building will be known as "The Johnston Memorial Hospital."

No Vital Statistics in Mississippi.—The discovery has been made that the State of Mississippi tabulates no records of vital statistics. The establishment of such a department, though recommended by the Board of Health, failed of sanction by the last legislature.

The Texas State Medical Association at a meeting held May 6 to 9, passed resolutions advocating State control of tuberculosis and appropriating \$200 for the publication of literature on that subject to be distributed throughout the State and the formation of a State Board of Health instead of a State Health Officer.

Surgical Building at Johns Hopkins.—A new building to cost \$100,000 is soon to be erected at the Johns Hopkins Hospital. The building will be five stories high with accident and operating rooms in the basement; Dr. Osler's dispensary, lecture rooms, etc., on second floor; Dr. Halstead's rooms on third floor, and a large amphitheater on fourth and fifth floors. The present amphitheater may be torn down.

Medical Examiners Meet.—The annual session of the North Carolina State Board of Medical Examiners will be held in Wilmington, N. C., beginning June 4, 1902. All physicians desirous of practising in the State and not previously licensed or registered are urged to present themselves at that time with credentials proving qualification in medical lore and in character as a growing disposition on the part of judges and solicitors to enforce the statutes regulating the practise of medicine in that State is noted.

WESTERN STATES.

Health of Seattle.—The report of the Department of Health for April, 1902, shows in an estimated population of 115,000 a mortality of 76, a deathrate of 7.92. There were 96 births, 46 males and 50 females; there were 4 clear days.

Chickenpox a Notifiable Disease.—The health department of Milwaukee, Wis., now requires physicians to report cases of chickenpox. This is done to control the spread of small-pox, cases of which have been treated as chickenpox.

Plague Quarantine.—At the meeting of the Colorado Board of Health, held April 14, a continuance of the bubonic plague quarantine order was decided upon. This forbids entrance into the State from any quarter of any Chinaman who fails to produce a certificate of health showing that he has not been exposed to infection from bubonic plague during the six weeks immediately preceding his arrival.

League Against Inoculable Diseases.—An organization of regular practitioners, known as the Iowa Society for the Suppression of Inoculable Diseases, has been formed with the object of devising measures to overcome the evils of venery, which it is thought can best be secured by educating men and women regarding their ability for good or evil during parenthood. The officers are: President, J. C. Shrader; vice-president, E. C. Clapp; secretary and treasurer, J. G. Mueller, all of Iowa City; traveling representative, U. S. Bayer.

Michigan College of Medicine and Surgery.—The faculty in a preliminary announcement of the opening of the fifteenth annual session, October 1, 1902, calls attention to the extensive improvements made in the buildings, equipment and entire management of the Emergency Hospital, to the institution of several new clinics—the enlargement of the laboratory courses—and to the establishment of a department devoted exclusively to the study and treatment of tropical diseases, and also to the Emergency Hospital Training School for Nurses.

The examination for internes at Cook County Hospital, Chicago, held May 1, resulted in the selection of eight men from the Northwestern University Medical School, four from Rush Medical College, and four from the College of Physicians and Surgeons. For this examination there appeared 30 from Rush Medical College, 16 from the Northwestern University Medical School, and 13 from the College of Physicians and Surgeons. The highest mark received by successful candidates was 421.6; the lowest mark, 366.2. Northwestern University Medical School secured the three highest marks.

FOREIGN NEWS AND NOTES

GENERAL.

Cholera in Egypt.—The director of the quarantine station at El Tor reported April 18 that 32 cholera patients out of 45 had died and 13 were still under medical treatment.

GREAT BRITAIN.

The King's Hospital Fund.—King Edward desires that the offerings usually tendered a ruler in honor of the coronation shall be in the form of donations to the King's Hospital fund.

Human Tuberculosis in Cattle.—The London *Times* reports that at the annual meeting of the Royal Agricultural Society the secretary, Sir Ernest Clarke, announced that tests now completed at the Royal Veterinary College in regard to the possibility of infecting cattle with human tubercle bacilli proved that bovines could be so infected and that such bacilli would multiply in bovines. The infection, however, is of a temporary nature and the risk of cattle becoming infected naturally from tuberculous human beings is very slight.

CONTINENTAL EUROPE.

Sanitary Dwellings.—The architects in the employ of the German Government are required to attend a two weeks' course of lectures on sanitary dwellings given in the Institute of Technology at Berlin and Hanover by the official chief of the architect service and by a physician, Professor Kossel. The attendance at a single course is limited to 20.

Sign of Pleurisy.—B. Przewalski, of Charkow, Russia, points out an early symptom of pleurisy with effusion which he noted in 19 cases. It consisted in a narrowing of the intercostal spaces and increased rigidity of the intercostal muscles on the affected side. It is especially marked in children and is due to abnormal contraction of the interosseous muscles analogous to the muscular contraction which occurs in joint affections.

Overcrowding of the Medical Profession in Germany.—The prospects of the average German physician are well shown in an article published in the *Aerztliche Central-Anzeiger*. The statement is made that in 1880 the census report showed an average of one physician for every 3,400 of population, while in 1900 there was one for every 2,000 persons. At present there are nearly 28,500 physicians in Germany and of these only about 6% are in the employ of the State. The remaining 94% get no pension, are not exempt from taxation, and many are obliged to pay a large rent. In future a man will have to study at least 6½ years to prepare himself to practise medicine while the average student will want a still longer time. His expenditure will be at least 12,000 marks (\$2,856) and it is pretty certain that over one-half of the practising physicians make less than 3,000 marks (\$714) a year. Such an income compares very unfavorably with the time and money spent on the study of medicine. It is estimated that the number of physicians will be increased by at least 860 yearly.

OBITUARIES.

Henri Filhol, professor of zoology in the University of Toulouse, and later of comparative anatomy in the University of Paris, and member of the Paris Academy of Medicine, aged 59.

John Vedder, of Saugerties, N. Y., May 22, aged 86. He was graduated at the Herkimer, N. Y., Medical College and was president of the New York State Antivivisection Society.

Adolph Schlernitzauer, a graduate of Washington University, St. Louis, and a successful practitioner of Millstadt, Ill., May 8, aged 64.

Sidney O. Morgan, a graduate of Western Reserve University, Cleveland, died recently at his home in Glen Ullin, North Dakota.

William Henry Andrews, of Springfield, Mass., May 19, aged 47. He was graduated from the Bellevue Medical College in 1878.

Henry Howard Hill, of Everett, Bedford Co., Pa., May 22, aged 57. He was a graduate of Jefferson Medical College, 1867.

Fr. Frusci, professor of surgical anatomy and operative surgery in the Medical Faculty of Naples.

Major John Brooke, a retired army surgeon, in Radnor, Pa., May 12, aged 72.

Dr. Bruzellus, professor of pathology and therapeutics in Stockholm.

Florian Beely, of Berlin, a prominent orthopedic surgeon, aged 55.

Dr. Robert, professor of clinical medicine in Barcelona.

Frank R. Reynolds, of Eau Claire, Wis., May 22.

Jullus Bruck, professor of dentistry in Breslau.

John C. Earle, of Easton, Md., May 17, aged 78.

James Rose, of Waynesburg, Pa., May 21.

S. R. Cochrane, of Albion, N. Y., May 25.

SOCIETY REPORTS

XX CONGRESS FOR INTERNAL MEDICINE.

WIESBADEN, APRIL 15-18, 1902.

[Specially reported for *American Medicine* by Dr. Albu, Berlin.]

[Concluded from page 854.]

SIXTH SESSION.

Ziemesen (Wiesbaden) reported on two cases of aortic aneurysm resulting from syphilis.

Experimental Investigation on the Influence of Albuminous Bodies on the Coagulation of the Blood.—Brat (Berlin). The investigations were made with a series of albumin preparations, with gelatin and with the gelatose "gluton." As the result of studies of a large number of albumin products, obtained by fermentation or by acid-hydrolysis, it was shown that these as well as gelatin and gluten act alike, in that they all prolong the time of coagulation. Brat especially maintained the incorrectness of the belief that injections of gelatin lower the time of coagulation. All of these bodies act according to the dose employed, more or less powerfully in arresting blood coagulation. They may be employed therapeutically in such doses as produce only slight alterations in coagulation time and which thereby affect the form of coagulation. The imperfect creation of the blood clot may cause a stronger adhesion to the vessel walls, and therefore under conditions of impaired power of coagulation of the blood may lead to a stronger thrombus formation than under normal conditions. Brat brought to the support of this view, first, the views of Alexander Schmidt; second, experiments of his own with gluten and control animals, and finally excessive thrombus formation in an aortic aneurysm accompanying hemophilia.

Hypnotic Remedies and Their Physiologic Action.—Koch and Fuchs (Aachen). The quick and sure action of chloral hydrate is largely due to its ready solubility, which also accounts for certain methods employed in its use. If one seeks the action of chloral hydrate in its molecular constitution it is found to rest on its being a condensation product which splits up in the organism into its components. A similar combination is found in amyhydrat, with which under certain conditions chloral hydrate forms dimethylethylcarbinolchloral or "dormiol." In experiments made on rabbits with chloral hydrate, dormiol, and a mechanical mixture of chloral and amylene hydrate, dormiol gave the slowest results.

On the Pathology of Transient Glycosuria.—Hoppe-Seyler (Keil). In speaking of the different forms of transient excretion of sugar, the idea of diabetes is usually suggested. It may, however, occur as the result of transient disturbance of the sugar converting organs. He spoke particularly of that form of transient elimination of sugar by the urine, which he had seen in 11 cases, in people who led wandering lives and were badly nourished. This "glycosuria of vagrants" disappears rapidly under a sufficiently nourishing diet. Transient elimination of sugar does not result from alcoholism, and though chronic alcoholism is present in many of these people it does not give rise to the glycosuria. It is rather to be attributed to alteration in the liver or pancreas. Hofmeister had made analogous observations on underfed dogs, and their glycosuria had disappeared with improved nourishment. V. Noorden (Frankfurt a/M.) referred to a rapidly passing "anxiety-glycosuria" observed in persons who later showed no alimentary diabetes. Stauss (Berlin) doubted that the liver had any connection with the appearance of such glycosuria. It is rather to be attributed to derangement of the pancreas. Imperfect nourishment is only a favoring condition. To this Hoppe-Seyler objected.

Hezel (Wiesbaden) reported a case of infantile central monoplegia of the facialis in a three months' old child. Lügenbuhl (Wiesbaden) offered the suggestion that it might be a congenital aphasia—that is to say, an imperfect development of the facial nucleus, such as Heubner had described.

On Venous Pulse.—Volkan (Giessen). The negative venous pulse has heretofore had no diagnostic significance, importance being attached only to the venous hepatic pulse which occurs as a regular symptom in tricuspid insufficiency. The speaker maintained that pulsation of the hepatic veins is not always systolic-positive, but as often diastolic-negative.

On Vasomotors in the Pulmonary Vessels (Pneumovasomotors). Strubell (Wien) referred to a series of experiments in the laboratory of v. Basch on the action of strophantin on the heart and the experimental demonstration of the existence of pulmonary vasomotors. Peripheral irritation of both vagi, following the injection of strophantin, allows of a lowering of the blood-pressure without a slowing of the pulse if the regulating fibers of the vagus are injured. Pressure in the left auricle is lowered while that in the pulmonary artery is increased, and the venous pressure very much increased. The fact that there is a simultaneous decrease in lung volume corresponds to the contraction of the pulmonary vessels postulated by Busch in his Pathology of Circulation. The pneumovasomotors are weak, whereby their action is masked by the regu-

latory influence of the vagus and they are evident only after paralysis of the latter.

Trophoneurotic Gangrene of the Skin.—Julius Müller (Wiesbaden). The case was that of young woman, 24 years of age, resulting from a scald on the right thigh some three years ago, since which time there has developed at five intervals about 30 gangrenous spots, which are confined to the extensor side of the right limb. The development of the affection was unusually rapid, reddening, formation of vesicles, and gangrene in a course of from seven to eight hours. A differential diagnosis of syringomyelia in view of the derangement of the nerves was not practicable.

On the Influence of Baths and Douches on the Blood-Pressure in Man.—Ottfried Müller (Leipzig). The influence of all quiescent baths on the blood-pressure is attributable to thermic irritation. There occurs in all water baths having a mean temperature of the body surface a typical curve of increased blood-pressure with a lessening of the pulse frequency, which continues throughout the entire bath. Water baths, with a mean temperature above that of the body surface up to 40° C., leads to an initial brief increase and then to a lowering of the blood-pressure below the normal, which is followed by a renewed increase in pressure. There is a decrease in the frequency of the pulse in this group of baths up to a temperature of 38° C. From that point upward an increase occurs. In water baths having a temperature above 40° C. there occurs a permanent increase of blood-pressure of typical form, as also in cold baths; only with this difference, that the pulse frequency is not diminished, but rather strongly increased. In agitated baths, also in half baths and wave baths, mechanical irritation becomes more evident according to the intensity of the movement, reaching its highest effect with douches. These produce increase of blood-pressure when of sufficient intensity, regardless of temperature. This increase is marked, but of brief duration, as in most baths.

On the Accumulative Action of Digitalis Bodies.—Frankel (Badenweiler). The investigations were carried on in the Pharmacologic Institute in Heidelberg, and were based on experiments on cats with different pure preparations of digitalis, the influence of each drug being continued for a period of several weeks. All digitalis preparations were used in gradually increased doses. At first a simple therapeutic action occurred, which finally became cumulative. Digitoxin exhibited the strongest cumulative action and is, therefore, not to be recommended for continued daily use. Digitalicum, on the other hand, is rapidly excreted and may be used in certain cases for considerable periods. Strophantin is usually more evanescent in its action than digitalis, but a preparation of strophantin recently prepared by Professor Thoms (Berlin) is particularly active and lasting. In none of the preparations was there observed any tendency to become habituated to the drug.

On Blood-Pressure in Acute Cases of Heart Strain.—Schott (Nauheim). The speaker had been able to recognize acute dilation of the heart in cases of bodily over-exertion in sound, strong men by means of Gärtner's tonometer for the examination of blood-pressure. Experiments were made on men who wrestled with each other until they were short of breath. So long as the wrestling gave rise only to a slight quickening of the pulse and breathing, the tonometer showed an elevation in blood-pressure; as soon, however, as shortness of breath appeared, accompanied by severe tachycardia or arrhythmia there appeared a very evident decrease in blood-pressure. Such diminished blood-pressure passed off as a rule in healthy individuals very quickly, but in some cases it continued for hours. These experiments throw light on the cases of chronic heart strain which have been commented upon of late, especially in connection with the increased interest in sports. According to Hoffman (Düsseldorf) arrhythmia does not indicate dilation; Cardiac dilation is not a physiologic, but rather a pathologic condition, and is not reparable.

On the Orthodiagraph and the Friction Method for Determining Dilation of the Heart.—Hornung (Schloss Marbach). The speaker declared the orthodiagraph to be untrustworthy and inadequate; on the other hand, the friction method gives reliable results. Grote (Nauheim) spoke against this method, regarding it as misleading.

SEVENTH SESSION.

The Function of the First Ribs.—Rothschild (Soden). The first ribs serve to give movement to the Manubrium sterni. The ossification of the first ribs has no influence on the capacity relations of the upper thorax. This is controlled by the movability of the sternal angles. Schmorl's groove is the result of emphysemic inflation of those portions of the lungs which lie between the ribs. The pathologic formation of a joint on the first ribs does not represent any tendency to segmentation, but rather the ossification of the connection of the rib with the body of the manubrium. The surgical separation of the first ribs from the sternum is an irrational operation; only the separation of the body from the Manubrium sterni is allowable.

The Significance of Silicic Acid in the Human Organism, and Its Relation to the Lung Tissues.—Rohden (Bad Lippspringe). In the absence of such minerals as are found in combination with silicic acid, the nitrogenous and albuminous substances of the tissues and of the blood are given over to dis-

integration, become decomposed and pass off as waste material. The silicic acid is comparable to the mortar which prevents the falling apart of the different minerals which act as the bricks of the cell-system. Silicic acid is of great importance in the maintenance of the body and of its potentialities; rendering the membranes and the elastic and fibrous tissues durable and compact; this leads to the acceptance of silicic acid as a therapeutic agent, especially for the purpose of giving to the lung tissues a greater permanency and power of resistance to disintegrating processes. Silicic acid, when in combination with basic mineral materials in neutral and assimilable form, influences favorably suppurative and phthisical processes, checking the progress by the formation of firm cicatrices and compact capsules, and changing disintegrative phthisis into a fibrous form. While all fluorin and alkaline compound with silicic acid act poisonously, Natrium silicicum purissimum (Merck), a preparation free from alkali and fluorin, may be used without danger for a considerable period. A combination that may be recommended is the neutralized mixture of silicic and carbonic acid of the alkaline calcareous chalybeate waters of Lipp Springs, which have an actively diuretic action.

On Poisoning Connected with the Dyeing of Furs with Preparations of Paraphenyldiamin.—Von Criegern (Leipzig). It occurs under the clinical aspect of bronchial asthma. Paraphenyldiamin by itself is simply irritating to the skin. The dyestuff as prepared for use is a nonpoisonous, but an intermediate product (a quinon derivative) is the active material. The poisoning runs in stages: First, an inflammation of the outer skin, then of the upper air passages, finally of the deeper. This last resembles bronchial asthma of independent origin. There are periodic attacks of dyspnea to be attributed to spasm of the bronchial muscles, there is expectoration of a typical sputum containing Leyden-Charcot's crystals, Curschmann-Unger's spirals and eosinophile cells. During the period of the poisoning there is no observable disturbance of the nervous system or of the kidneys, so that the entire process is to be regarded as a graduated superficial disease. There is no acquired immunity to the action of the poison, but rather an increased susceptibility.

Experimental Investigation on the Influence of Renal Decortication on the Electric Conductivity of the Blood.—Bickel (Göttingen). The value of the electric conductivity of a fluid is related to the amount of salts, acids, and bases contained in the given solution. The freezing point of the solution chiefly marks the amount of dissolved molecules. By determination of the conductivity and the freezing point of the blood-serum before and after extirpation of the kidney, it has been demonstrated that extirpation of the kidney does not materially change the amount of salts, acids and bases in the serum.

Osmotic Analysis of the Urine.—Steyrer (Graz). The speaker reported on the determination of the freezing point of urine, the observations being made on animals and in man, on patients with kidney affections and those with fistula of the ureter, or with only one ureter, and he presented the details of the resulting changes which took place in the molecular construction of the urine. The physical method of investigation renders chemie analysis of the urine in such cases superfluous.

On the Study of Cretinism.—Scholz (Graz). The speaker referred to the unfavorable results of the treatment of infantile cretinism with preparation of thyroid gland. There was no longitudinal growth of the bones nor any poisoning to be observed but great bodily prostration and an augmentation of spiritual apathy, together with emaciation dependent upon a loss of fat. From these unfavorable results of therapy it is seen that the view is untenable, that athyrosis is the cause of cretinism. These observations are the reverse of the favorable ones made on the treatment of myxedema by thyroid gland, both in the young and in adults. Blum (Frankfurt) lays stress on the correspondence of these observations in the experiments on man and animals as showing also that athyrosis is not influenced by thyroid gland. In myxedema it is apparently active only in that there is a diminishing of the disease deposits. Naunyn (Strasbourg) pointed out that the failures in thyroid therapy have to do with endemic cretinism, while on the contrary favorable results occur in the sporadic form. A 3 year old girl had under his observation developed from a cretin into a well-developed full-grown child. It required about 10 years of uninterrupted use of thyroid gland, and whenever the treatment was stopped retrograde symptoms immediately appeared. Kraus (Graz) had also had favorable results in the treatment of myxedema, but very bad results in cretinism.

Morphinism and Its Treatment.—Franz Müller (Godesberg). The speaker recommended in connection with psychotherapeutic procedures the avoidance of all compulsion but the bringing about a relinquishing of the habit by medical treatment, with a tea, the most important constituents of which are caffeine, cocaine, quinin and digitalis.

Serumtherapy in Basedow's Disease.—Goebel (Bielefeld). Independently of Lanz and Möbius the speaker had recommended the use of milk and serum from sheep and goats deprived of thyroid gland. Five months after the thyroidectomy, if no cachexia has followed, the milk of the goat is to be taken. One patient drank this during seven months and later received serum from the same goat. The subjective symptoms were gradually diminished, even with the use of the milk

alone. The enlargement of the heart became smaller and the pulse frequency lowered. Blumenthal (Berlin) substantiated the results of this therapy, which he had previously made public in conjunction with Burchardt. Blum (Frankfurt a/M.) recalled his work in this connection. It gives immunity not only to the free but to the combined poison of the thyroid gland. When thyrotoalbumin is no longer to be suppressed it is to be regarded as a symptom of thyroid insufficiency. The only rational line of treatment is with a serum opposed to thyrotoalbumin. The results previously reported have followed the use of a milk diet by patients after discarding flesh food.

On the Retention of the Three Stereoisomeric Mannoses in Animal Bodies.—Paul Mayer (Karlsbad). Experimental investigations as to the relation of stereoisomeric carbohydrates in the organism have as yet been worked out only for the pentoses. A study of the influence of configuration in the hexoses would be of particular interest. The present investigations, which have to do with the three mannoses, have proved that the optically active isomers hold different places as to their uses in the body. It is furthermore discovered that a part of the mannoses are transformed into glucose on the way through the organism, and that the greater of these physiologic changes depend on the configuration. Finally it has been proved that all three mannoses and the unfermentable laevomannoses are glycogen formers. From this fact it is evident that only fermentable sugars are capable of forming glycogen. The possibility that one sugar can be transformed into another, in the animal body, throws light on many heretofore dark places in the knowledge of sugar transformation. As for example, the occasional secretion of levulose, and also the appearance of milk sugar in the mammary glands. Rosenfeld (Breslau). The elimination of one kind of sugar probably exerts an influence on the elimination of another; for if one administer galactose and dextrose at the same time, a different result is obtained than if either one is administered alone; there will be no dextrose and less galactose excreted.

The Significance of Different Sugars in the Economy of the Sound and Diseased Body.—Clemen (Darmstadt). The speaker had previously pointed out that salivary digestion, if allowed to act for three days, does not give the double-sugar maltose, but forms dextrose as the end product of diastatic action. Since this he has demonstrated that the pancreasptyalins of different species of animals are not only to be distinguished by their quantitative, but also by their qualitative behavior, i. e., as regards the form of sugar which is built from starch. Bacterial action on starches also gives galactose instead of glucose, and an aldehyd of dulcitol instead of one of glucitol. Owing to the increased activity of the gastric glands during the initial stages of tuberculosis, acid-binding sugar occurs, while in advanced cases only levulose appears, owing to the lowered activity of the gastric glands.

On Suprarenal Diabetes.—F. Blum (Frankfurt a/M.). As already pointed out by Blum, the suprarenal gland contains a substance which gives rise to glycosuria if brought into the circulation in minute doses. This substance is identical with that constituent of the suprarenal which turns solutions of iron green and reduces ammoniacal solution of silver, and which also serves to increase blood-pressure. Suprarenin and adrenalin possess this sugar-producing power. A fraction of a milligram of this substance, or the contents of a single suprarenal gland, serves to give rise in a rabbit to nearly 6% of dextrose in the urine. In dogs fed exclusively on meat, 4% of grape sugar was found in the urine. The glycosuria persisted for two and three days. By continued injections of suprarenal juice true diabetes may be produced. The starting point of the sugar-producing agent of the suprarenals Blum believes to be in the liver. Hungry dogs whose glycosuric power may be regarded as exhausted excrete scarcely any dextrose after injections, but if fed on fat they begin again to give off dextrose in large quantity. There is a great probability that the suprarenals have etiologic relation to many forms of human diabetes; especially Addison's disease may be due to loss of activity in the suprarenals.

On the Mode of Glycuronic Acid Excretion.—M. Bial (Kissingen). This acid had thus far only been found in urine and blood. Bial has discovered it in normal feces, having with O. Huber easily isolated it from feces after the administration of menthol. The appearance in the blood and excretion in the urine is due to absorption. This is contrary to the theory of P. Mayer, who attributes increase in the excretion of glycuronic acid to a lowering of the bodily oxidizing power. P. Mayer (Karlsbad) maintains that because glycuronic acid is absorbed the fact is not altered that it may be a product of the incomplete oxidation of sugar.

On Phloridzin Diabetes and Alimentary Glycosuria.—Vogt (Strasbourg I.E.). In animals which have received large intravenous injections of glucose, phloridzin calls forth an increased secretion of sugar. That it has an influence on the kidneys is also demonstrated by the alteration in the excretion of water and of salts; diuresis with changes in the freezing point of the urine. In intravenous injections of cane sugar its excretion as such is increased by phloridzin.

On Traumatic Falling of the Kidney.—Lennhoff (Berlin). Injuries of various kinds lead to falling of the kidney. A rare cause is great muscular strain of the entire body, such as a sudden backward bending.

TEXAS MEDICAL ASSOCIATION.

THIRTY-FOURTH ANNUAL MEETING, HELD AT DALLAS, TEXAS, MAY 6, 7 AND 8, 1902.

An address of welcome was delivered by the Mayor of Dallas, and afterward the Governor of the State, speaking as the son of a physician and a State official, promised to do all in his power by amendments to the law to put the profession in the State on a higher level.

The secretary reported that there was 373 members on the roll, and 175 more were added during the meeting. The Board of Examiners reported that over 1,000 practitioners had enrolled themselves last year, while the treasurer reported a balance of about \$2,000 in the treasury.

In executive session the main business was the consideration of reports from a committee appointed to consider the question of a revision of the constitution and by-laws, and it was finally decided to leave the whole question over for another year. It was the idea of the minority report to follow the plan suggested by the American Medical Association—that all members of affiliated societies should belong to the State Association.

On the Treatment of Tuberculosis.—J. W. Scott (Houston). After remarking that no specific for tuberculosis has been found, the speaker said that considerable progress had been made, and doctors now approached a case of tuberculosis with more hopefulness as to results than ever they had done before. The State of Texas had done its best to protect its citizens from yellow fever, but had altogether neglected to take precautions against the infinitely greater and more deadly infection of tuberculosis. He hoped that in the future the authorities would not forget the presence in their midst of a far more malignant plague than could be imported from abroad.

The Poisonous Snakes and Spiders of Texas.—H. W. Crouse gave the results of a long series of experiments, the idea being to furnish the general practitioner with a handy means of distinguishing the bites of different species and thus being in a position to apply the requisite remedies. Permanganate of potassium injected locally and also administered by the mouth; strychnin, small doses of alcohol, and rest were the remedies recommended. Alcohol was considered useful only in conjunction with other remedies.

Pneumonia.—R. W. Knox (Houston). The speaker referred to the iconoclastic nature of the present day research. While the pneumococcus does not comply with all Koch's rules as to causative agents of disease, its invariable presence in pneumonia and its other features caused it to hold a high place as an etiologic factor. The etiology and symptomatology of the disease was treated in a paper by Dr. S. C. Red (Houston) who remarked that while the diagnosis was generally sufficiently simple, there were cases in which pneumonitis could not easily be recognized, and so it was desirable in some cases to make a close examination of the chest. Dr. R. T. Morris (Houston) read a paper on treatment, in which he said that the study of the rise and fall of specifics led him to be careful how he accepted all that had been said in favor of the latest remedy, creosote. After referring to the use of quinin, etc., he said he could not recommend any one as preferable to the old-fashioned therapy with which all were familiar. With robust patients he recommended depletion at the outset, calomel and soda, 5 grains each, followed by magnesia sulfate, morphin, pleasant surroundings, agreeable temperature, pure air, dry cold to chest, followed by tepid baths if necessary. In the discussion which followed, Dr. T. B. Armstrong advocated the use of carbonate of creosote, while Dr. W. S. McKnight (Mansfield) said that after experimenting with creosote he did not consider it a specific. Dr. S. H. Stout (Dallas) did not look for specific remedies. Dr. R. H. Rush (DeLeon) thought it was absurd to suppose that one remedy was suitable for all stages of the disease, and Dr. F. B. Shields (Victoria) said he had found eucalyptol with carbonate of ammonia useful in shortening the duration of the disease. Dr. Red replied, criticising the loose character of the reports which had been made regarding creosote, and Dr. Morris agreed that caution was necessary in accepting the wonderful reports received concerning specifics.

Rheumatism.—J. H. McCracken (Mineral Wells). The use of alkaline diuretics, plenty of water and saline purges was advocated. The salicylates should be used in chronic cases so long as there was evidence of infection. Afterward the iodids should be used with the alkaline eliminative treatment, hot baths, massage and electricity.

Achlorhydriagastica.—J. W. McLaughlin and S. M. Morris (Galveston). More attention should be given to the examination of the contents of the stomach.

Neurasthenia and Allied Conditions.—Dr. H. A. West (Galveston). The speaker gave an account of eight cases in which there were good results from the use of glycerophosphates in conjunction with other remedies. He thought they were deserving of a trial in cases of sexual debility and functional impotence, premature senility and debility consequent on typhoid fever, dengue, influenza, etc.

Other papers: **The Origin of Sensation and Thought** from an embryologic point of view, by Dr. J. M. Wort (Paris); **A Comparative Study of the Value of Methylene Blue and Quinin** in the treatment of malarial fever, by Dr. John T. Moore (Galveston); **Influenza**, by Dr. J. R. Nicholls (Terrell);

The Deaf and Blind and What Texas Does for Them, by Dr. M. H. Smoth (Austin); **The Action and Uses of Digitalis**, S. E. Hudson (Austin); **Typhoid Fever**, by Dr. S. T. Turner (El Paso).

Dr. J. M. Frazier (Belton) presided over the Section devoted to Obstetrics and Diseases of Children, and in his opening address spoke of the progress that had been made lately, chiefly through the introduction of antiseptic precautions, with women in labor and the use of antitoxin in diphtheria. In the discussion Dr. Taylor Hudson (Belton) advocated the paying of greater attention to children's eyes at the time of birth. Dr. W. H. Moore (Runge) discussed the treatment of the umbilical cord. Dr. C. E. Cantrell (Greenville) said that if the gelatinous matter were squeezed out of the umbilical cord the cord would take care of itself. Dr. A. B. Gardner (Bellview) favored the use of forceps in delayed delivery. Dr. W. B. McKnight (Mansfield) thought the use of forceps was never justified so long as the head would recede after a pain. Papers in this section were also read by Drs. J. F. Y. Paine (Galveston), W. H. Munday (Terrell), and B. F. Kingsley (San Antonio).

In the Surgical Section Dr. Emory Lamphear (St. Louis), by invitation, read a paper on **Fever of the Puerperal State From a Surgical Standpoint**, in which he claimed that puerperal fever was no longer known in hospital practice, owing to the application of surgical principles to obstetric practice. In many instances outside of this the deathrate was appalling owing to the unfamiliarity with the various causes of the fever; inappreciation of the true meaning of the term sepsis, gross carelessness, meddlesome interference with a natural process, and the spread of venereal diseases. The speaker classified the different kinds of infection under ten heads and indicated the treatment for each. He was especially severe on those physicians who thought they had fulfilled all the requirements of modern science if they washed the patient's vulva with soap and water and perhaps dashed a little carbolyzed water over the external genitals.

Dr. James P. Tuttle (New York) conducted a clinic and delivered an address on the **Treatment of Hemorrhoids**, and papers were read by Dr. James E. Thompson (Galveston) and Dr. F. B. Shields (Victoria).

In the Section of Medical Jurisprudence, papers were read on **Insanity** by Drs. Martin L. Graves (San Antonio), John L. Turner (Terrell), C. H. Moody (San Antonio), and U. S. Lankford (San Antonio). The latter referred to the effect of the multiplicity of school tasks on tender brains. Dr. R. B. Sellers (San Antonio) presented a paper on **The Physician as an Expert Witness**, and Dr. Charles P. Bancroft (Concord, N. H.) spoke on **Subconscious Homicide and Suicide**.

Dr. W. S. Carter (Galveston) submitted a report from a committee appointed last year to consider the possibility of securing uniform action to prevent the spread of tuberculosis in Texas. Dr. Frank Paschal (San Antonio) showed that tuberculosis had been increasing during the last 30 years in that city, and at a particularly rapid rate since the city became a health resort. The additional deathrate was not due to the mortality among visitors. It was therefore necessary, he concludes, to introduce restrictions to prevent the reckless immigration of tuberculous subjects. It was essential that uniform action should be taken to stop the spread of this deadliest of all infections. After discussion it was decided to spend \$200 to distribute literature as to the means that should be taken to guard against the spread of the infection.

The following officers were elected for the coming year: President, Dr. S. C. Red (Houston); vice-presidents, Dr. J. E. Thompson (Galveston), Dr. J. E. Gilchreest (Gainsville), Dr. H. K. Leake (Dallas); secretary, Dr. H. A. West (Galveston); treasurer, Dr. R. F. Miller (Sherman); orator, Dr. M. L. Graves (San Antonio). Dr. West was appointed delegate to the American Medical Association's meeting at Saratoga Springs. It was decided to invite the American Medical Association to hold its next meeting at San Antonio, Texas.

Cancer Research.—Mr. J. K. Caird, who three years ago contributed largely to the Dundee Royal Infirmary, has offered to build an addition to the hospital for the treatment of patients suffering from cancer, and to defray the expense of a five years' research in the subject. The estimated cost of the addition, which provides 114 beds, is £18,500, and the research fund is £5,000.

Victoria Memorial.—The proposition to erect a cottage hospital as a Victoria memorial at Nice is warmly supported by the English and American residents there, who lately held a public meeting for furtherance of the establishment of several cottage hospitals where English-speaking patients of whatever creed can be treated by the best and most sanitary conditions by English-speaking attendants and well-trained nurses. The plans include an operating room, a surgical ward, a lying-in ward and an isolated pavilion for cases of infectious disease. A certain number of free beds would constitute the memorial. Sad instances were cited at the meeting showing the urgent need of such an institution and the presence of smallpox on the Riviera and the difficulty of treating patients suffering from it in the hotels were discussed. Hopes are entertained that £10,000 will be raised, and work will be begun as soon as £4,000 are in hand, of which £1,500 have been collected.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

SEVERAL POINTS IN PRACTICE.

BY

L. D. SHEETS, M.D.,
of Bloomfield, N. J.

To the Editor of *American Medicine*:—It seems to me a brief narration of practical points is what most readers of medical journals want. This is especially the case with those who are very busy and have not time to devote to the reading of lengthy articles. Much valuable knowledge not found in textbooks is gained from experience, and ought to be communicated for the benefit of others, especially young practitioners. With this object in view I am reminded of several points in articles in late numbers of *American Medicine*, and give my experience for what it is worth. It is the everyday occurrences which interest us most, and it is profitable for us and our patients that we should be well prepared for cases that we see frequently.

In your review of gynecology and obstetrics, in an article on diagnosis and treatment of metritis, by Dr. Campbell, the following sentence occurs: "No man's finger is long enough to clear out an aborting uterus."

In 1859 I published an article in the *Cincinnati Lancet and Observer* on the subject of abortions, in which I stated that the finger is the best and safest instrument to remove the secundines. A reviewer of my article took the same ground as Dr. Campbell, and drew me into a considerable controversy.

I have used my finger many times with immediate relief to hemorrhage. My method is to push the uterus as far down in the pelvis as possible, and then introduce the finger. If the finger be too short introduce the whole hand into the vagina, and then with the forefinger in the uterus you can sweep its whole internal surface and scrape off any secundines that may be adhering. The os is usually patulous, and there is no trouble about inserting the finger, and you know precisely what you are doing.

A few years ago I saw the same proceeding recommended by Professor Nathan, of Louisville, Ky.

In your Book Reviews of March 8, the one on *Surgical Experiences in South Africa*, by Dr. Makins, points out the fact that wounds of the intestinal area very often traversed the abdomen without perforating the bowels.

I had such a case in my division of the Fifth corps field hospital, Army of the Potomac, in 1865. A soldier had a bullet wound which penetrated the abdomen a little below the left extremity of the stomach, passed obliquely through the abdominal cavity and lodged in one of the lumbar vertebrae. The patient lived some 10 or 12 days (I am writing this from memory and cannot be more precise), and I was beginning to think he would recover, but suddenly he died from peritonitis, if I remember rightly.

On postmortem, which we seldom made then, we found the bullet lodged in a lumbar vertebra, which it had fractured, and that it had cut off a considerable portion of the ascending vena cava; but it had not perforated any of the intestines. I published the case in the *Philadelphia Medical and Surgical Reporter*, a journal furnished us by the government.

In the same issue of *American Medicine* of March 8, in an article by Dr. Sinexon, of Philadelphia, on "Diseases of Nose and Throat," he speaks of the habit of young children in inserting foreign bodies in the nose, and of the great difficulty sometimes in removing them, especially when pushed far back toward the choana. I have encountered my share of these cases, and for many years have used nothing for their removal but the ear-spoon end of a common director. I have removed beans, buttons, gravel and metallic substances from the nose and ear without any great difficulty by means of this instrument.

One of the most difficult cases I ever had was that of a child who picked a piece of metal, something like an eyelet, from a

sewing machine, and put it in his nose. The parents, in attempting to remove it, only increased the trouble by pushing it farther in. It was out of sight when I was called, but I could feel it by probing. Its removal caused some hemorrhage, which often occurs, as the Schneiderian membrane bleeds very easily, but it soon ceases.

In your issue of April 5, 1902, there is an article on the "Surgical Uses of the Hairpin," by Dr. J. Torrance Rugh, in which he recommends the hairpin for removing foreign bodies from the nose and ear. I saw it tried once by a professional brother for this purpose, and it was such a dismal failure I resolved never to use it. Instead of extracting the substance, he pushed it nearly out of sight. I was sent for and offered him my director, which he declined, with the request that I should use it, which I did successfully.

One might suppose it would be difficult to get the spoon behind a foreign body in the nose or ear, but I have never found it so. When introducing the spoon, crowd it away, laterally, from the substance you wish to remove as much as possible while you are pushing it in to get behind the body to be removed, and don't be afraid you will push the body out of your reach.

RECIPROCITY IN MEDICAL LICENSURE.

BY

SAMUEL A. FISK, A.M., M.D.,
of Denver, Col.

At the outset we must recognize the fact, that while the Federal Government is given the right, by the Constitution, to regulate commerce between States, she has no jurisdiction within States, and that she cannot even touch the requirements for medical practice between States, as this is a matter of State's rights, and could only be reached by a constitutional amendment; so that at the very start any idea of uniformity of action by means of federal interference must be eliminated.

That there is need of some uniformity of action between States must, I think, be conceded. In every walk of life men change their location. We have simply to note that ex-President Cleveland only recently took up his residence in Princeton, or the Hon. Thomas B. Reed in New York, or that most of the bishops of the Episcopal church come from without their dioceses, or that the senior Flint or Marian Sims did not always live in New York, nor Osler in Baltimore to illustrate this point.

But today, if an M.D. changes his place of abode from one State to another, he comes plump up against the medical law of the State to which he moves, and this means in most instances that he has to be subjected to an examination by the State Board, often a mixed board, *i. e.*, composed of regulars, homeopaths and eclectics, who give him 10 questions to answer in writing on subjects in embryology, toxicology, chemistry—to say nothing of anatomy and physiology, and require that his average marking on the whole examination should be 75%. The questions asked are often purely technical and only to be answered by those fresh from their books. This requires a system of *cramming* on the part of the applicant, not for the sake of acquiring information, but simply to pass an examination, to comply with a form, and, as in all cramming, indigestion is likely to be produced and a clearing out of the offending matter results.

The position is an immoderate one on the part of the State and calculated to do serious harm. It is said to aim at protection of the people and at the same time exception is made of clairvoyants, midwives, faith-healers, etc., provided they do not pose as being an M.D. That is, it is a disadvantage, in the eyes of the law, to possess a medical diploma. We cannot help but wonder, too, if the examination is not often conducted with an eye to keeping out those who apply, *i. e.*, whether this legislation is not really class legislation. Thus a great injustice may be done to an American citizen. This is no imaginary thing, but it may become, in individual cases, a vital, intense, bread-winning matter. Some MacLure of the hills, through his very strenuous life, his devotion to his people and his work, may from exposure and overwork break down and contract tuberculosis. It happens to thousands of others, with lesser provocation, and

why should it not come to him? He would advise a patient to seek a change of location, but he himself cannot do so. He has spent his life in acquiring a special knowledge which unfits him for everything else, and this he cannot use, because, forsooth, of that examination. He has not been able to lay by any money for this rainy day, or at least not sufficient, for there is the wife and children to be considered. And so he must stick it out and die in his tracks. Or even if he is brave enough to try for the examination, he is rusty, he is many years away from his school days; his mind has grown unaccustomed to that kind of cramming; he is wasting valuable time and energy. It may be only to fail at last, and he is likely to do so if the examination is more than a form and a general average of 75% is required. He is denied the right of a man to earn his own bread, which he is eminently fitted to do; to beg he is ashamed, and so, like Goldsmith's girl, the only course open to him "is—to die."

Or, to take another case, and this a real and not an imaginary one. A man with a Yale A.B., A.M. and a Harvard M.D. sent to this altitude for pulmonary tuberculosis at last succumbs to the strain, and has a nervous breakdown. He is better off at sea-level. Indeed, it is a question whether he can live and do his work at this elevation. He is confronted with a condition and not a theory. He applies for permission to practice medicine at both seaboards, the Atlantic and the Pacific, and in both instances is told that he must stand that examination. No consideration is shown to his record. He has been admitted to the Massachusetts General Hospital in Boston. He is connected with local, State and American medical societies, besides other national associations, *e. g.*, the Academy of Medicine, the Physicians, the Climatological, etc. He has been active in his community; has served on the staff of the local hospitals for years; has for years identified himself with medical instruction; and has been honored with the presidency of his State Medical Society and with the chairmanship of a prominent section of the A. M. A. But this is no good to him. He must stand an examination like the simplest tyro from the schools and stand an unequal chance. And why unequal? Simply because the former is fresh from his books while the latter put behind him, with his algebra and trigonometry, these special branches years ago. His knowledge has become specialized. He hasn't dissected or performed a surgical operation, nor a chemic reaction for years and years. He did this all once under Harvard instruction, but, as has been said, he put it aside with other subjects and hoped never to have another examination until at the Last Day. His mind has grown accustomed to act in other channels than in the simple memorizing. He is as able to treat a typhoid, or a pneumonia, or a case of rheumatism, or consumption, as successfully as the man just from the schools, but equal him in an examination—never.

We are told that the individual must suffer that the masses may be protected. Is this the absolute truth?

Why doesn't he take his medicine like a little man and say nothing about it? He probably will have to take it anyway. But there are others, a very large percentage of others, and the principle remains. It may be asked, properly or insolently, what are you going to do about it?

If the present system is a faulty one, the evil must be remedied by combined, integral action, that is of the several States, for the Federal Government is helpless. *Reciprocity in Medical Licensure* seems to be the remedy. Let an initial examination be held, and after that let the several States be courteous to one another, and not boorish and repellant. Establish a standard which, once attained, is good for all time and all the States. But it will be argued that this is impossible. Can it be that the physicians of this country through their local, State and national organizations; through the American Medical Association, the Academy, the Association of Medical Colleges, the Association of State Boards of Medical Examiners, and other associations, cannot effect a change if they really mean to? Then are they indeed hoist with their own petard. What this reciprocity may be was the subject of discussion of the Academy of Medicine at its St. Paul meeting a year ago, and a full report is given in its bulletin.

CAUSE OF APPENDICITIS.

BY

A. NOEL SMITH, M.D.,

of Dover, N. H.

To the Editor of American Medicine:—For several months I have held the belief that appendicitis is caused by a specific bacterial element of some nature, and I have thus expressed myself to others from time to time. Upon no other hypothesis could I account for the rapid increase in frequency of the disease. Inability to diagnose cases in the previous generation will not cover all the errors, as the appendix cases now far outnumber the abdominal inflammations which occurred then.

I am pleased to note that Dr. Mitchnikoff is advancing the specific theory. Indeed, it is so stated in the daily press, which further adds: *The Philadelphia Medical Journal*, in reviewing the subject, says "the theory is the most plausible one yet advanced."

I trust the bacillus which is to blame may soon be identified and described, and a treatment devised to prevent a condition which at present requires the knife to remedy.

I have contended that if the bacillus of Eberth invades and causes characteristic lesions of the intestinal and mesenteric glands in typhoid fever, there is no reason why a special bacillus cannot and does not produce its own characteristic lesion in the appendix.

APPENDICITIS.¹

BY

B. MERRILL RICKETTS, PH.B., M.D.,

of Cincinnati, Ohio.

Reference was made to the ligation of the appendix by W. W. Grant on January 4, 1889; also to Dr. Morton's removal of the appendix, February 21, 1887; C. B. Stemen's case of appendicectomy, April 22, 1887; Dr. Morton's second case, April 23, 1887; H. B. Sands' case, December 30, 1887; Charles McBurney's, May 23, 1888, and J. B. Murphy's, March 3, 1889. The removal of the appendix was designed and accomplished in five of the seven cases reported from January 4, 1885, to March 3, 1889, with recovery of all and the two in which the appendix was not removed. Dr. Morton is given the credit of having first removed the appendix.

A case of a cowboy is reported in which the patient himself opened an appendicular abscess with a dagger, recovery ensuing. Appendicular surgery is given credit for having greatly influenced and given encouragement to surgeons in operating the typhoid perforation, which has now become an established surgical procedure.

Removal of the appendix through a lumbar incision can never become ideal.

Four classifications of pus are given:

1. Intra-appendicular;
2. Peri-appendicular;
3. General peritoneal;
4. Retrocecal,

in order of supposed frequency. Drainage in the first is not to be considered; removal of the appendix and closure of the belly wall being all that is necessary. The second is more complicated and diversified in character. It is highly probable that the cases of this class requiring drainage are limited to those in which there is a perforation of the gut or the appendix itself, or both, especially the former, and the latter, too, if not removed when perforated. There are a certain number of cases of rupture of the appendix in which closure without drainage would be appropriate. This is probably true of direct perforation into the intestinal cavity as well. The third class (general) may be the result of any of the other three types, with or without perforation, usually perforation of the appendix, or gut, or both, is present. It is this class of cases which frequently terminate fatally. Seventy per cent. of the author's deaths

¹Author's abstract of a paper read before Ohio State Pediatric Society, Toledo, May 27, 28 and 29, 1902.

being in this class of cases, while the inflammatory process may be general the pus may be localized or general.

The fourth class includes all retroperitoneal abscesses and is less frequent than any of the three preceding types. There may or may not be perforation of the cecum or appendix, or both. Rupture of abscess may be into gut, general peritoneal cavity, pleural cavity, lung, or all, or it may rupture externally at almost any part of the body from the shoulder to the knee, or into the vagina or rectum. This is the most difficult to drain. Pus is usually very offensive and must be subject to constant drainage; 30% of writer's deaths in appendicectomies have in this class, no doubt, been due to imperfect drainage. A more perfect system of drainage in this class is desired. The so-called flank drainage appears ideal, but as yet no perfect method has been inaugurated—one that will give perfect and lasting drainage, things that are absolutely necessary for a successful termination of such cases.

Drainage tubes, gauze, and the various substances for drainage, should be discontinued in a great majority of pus cases, if not in all. They are foreign bodies and are known to be more or less objectionable.

Phagocytosis is the probable ground on which to base any hope for the discontinuance of the use of tubes, gauze, and the various substances so frequently used.

If this theory is correct, and the evidence is rapidly accumulating to substantiate it being so, the fact should become more generally known and the method of its application better understood. Pus in all cases should not be subjected to phagocytes, neither should pus in all cases be removed by drainage.

If opening the abdominal cavity, together with removal of fluid and immediate closure of the cavity, in tubercular peritonitis is all that is necessary to cure it, why shouldn't the peritoneum (being nothing more or less than a lymphatic gland) be able to absorb and destroy bacteria, as suggested by Metchnikoff? To phagocytosis must we look for a more radical method of dealing with certain types of pus within the peritoneal cavity. Robinson, who is frequently quoted, believes that fluids enter the interstitial spaces, and secondly the bloodvessels; that the chief factors are osmosis, filtration, stomata and inhibition, and that the lymphatic channels are the real drains or depletors of the interstitial spaces, the sewers.

A METHOD OF OBTAINING RECIPROCITY IN MEDICAL LICENSURE.

BY

W. L. RODMAN, M.D.,
of Philadelphia.

To the Editor of *American Medicine*:—I have read your series of able editorials in *American Medicine*, issue of May 24, with interest. You favor reciprocity; so do I, and my plan is the most practicable method of obtaining it. Having myself been compelled to undergo an examination four years ago when I removed to Philadelphia, it has been my endeavor ever since to do something to give relief to others making a similar change. I wish to say very plainly that I have no criticism for the Pennsylvania State Board of Examiners for having compelled me to submit to an examination before granting a license, as they had no discretion in the matter. The law is mandatory and not sufficiently elastic to admit of exceptions. Our board has done excellent work, and no one gives it greater credit than I do.

My plan for a Voluntary National Board, good as it is for the recent graduates, is much better, and was intended more for the relief of practitioners of merit who may wish, for various reasons, to change their location or secure a license to practise in more than one State. Many physicians practise one place in winter and another in summer.

Such a board as I advocate is to give both theoretical and practical examinations and to have discretionary power as to which shall be the more prominent feature. In case of a recent graduate a theoretic examination must be given; but if the applicant be a practitioner, his examination should be largely clinical and practical in the wards of a hospital, supplemented,

if need be, by operative work upon the cadaver. In case of specialists the examinations may properly be largely in the specialty that the candidate may wish to follow. Every one offering his services to the public should at the present time be willing to submit to a fair and reasonable examination. State Boards, as at present constituted by law, have no discretion; a Voluntary National Board can have. State Boards can, however, legally recognize boards with a standard equal or superior to their own. Such a board as I advocate will have a standard at least equal to that of any State Board and can, therefore, be recognized by all of them.

This will make reciprocity both attainable and easy.

Under the present plan, with more than 50 State and Territorial Boards—each with a different standard—reciprocity is, I maintain, impossible. It cannot be based upon equity. It is manifestly unfair to ask a State Board with a high standard to accept without question the license of a board of low standard. All can recognize a National Board of high standard.

There can be no reasonable doubt that all practitioners would prefer such an examination as I advocate, but only a limited number of recent graduates would elect to appear before such a board. It is, I repeat, better for the practitioner, and was intended as much to give him necessary relief as to advance the cause of higher medical education.

THE ORIGIN OF THE ORIENTAL BATH.

To the Editor of *American Medicine*:—The interesting letter of Professor Wood in your issue of May 3 makes it clear: (1) That the hot vapor or steam bath is the only one that may properly be called Russian; (2) that the Turkish and the Oriental bath generally is by means of moist heat alone; (3) that the use of heated dry air is neither Turkish, nor Russian, nor Oriental; and why? The fact narrated by Dr. Wood concerning the shaving of the hair by the Egyptian and other Oriental nations gives us a clue. To some of the Oriental peoples this bath was, in its origin, a method of ridding the body of the long-time accumulation of dirt. Not even hot water would do this without soap, and soap, we must remember, is a modern invention. Of what use would dry heat be in loosening the concretions of months, or of a season, or of years? For this steam or moist heat would be required, and hence we find almost all primitive peoples emerging from barbarism have the steam bath in some form or other. A friend who has had considerable to do with bathhouses in the slums tells me that there is a class of Oriental people, especially women, who being denied the steam bath, will almost literally boil themselves for a long time in water so hot that no other human being could endure immersion of the hand in it. They will lie in almost boiling water as long as permitted and emerge with skins scarlet red in color. For filthy people who rid themselves of dirt only once in a year or more, hot steam or vapor baths and shaving of the body are doubtless most advisable; but for those who keep their bodies clean with a daily sponge-bath or tub-bath, the dry heated air-bath is a bad and stupid perversion of Orientalism, while the moist hot or steam-bath is a useless imitation. Either form is an insult to the skin and to the system of which the clean and civilized Caucasian should beware.

DERMATOLOGIST.

THE BITE OF THE COMMON HOUSE FLY.

To the Editor of *American Medicine*:—Referring to your editorial note on page 715 of your issue of May 3, "The Bite of the Common House Fly," in which you truly state that the house fly (*Musca domestica*) does not bite, permit me to say that I happen to know that the original report relative to the transmission of surra through the bite of the fly stated that the insect concerned was the *horse* fly. This a perverse typesetter evidently caused its appearance in print as *house* fly. This makes one think of the occasion when a reference was made to a certain estimable gentleman: "He owns half the town," and the printer made it read "He owes half the town."

In the present instance the change of a single letter has caused a most valuable scientific discovery to masquerade as a scientific absurdity.

M.

ORIGINAL ARTICLES

REPORT OF THE PRESENCE OF ANGUILLULA ACETI
IN THE URINE OF TWO PATIENTS MISTAKEN
FOR STRONGYLOIDES INTESTINALIS.*

BY

FRANK BILLINGS, M.D.,

AND

JOSEPH L. MILLER, M.D.,

of Chicago.

About three years ago an opportunity occurred to examine a specimen of urine in which the diagnosis of filariasis had been made, based on the presence of a nematode in the urine, which resembled somewhat *Filaria sanguinis hominis*. The physician in attendance reported that the patient had suffered for a considerable time with symptoms pointing to irritation of the urinary tract, hematuria, and frequent micturition. Other symptoms were slight edema of the legs and moderate drowsiness. The physician noticed macroscopically, in the specimens of urine which the patient brought, a number of small, very actively motile worms which on microscopic examination he considered filaria. Otherwise nothing pathologic was detected in the urine. It was alkaline in reaction, free from albumin and sugar, and was not chylous. Although repeated subsequent examinations were made, they were all negative, as the worms were only found in the one specimen.

The blood of the patient was carefully examined for filaria with negative results.

At the time the urine was received only a cursory examination was made, and a few permanent microscopic slides were prepared for future reference. An examination of these a few weeks later proved that the nematode present was not the filaria. A few of the smaller worms present were only slightly longer than the filaria. Many were found, however, 1 mm. in length, which is two or three times the length of the filaria embryos. The characteristic sheath of the filaria was absent. The mouth, shape of the head and gradually tapering posterior extremity did not correspond with these parts in the filaria. They conformed, however, both in size and structure with another parasitic worm—*Anguillula stercoralis*, or *intestinalis*. The peculiar pharynx, esophagus and stomach, and characteristic hooks of the male stamped it as a member at least of this family.

A few weeks later the urine was examined microscopically from a second patient, a lady, in which a similar nematode was found, and in which the probable diagnosis of filariasis had been made. In this case, also, the urine had been collected in a bottle previous to the examination.

Normand first discovered *A. stercoralis* in the stools of patients who had contracted diarrhea in Cochin China. Since then they have been found associated with diarrhea in various parts of the world, in Switzerland, Germany, Russia, Manila and Brazil. Strong recently reported the first case in North America, and Thayer¹ reports two cases, one of which at least must have originated in this country. The other patient was an Austrian who had lived in America six years.

This nematode is referred to in the literature under various synonymous terms as *Anguillula intestinalis*, *Strongyloides intestinalis*, *Rhabditis stercoralis*, *Leptodera stercoralis*, *Leptodera intestinalis*, *Rhabdonoma strongyloides* and *Rhabdonoma intestinalis*. Those wishing a full description, with literature, should consult Dr. Strong's² article or the article by Dr. Thayer, previously referred to. In the following description, only a few of the more essential points will be considered.

The *A. stercoralis* and *A. intestinalis* were described as distinct species until Leuchart, in 1882, demonstrated that the former was the free form, the latter the parasitic form of the same species. Its etiologic relation to the diarrhea has not yet been fully established, although from the researches of Strong and others their ability to cause pathologic changes in the mucous membrane of the intestine must be admitted. The free forms are found in the stools; the parasitic forms and ova in the intestines, the parasites being sometimes found in the crypts of Lieberkuhn, where they cause atrophy of the epithelial cells and often slight round cell infiltration. The two forms can better be described separately on account of their differences in size.

The free forms found in the feces are 0.3–0.6 mm. in length, 0.016–0.022 mm. wide. Placed in the incubator they molt, increasing in size, the mature males reaching 0.75–1. mm. in length, by 0.04–0.06 mm. in breadth; the female 1.–1.4 mm. by 0.075 mm. The head is rounded, the mouth surrounded by four papillae. The

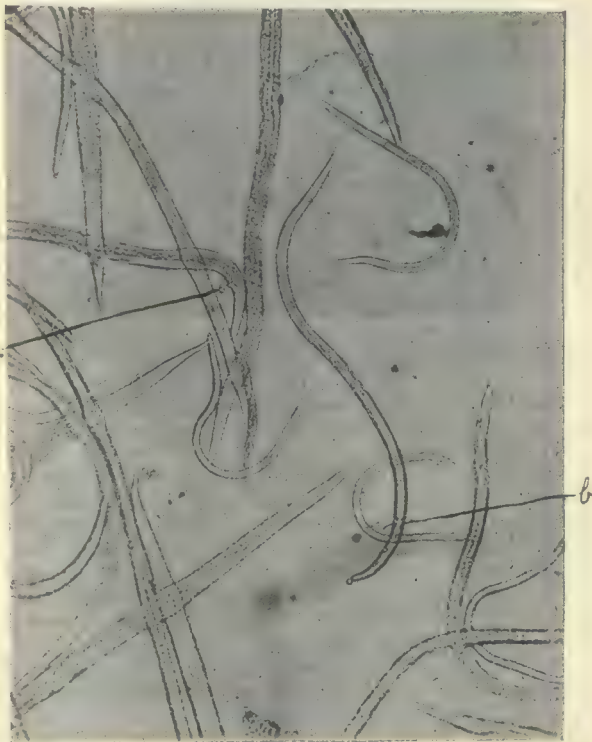


PLATE I.—Magnified 60 times. Vinegar eels: (a) protruded hooks of male showing fan-shaped accessory piece; (b) top-shaped esophageal enlargement.

esophagus presents two enlargements connected by a narrow constricted portion. The second enlargement is top-shaped, and contains three chitinous teeth arranged like the letter "Y." Continuous with this second enlargement or stomach are the intestines, which terminate at the anal opening near the posterior extremity. The males have a pair of double curved hooks in the anal region used in copulation. The female sexual orifice is at the junction of the posterior with the middle third of the body. Ellipsoid ova, 0.17 mm. by 0.045 mm. and also at times free embryos can be seen in the uterus.

The females of the parasitic forms are much larger and present slight structural differences from the above. Length 2.–2.25 mm., width 0.0132–0.04 mm. The mouth is without papillae, and the esophagus is one-fourth the length of the entire body and without enlargements. The ova measure 0.06 x 0.034 mm.

In the permanent preparations made from the urine only the male forms were found. These varied greatly

*Read at the meeting of the Association of American Physicians, Washington, D. C., April, 29, 1902.

in size, the smallest found 0.3, the largest 1.2 mm. in length by 0.03 mm. in diameter. The form resembled very closely the drawings of *A. stercoralis* found in the various works consulted. The terminal mouth was succeeded by an oblong pharynx, a narrow esophagus connecting it with the top-shaped stomach. The characteristic curved spicules were present in the mature males. The tail tapered gradually to a very fine point. The anal opening, a curved cleft, was located near the posterior extremity on the ventral surface. The intestinal canal was surrounded by a layer of cells containing numerous fat particles.

With the above findings, the identification of the

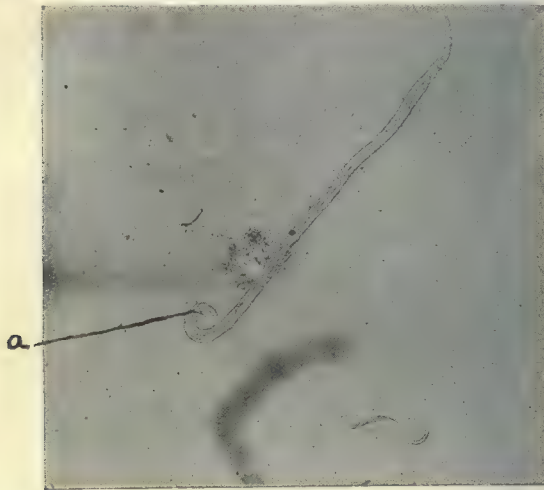


PLATE II.—Magnified 60 times. Mature male (a) showing hooks without fan-shaped accessory piece.

worms was apparently established, but several interesting features in these two cases led to a further study.

1. Throughout the literature no report could be found where *A. stercoralis* had been present in the urine. Sheiber³ reported finding a nematode belonging to this genus in the urine of a woman. From his description it is impossible to determine whether the worm was the *A. stercoralis* or a related species. In Sheiber's case they were found repeatedly until a careful cleansing of the genitalia demonstrated that the worms were not passed in the urine from the bladder.

2. They were found only once in the urine of each of these patients, although in one case at least repeated examinations were made.

3. They were both times found in urine that had been previously collected in a bottle, thus allowing of contamination. Furthermore, the presence of these two cases in an interval of a few weeks was also remarkable. With these points in mind, a further study was made of this family.

The family *Anguillulidae* is represented by numerous genera scattered over the entire world. They are found in fresh and salt water, in the mud of ponds, in decaying vegetable matter, etc. A number are parasites having as a host the lower forms of fresh and salt water animal life. Bastian⁴ describes and gives drawings of 100 new species which he discovered. He also enumerates a large number of species previously described by others. Borellus, in 1656, described the first member of the genus *anguillula*, the *A. aceti* or vinegar eel, a familiar object readily obtained from table vinegar. From comparison with the drawings and the natural habitat of this worm it readily suggested itself that the nematode found in the urine might be the vinegar eel—its presence being accounted for by the use of a bottle that had previously contained vinegar. With this point in view, specimens of the vinegar eel were obtained by allowing weak table vinegar to remain for a few days in a warm light place.

After 48 to 72 hours, each drop of the fluid contained several eels. These varied greatly in size, depending upon their degree of maturity. The average length of the males was 1.2 mm. by 0.033 mm. The average length of the females was 1.9 mm. by 0.06 mm. The maximum length of the females examined was 2.25 mm. Three to six ova and two to four embryos could usually be seen in the uterus of the mature females. After three to five days numerous young forms could be seen and from this time on the number of young forms rapidly increased, the females apparently dying after depositing their ova, as the sediment consisted largely of the dead bodies and fragments of their mature worms. These young forms varied in length from 0.25 to 0.7 mm. Among the developing forms I was unable with certainty to distinguish the females until they had reached a length of 1 to 1.2 mm. Embryos were often expelled from the uterus by the pressure of the coverglass. After expulsion they would remain knotted for a few seconds, then slowly straighten out and swim actively about. These embryos were from 0.25 to 0.3 mm. by 0.015 mm. The esophagus in the mature females measured on an average 0.2 mm. and proportionately shorter in the male. The posterior of the two enlargements was top-shaped and contained three teeth arranged like the letter Y. The intestine was continuous with this gastric enlargement terminating at the anal opening near the posterior extremity. The tail was very pointed and identical in this respect in both sexes. The males were provided with a pair of rather thick double curved spicules on the ventral surface in the anal region; projecting posteriorly from each is a fan-shaped accessory

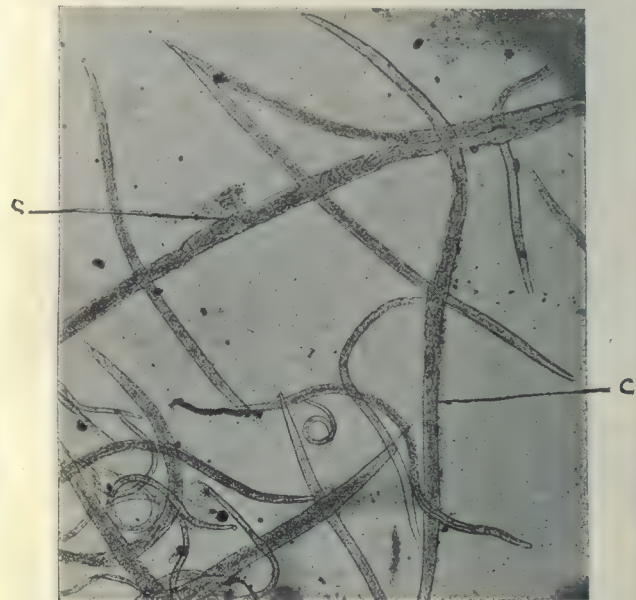


PLATE III.—Magnified 90 times. (c) Mature females of the vinegar eel containing embryos.

piece. In the living specimens the spicules were always retracted, but when killed by formalin, they were often protruded and then the fan-shaped accessory piece could be distinctly seen. The general color of the body from the stomach to the anal opening was dotted brownish, due to the contents of the intestinal canal. The anterior and posterior extremities are transparent, containing more or less numerous fat-like granules. The very young forms differed from the mature by having a relatively longer esophagus free from enlargements.

From a study of the above descriptions we see that the *A. aceti* and *A. stercoralis* bear a striking resemblance to each other in many particulars. The average length of the mature males of these two species differ very

slightly; apparently the *A. aceti* are somewhat longer, as the average length of those measured equaled the maximum length given for the *A. stercoralis*. The dimensions of the mature females of the *A. aceti* are the same as the parasitic females of the *A. stercoralis*. The females which develop from embryos found in the stools are much smaller, about one-half the length of the *A. aceti*. In internal structure and arrangement, as could be expected from members of the same genus, the resemblance is very marked. The mature males of these two species are, as far as I was able to determine, identical. The females differ in that the esophagus of the *A. intestinalis* is practically cylindric and without enlargements, while in *A. aceti* the esophagus presents the same enlargements in the female as are found in the male. This difference is only present in females found in the intestine, as those which develop from embryos found in the stool possess the same enlargements as are found in the males. This peculiar form of the esophagus was only apparent in the embryo of the *A. aceti* as they approached maturity, while it is reported present in all

but the extremely young forms of the *A. stercoralis*. This difference is of interest, as Teisser, in 1895, reported finding embryos in the feces which differed from those of the *A. stercoralis* in having an esophagus free from enlargement. The position and form of the spicules, with the exception of the fan-shaped accessory piece, is identical in the two species.

Cultural experiments conducted in order to demonstrate whether the *A. aceti* was capable

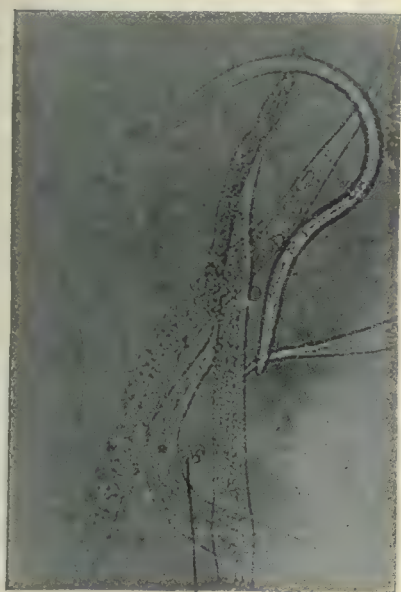


PLATE IV.—Magnified 200 times. Vinegar eel, showing the fat granules in the body.
(a) The protruded hooks of a male.

of living in acid and alkaline urine proved the affirmative. They multiplied as rapidly in the urine as in vinegar, and after two months many living forms were still present.

A few experiments to demonstrate whether the worms could be found in the stool when vinegar was taken by the mouth gave negative results, but further experiments in this direction are needed.

In conclusion the following points may be emphasized:

1. The *Anguillula aceti* or vinegar eel resembles very closely, judging from descriptions and drawings, the *A. stercoralis*.

2. The chief point of difference in the males of these two species is one of length, the *A. aceti* being slightly longer.

3. The young forms differ in that the esophageal enlargement does not appear so early in the *A. aceti*.

4. The females of the free form of *A. stercoralis* are less than half the length of the females of the *A. aceti*. They possess, however, the same esophageal enlargements.

5. The females of the parasitic generation correspond in length with the *A. aceti*, but do not have the esophageal enlargements.

6. The nematode found in the urine resembles in every particular the *A. aceti*, and one seems justified in these two cases in saying that the worm present was the *A. aceti* or vinegar eel.*

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PNEUMOCOCCUS ARTHRITIS.†

BY

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Pneumococcus arthritis is a rare condition. The subject has been fully considered by Leroux,¹ in a monograph published in 1899. He collected and analyzed 28 cases. Last year Cave² reviewed the subject, adding to those collected by Leroux three new cases, including one of his own. To these 31 cases reported by Cave I am now able to add ten more, two of them occurring in the Johns Hopkins Hospital and now reported for the first time. Cave's case is the only one I have found reported from England, while but two (Nos. 39 and 40), except my own, have been reported in this country.

Following are abstracts of the histories of the two cases occurring here. The second case was one of septicemia, meningitis and arthritis unassociated with acute lobar pneumonia. As in several respects this case appears to be unique it is reported in considerable detail.

CASE I.—Male, colored, aged 50. Admitted April 9, 1900, in a semicomatose condition. Onset of illness occurred suddenly ten days previously with fever, delirium and cough. The condition had grown gradually worse up to time of admission. For five days there had been jaundice.

On admission the patient appeared as though suffering from some acute infection. There were some signs of involvement of the apex of the right lung, but they were not definitely those of consolidation. The sputum was scanty and mucopurulent. Leukocytes, 15,000. Two days later the breath sounds at both apices had a slight tubular modification and there was impairment of the percussion note in both interscapular spaces. On this day the left ankle first appeared red and swollen and was painful on motion and pressure. The surface temperature over it was elevated. The sputum was very tenacious, mucopurulent, greenish-yellow, not bloody. The temperature continued elevated between 100° and 103.5°. On the tenth day after admission the ankle-joint was punctured and a syringe full of yellowish, purulent, blood-tinged fluid removed. This fluid contained numerous pus-cells and red blood-corpuscles, and many diplococci. Cultures made from this purulent fluid showed that these organisms were pneumococci. Arthrotomy was performed and the patient's condition at once began to improve, the temperature not becoming normal, however, until May 15, —36 days after admission. The patient was discharged June 12. The ankle was still swollen but the incision had healed.

Whether this patient certainly had a lobar pneumonia it was impossible to say. Unfortunately no blood cultures were taken. During the illness a systolic murmur developed at the apex decreasing much in intensity, however, before the patient was discharged. From the history and signs the probability is that a lobar pneumonia occurred and that the arthritis and endocarditis (?) were secondary manifestations of a general infection.

CASE II.—Murray, colored, aged 55, married. His occupation was that of an "oyster shucker." He was admitted to the Johns Hopkins Hospital during the evening of February 13, 1901, complaining of pain in his joints. He was in a peculiar mental state; appeared dull and answered questions in a very vague, rambling, inaccurate manner, so that no definite history could be obtained. On the next day the following notes were obtained from his wife:

He had apparently been a fairly healthy man; there was no history of any former acute illnesses. For several years previously he had had attacks of pain and swelling in the joints.

* NOTE.—Since this paper was written a case of vinegar eel (*Anguillula aceti*) infection in the human bladder has been reported by Ch. Wardell Stiles, Ph.D., Pathologist of Bureau of Animal Industry, and W. Ashby Frankland, M.D., U. S. Department of Agriculture, Bureau of Animal Industry Bulletin, No. 35, p. 35.

† Read before the Johns Hopkins Hospital Medical Society, December 16, 1901.

These attacks were evidently not very severe, as they had not confined him to bed. The exact duration of these attacks, and which joints were involved, could not be learned. For four or five weeks before admission, however, both knee-joints had been swollen, the right more than the left. They had been somewhat painful, and he had been lame in consequence but had not been confined to bed. On February 10, three days before admission, he had a slight chill in the afternoon and another during the night. He did not appear very ill the next day but remained at home. On the following day (the day previous to admission) he appeared worse, and complained of pain in the lower left axilla and at the apex of the right axilla. During the night he appeared feverish and at times was delirious. This condition lasted during the following day up to the time of admission. At no time had there been any cough, expectoration or dyspnoea.

Examination on admission showed the patient to be poorly nourished. He was complaining of intense pain in his knees and ankles. His mental condition was peculiar, answers to questions were very vague and inaccurate. The temperature was 99.8°, pulse 96, respirations 24. There was no stiffness of the neck or retraction of the head, no dyspnoea or cyanosis, no herpes on lips. The tongue was heavily coated with a white fur, the lips and mucous membranes were pale. Examination of the chest showed a slight impairment of the percussion note in the left infraclavicular space. The breath sounds were everywhere rather feeble, and over the lower back on both sides there were heard a few moist rales. Nowhere were the breath sounds tubular in quality. The heart sounds were irregular and weak. The pulse was of small volume, low tension and irregular. Both knees and ankles were swollen, hot and red. There was a considerable accumulation of fluid in and about all these articulations. At 11 a. m. on the following morning this note was made by Dr. Osler:

"The patient is completely apathetic; he does not respond to questions. The pupils are equal and equally contracted; the head is turned a little to the left. Movements on the two sides of the face are equal. The wrists, ankles and knees are swollen. The right knee is more swollen than the left, and the capsule is tense and contains fluid. The patient winces when the joints are touched. There is no general cutaneous or muscular hyperaesthesia. Patient can be lifted by his head without bending the neck."

Kernig's sign was not tested for on account of the pain on motion. The knee-jerks could not be elicited. The temperature had risen during the night, and at 10 a. m. reached 105°. The signs of pulmonary involvement were no more definite than on admission.

Blood Examination.—Red blood-corpuscles, 3,650,000; leukocytes, 10,000; hemoglobin, 50%.

At 11.30 a. m. lumbar puncture was performed, the right knee-joint was aspirated and cultures were made from the blood. From the spinal canal about 20 cc. of turbid, pale-yellow fluid were withdrawn. A specimen was centrifugized and the sediment, when examined microscopically, was found to be made up of leukocytes, with a few red blood-corpuscles. Both within and outside of the leukocytes were seen many diplococci. The cocci were lance-shaped, and occurred in pairs or short chains. They were not decolorized by Gram's method. The fluid aspirated from the right knee-joint was very turbid, yellowish. Microscopic examination showed it to contain numerous leukocytes and many diplococci resembling those found in the spinal fluid. Cultures were made from the spinal fluid on blood serum, plain agar, and hydrocele agar slants. Cultures from the fluid aspirated from the knee-joint were made in milk and on agar and blood serum slants. The cultures from the blood were made in the usual way, 8 cc. of blood being obtained and divided among three Erlenmeyer flasks of bouillon.

During the remainder of the day the patient's condition remained about the same. At 8 p. m. the leukocyte count was 15,000.

By the following morning, February 15, the cultures from the blood showed a growth of diplococci which, in shape and staining reactions, were identical with *Diplococcus pneumoniae*. A clinical diagnosis of pneumococcus septicemia, meningitis and arthritis was therefore made. On this morning the patient was unconscious. The temperature for the previous 24 hours ranged between 104° and 105.2°. The pulse was rapid and weak; the respirations were 36 to the minute. Examination of the lungs showed numerous coarse rales over both lungs, but nowhere tubular breathing. Kernig's sign was present. Leukocytes numbered 6,000. Patient's condition gradually grew worse, and death occurred at 2.20 p. m.

In all the cultures made from the blood, spinal fluid, and fluid from the joint, there was a profuse growth of diplococci. These were subsequently fully tested by growth in various media, and the provisional identification as *Diplococcus pneumoniae* fully confirmed.

Abstract of the pathologic report:

No. 1677, Murray, died February 15, 1901, 2.20 p. m. Autopsy, February 16, 11 a. m.

Lungs.—Right: There are a few old adhesions between the lobes. The lower lobe is very edematous, and contains disseminated minute areas of consolidation. Bronchi are not especially congested. The upper lobe shows a few old scarred

tubercles. Left: Also somewhat edematous. It shows in the lower portions a few minute areas of bronchopneumonia. This portion of lung floats.

Abdominal Viscera.—No abscesses were found, though in places in the pyramids of the kidneys there were a few opaque white lines.

Brain.—The dura is adherent to the cranium and is somewhat thickened. On its inner surface it appears brownish, somewhat flecked. The cerebral sulci are filled with a greenish purulent exudate, which also extends over the base, over the lobes of the cerebellum, and to a slighter extent about the medulla and cerebral peduncles.

The cerebral ventricles contain only a little, slightly turbid fluid, the third ventricle is rather distended with this fluid, the fourth ventricle shows no abnormalities.

Spinal Cord.—No examination could be made.

Right Knee-joint.—The capsule contains about 100 cc. of greenish, purulent fluid. The synovial membrane is much injected, and shows a papillary outgrowth of somewhat translucent connective tissue. On exposing the articular surface, the outer condyle of the femur is found to show almost complete erosion of the cartilage, the articular surface consisting of enamel-like bone worn to a mirror surface. The corresponding articular surface of the tibia shows a similar condition. The cartilage over the remainder of the joint on the lateral surface is very much elevated. In some areas this is due to thickening of the cartilage; in others the elevation consists of exostoses covered by a thinner layer of cartilage. There are some slight hemorrhages in the neighborhood of the joint.

Microscopic sections from the articular surface of the bones and tissues about the joints show the characteristic appearance seen in the joints in arthritis deformans, and in addition, there is seen a secondary superficial purulent inflammation.

Sections from the lungs show small areas of very fresh bronchopneumonia.

In sections from the kidneys are seen several small areas, showing beginning abscess formation.

In cultures made at autopsy from the heart's blood, meninges, kidney and liver, there was a growth of *Diplococcus lanceolatus*. *Bacillus coli communis* also grew from the kidney. From the consolidated areas in the lung only *B. coli communis* grew. However, in sections made from these areas and stained by Weigert's method, lanceolate-shaped diplococci could be demonstrated in considerable numbers.

From the clinical history and course, and the pathologic findings in this case, it seems evident that the joints were primarily infected, owing to the old arthritis deformans rendering them *loci minores resistentiae*. The portal of entry of the organism is not definite. No local cutaneous infections were discovered. While the invasion may have been through the lungs, the clinical history and pathologic findings point quite conclusively to the bronchopneumonia being secondary to the arthritis and general infection, and occurring only as a terminal event.

As the cases of arthritis previously reported have been well studied and reviewed by Leroux and Cave, I simply add a table of the 11 cases now collected, which table is made uniform with that constructed by Cave. I have found brief references to several other cases but sufficient details have not been given to enable me to include them in the table. Sello,³ in a discussion of unusual terminations and complications occurring among 750 cases of true fibrinous pneumonia, mentions two cases in which suppurative arthritis occurred, in one case in the sternoclavicular joint, in the other in the right shoulder. Sears and Larrabee,⁴ in an analysis of 949 cases of pneumonia at the Boston City Hospital, mention one case in which there was an "abscess of the hip-joint and thigh, the pus from which showed the pneumococcus."

The cases collected by Cave number 31, which with the 11 now collected and reported make in all 42 cases. However in one of the cases collected by Cave, that reported by Oliva, the bacteriologic examination was not made with sufficient thoroughness to justify the case being considered as one of arthritis due to pneumococci. Hence I have omitted this case and considered but 41 cases. From a study of these 41 cases of arthritis it is found that they may be divided into two great groups:

I.—Cases appearing as complications or sequels of acute lobar pneumonia.

That arthritis complicating pneumonia is a rare condition is shown by the statistics collected by Leroux. Among 4,256 cases of pneumonia, arthritis occurred but

six times. Thirty-four of the 41 collected cases belong in this group.

In 16 of the 38 cases but a single joint was affected and there were no other metastatic foci. That this is a much less serious condition than when two or more joints are involved or when, in addition to the arthritis, there are foci in other situations, is shown by the fact

normal in about a fortnight. The patient remained very feeble, however, and a slight murmur was made out over the precordium, the heart sounds later becoming inaudible. Death occurred 10 days later. At autopsy the pericardium was found to contain a liter of pus. There were no evidences in the lungs of a fresh or old pneumonia. In the left first metatarsophalangeal articulation a small collection of seropurulent fluid was found. On the surface of the cartilage abundant sodium urate crystals were found. Pneumococci were cultivated

No.	Observer.	Date.	Sex.	Age.	Relation to Pneumonia.	Seat of Arthritis.	Nature.	Complications and Remarks.	Result.
31	Sittmann ⁵	1894	M.	40	Followed pneumonia.	Left shoulder.	Suppurative.	Pericarditis, ulceration, endocarditis.	D. Pneumococci in blood during life. No treatment.
32	Nicolaysen ⁶	1896	.....	4 mos.	Eight days after onset of pneumonia.	Right elbow.	Suppurative.	Bilateral empyema, pericarditis.	D. Pneumococci in blood during life. No treatment.
33	Fiment ⁷	1898	M.	53	Followed pneumonia.	Right knee.	Suppurative.	Followed chronic rheumatism and old injury.	R. Resection.
34	Uckmar ⁸	1898	.....	.....	Followed pneumonia.	Shoulder.	Suppurative.	.....	.....
35	Hagenbach-Burckhardt ⁹	1898	F.	2½	No pneumonia.	Shoulder and knee.	Suppurative.	Abscess on arm and in thigh.	R. Spontaneous rupture—shoulder. Arthrotomy—knee.
36	Lop et Bonus ¹⁰	1900	F.	28	Followed peritonitis subsequent to labor. Pneumonia followed.	Left wrist.	Suppurative.	Peritonitis, parotitis.	R. Arthrotomy.
37	Lannois et Paris ¹¹	1901	M.	46	Followed pneumonia.	Right wrist.	?	Synovitis, endocarditis.	D. No cultures. Sections from heart valves showed pneumococci(?).
38	Allen ¹²	1901	F.	40	No pneumonia.	Left knee.	Suppurative.	.....	D. Arthrotomy, amputation.
39	Miller ¹³	1902	M.	Adult.	Followed pneumonia.	Right wrist.	Serous.	.....	R. No surgical treatment, joint stiff.
40	Cole.....	1902	M.	50	Probably followed pneumonia.	Left ankle.	Suppurative.	.....	R. Arthrotomy.
41	Cole.....	1902	M.	55	Primary. Bronchopneumonia followed.	Both knees.	Suppurative.	Meningitis, suppurative nephritis.	D. Pneumococci in blood during life.

that of the 16 patients in whom there was but one suppurative focus 10 recovered, while of the 18 with multiple foci but one recovered.

II.—Cases of arthritis preceding or occurring independently of acute lobar pneumonia.

In this group are to be included eight of the cases, one of them "Murray." Two other cases (that of Fernet and Lorrain,¹⁴ and that of Cole, Case I) possibly belong here, but as the possibility of a preceding pneumonia cannot be excluded it is thought best not to include them.

The following are brief abstracts of the history and course in these eight cases:

CASE I.—Reported by Bouloche.¹⁵ Male, aged 3. Four days before entrance to the hospital there was a sudden onset of fever and sore throat. The right knee, both elbows, and the right instep became painful, red, hot and swollen. On admission to the hospital the lungs were entirely negative on examination and the case resembled one of acute articular rheumatism, but, as the urine was small in amount and bloody, a general infection was suspected. On the following evening signs of lobar pneumonia first appeared at the right base. The next day 125 cc. of seropurulent fluid were aspirated from the right knee-joint. Death occurred two days later.

Autopsy showed purulent arthritis of both elbows and the right knee, lobar pneumonia at the right base, bronchopneumonia at the left base, acute nephritis and an acute myositis of the muscles of the thigh and upper arms. Pneumococci were cultivated from the pus obtained by aspiration before death, and also from pus obtained from all three joints at autopsy. Pneumococci were also found in sections of the muscles the seat of myositis.

CASE II.—Reported by Griffon.¹⁶ Female, aged 71. Patient entered the hospital in a comatose condition and no history could be obtained. There was a left-sided hemiplegia and redness and swelling over the right instep. A few rales were heard at the bases of both lungs. Otherwise the lungs were clear. On the same night the ankle-joint was opened and pus removed. Patient died on the following day. Autopsy showed a purulent meningitis and an acute endocarditis in addition to the suppuration in the right ankle. The lungs were edematous, but nowhere showed any consolidation. Pneumococci were obtained from the pus in the joint during life and at autopsy from the purulent exudation in the meninges, the valvular vegetation and the purulent infiltration of the joint.

CASE III.—Reported by Widal and Meslay.¹⁷ Male, adult. Complained of dysphagia and pain in the left first metatarsophalangeal articulation. The patient was a worker in lead. There was no history of pneumonia. The temperature oscillated between 101.3° and 102.2° for several days, then fell, reaching

from the pus in the joint and also from the pericardial effusion.

CASE IV.—Reported by Widal and Lesné.¹⁸ Male, aged 68. Past history negative, except for chronic rheumatism in the smaller joints. While at work patient was suddenly seized with a chill, headache and general malaise. During the evening and night there were fever and delirium. There was no pain in the side, cough or expectoration. On the following day there was pain in the left arm, which on the succeeding day became localized in the left sternoclavicular articulation and dorsum of left hand. These joints became red and swollen. On admission the temperature was 102.2°. A few drops of pus were aspirated from the sternoclavicular articulation, and found to contain pneumococci in pure culture. The temperature gradually fell to normal, the swelling over the hand gradually disappeared, and there was marked improvement for eight days, then without any general symptoms the pain and signs of inflammation again appeared in the sternoclavicular articulation. A few drops of pus were again aspirated with the same result as before. The swelling gradually disappeared without incision, but there remained some thickening of the joint.

CASE V.—Reported by Hagenbach-Burckhardt. Female, 2½ years old. Patient had been sick three weeks before admission with pain in abdomen, loss of appetite and headache. The doctor stated that there had been no signs of pneumonia. On admission there was discovered a phlegmon on the outer side of the left thigh, which was opened. Later the right shoulder and arm became swollen and painful. An incision was made into the abscess on the arm. No connection between this abscess, which was intermuscular, and the bone or joint could be made out. The shoulder remained swollen, and during manipulation of the arm on the following day, pus suddenly escaped from the shoulder-joint. Later an abscess appeared in the right thigh, and still later (one month after admission) a suppurative arthritis of the right knee occurred. Arthrotomy was performed, and patient was discharged well one month later. From all these various foci of suppuration, pneumococci were obtained in pure culture.

CASE VI.—Reported by Lop and Bonus. Female, aged 28. Thirty-six hours after labor, in which delivery was spontaneous, signs and symptoms of peritonitis appeared. The discharge from the uterus was free from odor. The lungs were clear. The patient's condition was very serious for two days, then gradual improvement took place for a week, when there was onset of pain in the left wrist. The joint became red, hot and swollen. The following evening the joint was incised, and 20 to 30 cc. of thick, greenish, odorless pus were removed. Marked improvement followed this, and continued for ten days, when a parotitis occurred on the left side. This improved without incision. Finally, several days after the appearance of the parotitis, there was a sudden onset of acute lobar pneumonia involving the left lung. This lasted 10 days, running a typical course. Recovery from this occurred, and the patient was dis-

charged well. From the pus in the wrist, from the vaginal discharge and from the serous fluid obtained by aspiration of the parotid, pneumococci were obtained in pure culture.

CASE VII.—Reported by Allen and Lull. Female, aged 40. Three or four days before entrance to the hospital the patient complained of "cramps" in the abdomen. The following day pain in the left knee was complained of. On admission the left knee was found painful and swollen. Aspiration showed that the joint contained thick, yellowish pus. Arthrotomy was at once performed. The patient became delirious and her condition worse, so that two days later amputation was made at about the junction of the lower and middle thirds of the thigh. The patient recovered well from the shock of operation and improved somewhat for five days, when the temperature again rose to 105.5°. Following this the patient had chills, the temperature rising to 108.2° at time of death, which occurred four days later. At autopsy the lungs showed chronic tuberculosis of the right apex, and they were congested and edematous throughout, but there was no pneumonia. No other foci of suppuration were found.

In the pus aspirated from the knee-joint pneumococci were found in pure culture. Cultures made from the amputation stump-wound showed pneumococci and smaller numbers of *Staphylococcus pyogenes aureus*.

CASE VIII.—Reported by Cole. See case "Murray."

From a study of these eight cases it is seen that they were all primary in the joint except one (VI), which followed peritonitis, the result of a puerperal infection. In three cases (I, II, VIII) the condition from the onset was that of a pyemia with the simultaneous appearance of several scattered foci. In but one case (VII) the focus of inflammation remained single. In the other cases the course of the disease was progressive, one part after another being involved. In one case (VI) the sequence was peritonitis, arthritis, parotitis, pneumonia. In another case (V) there occurred a succession of inflammatory foci in the muscles and joints. The occurrence of multiple lesions shows that in these cases there was probably an invasion of the blood by pneumococci, though Case VIII is the only one in which this was demonstrated.

The three cases which from the onset and course were typically septicopyemias were all fatal. Of the remaining five cases three resulted in recovery. All three of these ran a slow, progressive course. Of the two patients that died, in one the fatal result was to be attributed directly to the presence of a very large purulent pericardial exudate, and in the other the infection of the amputation wound with *Staphylococcus aureus* must be considered at least as a contributory factor in the fatal outcome.

It is of interest that in two of the cases there was a history of chronic arthritis (arthritis deformans, Case VIII), and in one the infection occurred in a joint already the seat of a gouty deposit.

The most important conclusions in regard to pneumococcus arthritis in general, many of which have also been pointed out by Cave, are:

1. A tendency to involvement of the larger joints, though small joints may be involved.
2. A tendency to the involvement of more than one joint (13 out of 41 cases).
3. A tendency to involvement of joints already the seat of a chronic affection. (In 13 cases a history either of chronic rheumatism, old injury, previous arthritis or gout.)
4. The effusion is usually purulent, but may be serous.
5. The mortality is high; (28 deaths, 13 recoveries.)
6. The clinical features of the condition and the prognosis depend more on the septicopyemia, of which it is usually but a manifestation, than on the joint lesion itself.
7. When recovery occurs, the course is usually a long, slow one, and usually ankylosis of the joint results.
8. The local treatment should consist in free opening and draining of the joint. The fact that in a few cases of mild infection of the smaller joints spontaneous recovery has occurred, might justify one in adopting conservative methods in such cases.

Considerable experimental work has been done on the artificial production of pneumococcus arthritis in animals. Cave summarizes this work as follows:

1. The injection of a virulent culture of pneumococcus directly into a joint of a susceptible animal is almost invariably followed by acute suppurative arthritis.

2. The subcutaneous injection of virulent cultures after the previous excitation of an aseptic inflammation in a joint, whether by direct injury or by the injection into the joint cavity of essence of turpentine, gives varying results, in many cases negative, in many positive.

3. The intravenous injection of virulent cultures with associated aseptic traumatism of a joint leads to arthritis much more certainly than do injections by the subcutaneous method.

Finally, Bezangon and Griffon have succeeded in producing an experimental pneumococcal arthritis by modifying the resistance of the animal experimented on in relation to the virulence of the pneumococcus. They find that if a rabbit is first *partially* immunized by the injection of cultures five or six days old, and consequently of diminished virulence, and after a few days a full dose of a virulent culture is injected, local lesions are produced rather than a general septicemia, and especially are these local lesions apt to appear in the joints as pneumococcal arthritis.

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SOME MODIFICATIONS OF THE AUTHOR'S ORIGINAL V-SHAPED OPERATION FOR CORRECTION OF DEFLECTION OF THE SEPTUM.¹

BY

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In operations for the correction of the various deflections of the nasal septum, it has been my experience that the greatest difficulty to overcome was not that of placing the septum in the median line, but in removing sufficient tissue to prevent any backward pressure on the septum, and a consequent return of the deflection. For the past six years I have been removing a V-shaped piece, or a number of V-shaped pieces, according to the deflection and amount of redundant tissue to be removed, from not only the cartilaginous, but also the bony septum for the correction of various deflections. The operation described in my book on pages 256-260 explains the V-shaped method as applied to certain forms of deflection. In a paper which I read before the American Laryngologic, Rhinologic and Otolologic Society at Cincinnati in 1899, I recommended that in the majority of cases in which deflection occurred, this V-shaped operation should be used, and I have since concluded, and after operating on 152 cases by this method, I am convinced that it is one of the simplest and best methods for the correction of almost all septal deflections.

I first used a small, curved saw for making the incision, cutting out the wedge-shaped piece at the greatest

¹ Read before the Section on Otolaryngology and Laryngology of the College of Physicians, Philadelphia, May 21, 1902.

point of deflection and redundancy, and making a simple saw cut at any other point on the septum necessary to allow it to be forced into line; this not only applied to the cartilaginous, but to the bony septum as well. The incision, either V-shaped or simple, was carried almost entirely through the cartilage or bone; this allowed of the molding of the septum into whatever position was desired, and also controlled the line of fracture when necessary to use the crushing forceps. For the past three years I have used almost entirely this V-shaped method, and out of the 152 cases I have had only 11 cases in which the operation was not entirely successful, and in each instance the failure was due more to complications than to the method. In no cases have I had perforation. By cutting out these V-shaped pieces, as shown in Fig. 1, the redundant tissue is removed, and if the V-shaped

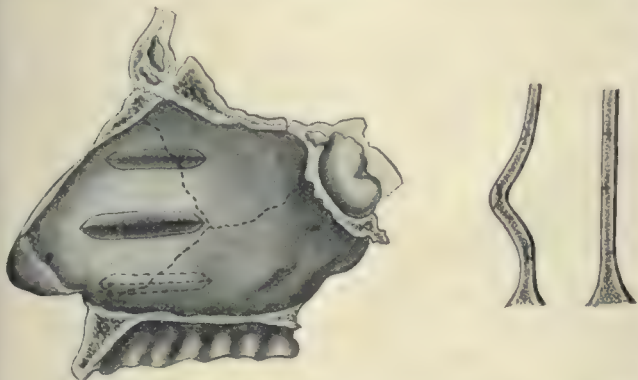


Fig. 1.

Fig. 2.

Fig. 3.

The V-shaped cuts are diagrammatic only. The position and direction of cut will vary in different cases. The dotted line indicates where the cut should be made on opposite side.

cut is made at the base of the septum so as to prevent any tendency to backward pressure, with one or two cuts made above, as shown in Fig. 1, and the septum supported by means of a metal tube, no difficulty will be experienced in retaining the septum in position.

To simplify the classification of septal deformities I will speak only of two varieties: (1) Septal deflections without external deformity; and (2) septal deflections with external deformity.

When the deflection begins at the base of the septum a V-shaped cut should be made on the concave side of the deflection close down to the floor of the nose (see Fig. 1). In making this V-shaped cut the amount of tissue to be removed depends upon the angle of the deflection, care being taken to remove sufficient tissue so that when the septum is placed perpendicular there will be no backward pressure and the surfaces will come together as shown in Fig. 3. As many more incisions should be made as are necessary to break up the resiliency of the septum, so that it will swing freely from the top. These incisions may either be made by the thin curved saw blade, or if the redundancy is extensive and the curvature in the septum is pronounced then the V-shaped incision should be made. The rules governing the incision are based on (1) the breaking up of the resiliency of the septum by the removal of the V-shaped piece or pieces and simple saw incisions, and (2) observing the blood supply and carefully avoiding the cutting off of any portion of the septum and its mucous membrane by parallel cuts on the same side of the septum.

In certain deflections where the redundancy is excessive a large V-shaped piece must be removed. This can be done without injury to the mucous membrane on the opposite side; this is highly essential so as not to disturb the blood supply and thereby prevent ulceration.

Originally in the majority of the cases I dissected up a flap of mucous membrane before making the V-shaped cut in the septum. This is not necessary in all cases.

Neither could it be done where a number of cuts are necessitated. If, however, at the base of the septum it is necessary to remove a large V-shaped piece of the cartilage, a flap of mucous membrane should be dissected back before the removal of the cartilage. After the removal of the V-shaped piece the mucous membrane should be carefully molded back over the cut. It is not necessary to put in a suture, for if care be taken in inserting and placing the metal tube it will sufficiently support and hold this flap in place.

The only operation in any way similar to this, described in the various textbooks, is that of Ingals, of Chicago, in which he recommended for the correction of deformities of the anterior portion of the cartilage the removal of a triangular piece of cartilage after dissecting back a flap of mucous membrane. This membrane is replaced after the removal of the triangular piece of cartilage and retained in position by means of a suture.

In deformities of the septum, where the tissues have been forced down and the nose flattened, if it is desired to elevate the nose and place it in its normal position the V-shaped cut should *not* be used. The beveled edge cut, somewhat similar to the method used in lengthening shortened tendons, should be used instead. If, however, it is only desired to establish nasal respiration, the V-shaped cut should be used and sufficient tissue removed at different portions of the septum so as to allow of its being molded into line.

The question of redundant tissue is necessarily involved in this V-shaped operation. Whether or not it is called redundant tissue matters little. The principle involved in this method can be illustrated in a board which has warped. While the actual length of the board is only slightly altered, in order to place it back in line a series of saw cuts are necessary, the amount removed depending on the curvature. This is exactly the principle of this V-shaped cut. If this method is properly applied it will remove redundancy either anteroposteriorly or perpendicularly.

For the removal of this V-shaped piece I have always used a small curved saw described in a previous article on this operation. In some cases, however, the making of the cut and removal of the V-shaped piece was very tedious and unless great care is exercised by the operator he will not remove a sufficiently large V-shaped piece of tissue to break up the resiliency of the septum. One case in particular in which I had great difficulty in removing the V-shaped piece suggested the advantage of an instrument which would make the cut and remove the tissue at the same time. Dr. George Fetterolf, who has assisted me in a number of septal operations and this one in particular, afterward devised the V-shaped file saw, as described in *American Medicine*, March 1, 1902. This is a most admirable instrument for the removal of this V-shaped piece. The instrument can be made at any angle desired so that a large or small piece may be removed. It simplifies and shortens the operation very much.

While in nearly all cases it is necessary to make more than one incision it is rarely ever necessary to make more than two V-shaped cuts. The other incisions in the septum should be made with the thin saw merely to lessen the resiliency of the septum and permit of its being freely flexible and easily molded into shape. The length of the cut in the septum antero-posteriorly will depend entirely upon the extent of the deflection. This is also true of the width of the V-shaped piece to be removed.

The advantage of the saw cut in controlling the line of fracture when the bony septum is involved cannot be overestimated. The removal of the V-shaped piece of bone with a saw was a more difficult process than the removal of the piece of cartilage. The file saw is of special advantage in those cases in which the bony septum is involved. A sufficient number of incisions should be made and sufficient tissue removed by the V-shaped cut

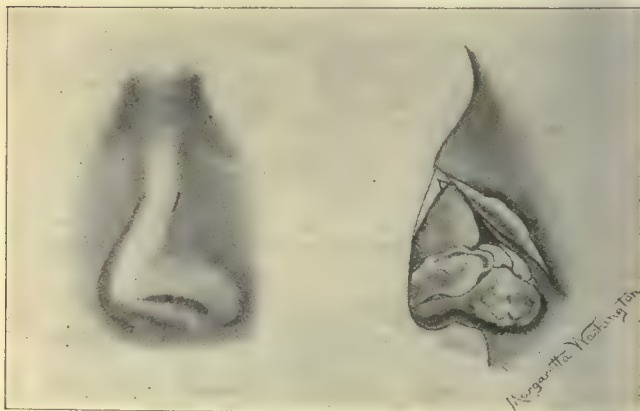
to allow the septum to be placed in line and supported there by means of the nasal tube. There should be no pressure whatever from this tube, as it acts merely as a support and is not intended for pressure. Should swelling occur, however, after operation and the tension be too great, the advantage of this metal tube is that its diameter can be lessened by the introduction of a pair of forceps and the compressing of the tube. I have used these tubes for the past six years and find them perfectly satisfactory in every way. They can be molded to fit any nostril either at the time of operation or afterward. This is a great advantage over the hard rubber tubes. The tube may be left in position as long as the septum needs support. I have allowed the tube to remain in position from three days to six weeks without any bad results. If there is any irritation produced by the tube, the nostril should be sprayed night and morning with camphorated albolin, one grain of camphor to the ounce of albolin.

If the V-shaped cuts as well as the straight cuts are made at the proper point and of sufficient length and width there will be little need for using the septum forceps for breaking up the resiliency. However, the small septal forceps of Roe or the small roll forceps as described in my book on page 257 may be used in breaking up any remaining resiliency and to make the septum perfectly pliable.

The Sinexon dilator is of great advantage in cases in which the obstruction is such as to occlude the nasal cavity and make it difficult to insert the cutting instrument. The dilator should be set so as to limit the amount of pressure and passed through the obstructed side, using sufficient pressure to force the septum over far enough to allow of the free insertion of the cutting instrument.

The after-treatment is very simple. Unless there is evidence of infection I think it is better not to use any spray or douche. If, however, the inflammation is rather severe, cold should be used during the first eight hours; if necessary afterward heat should be applied externally and a warm spray or douche of boric acid solution, eight grains to the ounce, should be used in the nostril.

Fig. 4 shows deflection of the septum with *external deformity*, and I wish to call attention to a very simple



No. 4.

No. 5.

No. 5 should show the V-shaped cut extending down on the septum.

method of correcting this deformity. Figs. 4 and 5 need very little explanation. First a small oblique incision (see Fig. 4) is made through the skin into the nasal cavity on the convex side of the deflection just at the point of junction of the cartilage and bone, through which the small saw or file saw is then inserted and a V-shaped portion of cartilage removed. This should extend down on the septum (further than is shown in Fig. 5) a sufficient distance to break up all resiliency, and the

amount removed should be sufficient to render the cartilaginous portion of the nose entirely pliable. The external wound is then closed by one suture, as it is not necessary to make an incision over $\frac{1}{4}$ to $\frac{1}{2}$ inch in length. It is then sealed with collodion over cotton.

The internal deformity is corrected the same as given above where no external deformity exists. It is of importance that a sufficiently large V-shaped piece be removed in order to render the septum perfectly pliable, in other words, to remove all redundancy. The principle involved in correcting the external deformity is identically the same as for the correction of the internal deflection of the septum. The prime object in all septal operations is to remove redundancy and break up resiliency. General anesthesia is preferable, although the operation can be done under local anesthesia.

BUBONIC PLAGUE.¹

Remarks on Diagnosis, Dissemination of *Bacillus Pestis*, and Prophylaxis, with Report of a Case.

BY

JOSEPH J. CURRY, M.D.

Captain and Assistant Surgeon, United States Volunteers; Member of the Board of United States Army Medical Officers Appointed to Study the Diseases of the Philippines.

[From the United States Army Pathologic Laboratory, Manila, P. I.]

MANILA, P. I., January 3, 1902.

To the Chief Surgeon, Division of the Philippines:

A fatal case of bubonic plague occurred in an American, a civilian employe of the Quartermaster's Department, United States Army. This man was admitted to the First Reserve Hospital December 25, with the diagnosis of malarial fever. The diagnosis of plague was made 24 hours after his admission to the First Reserve Hospital, and the man was at once transferred to the Plague Hospital, where he died December 27 at 4 a. m., having been ill but three days.

This is the third case of plague reported among Americans in this city within the last two years. The other two occurred eighteen months ago, and were also Quartermaster's Department employes (teamsters).

The same day on which we discovered this case of plague in a general ward of the First Reserve Hospital (December 26), a case of plague was found (a native) in the San Juan de Dios Hospital, Walled City. During the past week several cases of plague have been reported by the Board of Health in the Walled City.

While not wishing to be an alarmist it seems to me that it would be wise to adopt extraordinary precautions against the plague, for the present at least. The dry season is the most favorable season here for the spread of plague. This recrudescence of the pest after a period of quiescence is characteristic of the disease. It is impossible to tell whether it means the beginning of a serious epidemic or that it is only a temporary exacerbation of the disease. The history of plague epidemics in other countries warns us to be on our guard; for it shows that after the disease has smoldered for a year or two in a locality without any apparent gain, it often breaks out suddenly into a serious epidemic.

I take this opportunity to present with this report some remarks on "The Diagnosis of Bubonic Plague," and on the mode of dissemination of *Bacillus pestis*, with suggestions as to prophylactic measures.

From December 29, 1899 to June 15, 1900, I assisted the Board of Health of Manila in the work on plague, and for several months was in charge of the laboratory investigations on plague, as well as in charge of the plague hospital. The remarks contained in this report are the result of observations in over 100 cases of plague seen clinically, and 22 autopsies.

Very respectfully,

JOSEPH J. CURRY,
Captain and Asst. Surgeon U. S. Vols.

REPORT OF CASE.—H. D., white, aged 21 years, born in Iowa, a civilian employe Quartermaster's Department; his occupation was that of teamster. He was admitted to the First Reserve (military) Hospital, Manila, P. I., December 25, 1901, at 9 a. m., with the diagnosis (on transfer slip) of "malarial fever, intermittent" "type undetermined."

Family History.—Negative.

Past History.—He came to the Philippine Islands in March, 1899, with troops; was a private, Twenty-second United States

¹ A report to the Surgeon-General of the Army, January 3, 1902. Paper read before the Army Medical Lyceum, of Manila, P. I.

Infantry up to his discharge a short time ago. During this period, nearly three years, this man remained in good health, having no illness worthy of note.

Present Illness.—He was well until December 24. He worked all this day driving a quartermaster's wagon, but did not feel well. After putting up his team at five o'clock, he became suddenly ill with a chill, accompanied by vomiting, and followed by severe pains in the body and head, this in turn being followed by a feeling of great warmth. He was seen by a surgeon and sent to the First Reserve Hospital the next morning. On admission at 9 a. m., December 25, his temperature was 103° F., pulse 126, respirations 52. Physical examination was negative at this time. Patient was given tub baths frequently, but these failed to reduce his temperature, which at 4 p. m. was 105° F. He became delirious early and remained so all day.

December 26, 10 a. m.: Patient rational, temperature 103.4° F. At this time a swelling was noticed in his left femoral region, the tumor being painful on pressure. At the request of Major Arthur I saw the man at 11 a. m., and found the following:

A well-developed, powerfully-built young man, lying on his back partly turned on the right side with the left thigh flexed on the abdomen. On examination I found a tumor mass, the size of a pigeon's egg, in the left femoral region; it consisted of several swollen glands, exquisitely tender to the touch. Though the man had been sick only two days he had the appearance of one who had been ill with some severe infection for two weeks or more. His expression was one of great anxiety and pain; the face was flushed, tongue covered with thick, white coat, and pulse rapid. There was tension of the left thigh and left abdominal muscles. On the inner surface of the left thigh, high up and extending into the crotch, there was quite a good-sized area of nearly healed dhobie itch. The rest of the physical examination was negative. There was no jaundice.

Blood examinations were made at once in the ward.

Fresh coverslip examination for malarial parasites was negative. It was noted during examination of the blood specimen for malarial parasites that the leukocytes were greatly increased; so a blood count was made. Blood count: Red cells, 4,300,000, leukocytes, 64,700. Ratio of white to red cells, 1 to 66. In other words, the white cells were increased to approximately ten times their normal number. The blood examination suggested an intense septic infection, so I determined to aspirate the swollen glands for bacteriologic examination. As the gland was very painful, primary anesthesia by chloroform was obtained and the gland aspirated by means of an ordinary hypodermic syringe. A few drops of a turbid bloodstained fluid was obtained. The first drop of this fluid was allowed to drop into a culture tube of agar-agar, and several coverslips were made with the remaining drops. These coverslips were stained, one by carbol fuchsin and one after Gram's method. Examination of these coverslip specimens showed great numbers (a pure culture) of a short, thick bipolar-staining bacillus, morphologically the same as *Bacillus pestis*. This organism decolorized promptly and completely after Gram's stain.

The diagnosis of "bubonic plague" was then made and reported to the commanding officer of the hospital. Major Arthur at once ordered the patient removed to the isolation tent hospital, and had his bed, bedding, etc., taken out of the ward to be disinfected. He notified the Board of Health officials, who removed the patient to the plague hospital at San Lazaro.

Before his removal to the plague hospital I questioned him closely as to where he had been for the past two weeks, with the idea of learning, if possible, the source of the infection. I learned that he was quartered, with a number of other teamsters of the Quartermaster's Department, at the main corral on the Malacan road, Manila. He was not compelled to sleep here, however, and frequently spent his evenings and nights in houses in the native district. The last night spent in a native shack, he said, was Sunday, December 15, i. e., 8½ days before he showed the first signs of illness. I asked the man if he had not been outside his quarters since December 15, and though he said not, his answer was hesitatingly given and unsatisfactory.

Dr. McAndrews, Assistant Surgeon U. S. Army, the ward surgeon at the First Reserve Hospital, informed me that the man's personal condition was filthy when admitted to the hospital.

The quarters at the corral occupied by the teamsters are roomy, airy and clean. Probably the infection was obtained at one of the shacks of the lower, unclean class of natives which this man was accustomed to visit frequently.

December 27: I visited the plague hospital at 9 a. m. and found that the man had died at 4 a. m. The body was in the

position of opisthotonos, and already general rigor mortis was marked.

Autopsy was performed at 3 p. m. (11 hours after death) by Assistant Surgeon R. P. Strong, U. S. A., Pathologist to the Board of Health. Through the courtesy of Dr. Strong I assisted and made the cultures and coverslips from the various organs. Anatomically the case was one of intense hemorrhagic septicemia, with the primary focus in the left femoral glands, and the glandular system markedly involved.

Following is a brief description of the conditions found:

Body that of a powerfully-built, young, white man; rigor mortis marked: skin clear, no ecchymosis, no jaundice.

Glands.—In the left femoral region there was a large mass of swollen, hemorrhagic glands fused together and surrounded by a gelatinous effusion; size of mass 6 cm. by 4 cm. The left inguinal glands were greatly enlarged and hemorrhagic, as were the chain of glands extending along the left iliac vessels. The tissues surrounding these glands and the peritoneum above the iliac chain were filled with numerous, small, punctiform hemorrhages. The right femoral and inguinal glands were markedly enlarged and hyperemic. The retroperitoneal, mesenteric, axillary and cervical glands were also enlarged and hyperemic.

Spleen.—Much enlarged; dark-red in color; pulp soft and increased; punctate hemorrhages into the capsule.

Kidneys.—Large and cloudy, capsule containing many punctate hemorrhages.

Liver.—Enlarged, cloudy; numerous capsular hemorrhages.

Peritoneum.—Scattered over the peritoneum were many subserous, punctate hemorrhages, especially marked in the left iliac fossa and over the left iliac vessels.

Heart.—Pericardial sac contained about 100 cc. of yellowish, turbid serum; parietal and visceral pericardium contained many punctiform ecchymoses. Heart muscle was very pale and cloudy; the valves and cavities were normal.

Lungs.—Voluminous; pleurae dotted with small subserous hemorrhages; each pleural cavity contained approximately 250 cc. of slightly turbid, serous fluid. Bronchi were injected; no areas of solidification.

MICROSCOPIC EXAMINATIONS.

Coverslip preparations (two each) stained, one by carbol fuchsin and one after Gram's method, from heart's blood, pericardial exudate, pleural exudate, left femoral glands, and blood from superficial skin vessels showed as follows:

Heart's Blood.—A few short, thick, bipolar-staining bacilli which decolorized after Gram's stain.

Pericardial and Pleural Exudates, and Blood from Superficial Vessels.—Negative.

Left Femoral Glands.—Coverslips contained numerous, short coccobacilli, taking generally the bipolar-staining, but often stained solidly and sometimes staining in segments; these were completely decolorized by Gram's stain.

ANATOMIC DIAGNOSIS.

Hemorrhagic septicemia; acute splenic tumor; general acute lymphatic hyperplasia; acute hemorrhagic lymphangitis of the left femoral and inguinal glands; general subserous ecchymosis, and cloudy swelling of the heart muscle, liver and kidneys.

CULTURES

from the heart's blood, spleen, left inguinal glands, liver and kidneys showed *Bacillus pestis*. No other bacteria were present in the cultures.

BACTERIOLOGIC DIAGNOSIS.

General infection with *Bacillus pestis*—bubonic plague.

Note.—In this case it was not apparent how the man obtained his infection; probably in the Filipino house he last visited. The point of entry of the infection is not clear. It may be that he was infected through the abraded skin of the left thigh where the partially healed area of dhobie itch was located. "Dhobie" itch is very irritating, and the natural inclination is to scratch it frequently. The man's habits were not clean, his person was filthy. It could easily be that the dirt on his hands or under his finger-nails, or on his clothes or body, contained *Bacillus pestis*, and scratching infected the skin. The possibility of infection through intercourse with an infected Filipino woman must also be considered. As to the possibility of the latter being a source of infection I am unable to say. The great majority of the cases of plague that I have investigated had the primary focus in the femoral or inguinal glands.

ON THE DIAGNOSIS OF THE PLAGUE.

Without going too much into details we will consider the chief and characteristic symptoms of the various

types of plague, and by combining these prominent clinical symptoms with certain laboratory examinations endeavor to present an accurate and prompt method by which a diagnosis may be made.

The disease plague is, by most writers, divided into three classes or types:

1. Pestis bubonica or bubonic plague.
2. Pestis siderans or septicemic plague.
3. Pulmonic plague.

Bubonic plague is by far the most frequent type and occurs in from 65% to 90% of all the cases which have been studied in various epidemics. In Manila it is the usual type. I have seen but few of the pulmonic type, and none of the so-called septicemic type.

In the bubonic type the groin glands (the femoral and inguinal) are most frequently the first to be attacked; generally the glands of the right groin are first affected. In a report on bubonic plague in Manila, made to the Surgeon-General in 1900, the writer noted that "In considerably over one-half of the total cases of plague observed by him during nearly six months (from January 1 to June 15, 1901), the right groin glands were the first enlarged. The right groin glands were found to be primarily involved nearly three times as often as the left groin glands." The figures given by Manson as to the relative frequency of glands primarily involved are: in 70% groin glands, in 20% axillary, and in 10% cervical glands. I cannot vouch for the accuracy of this statement, but it is probable that close to 75% of all cases of bubonic plague first show in the groin glands.

In the second type, Pestis siderans or septicemic plague, the course of the disease is so rapidly fatal that no enlargement of the glands is apparent. This type occurs only in the course of severe epidemics of plague, and is the result of infection by intensely virulent bacilli, for plague bacilli tend to lose virulence readily outside the animal body and conversely the virulence of *Bacillus pestis* is greatly increased by frequently passing through the animal body.

In the pulmonic type also there is absence of visible glandular enlargement. In this, and in the septicemic type the diagnosis, especially of the latter, is not always easy. I will speak of the diagnosis of these various types presently.

Before discussing the diagnosis I wish to speak of a type of plague called Pestis minor, or "walking plague," and to say a word or two on the symptoms presented by these various types.

Pestis minor (mild, or walking plague), has a very low mortality. The type is generally bubonic; it is characterized by buboes, located generally in the groin as in the severer forms of bubonic plague. There is comparatively little constitutional disturbance in the affected individual. The glands may go back, or nearly back to normal size, the exudation being absorbed, or the gland may break down and discharge, recovery being quite rapid.

It is important to recognize these mild cases which invariably precede epidemics, and which represent infection by bacilli of low virulence. This is the time to stamp out the plague. As time goes on cases increase in number, and the bacillus, passing more and more time in the animal body, acquires increased virulence.

Symptoms.—As stated in the first part of these remarks, it is my intention to speak only of the characteristic symptoms, those which have diagnostic value. For details of symptoms, incubation, etc., the reader is referred to Kitasato and Nakagawa's article in Vol. 15, *Twentieth Century Practice of Medicine*, and other textbook articles.

The invasion of plague is generally sudden, and is frequently accompanied by a chill, followed by high fever. The onset is quite similar to that of the malarial fevers. In some cases, plague starts with a sudden chill,

as in the tertian malarial fever; in others with chilly sensations and a moderate rise of temperature, as is often the case in the estivo-autumnal type of malarial fever. In other words, the onset of plague is not characteristic; it does not differ from the onset of many other acute infections. In plague, however, soon after the initial fever there appears a glandular swelling in the groin, axilla, or neck, generally in the groin. In about three-fourths of the cases of plague the groin glands are first affected. The swelling of the affected gland progresses with great rapidity. I have often seen a swelling in the groin, no bigger than the tip of the little finger when first noted, increase in 24 hours to the size of a pigeon's egg. The tenderness of the swollen gland is characteristic. It is exquisitely painful on the slightest motion of the patient's body, and in consequence he assumes a position to favor the affected part. In case the groin glands are affected the thigh is drawn up, and the thigh and abdominal muscles on the affected side are in a state of tension. In case of affection of the right groin glands, the patient assumes the position which has been so frequently described as characteristic of acute appendicitis.

The depression of the patient sick with plague is altogether out of proportion to the time he has been ill. An anxious, fearful expression is also characteristic. The temperature rises quickly and becomes very high (104° to 105° or more). The bubo increases in size. Death occurs usually in from two to five days. The average duration of the cases I have studied was 3½ days from the time the patient went to bed. I have described here only the bubonic type.

In the pulmonic type the symptoms are quite similar to those of an acute diffuse pneumonia, with the exception that it is unusual to find evidence on physical examination of any consolidation. The expectoration is bloody and watery, not viscid as in acute pneumonia. There are numerous moist rales over both chests, and the dyspnea is great.

Diagnosis.—In the early stage of the bubonic type diagnosis on the clinical symptoms is very difficult, if not impossible, in isolated cases. When the bubo appears, the tenderness of the tumor, its rapid increase in size, and the great depression of the patient, make up a group of symptoms very characteristic of this disease. For an absolute diagnosis, however, we have to exclude other acute conditions and to rely on positive evidence obtained by laboratory examinations.

In the first place, as a matter of routine the blood should be examined for the malarial parasites. The absence of malarial parasites, and evidence of a marked leukocytosis would suggest some septic infection. A blood-count should be made to determine the degree of leukocytosis. The presence of a high leukocytosis, 20,000 and over, in the first two days of illness, is very suspicious of plague. In no acute disease is there such an early high leukocytosis.

The absolute diagnosis is made, readily and safely, by aspiration of the swollen glands. The plague bacilli multiply in the glands with remarkable rapidity, and stained sections have demonstrated that the enlargement is almost entirely due to their presence. Of nearly 40 cases, in which I aspirated in Manila, in not one did I fail to find the bacilli. The amount of material obtained by the hypodermic syringe not only suffices for cover-slip examinations and cultures, but also for animal inoculation. This routine was followed in all the cases cited.

As regards the septicemic type, the diagnosis would rest on the fact that there were many cases of undoubted plague in the vicinity. It would be difficult to make a diagnosis of septicemic plague, in the absence of other cases of bubonic or pulmonic plague, save at post-mortem.

In the pulmonic type there are certain differences from acute pneumonia, as stated before, and the plague

bacilli occur in enormous numbers in the watery, bloody, expectorations.

THE MODE OF DISSEMINATION OF THE PLAGUE.

The plague bacillus is eliminated from the body of infected individuals by various channels; in discharges from ruptured or incised buboes, in the urine and feces, and probably in all exudations from the body as well as in the sputum of those affected with pulmonic plague.

Infected animals (as rats) likewise deposit plague bacilli in their excretions, and their dead bodies are sources of infection to other animals. Healthy rats, devouring rats dead of plague become infected, and ants, flies and other insects feeding on dead animals become infected and deposit in their excretions virulent bacilli in various places. Nuttall has shown that house flies, which were fed on the organs of plague-infected animals, contained virulent bacilli 48 hours and more after feeding. He found virulent bacilli in the dejections of these flies two days afterward. Hankin, in India (according to Nuttall), has shown that ants, which can devour a dead rat with great rapidity, carry about virulent plague bacilli in their bodies for some time after feeding upon the body of a plague-infected rat. These ants and flies may deposit virulent bacilli, through their excreta, on food, in drinkables, on floors, tables, etc., and on the bodies or clothing of persons. In other words, they distribute the plague germ widely within the limits they travel.

Various investigators have attributed the spread of plague to direct inoculation through the bite of an infected insect, such as a flea, bedbug, etc. Experimental evidence is against this method. Nuttall and others, after careful experimentation, do not believe that plague is inoculated by the bites of these insects. Nuttall points out that insects while absorbing food from an individual's blood may deposit intestinal contents. The irritation of the bite causes the individual to scratch; so it could easily be, if the insect were infected, that plague bacilli could be scratched into the skin wound.

Rats are very susceptible to the plague, and die in great numbers before and during plague epidemics. Their infected bodies are a source of great danger. As mentioned before, healthy rats become infected by eating such diseased animals; and ants, flies and other insects, feeding on the infected bodies carry the bacilli, distributing the infection widely. Then, too, houses become infected by the scattering about of the excreta of both infected humans and rats. Persons residing in, or visiting such places may readily have their hands, bodies and clothing soiled with infected dirt.

Plague is a place-infection usually, and the favorite places for plague are those which are unclean, dark, damp, and filthy; in fact, the same places in which rats and all kinds of vermin flourish.

I have no doubt that plague, like anthrax, is very frequently inoculated in an individual by scratching with hands which contain plague-infected dirt. Skin diseases are most frequent in those living in squalid, dirty houses. Those living in such places get the infected dirt on their hands and under their finger-nails, and in scratching abraded skin surfaces inoculate themselves. Dhobie itch has favorite, select portions of the body, chief of these being the inner surface of the thighs and legs. The point of entry of nearly three-fourths of all plague infection is also in the lower extremities, or lower portion of the body, as shown by the fact that in nearly three-fourths of all cases the groin glands are primarily enlarged.

The possibility of infection through the genitourinary tract in coitus is a subject worthy of careful investigation.

Pulmonic plague must originate frequently through inhalation of dust containing virulent bacilli and possibly of the moist droplets given off in coughing. Flügge advanced the theory that pulmonary tuberculosis is con-

veyed in this manner, although it is extremely doubtful that this is the common method of conveying the disease.¹ In pulmonic plague the bacilli are found in enormous numbers in the mouth fluid, and the violent coughing which always accompanies the disease must undoubtedly disseminate the infection.

Animal experimentation shows that the infection may be obtained through the gastrointestinal tract by infected food or drink.

Prophylaxis.—We have seen that rats are very susceptible to the plague, that they frequently die in great numbers in the course of an epidemic, and often before the epidemic in human beings has started; and that flies, ants and other insects act as carriers of the plague bacilli.

Rats and vermin flourish only where there is dirt and filth, so that the first and greatest prophylactic measure is *cleanliness*, not only of one's person and living quarters, but of the whole establishment—mess-room, store-room, servant's quarters, outhouses, yard, stable, etc. In clean places, with whitewashed outhouses, stables, etc., rats and vermin find nothing to attract them, consequently such places are comparatively free from these dangerous pests.

Second, comes the destruction of rats and mice. The fewer rats in a locality, the fewer possible plague disseminators there are.

Third, protection of food and drink from possible contamination by ants, flies, and other insects, by the use of proper screens, etc. During epidemics, all food should be cooked.

Fourth, comes strictly under the first rule—that of cleanliness. All skin diseases, such as the so-called dhobie itch especially, should receive careful attention. Every abraded surface is a danger in itself, and when such surface is "itchy" the danger of inoculation by the plague bacillus is greatly increased. Such areas should be treated by a surgeon, and be well protected by dressings. I am of the opinion that a very considerable percentage of cases of plague have the point of entry of the infection through such areas.

MENSURATION AS AN AID TO THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.

BY

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Notwithstanding the great value of mensuration as an aid to diagnosis in the early and even in the "pretuberculous" stage of pulmonary tuberculosis, it has received but little attention from the general profession.

A considerable experience in its use has convinced me that mensuration is decidedly a help to a better understanding of that large class of ill-defined cases suspected of being tuberculous.

The term mensuration, as here used, embraces the measurement of the height, weight, respiratory power, and the mobility and vital capacity of the chest. While the signs derived from these measurements bear a certain relation to each other, and while they may have but slight significance when considered singly, when taken collectively they assume considerable importance.

Dr. H. P. Loomis considers "the evidences of a vital condition which predisposes to the development of phthisis or actually marks the true pretuberculous stage" under the following heads:

1. Corpulence, or the relation of the weight of an individual, expressed in pounds, to his height, expressed in feet.

2. Chest condition.—(a) Conformation of chest. (b) Chest measurement. (c) Vital capacity.

¹"On the Dissemination of the Tubercle Bacillus in Coughing," Curry, *Boston Medical and Surgical Journal*, May 8, 1898.

3. Constitutional condition.—(a) Chloranemia. (b) Digestive disturbances.

4. Character of the pulse.¹

I shall to a certain extent in my presentation of this subject follow the same classification, but as it is my purpose to be as concise as possible, consistent with clearness, I shall rely largely on my tabulation of cases to illustrate the relation to each other of the various signs obtained by mensuration and their value in the diagnosis of pulmonary tuberculosis.

I realize that the value of the signs thus obtained will be more fully appreciated when associated with other and more generally accepted signs of tuberculosis. I have, therefore, selected for the purpose of illustration 10 cases, 6 males and 4 females, between the ages of 20 and 40 years, each of whom at the time of the first examination I found to be in a normal condition as regards these points, but who subsequently became infected with and furnished the more generally accepted signs of the disease.

The corpulence of an individual, according to Dr. Loomis (see article already referred to), is the product obtained by dividing his weight, expressed in pounds, by his height, expressed in feet.

In a normal man it should be 26, and in a woman 23. When it falls far below these figures, especially when the loss of flesh has without apparent cause been steadily progressive, suspicion should be certainly entertained of a possible tuberculous condition.

Vital capacity is, according to Hutchinson, "the most complete voluntary expiration immediately following the most complete inspiration." The same writer also states that the quantity of expired air does not depend altogether on the size of the chest, but sustains a fixed relation to the height of the individual, being for a man of five feet eight inches about 230 cubic inches. While it may vary considerably and still be within the range of the physiologic vital capacity of the individual, it becomes abnormal when it falls much below a certain limit, called the "minimum vital capacity," which should have the ratio to the height of a man expressed in inches of 3 to 1, and of a woman 2.6 to 1. To illustrate, say the height of a man is 5 feet 8 inches = 68 inches \times 3 = 204, the number of cubic inches representing his minimum vital capacity.

Vital capacity is measured by means of the spirometer, an instrument invented by Hutchinson. In order to secure the most satisfactory results the patient must be instructed in its use.

Spirometric as well as pneumatometric tests are best made with the chest uncovered, or at least with the clothing about the chest and waist loosened. Nor must we forget that a full stomach would impair the efficacy of the tests. When made from time to time these tests are of value as indicative of the progress of the disease and when showing increasing capacity are a source of much encouragement to both patient and physician. Persons who have systematically practised deep breathing for a considerable time can, even after the advent of a tuberculous lesion, occasionally show some very surprising excursions on the scales of the spirometer and pneumatometer; such a case, of course, proving an exception to the rule. It may and occasionally does happen, however, that the patient has been in the habit of noting his chest expansion, if not his vital capacity, from time to time, and so is in a position to state to what extent it has diminished, thus furnishing data by which to judge of the degree of departure from his normal standard. No. 5 of my report (see tables) presents a striking example of such a case.

Pneumatometry also furnishes certain signs indicative of pulmonary disease which, like those of spirometry, have a considerable range within physiologic limits.

The average inspiratory power in men in normal condition, is about two inches, and in women, 1½ inches. The expiratory power averages in men about 2½ inches and in women 1½ inches.

It will be noted from a study of the foregoing averages that the expiratory power is about one-fourth stronger than that of inspiration. In using the pneumatometer, the patient should exert only the muscles of the chest and not those of the mouth and cheeks.

Although there is no fixed relation between the pneumatometric and spirometric signs as indicative of disease, we note, however, in most cases of pulmonary tuberculosis a certain relation between the respiratory power and the vital capacity (see tables). In the early stage of tuberculosis the inspiratory power is first lowered, while the expiratory power remains unimpaired. As the disease advances the latter is also lowered. In some cases a slight diminution of expiratory power may, however, be detected early in the disease.

Hutchinson has stated the mean mobility of a healthy male chest to be 3 inches.

My own observations of 30 healthy males, between the ages of 20 and 40 years, give a mean of 2¾ inches. Had I, however, added to the lists the measurements taken of 5 other individuals, who were practised deep-breathers and showed respectively a mobility of 4¾, 5, 5½, 5¾ and 6 inches, it would have raised the mean mobility to about 3½ inches.

The mean mobility of 12 healthy females was 1½ inches with the chest uncovered and 1¾ inches with the corsets on.

I have not infrequently found decided impairment of chest movement and consequently diminution of vital capacity and respiratory power in persons showing but few other signs of tuberculosis.

A comparison of the chest movements of the two sides may furnish signs of considerable diagnostic value in cases of suspected tuberculosis. Even a slight inequality (easily detected by the use of my stethometer) is, when not otherwise accounted for, indicative of the disease.

As all are doubtless familiar with the general chest conformation of those who are, so to speak, predisposed to pulmonary tuberculosis, I need not occupy space with its description. I wish in this connection, however, to call attention to certain changes in the shape and size of the neck to be found on the side of the affected lung. This change consists of a wasting of this side of the neck at its base; in cases of even slight apical involvement the semicircumference of this side being about ½ inch less than that of the other side. In these cases the neck is also lengthened on the affected side, owing to the flattening of the summit of the chest. These conditions in many instances may be noted even before the physical signs indicate the presence of a tuberculous lesion.

Before entering upon our investigations let us recall to mind that under normal conditions the two sides of the thorax are practically symmetric¹ (although, to be more exact, we will find that in most persons the semicircumference of the right side of the chest exceeds that of the left by from ½ to ¾ of an inch—left-handed persons, however, having an enlarged left side); that the respiratory movements are to a greater or less extent noticeable over the whole thorax; that the inspiratory movement is slower and longer than that of expiration, with no pause between them, although there is an appreciable pause at the close of each respiratory act (according to Walshe, the period of motion to that of rest is as 9 to 1), and that the expiratory power is about one-fourth stronger than that of inspiration.

For making comparative measurements of the thorax

¹ The Pretuberculous Stage of Phthisis, or the Condition which Antedates Tuberculous Development, and some Aids to its Diagnosis.—*Medical Record*, December 10, 1898.

¹ From an examination of 42 individuals, 30 males and 12 females, in normal health I found but three instances—two males and one female—of perfect symmetry of the two sides of the chest. One of the males was an athlete and ambidextrous, and, by the way, subsequently showed (case 5) as a result of tubercular disease radical departures from his normal measurements.

I have devised two instruments, which may be called respectively a differential thoracic measurer and a stethometer. The former is a modification of the double tape suggested by earlier writers. It consists of a graduated tape, 50 inches in length, numbered right and left from its center, at which point it is attached to what may be called a fixation plate. To use the tape, adjust by means of two short strips of surgeon's plaster, the plate over the spine on a line with the inferior angles of the scapulas, pass the tape around the chest on a level with the nipples, crossing them over the mesial line (which may be defined by a pencil mark on the skin) of the sternum. By its use we can take simultaneously the measurements of the two sides of the chest, the total of the two giving, of course, the circumference of the chest.

By noting the measurements of each side of the chest at the completion of a forced expiration and after a forced

For taking comparative measurements of the mobility of the two sides of the chest at various points the arms of the instrument are applied to the anterior and posterior chest and at the close of a forced expiration are locked by means of the set-screw, which also unlocks the jointed end of the arm. The patient should now make a forced inspiration, the degree of mobility being one-half of that indicated on the multiple scale of the instrument.

In making the examination the chest should be uncovered and with the patient standing, if possible, in a natural position, with the arms hanging by the side.

In order to avoid repetition and to present in the most comprehensive manner the results obtained by mensuration in the diagnosis of early pulmonary tuberculosis, I submit the following analysis of cases, with the normal conditions of which previous examinations had made me acquainted:

TABLE I.—GIVING THE MEASUREMENTS OF 10 INDIVIDUALS IN NORMAL CONDITION, SHOWING THEIR RELATION TO EACH OTHER.

Case.	Sex.	Age.	Height.		Weight.	Corpulence.	Semicircumference of the Chest.				Thoracic Perimeter.	Normal Thoracic Perimeter for Individual.	Vital Capacity—Cubic Inches.	Normal Minimum Vital Capacity for Individual.	Respiratory Power.		Semicircumference of the Neck.	
							At Expiration.		Mobility.						Expiratory.	Inspiratory.		
			Ft.	In.														
							R.	L.	R.	L.								
1	M.	26	5	10	156	26	18½	17¾	1½	1½	37½	35	235	213	3	2½	7½	7½
2	M.	20	5	9	169	29	17½	16¾	1½	1½	35	34½	225	210	2	1½	7¾	7¾
3	F.	22	5	6	130	23	16	16¾	1½	1½	33	35	169	170	1½	1½	6	6
4	M.	37	5	8	159	28	17¾	17	1½	1½	36	34	231	207	3½	2½	7½	7½
5	M.	30	5	10	167	29	20¼	20	3	3	43	35	320	213	6	5	8½	8½
6	M.	21	6		176	29	17¾	17	1½	1½	36	36	225	219	2½	1¾	8	8½
7	F.	21	5	5	114	21	15¾	15¼	1	1	32	32½	175	167.5	1½	1	5½	5½
8	M.	40	5	8	157	27	17	17	1½	1½	35	34	225	207	2½	2	7½	7½
9	F.	35	5	4	119	22	16½	16	1½	1½	33	32	168	165	1½	1	6	6
10	F.	20	5	7	136	24	16½	15¾	1½	1½	33	33½	173	172.5	1½	1	6¼	6¼

TABLE II.—GIVING THE MEASUREMENTS OF THE SAME INDIVIDUALS AT A LATER PERIOD, THERE NOW BEING EVIDENCE OF A TUBERCULOUS INVASION OF ONE OR BOTH LUNGS.

Case.	Length of time since first ex- am in a- tion.	Yrs. Mos.	Weight.	Corpulence.	Semicircumference of the Chest.				Thoracic Perimeter.	Vital Capac- ity.	Respiratory Power.		Semicircum- ference of the Neck.		Lung Affected.	Remarks.
					At Expiration.		Mobility.				Expir- atory.	Inspira- tory.	R.	L.		
					R.	L.	R.	L.								
1		11	142	24	17	17	$\frac{3}{4}$	$1\frac{1}{4}$	35	205	$2\frac{3}{4}$	$1\frac{1}{2}$	7	$7\frac{1}{4}$	Right.	In each of these 10 cases the apex of the lung was the seat of the disease. Cases 6 and 10 were in brother and sister.
2	1	8	150	26	16	$15\frac{3}{4}$	$\frac{4}{4}$	1	32	185	$1\frac{3}{4}$	$\frac{3}{4}$	7	$7\frac{1}{2}$	"	
3	3	6	120	$21\frac{3}{4}$	$15\frac{1}{4}$	$15\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$31\frac{1}{2}$	140	1	$\frac{3}{4}$	$5\frac{1}{4}$	$5\frac{1}{4}$	"	
4	2	2	150	26	$17\frac{1}{4}$	$16\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	34	190	3	2	$7\frac{1}{4}$	$6\frac{1}{4}$	Left.	In 7 of the cases the signs obtained by mensuration had clearly indicated the existence of lung disease before it was possible by the ordinary methods of physical exploration to demonstrate its presence.
5	2	2	148	25	$18\frac{3}{4}$	$17\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	38	245	4	$2\frac{1}{2}$	$7\frac{3}{4}$	$7\frac{1}{4}$	"	
6	6		168	27	$17\frac{1}{4}$	$16\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$34\frac{1}{2}$	195	$\frac{3}{4}$	1	$7\frac{1}{4}$	$7\frac{1}{4}$	"	
7	1	6	166	19	15	15	1	1	31	156	1	$\frac{3}{4}$	5	$5\frac{1}{4}$	Both.	
8	4	1	146	25	$16\frac{3}{4}$	$16\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$33\frac{1}{4}$	198	$2\frac{3}{4}$	$1\frac{1}{4}$	$7\frac{1}{4}$	$6\frac{3}{4}$	Left.	
9	8		112	20	$15\frac{3}{4}$	$15\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$31\frac{1}{2}$	154	1	$\frac{3}{4}$	$5\frac{1}{2}$	$5\frac{1}{2}$	Right.	
10	1		120	$21\frac{1}{2}$	$15\frac{3}{4}$	$15\frac{1}{2}$	$\frac{3}{4}$	1	31	168	$1\frac{1}{4}$	$\frac{1}{2}$	$5\frac{1}{2}$	6	"	

inspiration, we are able to detect the relative disparity, if any exists, in the respiratory movements of the two sides. By adding the average of the measurements of the two sides we obtain the "thoracic perimeter" of the individual, which should never be less than one-half his or her height.

The stethometer is simply a modification of the ordinary calipers, with a graduated scale to indicate the degree of separation of the arms, for taking the diameters of the chest.

One arm of the instrument is jointed at one-third of the distance from its free end and is supplied with an index twice the length of the jointed part, thus increasing twofold the reading on the scale of the movements of any part of the chest to which the instrument may be applied, a movement of even one-eighth of an inch being read with ease. For taking the anteroposterior diameter of the chest, lock by means of the thumbscrew, the jointed end of the left arm and apply one arm of the instrument over the sternum on a level with the nipples and the other over the spine on a line with the inferior angles of the scapulas and note the reading on the scale. The transverse diameter may be obtained by placing the arms over the center of the fifth rib on each side of the chest.

It will be noticed from a study of these tables that a large proportion of the patients were above the average height, and my records of a considerable number of other cases of pulmonary tuberculosis demonstrate that individuals of both sexes above the average height are most frequently infected by the disease.

So convinced am I of the value of the signs obtained by mensuration in the investigation of cases of suspected tuberculosis that it has become a matter of routine with me to make use of this method in my examination of all such cases.

Although in many instances I fail at my first examination to secure by the aid of the ordinary methods of physical exploration corroborative evidence of the existence of tuberculosis, yet the signs obtained by mensuration are to my mind sufficient to warrant the assumption that patients have already entered the borderland, the pretuberculous stage of pulmonary tuberculosis. Especially is this true when, as is usually the case, a number of the following symptoms are present, *e. g.*, prominent bright eyes, often with dilated pupils; morning pallor; a feeling of fatigue on arising in the morning, even after a good night's rest; more or less shortness of breath on slight exertion; a quickened pulse, unaffected by a change of position; an evening rise of tem-

perature, and a dry hacking cough on assuming a recumbent posture.

At any rate we can make no mistake in treating such cases, as is my practice, as tuberculous suspects. Subsequent study of a large proportion of such of these patients as have failed to heed the danger-signal has shown that they have given evidence of beginning or more advanced tuberculosis, thus proving that the signs present at the first examination were of exceeding value as indicative of a latent or pretuberculous stage of tuberculosis.

To some it might seem, notwithstanding the unmistakable value of the evidence presented, that all these measurements are unnecessary and a waste of time, they possibly forgetting that "the physician who has made up his mind that he will diagnose as correctly as possible whatever nature of disease comes to his notice, and who is moreover desirous of aiding the crusade against tuberculosis to the best of his ability, has no other course than to do his work carefully and thoughtfully, and he must bear in mind at all times that tuberculosis may be present when in the absence of other recognizable cause the general health appears to suffer."¹

A CASE OF PAROVARIAN CYST COMPLICATED BY THE PRESENCE OF A MYOMATOUS UTERUS FILLING THE PELVIS: OPERATION; EXTENSIVE ADHESIONS; ACCIDENTAL INCISION OF THE BLADDER; PHLEBITIS ON THE TWENTY-FIRST DAY.

BY

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Miss B. D., white, aged 50. She menstruated at 14 years, and was always regular until two years ago. She had typhoid fever in 1889. In 1892 she fell from a wagon and hurt her side and abdomen. In 1895 she had three attacks of pain of an aching character in her left side, and she then noticed a small lump there for the first time. This remained about a year and then disappeared. About this time she noticed that her abdomen was getting larger, but the lump could no longer be felt. This lump was, doubtless, the myoma, and it disappeared by reason of being forced back into the pelvis by the rapidly growing ovarian cyst. The physical examination showed that she was in good general health, and fairly well nourished; the abdomen was characteristically symmetric in its enlargement, and the waist measured 43 inches. The vaginal examination showed the cervix small and soft, and pushed down toward the vaginal outlet, and the pelvis full of a soft, smooth, indistinct mass. On May 4, under ether anesthesia, the uterus was curetted and packed with gauze. The abdomen was then opened and a very thick-walled cyst was found adherent to the greater part of the surface of the anterior abdominal wall. The adhesions were so old and dense that two or three areas as large as the hand had to be dissected off with the knife. None of the cyst wall was left however, and after draining off 15,000 cc. of thick, chocolate-colored fluid, the sac was freed from the posterior parietal peritoneum and from the omentum, to which it was attached by three broad vascular bands, and removed from the abdomen. The pedicle was the right broad ligament. After the cyst was removed the pelvis was found to contain a myomatous uterus which about filled it.

As the bladder was pushed up along the middle line to within 2½ inches of the umbilicus, the incision for the removal of the cyst occupied a space of from 2½ inches below the umbilicus to 2 inches above. This was too small for the removal of the myoma, and in attempting to enlarge by freeing the bladder and allowing it to drop down, the bladder was cut into, transversely, to the extent of an inch. This cut was at once closed by a double row of continuous catgut, and gave no after-trouble. The myoma was then removed, with some delay but little difficulty, through the high opening. The uterus was amputated above the cervix and removed, together with the tubes and ovaries. All raw surfaces were stitched over and the wound closed without drainage, except for a small piece of gauze left in the cervix, which drained the subperitoneal space. Altogether, this operation occupied nearly six hours. The greater part of this time was consumed in freeing the very extensive adhesions and in sewing over the raw spaces left by them afterward. When, in the beginning, it was seen that the operation would be a long one, the patient was given 2,000 cc. of normal salt solution under the breasts, and notwithstanding that

some little blood was lost, her pulse remained at 80 during the whole time. There was no other nausea, and the kidneys acted well from the first: 320 cc. of urine the first 24 hours; 750 cc. the second; 840 cc. the third; 1,500 cc. the fourth; 1,345 cc. the fifth, and afterward somewhat less.

There was primary union of the wound, and the convalescence was uneventful until the twenty-first day, when the temperature rose to 101.5° and she had pain in the left leg. From this time until the thirty-second day the temperature ranged from 101.5° to 104° in the evening; the morning temperature was always near normal, usually following a heavy night-sweat. The saphenous, femoral and iliac veins were large, hard, knotty and sensitive to touch. There was no pain in the limb after the first week, and in 14 days after the onset the pulse and temperature were normal, and the hard vein was nearly back to its normal condition. Dr. H. A. Kelly says (*Operative Gynecology*) that he had nine cases of phlebitis in 1,200 abdominal sections: that they all occurred between the eighteenth and twenty-sixth days; that it is doubtless septic in its origin, though he had never seen a death from this cause; that all patients get well in a few weeks, though some lameness may persist for a while longer. The treatment carried out with our patient was that recommended by Dr. Kelly, viz., keeping the leg warm and occasional applications of the paquelin cautery. The symptoms in this case, excepting a slight stiffness and enlargement of the limb, were all gone at the end of three weeks.

I have no statistics at hand as to the frequency of the occurrence of this combination of parovarian cyst and myoma, but I am informed by Dr. T. S. Cullen that it is not uncommon, which, as he says, one would naturally expect from the frequency with which they each occur singly.

THE DISTRICT OF COLUMBIA CANCER RECORD FOR TWENTY YEARS.

BY

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Medical literature of recent years has offered numerous contributions concerning the increase of cancer, many being of a markedly pessimistic and alarming character. A large number of the medical profession, as well as a considerable body of the laity, appear imbued with like convictions, though a number of writers present explanations and an array of statistics to prove the alleged increase is more apparent than real.

Williams¹ states that for a half century the British Registrar-General's report has repeated annually that the cancer deathrate is the highest on record and he thinks that if no effort is made to check its progress it will ere long be as lethal as typhoid fever, smallpox and tuberculosis combined.

Park² says that it is the only disease that is steadily on the increase and that, if the relative deathrates are maintained during the next 10 years, there will be more deaths in the state of New York from cancer than the combined three diseases just mentioned.

Rodman³ believes that in this country and England cancer is on an alarming increase, claiming that in Louisville, during 30 years, the number of cancer cases has doubled each decennium.

Payne,⁴ quoting the British Registrar-General of 1889, considers that it seems scarcely possible to maintain the optimistic view that the whole apparent increase can be explained by greater care in diagnosis, and it must be admitted as highly probable that a real increase is taking place in the frequency of this malignant affection.

Finkelnburg,⁵ after citing the statistics of Frankfort-on-the-Main, which testify to the increase being apparent rather than real, offers extensive data to prove the actual great increase of the disease in Prussia.

Lyon⁶ claims that the cancer deathrate has doubled in Buffalo during the past 20 years and that this increase agrees with similar marked increase for all countries of the civilized world, which cannot be accounted for by more careful diagnosis and certification.

On the other hand, Newsholme⁷ believes the increase is only apparent and not real, due entirely to improved diagnosis and more careful certification of causes of death

¹ Von Ruck. The Diagnosis of Pulmonary Tuberculosis.—*The Journal of Tuberculosis*, July, 1900.

on the part of practitioners. By separating deaths into groups of ages the rate is shown to be much less than commonly given, and when divided into accessible and inaccessible, the increase is confined to the latter, explained by increased knowledge and better diagnosis.

A similar explanation is given by Scott,⁸ who finds in Eastern Essex, England, an increase of cancer death ratio during three decades, with the small variation from 6.36% to 7.73% and 8.41%, occurring mostly among males and being inaccessible cases.

Whitney⁹ shows that, computing the deathrate for cancer in Massachusetts for patients of 30 years of age and over, the rate became four times greater during a period of 30 years previous to 1895. At that rate in two centuries every person over 30 years of age would die of cancer. But this increase is calculated by a geometric ratio, while the real increase is arithmetical and explained wholly on the ground of improved diagnosis and certification. He insists that the cancer death ratio should be estimated only for the population over 30 years of age among whom the disease prevails, and that correct statistics can be obtained only from large hospitals treating many patients over a period of years, the diagnosis being confirmed after operation or autopsy. This has been possible only in the Allgemeiner Krankenhaus, Vienna, covering two decades, and the Charité Hospital, Berlin, during 11 years where, in nearly 50,000 autopsies, the death ratio for cancer was 8.3%, being nearly 2% higher than in Massachusetts today. He thinks that until the ratio of deaths for 30 years and over has reached 8% or 9%, which is shown by autopsies to be the normal death ratio, it is not justifiable to speak of the increase as inherent in the disease itself.

A study of the statistics for the District of Columbia for 20 years, from 1881 to 1900, will throw light on the views quoted and add to the knowledge of this important subject. The annual reports of the health officer furnish the chief basis for the study.

In computing the following figures, the population, total deaths and cancer deaths of the 10 years from 1881 to 1890 have been combined to form the first decade; those of the 10 following years appear in the second. Thus the population of the first decade was 2,048,730, of the second 2,678,434, an increase of 30.73%, which figure will be taken as a basis for comparison in computing subsequent rates of increase.

The total deaths were respectively 47,900 and 58,908, with an increase of 22.98%, while the cancer deaths increased from 1,012 to 1,497, a rate of 47.92%, the former being less and the latter considerably greater than the increase of population.

The twelfth U. S. census gives an increase throughout the country for total deaths of 23.50% over the eleventh, and 40.46% increase for cancer deaths, the figures for the latter being respectively 29,475 for the twelfth and 20,984 for the eleventh. Thus, while our increase of total deaths falls below that of the census record, that for cancer is larger.

This increase for cancer is in marked contrast to the decrease of certain diseases exhibited in the census report, the last presenting a deathrate per 100,000 for tuberculosis of 188.5, as compared with 247.3 for the previous census. The relative figures for typhoid fever are 33.9 and 44.28; for malarial fever 8.03 and 18.31; for dysentery 13.51 and 33.28.

When we consider also the very great reduction in the deathrate for the infectious and intestinal diseases of children, that of diphtheria being about 50% and of cholera infantum nearly 30%, it is obvious that the fairest comparison of the relative deathrates for cancer will include only those deaths during the ages to which the disease is confined chiefly, 30 years and over.

On this basis we obtain the ratio of cancer deaths from the first decade in the District of Columbia to be 5.11%—cancer deaths 1,012, 30 years and over, 19,787; of the second decade 5.29%—cancer deaths 1,497, 30

years and over, 28,235—an increase of only .18%. The highest ratio for a single year of the 20 is 5.56%, for 1885, while the lowest falls in the second decade, for 1892, with a ratio of 3.96%.

In this connection it is well to refer again to the previously quoted cancer death ratio of 8.3%, given as normal from the German hospitals and much in excess of our figures:

RATIOS OF CANCER DEATHS TO THOSE OF 30 YEARS AND OVER.

	Cancer.	30 Years and Over.	Death Ratios.
1881-1890	1,012	19,787	5.11%
1891-1900	1,497	28,235	5.29%
1885	119	1,814	6.56%
1892	111	2,798	3.96%

Whitney⁹ gives this ratio among the six New England states, for the year 1895, from 5.50% to 6.75%, a variation greater than that of the two decades in the District of Columbia, which are practically identical. Hence, estimating on the basis of deaths at 30 years and over, we can affirm there has been no increase in the disease during this period of 20 years.

The statistics from Frankfort-on-the-Main first divided cancer cases into *accessible* and *inaccessible*, the terms referring to the ease or difficulty of access, and claimed the increase occurred among the latter, due to improved methods of diagnosis and more careful certification of deaths during recent years.

ACCESSIBLE CASES.						INACCESSIBLE CASES.					
	1881-1890.	1891-1900.	Increase.	Decrease.	Percent- age.		1881-1890.	1891-1900.	Increase.	Decrease.	Percent- age.
Uterus.....	270	363	93	...	34.44	Stomach	191	339	148	...	77.48
Breast	148	221	73	...	49.32	Intestines	45	57	12	...	26.66
Axilla	11	2	...	9	81.81	Rectum	27	50	23	...	85.18
Face	47	69	22	...	46.66	Liver	68	157	89	...	130.88
Mouth and Tongue.....	35	33	...	2	.63	Pancreas	13	17	4	...	30.77
Throat.....	19	33	14	...	73.68	Kidneys	7	19	12	...	171.42
Neck	14	18	5	...	38.46	Bladder	15	24	9	...	60
Leg and Foot.....	13	10	...	3	23.07	Ovary.....	14	3	...	11	78.57
Groin	2	1	...	1	50	Abdomen	2	36	8	...	2.57
Vulva	10	10	...	...	...	Lungs.....	7	7	...	...	700
Scrotum	2	4	2	...	100	Esophagus.....	4	4	...	...	...
Penis.....	4	1	...	3	75	Undefined....	25	19	...	6	24
	575	765	190	...	33.04		437	732	295	...	67.50

Under this division our accessible cases are made to include those of the surface of the body, with uterus, mouth and tongue, and throat.

With 575 deaths in the first decade and 765 in the second, the rate of increase is 33.04%, little greater than the increase of population, which was 30.75%. The highest figure is for throat cases, rising from 19 to 33, or 73.68%. These cases, being on the border line between accessible and inaccessible, might have been classed with the latter, in which case the increase of the accessible would practically correspond to that of the population.

Newsholme and King¹⁰ claim that this division of British statistics shows no increase among accessible cases from 1860 to 1889.

The figures for inaccessible cases are 437 and 732, an increase of 67.50%. The organs displaying the highest percentages of gain are stomach, 77.48%; rectum, 85.18%; liver, 130.88%; kidneys, 171.42%; thus confirming the statement that the greatest increase of cancer has occurred in the digestive organs.

Payne⁴ says the statistics of St. Thomas' Hospital for 20 years disclose an increase of three or four times, in admissions for cancer of the digestive organs, while of the generative organs they have doubled.

No rational explanation appears for this greater

increase in inaccessible organs, other than that of improved diagnosis, aided by the immense strides in abdominal surgery of recent years. This influence is also exhibited in the decrease of the cases in certain organs, which otherwise would not be consistent with the steady increase of population. It is evident in both divisions of our cases and must be explained by a more accurate classification under other organs or entire change of diagnosis. Thus, of the axilla the deaths decreased from 11 in the first to 2 in the second decade; leg and foot from 13 to 10; penis from 4 to 1; ovary from 14 to 4; undefined from 25 to 19.

From the study of our cases under this classification we are led to believe the increase of cancer is practically confined to cases of inaccessible organs and has been due to improved diagnosis, better classification of cases and more careful certification of deaths.

Sex.—The greater relative increase among males over females has been noted by different writers. Our figures give them an increase of 75.60% in the second over the first decade, against 36.96% for females.

MALE AND FEMALE CANCER DEATHS.

	1881-1890.	1891-1900.	Increase.	Percentage.
Male	287	504	217	75.60
Female.....	725	993	268	36.96

For an understanding of this difference we turn again to the division into accessible and inaccessible cases. We find that among the former the male deaths increased only 28.28%, less than that of the population, while among the latter they rose to 93.47%, the two classifications for females presenting the ratios 34.03% and 48.67%.

ACCESSIBLE CASES AS TO SEX.

	1881-1890.	1891-1900.	Increase.	Percentage.
Male	99	127	28	28.28
Female.....	476	638	162	34.03

INACCESSIBLE CASES AS TO SEX.

	1881-1890.	1891-1900.	Increase.	Percentage.
Male	184	356	172	93.47
Female.....	253	376	123	48.67

This excessive increase for males under the inaccessible division can be explained only as the result of more accurate diagnosis, largely the result of more general performance of abdominal section upon male patients during the last decade, which had been applied previously more commonly to females.

Naturally the uterus claims the greatest number of victims, 270, or 26.67% of all cancers in the first decade; 363, or 24.25% in the second, with an increase of 34.44%, which, however, is little greater than that for population.

Of the breast, practically confined to females, there were 148 and 221, being 14.62% of all cancers in the first and 14.76% of those in the second decade, and giving an increase of 49.32%.

CANCER OF UTERUS AND BREAST.

	1881-1890.	1891-1900.	Increase.	Percentage.
Total deaths.....	1,012	1,497		
Uterus	270	363	93	34.44
Percent. of total.....	26.67	24.25		
Breast	148	221	73	49.32
Percent. of total.....	14.62	14.76		

Newsholme and King¹⁰ say that while the greater prevalence of cancer in women is due entirely to affec-

tions of the sexual organs, the two sexes suffer equally in those parts of the body common to both. On the other hand, Payne⁴ claims that in England there is more marked increase among males than females, the digestive organs being the most frequent and important site in males. Reiche,¹¹ in discussing the cancer statistics of Hamburg, finds an enormous preponderance of cases in the digestive organs of males over females, namely, in the tongue, pharynx, esophagus and stomach, while of the intestines and rectum they are practically identical in the two sexes.

Our figures do not agree wholly with any one of these views, as illustrated by the accompanying table:

CANCER OF ORGANS COMMON TO BOTH SEXES.

	Males.				Females.			
	1881-1890.	1891-1900.	Increase.	Percentage.	1881-1890.	1891-1900.	Increase.	Percentage.
Face.....	31	44	13	41	16	25	9	56.25
Neck.....	9	14	5	55.55	4	4		
Throat.....	16	29	13	81.25	3	4	1	33.33
Stomach.....	89	193	104	116.85	102	146	44	43.13
Intestines.....	22	27	5	22.72	23	30	7	31.34
Rectum.....	11	20	9	81.81	16	30	14	87.50
Liver.....	33	72	39	118.12	35	85	50	142.85
Pancreas.....	8	8			6	9	3	50
Kidneys.....	5	8	3	60	2	11	9	450
Bladder.....	12	18	6	50	3	6	3	100

Most marked are the higher male percentages of increase for neck, throat and stomach; the female for liver, pancreas, kidneys and bladder; while they are practically the same for face, intestines and rectum. In males the increase for neck of 55.55%, and for throat of 81.25%, against no increase for females in the former and 33.33% for the latter, is very striking. The quoted references to the greater increase in males, of stomach cases, is sustained by our figures, 116.85%, compared with an increase of 43.13% for females. In the remaining portions of the digestive tract the two sexes suffered about equally. The females, with a total of 120 liver cases, surpassed the males with 105, their percentage of increase being 142.85%, while for males the rate was 118.12%.

Though the two sexes present equal numbers of deaths for pancreas and kidneys, the females increased 50% for the former in the second decade, against no increase of males, and exhibit an increase of 450% for the latter, compared with 60% for males. While the females increased 100% for bladder cases and the males 50%, their total deaths were less than one-third that of males.

Any significance attached to the percentages from these three last organs is modified by the small total under each, where an additional figure will greatly increase the rate.

Race.—While the earlier writers asserted that malignant disease was rare among negroes, those of recent years are unanimous in reference to its equal frequency, or greater increase than among whites.

Rodman,³ after describing at length the immunity up to 50 years ago and subsequent effect of civilization on the colored race, declares they have become quite as liable as the whites to cancer of some organs, and more so to affection of the uterus. He quotes other writers of southern cities who offer similar testimony. Cullen¹² asserts that carcinoma of the uterus is equally prevalent among the colored as whites at Johns Hopkins Hospital, and that in the negress it differs in no way from that of the white woman.

The statistics of the District of Columbia disclose 33.37% of the population colored, for the decade 1881-1890, 32.08% for the following decennium. Their ratios of total deaths were respectively 47.04% and 44.22% for these two periods, while of cancer deaths they were

25.98% and 26.52%. Thus, with a decrease of the total death ratio relative to the whites, the colored show an increased cancer ratio. It is to be noted that in neither decade has the cancer death ratio of the colored equaled that for colored population, indicating that as yet the race has not been affected by the disease proportionately to the whites.

WHITE AND COLORED DEATH RATIOS TO TOTAL DEATHS.

	1881-1890.	Percentage.	1891-1900.	Percentage.
Total population.....	2,048,730		2,678,434	
Colored population.....	682,979	33.37	859,349	32.18
Total deaths.....	47,900		58,909	
Colored deaths.....	22,535	47.04	26,053	44.22
Cancer deaths.....	1,012		1,497	
Colored cancer deaths..	263	25.98	397	26.52

Comparing the increase exhibited by each race in the second over the first decade, the total white deaths were more by 29.53% against 15.61% colored; while for cancer deaths the percentages are 46.86% white and 50.95% colored. The same relative cancer increase is presented for the two sexes, white males showing a gain of 72.96%, colored 87.03%; for females the figures are respectively 35.07% and 41.62%.

INCREASE OF WHITE AND COLORED CANCER DEATHS.

	1881-1890.	1891-1900.	Increase.	Percentage.
Total white deaths.....	25,365	32,856	7,491	29.53
Total colored deaths.....	22,535	26,053	3,518	15.61
White cancer deaths.....	749	1,100	351	46.86
Colored cancer deaths..	263	397	134	50.95
White male cancer deaths.....	233	403	170	72.96
Colored male cancer deaths.....	54	101	47	87.03
White female cancer deaths.....	516	697	181	35.07
Colored female cancer deaths.....	209	296	87	41.62

The most marked disproportions between the races are found in the uterus and liver. For the former the white increase was 21.57%, colored 65%; for the latter, white 117.54%, colored 190.90%. Also for the breast, the whites, with 46.60% increase, were exceeded by the colored with 55.55%; but for the stomach the whites have the larger increase of 82.44%, against the colored

WHITE AND COLORED INCREASE OF CANCER IN CERTAIN ORGANS.

		1881-1890.	1891-1900.	Increase.	Decrease.	Percentage.
Uterus.....	White.	190	231	41		21.57
	Colored.	80	132	52		65
Liver.....	White.	57	125	68		117.54
	Colored.	11	32	21		190.90
Breast.....	White.	103	151	48		46.60
	Colored.	45	70	25		55.55
Stomach.....	White.	131	239	108		82.44
	Colored.	60	100	40		66.66
Intestines...	White.	36	48	12		33.33
	Colored.	9	9			
Rectum.....	White.	21	42	21		100
	Colored.	6	8	2		33.33
Bladder.....	White.	14	21	7		50
	Colored.	1	3	2		200
Kidneys.....	White.	5	14	9		180
	Colored.	2	5	3		150
Pancreas....	White.	9	15	6		66.66
	Colored.	4	2		2	50
Ovary.....	White.	10	2		8	80
	Colored.	4	1		3	75
Vulva.....	White.	6	8	2		33.33
	Colored.	4	2		2	50
Face.....	White.	42	63	21		50
	Colored.	5	6	1		20
Neck.....	White.	11	18	7		63.63
	Colored.	2			2	100
Mouth and Tongue.....	White.	26	28	2		7.69
	Colored.	9	5		4	44.44
Throat.....	White.	17	27	10		58.82
	Colored.	2	6	4		200
Undefined...	White.	20	16		4	20
	Colored.	5	3		2	40

66.66%. For all other organs the colored record presents too few cases for valuable comparisons, the greater increase shifting from one race to the other.

One explanation of the large colored increase in certain organs may lie in the greater operative facilities of recent years for these patients and consequent opportunities for improved diagnosis. Yet, excepting cases of the uterus and liver, the percentages of increase are so similar that neither race appears more prone than the other to the disease.

From this analysis of the District of Columbia statistics, the following conclusions are drawn:

1. On the basis of comparing cancer deaths with those of 30 years and over, no increase of the disease is found in the last decade over the preceding.

2. Classification of cases into accessible and inaccessible reveals practically no increase in the former but entirely in the latter, probably the result of improved diagnosis and certification of deaths.

3. Aside from cases of the female generative organs, the sexes are equally liable to the disease.

4. The white and colored races are alike subject to cancer, the latter showing a greater increase in cases of the uterus and liver.

5. While cancer deaths during the last decade have increased over those of the previous decade by a larger percentage than those from any other disease, we are not justified in attributing this to an increase in the disease itself.

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- 9 Whitney, W. F., Boston Med. and Surg. Jour., 1901, cxlv.
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Rush Medical College.—Dr. Arthur Dean Bevan has been elected professor of surgery to fill the vacancy made by the death of Christian Fenger.

University of California.—The faculty have adopted a new premedical course by the terms of which students will no longer receive the degrees of M.D. and B.S. upon completion of three years in the academic and three years in the medical department. The degree of B.S. will hereafter be conferred on completion of the new premedical course in the College of Natural Sciences and of the first two years in the medical department. This change is the result of the reorganization and extension of the medical department, which will no longer admit students who have taken the three years' premedical course at Berkeley.

Mortality in Michigan.—There were 2,850 deaths in Michigan during the month of April, a decrease of 109 from the preceding month. The deathrate, however, 14.1 per 1,000 estimated population, was the same as that for March. There were 492 deaths of infants under 1 year of age, 219 deaths of children aged 1 to 4 years, inclusive, and 865 deaths of persons aged 65 years and over. Important causes of deaths were: Pulmonary tuberculosis, 206; other forms of tuberculosis, 37; typhoid fever, 37; diphtheria and croup, 31; scarlet fever, 30; measles, 35; whoopingcough, 25; pneumonia, 354; influenza, 45; cancer, 134; accidents and violence, 153; smallpox, 5.

Personal Medical Advertisements.—The Academy of Medicine of Kansas City has adopted resolutions recommending that a censorship be instituted over the public press in order to abolish the practice of publishing under the heading of "Personal Medical Advertisements" nostrums and means intended to cut short or prevent pregnancy, these appearing under the titles of "Guarantees," "Sure Relief," "Sure Prevention," etc., also that the matter should be deemed of sufficient importance to be called to the attention of the Post Office Department with the request that they use their influence to restrict or prohibit the distribution through the United States mail of all papers, periodicals, or magazines continuing to prostitute their columns with such matter. Further, that a copy of these resolutions be sent to all state medical associations urging their cooperation by the adoption of these resolutions and that the secretary of each association adopting them be requested to forward two copies, one to the American Medical Association and the other to the Postmaster General, petitioning relief from this destructive influence.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

May 24, 1902. [Vol. xxxviii, No. 21.]

1. The Treatment of Inoperable Septic Peritonitis. HORACE G. WETHERILL.
2. The Neuroses of the Heart. HERMAN H. HOPPE.
3. Acute Congestive or Inflammatory Glaucoma. CHARLES J. KIPP.
4. Case of Cesarean Section Under Spinal Anesthesia. S. R. HOPKINS.
5. A Case of Blastomycetic Dermatitis (?). JOHN GLENDON SHELTON.
6. Acute Anterior Poliomyelitis in a Youth of 18 Years: Remarks on the Sensory Symptoms. FRANK R. FRY.
7. Some Clinical Aspects of Chemistry. CHARLES P. EMERSON.
8. Appeal for the Early Treatment of Squint. NELSON MILES BLACK.
9. Attendants and Nursemaids. HELEN C. PUTNAM.
10. The Evolutionary Aspect of Infectious Diseases, with Especial Reference to the Local Venereal Diseases. G. FRANK LYDSTON.

1.—Treatment of Inoperable Septic Peritonitis.—Whether the treatment of septic peritonitis shall be surgical or medical must be determined by diagnosis as to the source, virulence and diffusion of the infection and consideration of the time elapsed since the cavity was infected. Infections from intestines, appendix and oviduct are apt to be dangerous in the order given as mobility promotes diffusion and prevents plastic closure of the leak. Rest favors limitation of involvement and is best attained by keeping the bowel empty and by avoidance of cathartics. This means lavage, fasting and no salts. Enemas for clearing the rectum must be small and carefully injected. Diffuse peritonitis with profound local and general symptoms must be considered inoperable. Early operation before diffusion has occurred is safe. Internal operations are advisable after recovery from diffuse peritonitis. [H.M.]

2.—Neuroses of the Heart.—While the heart is rich in sensory fibers and ganglionic cells there are no motor fibers or centers. The motor stimulus comes from the blood itself, perhaps from the sodium chlorid alone. The neuroses are neurasthenia cordis, tachycardia and bradycardia. Under the first are included arrhythmia, pseudoangina and nervous bruit. The most frequent condition is cardiac hypochondria based on palpitation, irregularity or pain. Palpitation may occur without cause. In some cases the beats are continually 20 to 30 above normal with dyspnea lasting for hours, days or weeks. There may be irregularity not only in rapidity of action but in the occurrence of intermissions. Arrhythmia may be due to vasomotor disturbance of the coronary artery. The difficulty lies in excluding myocarditis and organic nervous trouble. The rhythm is always perfect in Grave's disease. Diagnosis is important in relation to treatment. Exercise fatal in coronary sclerosis or myocarditis is demanded in neurasthenia. Angina, which occurs spontaneously, not produced by effort, is false. It may occur in the night. Nervous bruits can be explained by passive distention and sluggish activity of the vessels surrounding the cardiac ganglia bringing about deficient nutrition and producing changed activity. Tachycardia occurs in individuals who are well between attacks, in others with a nervous diathesis, but without neurasthenia or hysteria. The attack comes suddenly, with a start or darting pain, then a sense of fatigue and anxiety. The sounds are clear, but so rapid as to be almost indistinguishable. Bradycardia as a neurosis is exceedingly rare. [H.M.]

4.—Cesarean Section Under Spinal Anesthesia.—In the case reported spinal fluid was used as a solving medium, thus avoiding headache and vomiting. The powerful oxytocic properties of cocain recommend its use. Only one other case is recorded. [H.M.]

6.—Acute Anterior Poliomyelitis.—After reporting a case, Fry quotes varying and contradictory statements from various textbooks as to sensory symptoms. There is no question that hyperesthesia and pain are usually present, and proportionate to the intensity of the invasion. He suggests that these are due to irritation of the posterior areas of the cord by overflow of the inflammatory process. The sensory symptoms are too ephemeral and intense in their duration for even a mild neuritis. [H.M.]

8.—Early Treatment of Squint.—Treatment should begin as soon as the slightest deviation is noticed, and should consist

in the maintenance of fixation by bandaging or atropinizing the better eye, and by correction of all refractive errors. The fusion faculty should then be educated, and when that is well developed if the deviation is not corrected, operative measures should be undertaken to produce approximate parallelism of the axes, as little can be done with the fusion sense after the sixth year. This parallelism can be perfected and maintained by further fusion exercises. The author describes the amblyoscope, which is adapted for use in any degree of squint, and which overcomes suppression of the image by increasing the illumination, at the same time amusing the child. [H.M.]

9.—Attendants and Nursemaids.—Putnam recommends that hospitals open training classes for attendants on the non-critically sick who do not need the most expert service and cannot afford to pay for it and also for nursemaids. This would ensure better preparation than that furnished at present by lay schools, whose requirements are too elastic. [H.M.]

10.—Evolutionary Aspect of Infectious Diseases.—Lydston applies the law of differentiation of type and species from change of environment to germ development, holding that virulent properties may thus generate in previously innocuous organisms. As bearing upon the upspringing of hitherto unrecognized infectious diseases cerebrospinal meningitis, unknown until the last 100 years, is interesting. The difficulty of differentiating etiologically processes which seem unequivocally specific has long been familiar. While type has become fixed, and there can be no variation in kind but only in degree of pathogenesis, yet far back a number of specific germs may have had a common root stock. Laboratory proof of bacterial evolution are not wanting. The necessity of special conditions in the life history of pathogenic microbes is suggestive. Fowls resist anthrax ordinarily, but if chilled they succumb. Dead cultures of the hay bacillus are as fatal as dead cultures of disease germs. This shows how narrow specific influence may be when dissociated from the effects of metabolic products. He cites instances of micro-organic transformation observed experimentally. The urethrococcus may have the same relation to the gonococcus that is claimed for the Klebs-Loeffler bacillus, the pseudodiphtheria bacillus, and the ecdiphtheria parasite. The germ as the first cause of disease cannot well stand. The soil is all important. Gonorrhea and chancreoid develop anew in the medium afforded by the secretions of the unclean vagina by adaptative changes in innocuous germs, and are often associated in a way suggestive of the contraction of one disease from the secretions of the other. [H.M.]

Boston Medical and Surgical Journal.

May 22, 1902. [Vol. cXLVI, No. 21.]

1. An Abstract of Some of the Prevailing Opinions on the Periods of Incubation: Observation and Isolation of Some of the Infectious Diseases. ELBRIDGE G. CUTLER. (Continued)
2. Gunshot Wounds of the Kneejoint by the Projectile of Reduced Caliber. LOUIS A. LA GARDE, major and surgeon, U. S. Army.
3. Notes in Cuba. CHARLES C. FOSTER.
4. Birth and Deathrate as Influenced by Obstetric and Gynecic Progress. GEORGE J. ENGELMANN.

2.—Gunshot Wounds of the Kneejoint.—La Garde reviews the statistics relative to gunshot wounds of the kneejoint during the time when the large caliber projectiles were used, and recent statistics relative to the same condition but caused by the modern small projectiles. He concludes as follows: (1) We find that the mortality of gunshot injury of the kneejoint in the Civil War was 53.7%, and as amputation was universally done all those who recovered escaped with the loss of a limb, unfit for duty; (2) that 33 cases of gunshot wounds of the knee produced by the larger caliber lead bullet in campaign, reported by Reyher and v. Bergmann, treated antiseptically, gave a mortality of 11.1%; (3) that 62 cases produced by a variety of missiles reported by the Surgeon-General since 1898, similarly treated, gave a mortality of 8%, and that 45.6% of those who recovered were restored to duty; (4) that of 19 cases in the Santiago campaign by the reduced caliber bullet the mortality was nil, and that 73.6% of the wounded recovered fit for duty. It is thus seen that the humane features of the reduced-caliber bullet have operated not only in diminishing the mortality in gunshot injuries of the knee from about 8% or 11% to nil, but that

it has increased restorations to duty 28%, as shown by comparing the last two tables. [A.B.C.]

4.—Treated editorially.

Medical Record.

May 24, 1902. [Vol. 61, No. 21.]

1. Radiotherapy for Cancer and Other Diseases. WILLIAM J. MORTON.
2. Benign Tumors Complicating Pregnancy. BACHE M. E. EMMET.
3. Malignancy Complicating the Pregnant State. S. MARX.
4. Uterine Displacements Complicating Pregnancy. EDWARD A. AYERS.
5. A New Substitute for Silver Nitrate. ALBERT C. BARNES and HERMANN HILLE.

1.—Radiotherapy.—Morton discusses the nature of the x-ray, the uses of soft and hard tubes, and the nature of the changes set up in the tissues. He describes his method of tanning the skin in order to make more active treatment possible and briefly reports a number of successful applications of the rays. His conclusions are that the x-ray has a general application for the relief of pain; it has a certain effect in internal cancer and other internal diseases and he recommends it prior to operation to clear the tissue of cancer particles and foci and to circumscribe the disease and subsequent to operation to preclude recurrence. It may be preferable to operation and he shows a percentage of cures comparing favorably with the former. It should not be employed by immature operators. He urges standardization as to apparatus, duration and frequency of treatment and distance of tube. [H.M.]

2.—Benign Tumors Complicating Pregnancy.—There is not a single organ in the pelvis, nor scarcely one in the abdomen which may not yield a tumor, that will complicate pregnancy. Emmet mentions among possible tumors of the abdomen, ascites due to disease of kidneys, hydatids, cysts of the kidney, cysts of the spleen, any of which may by downward pressure interfere with the enlarging uterus, or by pressure upward displace the diaphragm, and interfering with the action of the lungs produce dyspnea, hence they may call for treatment by evacuation to minimize the suffering induced. Cystocele may be a very distressing complication, and the care of the bladder during pregnancy cannot be too strongly urged. Overdistention of the bladder should be avoided, and if necessary to prevent this the bladder should be artificially emptied. There may be tumors of labia or vagina which interfere especially with labor. Polypi growing from the uterine canal are not uncommon, and cystic ovarian tumors are a frequent complication. When these rise high in the abdomen, and do not crowd the uterus, they may be left until after delivery; but if the growth threatens grave results in the early months laparotomy should be performed, with confidence that it will not interrupt gestation. Most all other tumors of the adnexa, as dermoids, fibroids and cysts, if high up, may be ignored. Pus-tubes should be removed. In regard to uterine tumors, Emmet says that if they are discovered midway in pregnancy, he would leave them absolutely alone if they occur on the body and give no trouble; but if in the lower segment or neck, he would seek to crowd them out of the pelvis, and be guided by after symptoms as to the necessity of interfering. Should these tumors be discovered in the late months of pregnancy, he would not operate unless they are in such position or of such size that they threaten to impede or prevent delivery. [W.K.]

3.—Malignancy Complicating the Pregnant State.—All malignant tumors of the genitalia, except those of the uterus, seem distinctly to prevent the possibility of conception. But where the malignant tumor attacks the cervix uteri or even the body itself, Marx believes that the possibility of impregnation is greater than under normal conditions. Clinically this is proved by the large number of cases reported, in which pregnancy is associated with malignant tumors, especially carcinoma of the cervix. In such cases an early diagnosis is important and is readily made by exclusion, direct examination and microscopic examination of an excised piece. Hemorrhage is inconsistent with a normal pregnancy, but may arise from other causes than cancer. Marx reports a case of hemorrhage thought to be due to carcinoma, but which proved to be due to a very low placental implantation and a badly eroded os. A direct visual examination is the only method we have to clear up the

diagnosis as between malignant condition of the cervix and other lesions causing persistent hemorrhage. In order to help these patients early operation is necessary, hence an early diagnosis must be made even at the expense of the termination of pregnancy. If the case is operable, the surgeon must choose the operation best for the mother, either terminating the pregnancy and in a few days extirpating the organ, or doing both operations at one sitting. He describes the manner in which the latter may be best accomplished. If the cancer is inoperable and the mother's case is hopeless, the surgeon must bend all his energies to saving the child. [W.K.]

4.—Uterine Displacements Complicating Pregnancy.—Ayers classifies these as displacements due to uterine sources; to adhesions to bladder, rectum, abdomen, broad ligament or intestines; to periuterine pressure from pelvic abscesses, ovarian tumors, cyst, hernia and other causes. Retroversion and retroflexion usually, and extravaginal prolapse always, produce abortion. Incarceration, or fixation of the fundus beneath the promontory may produce pernicious vomiting and make the induction of abortion unnecessary. Martin saw 121 incarcerations in 24,000 patients. The symptoms do not usually appear before the tenth week. Under adhesions Ayers classes ventrofixation, and quotes from Laphorn Smith, who reports 36 cases out of 148 in which obstetrical difficulties followed ventrofixation. In pregnant women with ventrofixation the dangers are premature expulsion of the ovum, excessive expansion of the posterior portion of the uterus, thinning and rupture of the uterus, malpositions of the fetus, and the general effect of pain. Ayers prefers vaginal fixation or readjustment of the round ligament. [W.K.]

5.—See *American Medicine*, Vol. III, No. 21, p. 871.

New York Medical Journal.

May 17, 1902. [Vol. LXXV, No. 20.]

1. Subcutaneous Injection of Paraffin in the Correction of Nasal Deformities. HARMON SMITH.
2. The Clinical Aspect, Symptoms, and Differential Diagnosis of Osteomyelitis. R. TUNSTALL TAYLOR.
3. The Surgical Treatment of Bright's Disease (*A preliminary communication*). RAMON GUITERAS.
4. Why Doctors Disagree. A Plea for a Modern Code of Ethics. BITTLE C. KEISTER.
5. Hypnotism a Useful Aid in the Treatment of the Morphin Habit. SIGMUND A. AGATSTON.

1.—Subcutaneous Injection of Paraffin.—Smith shows the satisfactory results obtained in the correction of saddle-back nose by the use of paraffin subcutaneously injected. Prior to the paraffin injection 5 minims of a 4% solution of cocain is used. The sterile paraffin is kept in liquid form and injected with the right hand, carrying the point of the needle beyond the site of greatest deformity, while the soft tissues of the nose above the dorsum are lifted up with the left hand. The injection is made slowly, at the same time withdrawing the needle and using the thumb and index finger of the left hand to mold the paraffin to the necessities demanded by the peculiarity of the deformity. Unless care is exercised the paraffin is likely to force its way to the inner canthi of the eyes, where there is a mass of loose areolar tissue. [C.A.O.]

2.—Osteomyelitis.—No definite bounds can be placed on the stage of infection as to onset, whether it occurs during the course or convalescence of an acute exanthema or infectious disease; during the healing of the umbilical cord; during a bronchial catarrh or intestinal diarrhea; pharyngitis or amygdalitis; an exposure to cold or dampness; some trauma or simple furuncle. During the acute stage of the disease the dry tongue, high temperature with continued fever, gradually rising and with morning remissions, rapid pulse and respiration are the rule, a typical typhoid clinical aspect. Emaciation is rapid. Pain of an excruciating boring character is one of the earliest and most constant symptoms. Tenderness is a more valuable sign as to the exact location of the focus of disease. The point of most extreme sensitiveness is usually the center of infection where the periosteum has become secondarily involved and gives us the means of locating our incision, even before swelling in the soft parts has occurred. This point is usually found earliest near the epiphyseal junction in the diaphysis. The long bones are usually involved, and more com-

monly those of the lower extremities, but the flat bones are also attacked at times. The diseases which are more commonly confounded with osteomyelitis are typhoid fever and rheumatism; those that might be mistaken for it are tuberculous epiphysitis or joint disease, specific osteochondritis, scurvy and sarcoma. Leukocytosis is present in osteomyelitis, while in typhoid fever the leukocyte count is normal or subnormal. A positive Widal's reaction should exclude osteomyelitis. The skiagraph in osteomyelitis would show areas of osteoporosis, perhaps beginning osteosclerosis, purulent periosteal excavation and possible epiphysal separation or pathologic fracture in bone necrosis. Taylor reports several cases to show the mistakes commonly made in diagnosis and in the general course of the disease. [C.A.O.]

3.—See *American Medicine*, Vol. III, No. 20, p. 811.

4.—**Why Doctors Disagree.**—Keister enters an earnest plea for a modern code of ethics that will treat specifically the many mooted questions of the age. He says the medical profession of the United States needs a national code of laws, like unto that of Germany, that will reach every class and kind and be the means of uniting the entire profession in one great whole. [C.A.O.]

5.—**Hypnotism; Treatment of Morphin Habit.**—Agatson reports a case of morphinism in a woman of 38, who was accustomed to taking 25 grains of morphin within 24 hours. This he gradually reduced to zero, but the suffering was intense and drugs failed to relieve any of the distressing symptoms. He then resorted to hypnotism with suggestion. This he continued for some time until the patient began to respond to drugs, and within a year she made a perfect recovery. The author believes that hypnotism will be found an invaluable adjuvant in the treatment of these cases. [C.A.O.]

Medical News.

May 24, 1902. [Vol. 80, No. 20.]

1. Consumption Contracted in Colorado and Methods to Restrict its Spread. S. G. BONNEY.
2. The Treatment of Puerperal Eclampsia. WILLIAM E. PARKE.
3. Venesection and Transfusion in Puerperal Eclampsia. R. ABRAHAMS.
4. Puerperal Hemorrhage. GEORGE SEYMOUR.
5. How Shall We Treat Sepsis Following Abortion in Labor? W. O. HENRY.
6. The Etiology of Puerperal Toxemia. A. ERNEST GALLANT.

1.—**Tuberculosis Contracted in Colorado.**—Bonney analyzes statistics showing an increase in the percentage of deaths from tuberculosis contracted in the State and calls attention to the fact that the actual number of such deaths has not practically increased. The increase in proportion is due to the fact that many of the invalid population return to their homes in other States to die. The native cases of tuberculosis are shown not to be due so much to contagion brought from without as to occupation, a large number occurring among miners. There is no justification for an antituberculous crusade that is not equally demanded and perhaps more so in every other State of the Union. [H.M.]

2.—**Treatment of Puerperal Eclampsia.**—W. E. Parke first considers the usual preventive measures, and if these fail to prevent increasing toxemia he advises the induction of labor. For the treatment of convulsions he considers venesection of great value in a strong, full-blooded person. Inhalations of chloroform, chloral and bromid are valuable. Normal salt solution administered either as an enema or by infusion, dilutes the poison and increases the activity of the kidneys. It is especially indicated after bloodletting. [W.K.]

3.—**Venesection and Transfusion.**—Abrahams reports three cases of puerperal eclampsia treated with venesection and transfusion with most gratifying results. In the third case the patient was a woman of 40 in her first confinement. Eight hours after delivery she was seized with tonic and clonic convulsions and had 18 in six hours. She was rapidly sinking when the friends at last yielded to bloodletting, and 22 ounces were taken from a large varicose vein in the right leg, followed by a high enema of salt solution. Three of these were given in four hours. The coma passed away, the paroxysm ceased and she was out of bed in four weeks. The abstraction

of blood in eclampsia produces immediately a favorable change in the patient's appearance; the cyanosis of the face, the rigidity of the muscles, the spasms and twitching which are often noticed even during deep coma all stop at once; the pulse, be it never so hard, loses its tenseness; the coma, be it never so deep, yields either abruptly or slowly, but surely. Transfusion improves the pulse; induces free sweating and free micturition; and it produces intense thirst in the awakened patient, which causes her to drink copiously, which is very desirable. Venesection alone frequently fails; it should always be accompanied with the use of saline solution given by injection into the colon in a strong subject; but if the patient is weak or in a state of collapse it should be passed directly into circulation by transfusion. [W.K.]

4.—**Puerperal Hemorrhage.**—Seymour gives the chief causes of antepartum and postpartum hemorrhages and states briefly the general rules for their management. He also emphasizes the necessity for the obstetrician to be master of the best methods of controlling such hemorrhages but recognizes the fact that there is need of a skilful gynecic surgeon in many cases of placenta prævia and in those cases in which the hemorrhage is induced by neoplasms, whether benign or malignant. [W.K.]

6.—**The Etiology of Puerperal Toxemia.**—Gallant, from the etiologic standpoint, considers this subject under four heads: (1) The seed, microorganisms; (2) the soil, the genital tract predisposed to infection by postpartum conditions; (3) the sower, the most common means of implanting pathogenic bacteria being repeated digital examinations by surgically unclean hands, failure in asepsis during and after labor, and sometimes by antepartum baths; (4) the harvest, puerperal toxemia. Bacteria produce toxins and set them free under widely different circumstances. Sometimes they elaborate a soluble chemic ferment, which by action on the animal body causes the symptoms of the disease and produces death. In some bacteria there is found a poison adhering to their bodies, only set free when the organism disintegrates. In the animal body they seem to find especially favorable conditions for their solution. Gallant concludes that the introduction of microorganisms is in the larger proportion of cases (barring gonococcal cases) an avoidable offense. Unfortunately, infection from external sources is not rare; therefore it is the imperative duty of nurse, student and physician, when in charge of a pregnant or puerperal woman, to conscientiously practice asepsis. [W.K.]

Philadelphia Medical Journal.

May 24, 1902. [Vol. IX, No. 21.]

1. Facts and Theories Concerning Spermolysis.
2. Note on the Occurrence of Ascites in Solid Abdominal Tumors. WILLIAM OSLER.
3. On a Possible Cause of Meteorism and Partial Intestinal Obstruction, with Remarks on the Use of Eserine in Intestinal Atony. FREDERICK A. PACKARD.
4. Insufficiencia Pylori, a Sequela of Chronic Gastritis; with Report of Twelve Cases Successfully Treated. MARK I. KNAPP.
5. The "Fourth Disease" of Dukes, with Report of an Atypical Outbreak of Scarlet Fever. J. HALL PLEASANTS.
6. A Discussion of the Morbid Conditions of the Upper Respiratory Tract, Resulting from the Infectious Diseases. CAROLUS M. COBB.
7. An Unusual Case of Diphtheria. J. NEWTON HUNSBERGER and D. H. BERGEY.

1.—**Spermolysis.**—This is a brief presentation of the views of Farnum, Louvon, Metelnikoff, Metschnikoff and Moxter on spermolysis, and presents an explanation of the evident contradictions obtained by these investigators. [C.S.D.]

2.—**Occurrence of Ascites in Solid Abdominal Tumors.**—W. Osler thinks the attention of the profession has not been sufficiently directed to solid tumors as a cause of recurring ascites, and cites a case recently referred to him of a woman of 53 who had had at intervals for three years attacks of ascites. Within the past four months she had been tapped four times. A solid tumor could be felt in the abdomen, and recovery followed its removal. Other instances are given in corroboration of Dr. Eden's statement (*Lancet*, February 8, 1902) that "ascites is the rule with solid tumors of the ovary." [O.R.]

3.—**Intestinal Obstruction and the Use of Eserin.**—Packard points out the possibility that intestinal obstruction to

flatus may in some cases be due to the formation of a U-shaped intestinal loop, which becoming filled with fluid feces forms a mechanism resembling a plumber's trap, the liquid contents serving as a seal to prevent the passage of gas; the development and persistence of such a mechanism being dependent on intestinal atony. He reviews the literature regarding the use of Calabar pear, and its alkaloids, eserine, physostigmon and pilocarpin, in human medicine, and particularly in cases of meteorism. The results following the use of eserine, either as the sulfate or as the salicylate in doses of $\frac{1}{100}$ grain, morning and evening, are favorable. Aside from cases of acute intestinal distention, eserine is apparently useful in the constipated habit of long standing due primarily to weakness of the intestinal wall. Van Noorden favors the use of the salicylate of eserine (physostigmin), because it can be well preserved in a dry state and is readily soluble in 5 parts of water; he states that it is best given in powder with milk sugar. [C.S.D.]

4.—**Insufficiencia Pylori.**—Knapp first considers the physiologic function of the stomach, pointing out that the function of the muscularis is purely dynamic, while that of the mucosa is chemic, and loss of the latter is not so disastrous as loss of the former function. During the early part of digestion the pylorus closes tonically as the result of the irritation produced by the ingested food; later it relaxes at certain intervals, during which the chyme is propelled into the duodenum by the successive wave-like contractions of the gastric musculature. In order that the pylorus may respond to irritation, it must be capable of being irritated, i. e., it must be in a healthy state. Mechanic or chemic insults are the most common cause of chronic gastritis. Abnormal irritation of the pylorus leads to its contraction, and when the stomach tries to expel the insulting agencies, it finds the door closed, and the consequent onslaught against this closed door produces injury, and is to be regarded as the reason why the pyloric portion is found, most often, to be the locus morbi. The finer maceration of food depends not on the teeth but on the muscular activity of the stomach; hence the more finely divided the chyme the greater is the muscular activity of the stomach, which leads us to admit that by the physical appearance of the chyme the dynamic function of the stomach can be judged. "In other words, the finer the chyme, the greater the dynamic function, the motility of the stomach." Atony of the stomach must show for its confirmation a large quantity of chyme plus a preponderance of the large particles of food with either no floury layer or but a small quantity thereof. Chronic catarrh is to be regarded as one of the causes of insufficiency. With the appearance of insufficiency we enter upon the beginning of atrophy of the mucosa, and finally to the absence of chyme, ferments, and even mucus, termed by Einhorn *Achylia gastrica* and by Ewald *Anadenia gastrica*. [C.S.D.]

5.—**The Fourth Disease.**—J. H. Pleasants, from a study of the subject, aided by a practice among children and a familiarity with variations in the clinical picture presented by certain of the acute exanthemas in some epidemics, concludes that Dr. Dukes has not established the existence of a new exanthematous disease, and that he has included under the so-called "fourth disease" cases of undoubted scarlet fever, and probably cases of rubella also. That in certain epidemics scarlet fever may present an atypical picture, with many of the classic symptoms absent, rendering diagnosis difficult or impossible in isolated cases. He thinks we should be cautious in accepting new diseases in this group when the claim for recognition rests upon superficial points. [O.R.]

6.—See *American Medicine*, Vol. II, No. 12, p. 439.

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

The Second Annual Report of the Cancer Committee to the Harvard Medical School.¹—This valuable contribution to the study of the etiology of cancer consists of papers by E. E. Tyzzer, Charles J. White,

W. H. Robey, Jr., Oscar Richardson, Joseph D. Weis, Edward H. Nichols, and R. B. Greenough, whose researches have been especially directed toward the solution of the following questions:

1. What analogy exists between the nodules caused by *Coccidium oviforme* and the cell proliferation of cancer?

2. The nature of the skin lesions characterized by epithelial cell proliferation said to be due to the action of a so-called protozoan *Molluscum contagiosum*.

3. Are blastomycetes constantly present in human cancers and are they the cause of the lesions?

4. Can true epithelial or cancerous nodules be produced by experimental inoculation of animals with blastomycetes?

5. Have the wellknown endocellular bodies seen in the protoplasm of cancer cells a definite morphology; are they parasites and the cause of cancer?

Dr. Nichols sums up the result of the work of the past year (abstracts of the separate papers are given elsewhere in our columns) as follows:

1. The lesions produced by the *Coccidium oviforme* is essentially a process of chronic inflammation and is not analogous to the lesion seen in cancer.

2. The lesion of *Molluscum contagiosum* is characterized by certain changes in the epidermis, is not due to the action of a protozoan, and is not analogous to cancer.

3. The so-called "Blastomycetes" ("Saccharomycetes") of Sanfelice and Plimmer are *Torulae*.

4. The lesions produced by these "Blastomycetes" (*Torulae*) are essentially nodules of peculiar granulation tissue, are not cancerous, nor in any sense true "tumors."

5. Blastomycetes are not constantly present in human cancers.

6. The peculiar bodies seen in the protoplasm of cancer cells are not parasites, nor the cause of the lesions, but probably are in part at least atypical stages of the process of secretion by glandular epithelium.

Coccidium Infection of the Rabbit's Liver.—E. E. Tyzzer's¹ review of the recorded knowledge of this common disease of domestic rabbits and of the life cycle of the parasite is summarized as follows: 1. Associated with certain lesions in the liver of the rabbit are found parasites of varying form and character. 2. The various forms represent the life cycle of a definite species of sporozoon, *Coccidium oviforme*. 3. In only one stage does the parasite resemble the cell inclusion of cancer. Even this stage presents a definite and constant morphology. 4. The immediate effect of the parasite upon the host is to produce degeneration and destruction of the epithelial cells of the bile ducts. Secondary to this, the effects of irritation are seen in the proliferation of connective tissue and epithelium. The more remote changes are those of cirrhosis. 5. Repair is effected through the walling off of the process by connective tissue, by the destruction of the remaining parasites, and finally by cicatrization. In conclusion it may be said that there is no well-founded analogy between the cell-inclusions of cancer and any one of the stages in the life history of *Coccidium oviforme*. The lesion is of the nature of a chronic inflammatory process. The tissues react to the irritation which the parasites cause by their presence in the bile ducts, with the removal of the irritation repair takes place. Thus the whole is to be regarded as a physiologic process, checking the inroads of the parasite. It has little in common with the newgrowth. No metastases are formed, nor is it possible for them to be formed, as is evident from the nature of the lesion. The process is self-limited and repair follows the destruction of the parasites. [C.S.D.]

Culture Experiments with Malignant Tumors, 1900 to 1901.—Oscar Richardson.¹ This is a continuation of a report for 1899 to 1900, done in the Clinico-pathologic Laboratory of the Massachusetts General Hospital for the Cancer Investigation Committee. The results of the later investigation confirm the

¹ Journal of Medical Research, Vol. vii, No. 3, April, 1902.

¹ The Journal of Medical Research, April, 1902.

previous report as to the impossibility of cultivating from the tissues and fluids of malignant growths anything which can be regarded as a specific infecting organism. [C.S.D.]

Four Pathogenic Torulae (Blastomycetes).—Joseph D. Weis.¹ The result of a systematic study of the various micro-organisms which have been regarded as the infectious agents of malignant tumors, especially of such as have been referred to the yeasts and blastomycetes by Sanfelice, Plimmer, Klein and others, leads to the conclusion that the organisms in question are not, properly speaking, yeasts, but belong to the group *Torulae*, viz., asporogenous blastomycetes, with or without the power of fermentation. They are therefore improperly referred to *Saccharomycetes*, and should in view of the present classification by cryptogamic botanists be hereafter referred to as:— (1) *Torula Sanfelice*, the blastomycetes isolated by Sanfelice from an adenocarcinoma of the human ovary; (2) *Torula neoformans*, the blastomycete first isolated from the surface of ripe peaches by Sanfelice and afterward inoculated by him into animals with positive results; (3) *Torula Klein*, a blastomycete found by Klein in London in milk, which proved to be pathogenic for guineapigs; (4) *Torula Plimmer*, a blastomycete isolated by Plimmer from cancer of the breast. These organisms have almost the same characteristics and show but few variations one from another. They do not ferment any of the sugars; they do not form spores; under none of the conditions are mycelia to be seen. [C.S.D.]

Molluscum Contagium.—Charles J. White and William H. Robey, Jr.¹ The history of this disease, first described by Bateman in 1817, is carefully reviewed and a bibliography is appended, the findings of the literature serving for a tabulated epitomization of the views of the many distinguished investigators who have worked upon this puzzling problem. These may be grouped under five theories as to the disease: (1) That it is of follicular or sebaceous origin; (2) that it arises from a metamorphosis of the rete cells; (3) that the disease is contagious; (4) the bodies are degenerated epithelial cells; (5) that the bodies are parasites. According to Hyde the statistical frequency of the disease in America is 1.65 per 1,000. The opinion arrived at by Drs. White and Robey, as the result of their personal investigations, is that nobody has demonstrated up to this time any parasitic body in the growth, and that the change is not a colloid or hyalin degeneration, but rather an extraordinary metamorphosis of rete cells into keratin. [C.S.D.]

The Relation of Blastomycetes to Cancer.—Edward H. Nichols.¹ After a critical review of the work of previous investigators, it is pointed out that allowing cancer-cell inclusions to be blastomycetes, it has been shown that they are not constantly present in cancers, i. e., they are not present in such numbers, or in such relation to the pathologic process as fairly to be considered as a causative agent. It must be remembered that the mere occurrence of blastomycetes in human malignant tumors is no evidence that the blastomycetes are the cause of the cancer. The discovery by DeMeyer of lycopodium spores in the stroma of an epidermoid cancer of the arm, due to the use of lycopodium as a dusting powder for the malignant ulcer, leads to the observation that, if lycopodium spores can be taken into a cancer, it would be an easy matter for blastomycetes to be taken in the same way. The investigations of Nichols were confined to a study of the lesions produced by the inoculation of animals with Sanfelice's "neoformans" and with the organism isolated by Plimmer, and led to the following conclusions: (1) Certain blastomycetes can live and multiply in human and animal tissues, produce local lesions and metastases in the internal organs, i. e., they are pathogenic; (2) the lesions produced in animals by spontaneous infection with blastomycetes are acute inflammation, abscesses or nodules of peculiar granulation tissue, and are not in the least analogous to cancers; (3) the lesions produced in human beings in cases of spontaneous infection with blastomycetes are acute inflammation (abscesses or ulcers) or proliferation of endothelium and connective tissue. At times a proliferation of the epidermis does occur, but is not due to the action of the blastomycetes; (4) blastomycosis in human tissues is very rare; (5) the lesions produced in animals by experimental inoc-

ulation with blastomycetes are, with the exception of Sanfelice's "successful" cases, inflammations or nodules of peculiar granulation tissue. Sanfelice's cases are not conclusive in themselves, are in direct opposition to the results obtained by all other observers, and, even if true, are logically explained as coincidences, and not as results; (6) blastomycetes as a rule cause marked proliferation of tissue, and little infiltration with leukocytes, i. e., their toxic powers are small; (7) blastomycetes primarily extend along lymphatic clefts and vessels; (8) rarely in human beings, more often in spontaneously infected animals, and often in experimental animals, blastomycetes may be taken into the bloodvessels, disseminated throughout the body, and produce a general infection and metastases; (9) the secondary nodules have the same general character, i. e., a formation of granulation tissue, as the original nodules; (10) the morphology of the so-called "cancer bodies" is not identical with that of the blastomycetes; (11) blastomycetes are not constantly present in human malignant tumors and cancers; (12) even if blastomycetes do occur in human cancers they are not present in such numbers and in such a relation to the anatomical lesion as to justify the belief that they are the cause of the disease. All of these facts lead to the ultimate conclusion that there is no evidence that blastomycetes have anything to do with the production of human cancers. [C.S.D.]

Cell Inclusions in Cancer and in Noncancerous Tissue.—R. B. Greenough.¹ This paper is supplementary to a report made to the Cancer Investigation Committee of the Harvard Medical School, 1900. It is based on the examination of 97 specimens of tissue, both normal and pathologic, and leads to the conclusion: (1) That cell inclusions of a constant type are found in practically all cases of cancer of the mammary gland; (2) that they are also found in noncancerous disease of the mammary gland. That they are not found in epithelioma or sarcoma; (4) that their appearance, staining reactions, and situation in the cell are such as to justify the hypothesis that they are the result of the secretory activity of the epithelial cell; (5) there is no cause for attributing a parasitic origin to their appearance. [C.S.D.]

Temperature of Pulmonary Tuberculosis.—Lawson² describes a graphic method of showing temperature which gives a more distinct idea of the course than the usual one. The temperature is taken every four hours, the highest and lowest readings for each four days are averaged and marked on a chart, each space of which represents 96 hours. The space between the high and low curve is blackened in. The band is at first broad, but as improvement takes place it narrows, showing less diurnal variation. The amount of sputum and the body weight are also represented. Inelasticity and instability are characteristics of the temperature. On very hot summer days nearly all the sanatorium patients showed a rise. Rectal temperatures are more accurate and give indications of a rise 12 hours sooner than the mouth. The rule as to exercise is that if the rise of temperature following a walk before 12 has not returned to normal by 1 the amount must be restricted or complete rest enjoined. [H.M.]

A Case of Severe Anemia with Enlargement of the Spleen in an Infant.—F. S. Churchill³ reports the case of a female child of 2½ years which died in about six weeks after he first saw it. When first seen, the spleen was much enlarged and extended 4½ cm. below the border of the ribs; the notch could be easily felt. A week or so prior to death the spleen had diminished in size, extending but 3 cm. below the costal arch. The chief interest of the case, of course, centers in the blood. The main features of this were the low red cell count, the low percentage of hemoglobin, the slight leukocytosis, the poikilocytosis, the great variations in form, size and number in the different varieties of white cells, and the presence of nucleated red cells; the normoblast prevailing. The similarity of this case to those described under the head of anemia infantum pseudoleukemia, leads the author to believe that it belongs to the latter type. The anemia in this instance was secondary, due to rachitis. The treatment was chiefly dieting and intestinal disinfection. [F.C.H.]

¹ The Journal of Medical Research, April, 1902.

² Medical Press and Circular, December 18, 1901.

³ The Chicago Medical Recorder, May 15, 1902.

¹ The Journal of Medical Research, April, 1902.

Experiments on the Relation of the Cow to Milk Diphtheria.—George Dean and Charles Todd,¹ bacteriologists to the Jenner Institute of Preventive Medicine, present a very careful study of a typical outbreak of diphtheria among the consumers of the milk of two cows suffering from "cowpox." Members of one household who did not drink milk or who used it only after sterilization escaped infection. The cows yielding the milk were found to be suffering from an eruptive disease of the udder, and both from the lesions and from the milk, cultures of virulent diphtheria bacilli were isolated. The pathologic condition in the cows preceded, by a short interval, the onset of the disease in the patients. Having regard to Power's epidemiologic investigations, and to Klein's experimental work, this observation was of the greatest interest and naturally suggested the hypothesis that the lesions were due, principally, to a specific diphtheric infection of the cow. Further investigations weakened this view, for it must be noted: 1. That in the cow intentionally subjected to infection from the diseased cows and in which there occurred the eruptive condition of the udder, neither in the vesicular nor in the ulcerative stage of the disease could diphtheria bacilli be demonstrated. 2. That in calves infected with the eruptive disease no diphtheria bacilli could be demonstrated. 3. That in a calf, in spite of the fact that it has received 10,000 units of diphtheria antitoxin, the vesicular eruption was experimentally produced. The last is probably the strongest point in support of the dual nature of the condition in the cows. It is conceivable that pathologic lesions in the cow such as these described, if infected with the diphtheria bacillus, might form a suitable nidus for its growth and permit of the infection of large quantities of milk over a considerable period. Though we have as yet no evidence on the subject it is possible that a profound change in the virulence of the diphtheria bacillus for the human subject might be effected by such passage through the cow. The disgusting habit that milkers in this part of England have, of spitting on their hands before milking, would easily account for the infection of the lesions, even in the absence of obvious diphtheria in the cowman; knowing, as we now do, that apparently healthy individuals are not uncommonly the hosts of the diphtheria bacillus. The experiments made with the view of ascertaining whether the eruptive condition was genuine cowpox, are opposed to that view; for two calves, and one cow successfully infected with the eruptive condition and subsequently vaccinated with vaccine lymph, developed a typical vaccinia. [C.S.D.]

Acute Intestinal Obstruction Treated with Quicksilver.—McKean Harrison² reports that a man of 60 sustained a fall. Intestinal obstruction with its attendant symptoms persisted for seven days. Operation was refused and as a last resort $\frac{1}{2}$ pound of quicksilver was given. He soon became better, bowels moved two days later and the quicksilver was passed on the tenth day. Another man of 80 developed intestinal obstruction. His condition became very serious and operation was deemed unwise. On the third day $\frac{1}{2}$ pound of quicksilver was given. The quicksilver was passed on the fourth day. Recovery in each case was complete. [A.B.C.]

A New Acid-Fast Streptothrix, Pathogenic to Man and Animals.—Since the discovery that *Bacillus lepræ* and the smegma bacillus possessed the same peculiarity as *Bacillus tuberculosis* in resisting decolorization by a 25% solution of mineral acids, after having been stained in hot carbol-fuchsin, a number of "pseudotuberculosis" or "acid-fast" microbes have been found. The *Streptothrix bovis* causing "Farcin du Boeuf," isolated by Nocard (1888) and an organism described by Berestnew in 1898 as a Pseudo-actinomyces, are particularly interesting as being pathogenic to man. Birt and Leishman¹ have added another to the list, having obtained the same from a case of chronic bronchopneumonia. [C.S.D.]

Radioscopy of the Diaphragm.—The observations of P. Pennato³ on the movements of the diaphragm by means of radiographs indicate that irregularities are more often due to diseases of the chest organs than to those of the abdomen. [C.S.D.]

GENERAL SURGERY

A. B. CRAIG

MARTIN B. TINKER

C. A. ORR

Total Bilateral Resection of the Cervical Sympathetic in the Treatment of Exophthalmic Goiter.—Resection of the cervical sympathetic for Grave's disease was first suggested by Edmunds (*Lancet*, Vol. i, 1895, p. 1,311) and a short time after this was practised by Jabouley, of Lyons. The chief champion of this method of treatment, however, has been Jonnesco, of Bucharest, and a paper by one of his assistants, Balacescu (*Arch. f. klin. Chirurgie*, 1902, Vol. 67, p. 59), giving a complete review of the subject, will be of interest to all who are called upon to treat this affection. With regard to the etiology of exophthalmic goiter, Balacescu attributes the entire disease to irritation of the sympathetic nerves. Whether this irritation be the result of a neurosis, some definite lesion such as compression, or is produced by some form of intoxication, he thinks may be left out of the question when the treatment of the affection is considered. The exophthalmus is produced by forcible contraction of the cone of muscle (Müller's unstriated muscle) which covers the posterior surface of the eyeball. Removal of the sympathetic nerve relieves this symptom in all cases. The hypertrophy of the thyroid gland is caused by excessive dilation of the vessels from irritation of the thoracic and cervical sympathetic vasodilator fibers, as was shown as a result of Abadie's experiments reported at the French Surgical Congress in 1897. Hyperactivity of the thyroid gland and hypersecretion is possible through permanent stimulation of the fibers of the sympathetic. The tachycardia, one of the most distressing symptoms of this disease, is also attributed to irritation of the sympathetic accelerator nerve fibers of the heart. Cerebral disturbances are produced by irritation of the fibers of the sympathetic vasoconstrictors which produce permanent anemia of the brain. If we grant all these premises for which Jonnesco has contended, and with a considerable amount of physiologic evidence to support him, of course there can be but one conclusion; that paralyzing the sympathetic by the removal of a large portion of it would prevent all of these pathologic conditions. Balacescu has gone over the literature of this subject very thoroughly and he gives abstracts from the histories of all cases thus far reported together with cuts from photographs of the patients showing their improved condition after operation. It would require too much space to discuss the results which he reports in detail or the methods of operating. It is sufficient to say that he considers bilateral resection of the sympathetic the method of choice in all cases of Grave's disease and reports 63.8% of permanent recoveries, 18.1% of cases improved and 18.1% of failures, without a single death. In 17 cases operated upon by Jonnesco there was rapid disappearance of exophthalmus, progressive decrease in size of the goiter, lessening of tremor and disappearance of many other distressing symptoms, such as extreme nervousness, diarrhea, hyperidrosis, etc. The tachycardia disappeared sometimes very quickly, in other cases after several days, the pulse coming down to normal eventually. In some of the cases in which there was not improvement it is stated that the disease was far advanced at the time of operation and the patients were in a very cachectic condition. In contrast to these favorable results without any mortality he quotes Allen Starr's statistics of 190 cases operated upon by partial removal of the thyroid with 23 sudden deaths following and the occurrence of fever, dyspnea, tachycardia, vomiting and other distressing symptoms in about 40% of the cases.

At present the question of the best method for the surgical treatment of exophthalmic goiter still remains unsettled. We believe that the majority of the leading

¹ Journal of Hygiene, April 1, 1902.² British Medical Journal, April 26, 1902.³ La clinica medica Italiana, 1901, No. 7.

surgeons of the world are at present in favor of partial excision of the thyroid as the method of choice. The question of etiology seems as far from being settled as ever. Those who favor partial strumectomy have been influenced chiefly by the advocates of the theory of the chemic origin of the disease. Gautier, Möbius and others compare the clinical picture of Grave's disease to that of myxedema and cachexia strumipriva, believing that the thyroid is the organ which removes chemic poisons from the circulation, and that Grave's disease results as a disturbance in function of the gland. They claim that in the great majority of cases the symptoms of exophthalmus, tachycardia, etc., occur secondary to the appearance of the struma, and hence the desirability of partial strumectomy to remove the source of excessive secretion of the thyroid. On the other hand, the studies of Abadie which have already been mentioned, form the chief support of Jonnesco and his followers. The influence of the sympathetic upon the exophthalmus, the circulation and changes of temperature have been known since the classic experiments of Claude Bernard. With this, as with many other surgical affections, we are still in need of further aid from the physiologist before we can be certain as to what is the rational procedure in exophthalmic goiter. If Balacescu's statistics are reliable, Jonnesco's operation certainly has much to commend it to surgeons in preference to partial strumectomy.

Skin Changes in Intestinal Carcinoma.—Holländer¹ again calls attention to the presence of changes in the skin as an aid in the early diagnosis of intestinal carcinoma. He states that the formation of angiomas in cases of carcinoma have been noted by Langenbeck, Israel, Freund and many other surgeons. In 1900 he published a paper calling attention to this topic in the *Deutsche medicinische Wochenschrift*. During the past 10 years he has had an opportunity to examine large clinical material, including many suffering from intestinal carcinoma. In these patients one frequently finds numerous dry red flecks from the size of a head of a pin to that of a pea which are elevated somewhat above the surface. They differ somewhat from capillary hemorrhages and small angiomas in that they do not become pale on pressure. They are doubtless observed quite frequently in elderly healthy people and perhaps have some relation to an atrophic condition of the skin and cachexia. They are met most frequently in quite fleshy individuals. Two other skin changes, pigmentation and wart formation, are noted, and when these are present together they are very significant of intestinal carcinoma, Holländer believes. The wart formation appears as a sprinkling of many flat little warts which at first glance sometimes appear like specks of dirt. They are caused by an overgrowth of pigmented epithelium from the sebaceous glands. These little warts may also be found among healthy people, but when they are very numerous and occur in young people they show a decided tendency to overgrowth of the epithelial tissues. Speck-like pigmented areas also occur quite frequently and may cover the entire body. Holländer believes that they occur most frequently in the vicinity of the tumor itself; for example, in cases of rectal carcinoma in the gluteal region. Experience has led him to believe that these facts are of considerable value in that attention of the profession should be more generally called to it in order that further observations be made. [M.B.T.]

Lung Embolus After Operations Upon the Appendix.—Oppenheim² has met with 3 cases of embolus of the lung and 2 cases of thrombus out of 18 cases of appendicitis with abscess which have recently come under his care. The lower right lobe of the lung near the pleura was usually affected. There was little to be done in the treatment of these cases. Dry cups are advised for the relief of pain, and morphin not only relieves pain, but is the best aid in treating the dyspnea, which is a very distressing symptom in these cases. As to the origin of lung embolus in appendix cases he believes that the operation itself can have no influence in the development of the embolus, for there is absolutely no connection between the vessels in the

field of operation and those of the lungs. The vessels of the mesentery empty into the superior mesenteric vein and the blood passes through the portal vein to the liver where any embolus from this source will be filtered out. He believes that the most probable source of the embolus is in the bloodvessels of the pelvis in the cases of abscesses which are situated low down. These veins lead directly to the vena cava and frequently they are much disturbed in separating a very adherent appendix. [M.B.T.]

On Para-amidobenzoicacidester as a Local Anesthetic.—Carl v. Noorden¹ (Frankfurt a/M.). The ethyl ester of p-amidobenzoicacid $C_6H_4 \begin{smallmatrix} NH_2 \\ \diagup \\ COO C_2H_5 \end{smallmatrix}$ was prepared by E. Ritser, of Frankfurt a/M., in 1890, and named Anesthesin. After several years of careful experimentation it has been found by Binz, of Bonn; Kobert, of Rostock, and others to be nonpoisonous, and by v. Noorden to be the most valuable local anesthetic yet discovered; especially useful in the treatment of gastric hyperesthesia, dysphagia and irritable cough. It has the advantage over orthoform in that it causes no irritation. [C.S.D.]

Four Hundred Operations for Vesical Calculus.—Frisch's² cases include 306 litholapaxies and 94 suprapubic cystotomies. The mortality in the litholapaxies was but 2.6% and there was recurrence in only 19 patients or 8.2% of the cases. He believes that the more the surgeon becomes accustomed to litholapaxy the more he is inclined to extend the indications for this operation. The operation was formerly considered unsuitable in children, but a large number of cases have been reported by various operators with very successful results. Diverticulas in the bladder have also been considered a contraindication, but it is often possible to crush the stone by filling the bladder with a large quantity of fluid and then pressing the stone up out of the diverticulum with the finger in the rectum. In cases in which he uses suprapubic cystotomy for the removal of large stones, etc., he prefers immediate suture of the bladder if possible. Complete suture is advisable in all cases in which the urine is clear, whatever the age of the patient. A moderate amount of cystitis is not a contraindication, provided a drainage catheter is inserted and care is taken in the after-treatment of the case. In the severer forms of cystitis with large numbers of bacteria in the urine and in cases in which the urine is ammoniacal or the bladder ulcerated, as well as in cases in which the kidney is diseased, drainage of the bladder should be practised. Frisch usually administers urotropin or some salicylic preparation for several days before the operation to render the urine as nearly antiseptic as possible. He sutures the wall of the bladder with interrupted silk stitches in two layers, taking care not to pass the stitches through the mucosa. Catgut he has found entirely unreliable. He closes the muscles, fascia and skin, with the exception of a small opening for drainage at the lower angle of the wound. The dangers of opening the peritoneum and of infiltration of urine afterward are not great. The peritoneum should be sutured immediately and usually healing without the slightest symptom results. In 94 suprapubic cystotomies for stone and over 100 operations for tumors of the bladder he has never had a single case of infiltration of urine. Out of 44 cases in which he closed the bladder completely there was healing by first intention in 23 cases. In 10 cases a small amount of urine escaped from the wound from the third to the ninth day after operation, and in 4 cases supuration with breaking down of the wound occurred. [M.B.T.]

Cirrhosis of the Liver.—Murrell³ reviews the history of the operation for establishing a collateral circulation to cure or prevent ascites, giving the credit for its adoption to Drummond and Morrison. He appends a table of 22 cases by different operators, reporting several of his own. He tabulates also the compensatory channels of the circulation. Carcinomatous subjects are naturally rejected. Syphilitics should be medically treated several weeks before operation. The best results are obtained in the preascitic stage, when diagnosis rests on alcoholic history, with hematemesis and enlargement of the liver

¹ Centralbl. f. Chirurgie, April 26, 1902.

² Berliner klinische Wochenschrift, 1902, Vol. 39, p. 94.

³ Berliner klinische Wochenschrift, April, 1902.

² Wiener klinische Wochenschrift, 1902, Vol. 15, p. 360.

³ The Medical Press and Circular, January 8, 1902.

and spleen; the sooner the better. A temperature rise of 3° or 4° is not ground for postponement. General anesthesia should be used and a binder applied when the patient gets up. [H.M.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Enteric Fever in Pregnancy.—The accidents and illnesses of celebrities by birth or fortune, whether they be crowned heads or presidents of republics, are of unusual interest to the general public. The recent illness of Queen Wilhelmina, of Holland, has attracted the customary attention in the medical and political world. In an hereditary monarchy the importance of an heir to the throne sometimes becomes paramount in order to preserve the peace of a nation or the perpetuity of a dynasty. To our democratic minds the preservation of peace is vastly more important than the mere perpetuation of a certain family of individuals in regal position, simply because of a supposed divine right which they arrogate to themselves of ruling and reigning over their fellow-men, many of whom are formed by nature in a finer and firmer mold than they. The coronation of a somewhat frail youth at the court of Madrid, and the frequent illness of her majesty of Holland, indicate how insecure are the foundations of royal power. From the medical point of view the complication of pregnancy by enteric fever is always an interesting one. Murchison stated that, according to Rokitsansky and Niemeyer, pregnancy confers almost entire immunity from enteric fever, but this statement has been denied by many other authorities. Undoubtedly the same rule governs the occurrence of typhoid in the pregnant woman as in the nonpregnant, and the condition neither predisposes to the disease nor confers immunity from it. Savidan collected 31 cases of typhoid in pregnancy, with five deaths. In the majority of cases gestation is interrupted by the disease. The cause of abortion or premature labor may be the continued high temperature, hemorrhage in the endometrium, or in the membrane of the ovum itself; or a depressed condition of the maternal circulation, in asphyxiation of the child. Giglio has demonstrated the fact that the fetus may become infected by the transmission of the typhoid germs through the placenta. Vinay asserts that gestation is interrupted in 65% of cases. Charpentier gives a table including 322 cases collected from various authors, in 182 of which abortion or premature labor occurred. He holds that if premature labor occurs the child may be stillborn or, if born alive, it is feeble and death may follow preceded by symptoms of typhoid. Hirst observes that idiocy has been noted in a considerable number of instances. The diagnosis of typhoid complicated by pregnancy presents no especial difficulty, but when this complication develops during the puerperium the problem is not so easily solved; and in many cases in which a diagnosis of typhoid fever is made soon after childbirth the real cause of the symptoms depends upon uterine infection. This mistake may be made, particularly if a septic diarrhea is a marked symptom of the sepsis. It is a safe rule to regard every rise of temperature during the puerperium as due to infection, unless we can clearly demonstrate some other affection to be the cause. The Widal's test should always be employed in suspected cases. Accurate and complete physical examination of the patient, combined with the aids which recent microscopy and bacteriology have placed at our command, will help us to arrive at a correct diagnosis. The treatment of typhoid fever occurring during pregnancy does not differ from the ordinary methods. No fear need be felt regarding the induction of labor by the treatment directed toward the control of temperature; for it will be the elevation of temperature and not the treatment which is responsible for premature labor or abortion, if such should occur.

Vaginal Hysterectomy for Cancer with Four Months Pregnancy.—Baldwin¹ reports the case of a woman of 28, with four children, suffering from too frequent and profuse menstruation. Examination showed a cauliflower growth springing from the posterior lip of the os and filling the entire vaginal vault. In the operation the cauliflower tissue was first broken off with the fingers and then the cervix was amputated. To prevent infection the vagina was resterilized, then the uterus opened and emptied of a four months fetus and placenta, after which the uterus was easily removed through the vagina. Microscopic examination confirmed the diagnosis of cancer, but it is one of the few cases in which there has been no recurrence within three years after hysterectomy for cancer of the cervix. Baldwin considers it better to remove growth, fetus and uterus all in one operation, as in this case. [W.K.]

Lung Embolism in Placenta Prævia.—Voigt² gives the history of a case of placenta prævia in which, after the successful delivery by version of a living child with the mother in apparently good condition, when all danger seemed past, there was a sudden change characterized by excessive pallor, difficult breathing and loss of pulse. The absence of hemorrhage, the impeded respiration and other symptoms all indicated embolism in the lungs. By means of heart massage, subcutaneous injection of stimulants and saline infusions and external applications of heat, heart action revived and the patient eventually recovered. For the last five weeks before delivery there had been almost daily bleeding, so there were present all the conditions favorable to the formation of a thrombus. In the treatment of embolism the most important point is to strengthen the heart action by overcoming all opposing circumstances and rendering respiration as easy as possible. Secondly, to avoid any embolic relapse by absolute rest in bed, aided by small doses of morphin. [W.K.]

Deciduoma Malignum.—The histology, as well as pathology of this disease is still a mooted question, the growth being either a sarcoma or carcinoma or a combination of both, and being derived either from maternal or fetal structures or both. In view of existing knowledge, Ladinski³ thinks the name Deciduoma malignum is the most appropriate. Clinically, however, he says the disease presents a clear and distinct picture, and its diagnosis, which is most important, should not be difficult. Pregnancy is an absolute concomitant or precursory condition of Deciduoma malignum, and the chief clinical features are: (1) History of recent parturition or abortion, especially if a hydatid mole has been discharged or placenta retained; (2) profuse hemorrhage occurring at irregular intervals, without apparent cause, and not amenable to the ordinary means of treatment, and which recur in spite of repeated curetages—the presence of a constant sanguineous discharge during the intervals of hemorrhage; (3) a persistently large and hyperplastic uterus and cervix, with a patulous os; (4) pain in the pelvis; (5) anemia, rapid loss of flesh and strength, and cachexia; (6) characteristic nodule in interior of uterus in the early stage. This nodule begins as one or more minute, dark-colored or reddish nodules, and springs from the endometrium, either by a broad base or pedicle—it is soft, spongy, friable and bleeds very profusely on touch; (7) the presence of metastatic deposits, especially in the vagina and lungs, the latter producing cough and bloody expectoration. It is the most fatal of all neoplasms, and considering the rapid progress of the disease, the treatment should consist of complete extirpation of the uterus and vaginal metastasis, if present, as soon as the diagnosis is made from the clinical signs or histologic examination. Any measure short of this will only aggravate the condition. This should be resorted to, even in the suspected presence of metastatic deposits in other parts of the body, for in a few cases these secondary deposits disappeared after the primary tumor was removed. Ladinski describes a case in detail, and appends a collation of 132 authentic cases. [W.K.]

Changes in Fibromyomatous Uteri.—Bishop³ presents a study of microscopic specimens. While the tumor is still

¹ American Journal of Obstetrics, April, 1902.

² Münchener medizinische Wochenschrift, May 6, 1902.

³ Medical Press and Circular, December 25, 1901.

intramural it tends to produce hyperplasia of the endometrium. When sufficiently submucous to exert some pressure on the membrane, it produces compression of the glands, with subsequent disintegration both of them and the interglandular substance. When polypoid, the membrane over and opposite to the tumor is reduced to a single layer of cells which approximate the squamous type. Cureting is justified before the tumor becomes polypoid, but not after, as the removal of the thin epithelium opens the way for infection. Krieter discusses the development of fibromyomas from the adventitia of the arteries at some length. The connective tissue coat forms the capsule. Their low nutrition and slow growth are explained by their dependence on one convoluted artery, except for the fine vasa vasorum. [H.M.]

Significance of Albuminuria in Pregnancy.—Until within the past decade, when a contrary opinion arose, the presence of albumin in the urine was regarded, out of all other symptoms, as the one sure and infallible sign of kidney lesion, the plain meaning of which was unmistakable. The pregnant woman in whose urine albumin was found was looked upon as in a very grave condition. But according to Morse¹ we now know that the presence of albumin in the urine does not necessarily indicate disease. It may be present in health. Its gravity and significance must be determined by the presence or absence of certain other symptoms as 500 women out of 10,000 have albuminuria during pregnancy; yet of these 500 only 60 develop eclampsia; on the other hand, Gerster has collected a series of 108 cases, all eclamptics, in which, after repeated and careful examinations, no albumin was found at any time. But such examinations have shown that there exists a close relationship between the amount of urea eliminated and the development of toxic poisoning. Urea is a waste product, poisonous in itself, eliminated through the medium of the kidneys and in health none of it is retained. A healthy individual eliminates 35 grams of urea in a day. Whenever a decrease in this amount continues for any length of time in pregnancy, signs of disturbance are not wanting. Marx says urea is always found markedly diminished in the so-called toxemias of pregnancy, and when symptoms of toxemia occur they are caused, not by the albumin, but by faulty urea secretion. Morse concludes that the weight of evidence seems to be against the reliability of albumin as a symptom of serious import; and careful urinary analysis show a definite relation between urea and the development of toxic symptoms. [W.K.]

Perityphlitis in Pregnancy.—An interesting case of perityphlitis occurring in the second month of pregnancy is reported by Keiler,² of Berlin. Upon making an incision through the abdominal wall the limits of a large abscess were seen, and in the weak condition of the patient, in order to shorten the operation, it was deemed advisable to fix the tumor to the abdominal wall, protecting the abdominal cavity from the contents of the abscess by a circular tamponade of iodoform gauze strips. Ten days later there was a spontaneous delivery of the pus, after which the fever left and the appetite returned. Abortion took place four weeks after the operation, but without interfering with the recovery of the patient, and in 14 days from that time the wound had healed. [W.K.]

Phleboliths Simulating Ureteral Stone.—Clark¹ reports a case presenting a unique complication following nephrorrhaphy. The patient, aged 42, had been operated upon for a right floating kidney, and for several months following she was comparatively well; then a dull pain in the right side appeared, gradually increasing and leading to loss of general health and strength, and tuberculosis of the kidney was suspected. A careful examination of urine showed the absence of tubercle bacilli. A Röntgen ray negative was made, which demonstrated five distinct calculi just above and below the pelvic brim. An incision exposed the ovarian veins, which were enormously distended and more or less knobbed in a valve-like way. Tracing these veins down into the pelvis, there were found five small phleboliths, the largest about the size of a grain of wheat, their position being that shown in the Röntgen negative. The renal adhesions were loosened, the ovarian vein was

ligated in segments down into the pelvis, in order to shut off entirely its circulation and thus destroy the varicosities; but as the stones were small and lay close to the iliac vessels, they were not disturbed. The patient made a satisfactory recovery and is still much better than before the operation, though there has been some recurrence of the pain and it is thought possible that the adhesions about the kidney have reformed, causing the pain. [W.K.]

Obstruction of the Ureter by an Enlarged Spleen.—A case of this kind is reported by Peters.¹ Examination of the patient, aged 24, who had suffered several attacks of renal colic revealed a movable mass about the size of two fists on the left side of the abdomen, and a diagnosis was made of cystic kidney. On operation an enlarged spleen was found with its lower extremity resting on the floor of the pelvis and completely filling the left side of that cavity, so that pressure was exerted upon the left ureter at the point where it passes over the brim of the pelvis. The spleen was removed and the patient made a good recovery. There have been three cases out of 9,261 admissions to the gynecologic dispensary of John Hopkins Hospital in which splenectomy was performed for enlarged spleen. In each instance the large, displaced organ was mistaken for a neoplasm until operation. All improved and two have remained well up to the present time. The features of especial interest in the case reported are the occurrence of severe attacks of renal colic with intermittent hydronephrosis and hydronephrosis, due to pressure of the enlarged and prolapsed spleen upon the ureter at the pelvic brim; and the marked and permanent improvement in the condition of the blood and general health of the patient following the removal of the enlarged organ. [W.K.]

The Treatment of Endometritis.—Smylie is still inclined to believe that chronic endometritis is not associated with microbic infection, though the subject is still open to discussion. The relation of abortion to endometritis is fully discussed. The former is no doubt more frequently the result of the latter than its cause; although there can be no doubt that in some cases, especially when septic infection occurs, and even without it, the disease results from abortion. Anomalies of the placenta, such as placenta marginata and succenturia, excentric or valamentous attachment of the cord, hemorrhagic infarction and placenta prævia, are most frequently results of endometritis. It is evident that endometritis which causes severe symptoms in the unmarried, and even those forms which cause only slight symptoms in those who have to bear children, requires active treatment. We must appreciate the possibility of preventing the disease by asepsis in midwifery and gynecology, the instruction of those suffering from specific diseases as to the risks attending sexual relations, the care of young women during the menstrual period, and the proper treatment of uterine displacements and tubal and ovarian diseases; as well as attention to the action of the bowels, and the health in general. The treatment of endometritis is detailed, which may be summarized as follows: Septic forms require active antiseptic treatment; in those forms of chronic endometritis in which hemorrhage is a prominent symptom, especially when an exact diagnosis is required, the curet is advisable; when leucorrhœa is the chief characteristic, or when the curet has failed, a powerful caustic is required, and of those which have proved effectual, zinc chlorid is perhaps the most certain. We may hope in the near future to see it replaced by some better method, possibly by formalin and atmocausis. [F.C.H.]

New Symptom in Diagnosis of Short Umbilical Cord.—Brickner,¹ having made a careful study of two cases which he reports, and which seem clearly to demonstrate that frequent urination in the interval of pain during the second stage of labor is a certain indication of a short cord, summarizes the diagnostic points as follows in the order of their importance: Recession of the head in the intervals of pain, urination in small quantities in the intervals of pain after the establishment of the second stage, arterial bleeding during and between the uterine contractions, pain over the placental site, especially during a uterine contraction or during the application of forceps; a desire of the patient to sit up, uterine inertia. [W.K.]

¹ American Journal of Obstetrics, April, 1902.

² Münchener medicinische Wochenschrift, May 6, 1902.

¹ American Journal of Obstetrics, April, 1902.

² The Glasgow Medical Journal, May, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

Culture Products in the Treatment of Tuberculosis.—Pottenger (*Therapeutic Gazette*, Vol. xxvi, No. 1, 1902, p. 13), in reviewing the history and statistics of tuberculin and other culture products, defines the value and usefulness of these substances. Too much has been expected of them, and unsuccessful cases as well as pathologic findings have been unjustly accredited to them. We should distinguish between pure tuberculosis, the disease in its early stages, when it yields to treatment as readily as typhoid fever or pneumonia, and consumption or the results of tuberculosis, ulcerations, cavities and cheesy nodules. The early want of success and consequent bitter disappointment of the profession are due to improper administration of tuberculin, and to lack of discrimination in the selection of cases. The dose should be small, so as to avoid febrile reactions, and the remedy should be used only in the early stages, as Koch himself recommends. Virchow's position in regard to tuberculin is defined. He admits that "any process that can be brought about by tuberculin can also come about without that remedy." His statements concerning the supposed toxic qualities of tuberculin have been greatly exaggerated and distorted. That acute miliary tuberculosis is produced by injections of tuberculin, and that "apparently innocent latent foci are mobilized," is denied. The statistics of those who have tried culture products since 1901 are fully reported, and are interesting series of reports, showing the comparative results obtained at sanatoriums and in ordinary practice, and with and without the use of tuberculin. The history of the discovery of tuberculin and of the subsequent laboratory products are detailed. First, the pure culture fluid was used—tuberculin (Koch); then a purified culture fluid—tuberculo-ciden and antiphtisin (Klebs); then a mixture of culture fluid and proteids from the bodies of the bacilli—tuberculinum purificatum (von Ruck); then an emulsion of bacilli and fragments of same—tuberculin R. (Koch); and finally, a pure solution of the bacilli, watery extract (von Ruck). These preparations and the methods of producing them are fully described. Pottenger concludes that culture products have a specific action upon tuberculous foci. The field of usefulness for culture products is in those cases in which recent tubercles are found, and this especially in incipient cases. In advanced cases culture products will help remove areas of recent extension, but cannot be expected to remove dead, decaying, or newly-formed tissue. When the case is managed properly (that is, the proper hygienic and dietetic measures are prescribed) and culture products are used, the proportion of cures is greater than when culture products are not used. Culture products produce an immunity which protects the patient from relapses; and hence effect a permanent cure more often than hygienic and climatic treatment alone. [R.M.G.]

[My own judgment, however, still remains that tuberculin is needless for diagnosis and dangerous in treatment. S.S.C.]

Climate in Menorrhagia.—In some cases of menorrhagia the congestive tendency in the abdominal viscera seems to be affected favorably by residence at high altitudes. In cases occurring in connection with chronic congestion and enlargement of the uterus, often due to subinvolution after childbirth or abortion, an extended course of treatment at muriated, muriated alkaline, or sulfated alkaline spas, followed or interrupted by residence at a climatic health resort of moderate elevation, often gives good results; in these cases, especially, is a prolonged period of rest for the organs required, the congestive tendency being certainly protracted by sexual intercourse. The mere separation from the husband during residence at a health resort may have a good effect. The menorrhagia associated with uterine fibroids is frequently favorably influenced by a course of brine baths, such as those of Kreuznach, Woodhall Spa, and Mt. Clemens, in Michigan. In middle-aged women with a tendency to plethora and obesity, treatment at sulfated alkaline spas, such as Franzensbad, with suitable regulation of the diet and regimen, may be recommended, especially when there is constipation, and should be followed by a stay at some

climatic health resort of moderate or high elevation. When there is cardiac dilation, thermal gaseous muriated baths, such as those of Nauheim, with or without resistance exercises, often are useful; high altitudes are counterindicated. Hydrotherapeutic measures and sea-bathing sometimes are useful in cases requiring tonic treatment; and chalybeate and arsenic spas may be prescribed in certain associations of anemic and debilitated conditions with menorrhagia."—F. Parkes Weber, in Cohen's "System of Physiologic Therapeutics," Vol. IV.

Gelatin Enteroclysis in Purpura Hemorrhagica.—Sereni (*Il Policlinico*, Vol. vii, No. 46, 1901, page 1,458) reports two cases in which complete recovery took place under this treatment. The obvious advantages of this method over subcutaneous injections are discussed at length. Aside from the pain and discomfort attending the use of the syringe, there is the more serious danger of embolism; and fatal cases of tetanus following hypodermic injection of gelatin have been reported, the substance apparently providing an exceptionally favorable medium for the growth of the microorganisms. In regard to the effectiveness of the method, it has been demonstrated by Rocchi that 50 cc. of a 2% solution of gelatin introduced into the bowel is more rapidly absorbed than is the same quantity of a 1% solution injected subcutaneously; the effect becomes noticeable after 10 minutes and lasts about 6 hours. The technic is simple and the procedure free from unpleasant by-effects. Before administering the gelatin clyster, the bowel must be flushed with boiled water to facilitate absorption; 50 cc. of a 6% or 10% solution of gelatin in distilled water, containing about 0.75% of sodium chlorid and a few drops of laudanum to diminish the local irritation and promote the retention of the fluid, are then injected under moderate pressure. The temperature should be that of the body. [R.M.G.]

[The method should be equally applicable in all other cases in which it is desired to make use of the coagulating property of gelatin, as in aneurysm, hemorrhage, and the like. Gelatin given by the stomach may also be moderately effective, but in very much less degree and with much more uncertainty. Explanation of the entire subject is still lacking. S.S.C.]

Hygiene of Tuberculous Patients.—G. Darenberg (*La Médecine Moderne*, Vol. 12, No. 35, 1901, page 278) recommends life in the open air, and when indoors the windows should be opened as much as possible. During the day the windows should all be opened. Young tuberculous patients may have them opened during the night without inconvenience when their minimum temperature does not fall below 98° between the hours of 2 a.m. and 5 a.m. Old tuberculous patients who complain of chilliness during sleep, even without their temperature falling below 98°, must not sleep with the window open at night. The author believes that the removal of all hangings and upholstered furniture from the room of a tuberculous patient and forcing him to live between bare walls, with wooden seats and furniture, is a bad and useless practice. Superfluous furniture should be avoided, but enough should be permitted to make the patient comfortable. Rest is an important requisite in the hygienic treatment of tuberculosis. Walks are permitted, with various other recreations, which, while keeping the patient active, are also restful to him. Exercise should not be undertaken in order that the patient may become accustomed to fatigue; in Darenberg's opinion this result will not follow. If exercise is undertaken which somewhat tires the patient, he should be allowed to rest for several days before undergoing the same exertion. If this is not done and he is allowed to repeat it on the following or on successive days, rapid exhaustion will ensue. Hygienic treatment will necessarily take a long time. The physician should gain the confidence and cooperation of the patient in order to obtain the best results. [L.F.A.]

Round-Cellled Sarcoma Successfully Treated by Röntgenism.—Kirby (*Journal of Advanced Therapeutics*, Vol. xx, No. 2, p. 89) reports an "inoperable" case of round-celled sarcoma of the neck apparently cured in six weeks by means of the x-ray. The growth first made its appearance after the patient had sustained a bruise on the neck. At the end of two years from the time of its first appearance the tumor had attained the size of a goose egg and was firmly fixed, with indurated borders. Pain was a prominent symptom. At the time the x-ray treatment was begun the tumor measured 10 inches in

its longest, and 5 inches in its shortest diameter; the area of ulceration measured about 5 inches by $3\frac{1}{2}$ inches. A portion of the tumor was excised and the diagnosis of round-celled sarcoma confirmed by microscopic examination, before treatment was begun. The tube used was a Truax & Green improved, with two anodes. It forced back a spark-gap of four inches. The distance of the anode from the skin was 10 inches. The exposures lasted from 15 to 20 minutes each, the whole ulcer being rayed at each sitting. There were no evidences of x-ray dermatitis at any time and no effect upon the hair-roots. [R.M.G.]

Hydrotherapeutic Treatment of Influenza.—Shurly (*Bulletin Général de Thérapeutique*, Vol. cxlii, No. 22, page 876) recommends vapor baths in the treatment of influenza, if they are not contraindicated by the state of the heart; hot drinks may also be added. In cases in which it seems preferable, hot-air baths may be substituted. If the temperature is very high, cold applications must be used, accompanied by the hypodermic injection of 0.9% salt solution. Quinin and opium, especially the camphorated tincture of opium, should be administered internally. In the presence of marked nervous debility, strychnin and phosphorated oil are indicated as tonics. Hypersecretion of the gastric mucous membrane, with stenosis of the pylorus due to spasm, should be combated by the application of hot compresses to the epigastrium, and by the internal administration of a mixture containing wine of opium and tincture of belladonna in equal parts, of which 10 to 20 drops is given in water before meals. This treatment should be associated with a carefully regulated diet and proper hygienic precautions, which will tend to modify the neuroarthritic tendencies. [L.F.A.]

Failure of Gelatin in the Treatment of Aortic Aneurysm.—Syers (*Treatment*, Vol. v, No. 10, 1901, p. 729) reviews a series of six cases reported by Goloubinine in which injections of gelatin were used. Two of the patients died in hospital, two died immediately after they were discharged, and two, so far as could be learned, were unimproved. Syers calls attention to the importance of the general state of the aorta in cases of aneurysm. In every case of aortic aneurysm the possibility of any number of similar dilations is present, and in most instances the possibility has become an actuality, for other portions of the vessel are nearly always aneurysmal. "It is only necessary to glance at the thin, roughened, ragged, and calcareous surface of the vessel to convince one's self that the actual tumor, which is the external mark of the disease, is a small matter, and that even were it filled up and cured, the condition of the patient would be no better." On pathologic grounds the treatment of aneurysm by injections of gelatin, the introduction of wire, or galvanopuncture, must therefore be abandoned. [R.M.G.] [A conclusion altogether too sweeping. s.s.c.]

Sacrolumbar Puncture for Therapeutic Purposes.—Chipault (*La Médecine Moderne*, October 30, 1901) reports 57 cases in which he employed sacrolumbar puncture for therapeutic purposes. It was a failure in nine because of ankylosis in a patient having chronic rheumatism, and because of subarachnoid gelatinous edema in syphilitics, and subarachnoid adhesions in rheumatics. Among 25 which showed no improvement were included cases of hydrocephalus, intracranial tumor, tuberculous meningitis, general paralysis, and epilepsy; 14 showed a more or less fleeting palliative result, purely symptomatic; but in only 9 cases was a cure obtained. Of this number there were 4 cases of specific meningitis and 1 of septic meningitis in which the cure was due in great part to the accompanying medicinal treatment. In the 4 remaining cases the cure was attributed directly to the puncture; these included 1 case of serous hypersecretion in a congenital hydrocephalic, 1 case of coma in an old syphilitic, 1 case of meningitis due to grip, and 1 case of choreiform affection with hemorrhagic cerebrospinal liquid. Chipault believes that lumbar puncture should rarely be employed for therapeutic purposes. [L.F.A.]

Treatment of Typhoid Fever with Jez's "Antityphus-extract."—(*Wiener klinische Wochenschrift*, 1901, No. iv, from *Therapeutische Monatshefte*, Vol. xv, No. 9, 1901.) This extract is obtained from the organs of animals that have been infected with *Bacillus typhosus*. It is administered in tablespoonful doses once or twice every hour, depending on the severity of

the infection, until the first remission takes place. One tablespoonful is then given every three hours until the morning temperature does not exceed 38° C. (100.4° F.), and after that the same dose is continued three times a day. The preparation has the following advantages: It is administered by the mouth. It is a harmless remedy that can be safely given in large doses without producing noxious by-effects. When given uninterruptedly in typhoid fever it reduces the temperature and strengthens the pulse. It shortens the course of the disease and lessens or neutralizes the typhoid toxins. The remedy acts only in typhoid fever and can therefore be utilized to decide the diagnosis in a doubtful case. [R.M.G.]

Treatment of Tuberculous Adenitis.—Broca (*La Médecine Moderne*, October 30, 1901) directs that patients having tuberculous adenitis should be placed in the best hygienic surroundings, preferably at the seaside. In some cases a marine climate and the administration of iodine, arsenic, iron, and the phosphates will suffice to stop the progress of the disease, but local treatment will often be necessary. Local treatment consists in interstitial injections of iodoform and of camphorated naphthol, and in extirpation. In simple hypertrophic or caseous ganglionic enlargements, 5 or 6 drops of camphorated naphthol are injected once a week. If fistulas exist, interstitial injections are not applicable. In these cases the part should be curetted and afterward dressed with camphorated naphthol. Extirpation is indicated in lymphomatous enlargements and in cases of multiple caseous enlargements without marked periadenitis. [L.F.A.]

Gelatin as a Styptic.—Gebele (*Münchener medizinische Wochenschrift*, 24, 1901, from *Therapeutische Monatshefte*, Vol. xv, No. 9, 1901) states that gelatin acts only after a considerable amount of blood, amounting to one-fifth or one-fourth of the total quantity, has been lost. The gelatin should be heated to about 100° F. A 2% solution is suitable for subcutaneous injection; for local application a 10% solution is advised. [R.M.G.]

Lumbar Puncture in Cerebrospinal Meningitis.—Netter (*La Médecine Moderne*, October 30, 1901) believes lumbar puncture of great value in cerebrospinal meningitis and in septic meningitis, especially when there is an increase in pressure. In one case of suppurative meningitis following otitis, he made a lumbar puncture, withdrawing a cloudy liquid rich in microorganisms. Recovery followed, which he attributed to the punctures, the only other treatment having been hot baths. [L.F.A.]

Electricity in Gynecologic Work.—Wheatland (*Journal of Advanced Therapeutics*, Vol. xx, No. 2, p. 103, 1902) recommends the use of electricity in dysmenorrhea, amenorrhea dependent upon local conditions, endometritis, metritis, subinvolution, pelvic peritonitis and cellulitis when pus is absent, catarrhal salpingitis and uterine fibroids. The action of electricity, as stated by Wheatland, is remarkably simple and the indications readily deduced. If congestion is to be lessened, the positive pole of the galvanic current is applied to the part; if it is desired to produce hyperemia, the negative pole is used. Electricity also possesses cathaphoric action, or power of diffusing medicaments into the tissues of the body. In regard to the faradic current, it is stated that a long wire with rapid and smooth interruption will produce sedation, and a current from a short wire with slow vibration, stimulation. The polarity of the faradic current is less distinct in its physiologic action, but resembles the galvanic in that the electrode attached to the positive pole is more sedative, and that to the negative more stimulating to nerves and muscles. By its tonic action on nerves, and its power to stimulate to contraction unstriated muscle fibers, the faradic current relieves inflammation by causing the vascular walls to contract on their contents and expel them into the blood stream; pelvic adhesions are severed and their absorption promoted. The author describes his technic and the various apparatus he is in the habit of using. [R.M.G.]

Dialyzed ergot of rye (Golaz) is recommended by Niebergall (*Centralbl. für Gynäkologie*, 1901, No. 19, page 482) instead of the liquid extract. It may be given undiluted by hypodermic injection, in the dose of 2 Pravaz syringefuls daily, or by the mouth in the dose of 20 drops, 5 times a day. It is more rapidly absorbed, and therefore acts more promptly, than the extract, does not produce abscess at the site of injection, and

never gives rise to ergotism even when given continuously for weeks. [R.M.G.]

Substitution of Bromids for Food-chlorids in the Treatment of Epilepsy.—R. Balint (*La Médecine Moderne*, Vol. xii, No. 36, 1901, page 294) obtained good results in 28 cases of epilepsy by replacing the sodium chlorid in their diet with sodium bromid. He administered a diet consisting of 1 pint of milk, 1 to 1½ ounces of butter, 3 unsalted eggs, and 10 to 13 ounces of bread and fruits. In the absence of the chlorids in the food, only small doses, 30 to 45 grains of the bromid are necessary, mixed with the bread in place of sodium chlorid. The effects of this treatment were at first irregular. At the end of 6 or 7 days improvement occurred in all cases. In some patients the number of attacks diminish quickly, in others the attacks became less marked and the convulsions were replaced by feeble contractions, or by attacks of vertigo accompanied by a short loss of consciousness. Certain patients, who had previously had 3 attacks daily, were free from them for 15 days. By this treatment Balint obtained complete cessation of attacks in 7 out of 9 patients having epilepsy of recent origin, and in 15 out of 19 cases in which it was of long standing, or in 80% of the cases observed; in the other 20%, partial and progressive improvement occurred. In the majority of the cases treatment was continued from 35 to 40 days, in others for 2 months. [L.F.A.]

Electricity in Hysteroneurasthenic Paralysis.—Bishop (*Journal of Advanced Therapeutics*, Vol. xx, No. 2, 1902, p. 81) reports a successful case: The patient, a woman, had been ill for four years, and was entirely helpless on both sides below the waist; the knee-joints were stiff and the legs could not be moved without causing intense pain. There was some muscular wasting, but not enough to indicate a lesion of the motor nerves or of the anterior cornua. Sensation was nearly normal. She could use both hands, but could not walk, and there was a large bed sore over the sacral spine. A large pad attached to the positive pole of a galvanic battery was placed over the dorsolumbar region and the negative pole was applied successively to the superior, middle, and inferior cervical ganglions on both sides. A large electrode was then placed over the region of the stomach and over the sciatic nerve at its exit from the pelvis; finally the paralyzed extensor muscles of the thigh and leg were made to contract for about five minutes. The current strength varied from 5 to 10 milliamperes. This treatment was given daily, and in addition gentle movement was employed to overcome the stiffness of the knees. The first sign of returning power was observed after four months, when the patient began to move the large toes. After this she improved rapidly; in six months she was able to go about in a chair, and at the time the article was written was to all appearances perfectly well. [R.M.G.]

FORMULAS ORIGINAL AND SELECTED.

Treatment of Chronic Pharyngitis.—Savoire (*Bulletin Général de Thérapeutique*, April 30, 1901) recommends that all mechanical nasal disorders, which are a frequent cause of pharyngitis, should be treated by appropriate medical or surgical means, establishing, so far as possible, the breathing power of the nose. Lavage of the nasopharynx should be practised morning and evening, with one pint of phenosalyl solution 1 to 100, in order to clear away all the mucus which accumulates in the nasopharyngeal cavity. This should be followed by a nasal inhalation for four or five minutes of a teaspoonful of the following solution:

Solution of formaldehyd (40%)	1 m
Menthol	2½ drams
Chloroform	2½ drams
Cologne water	3 ounces

Every evening the nasopharynx should be touched with one of the following solutions:

- (1) Saturated aqueous solution of resorcin. (15 p. 10)
- (2) Menthol 15 grains
Tincture of iodine 1½ drams
Glycerin 2½ drams

This treatment, by no means painful, generally brings about the cure of the most tenacious cases at the end of several weeks. [L.F.A.]

OPHTHALMOLOGY

WALTER L. PYLE

The Value of Iridectomy in Simple Chronic Glaucoma.—There is great divergence of opinion as to the relative value of the various methods of treatment in simple chronic glaucoma. Bull is of the opinion that this is probably due to a lack of precision in interpreting the real meaning of the various symptoms as they are observed in different cases. The so-called characteristic signs—reduction of vision, contraction of the field, and excavation of the optic disc, are also met with in simple atrophy of the optic nerve. The truly distinguishing sign is increase of intraocular tension; without this, there is no glaucoma. Careful observation of the existing conditions of the angle of the anterior chamber, which varies in different refractive conditions; study of the field of vision, particularly for scotomas under small visual angles, and observations of the iridic reaction to miotics, are valuable prognostic guides for operative interference. The study of the optic disc is sometimes misleading, and the question of increased tension is often difficult to settle.

David Little¹ is of the opinion that iridectomy should be done on every case of primary chronic glaucoma in which the patient's physical condition does not forbid the shock of operation. He says the earlier the operation the better, even in the premonitory stage. He does not hesitate to operate on an eye when the field is contracted to fixation, provided there is any vision worth saving. De Schweinitz² advises what has been termed by E. Treacher Collins "a preventive iridectomy" on the apparently unaffected, or at most but slightly involved eye, in cases of monolateral primary glaucoma, acute or chronic. In suspicious cases he recommends operation on the sound eye as soon as the anterior chamber of its affected fellow has been restored. He adds that it might be justifiable to suggest operation in any case, if the patient is about to pass from observation and into a locality where expert examination is not available. In common with many Austrian and German surgeons, Czermak is also inclined to advocate prophylactic iridectomy in monolateral cases.

On the other hand, C. S. Bull³ believes that in advanced chronic glaucoma, with great contraction of the visual field, marked impairment of vision, undoubted increase of tension, and deep cupping of the disc, the prognosis for operation is distinctly unfavorable. In those cases in which the contraction of the field has approached close to the fixation point, even though the central vision is good, he believes that iridectomy is positively contraindicated. The contraction of the field is not arrested and may be made worse, and followed by loss of central vision. It is the opinion of many experienced ophthalmologists that such cases should be treated by miotics, massage, careful refraction, salicylates, iodids and proper hygiene. Bull believes, however, that in the early stages of simple chronic glaucoma, before the fields are much contracted, the sooner iridectomy is done the more certain the effect, and the better the prognosis. In the so-called "posterior glaucoma" without marked signs in the anterior segment of the eyeball, perhaps the result of a previous optic neuritis, there is reasonable doubt as to the value of iridectomy.

The latest published statistics on operation in glaucoma are those of Haab, of Zürich, and of Mendel,⁴ from Hirschberg's clinic. In the former's cases there were 77% of distinctly favorable results in acute inflammatory glaucoma, and 71% in simple glaucoma. Of the cases treated by miotics 40% progressed favorably. In Mendel's statistics the results are more or less uniform with

¹ President's address, Ophthalmological Society of the United Kingdom, October 17, 1901.

² Trans. Amer. Ophthal. Soc., 1901, 291.

³ Archives of Ophthalmology, January, 1902, page 57.

⁴ Berliner klin. Wochenschrift, January 22, February 23, 1902.

the previous ones of 569 operations in Hirschberg's clinic. During the last seven years there were 234 glaucoma patients and operation was performed on 258 eyes. In 15 cases there was no operation. Of the patients 83 were men, 144 women, and 7 children. In acute inflammatory glaucoma, iridectomy was satisfactory in 82.2%; in chronic inflammatory glaucoma in 77.1%. In simple cases tension was reduced, and vision was generally improved or held stationary. The second eye was never operated on until the first had completely recovered from the surgical intervention. In 31 cases enucleation was necessary on account of pain. The fitness of cases for operation was judged by previous experiences. In Berlin, iridectomy has maintained its supremacy for 25 years, although other operations and the miotic treatment are also still employed.

Disease of the Retina and Optic Nerve in Chlorosis.—Westcott and Pusey¹ report an instance of papilloretinitis in a sallow girl of 15, in which blood-examination showed every evidence of chlorosis. Under the administration of iron for three weeks there was marked improvement, and two months later there were practically no ophthalmoscopic evidences left; vision was perfect, and the chlorosis had disappeared. They have collected records of 17 cases of this nature, and believe that they are much more frequent than the reports would indicate. They call attention to the great liability to error in diagnosis, with consequent disastrous results.

With commendable frankness, such competent observers as Schmidt, Gowers and Engelhardt acknowledge their mistake in judgment of these cases. In Schmidt's case a diagnosis of hysteria was made, and chlorosis, the true cause of the trouble, was not detected for 40 days. In Gower's case, syphilis was suspected, and potassium iodid given. Not until iron was substituted was improvement noticed; too late, unfortunately, to prevent partial optic atrophy. Engelhardt's case was treated for one year as one of brain tumor, and came to postmortem examination, an issue that might have been avoided had the proper diagnosis been made early.

The cause of optic neuritis in cases of chlorosis is attributed by Hawthorne² to intracranial thrombosis. His personal observation is limited to a single case—that of a girl of 17, who, though not distinctly anemic, suffered from menstrual irregularity. She was free from all evidence of visceral disease. The ocular symptoms were diplopia of sudden and recent origin (14 days) dependent on paralysis of the right external rectus, and double optic neuritis. Later in the case there were some central retinal changes, although visual acuity was not greatly decreased. After a few weeks' treatment by rest and the administration of iron, normal vision was regained, the optic neuritis subsided, and the ocular palsy entirely disappeared.

Intraocular Use of Iodoform in Infection of the Eyeball.—That iodoform may be introduced into the anterior chamber without causing violent reaction or dangerous irritation has been demonstrated by Berry and Ostwalt, and Ollendorf³ inserted small discs of iodoform into the vitreous of rabbits through an incision behind the insertion of the superior rectus, without causing irritation. In all of these experiments the iodoform was gradually absorbed. Goldzieher⁴ reports the favorable action of iodoform introduced into the anterior chamber in five cases of intraocular infection. The cases included foreign body in the vitreous, diabetic iritis, and ulcer of the cornea with hypopyon. Knur reports the results of the intraocular use of small rods of iodoform in 23 cases in the clinic of Haab, of Zurich, who advocated this treatment at Utrecht in 1899. The cases included intraocular infection of all kinds, and in eight instances enucleation

was ultimately necessary. Introduction into the vitreous seemed to produce a more intense action. On account of the liability to corneal opacity at the point of introduction, a wound of the pupillary area of the cornea should be avoided. From recent experiences, Römer, of Würzburg, believes that the iodoform is of benefit only when the infection is from the ordinary pyogenic microbes. He cites two cases of such infection after injury with foreign bodies in which the eyeballs were saved, and a third of infection by a peculiar bacillus after cataract-extraction in which the iodoform was useless.

Atroscin and I-Scopolamin.—W. F. Macklin¹ believes that these substances are practically identical, and he claims that when used in 1% solution, preferably in castor oil, they act as rapid and powerful mydriatics, and, as cycloplegics, are as reliable and potent as atropin sulfate, while the power of accommodation returns in five days. He publishes tables showing clearly and graphically the results of some experiments made at the Royal Ophthalmic Hospital, London. He concludes that the advantages of the oily solution are that a more rapid and certain action of the drug is obtained, and only one application is required. In making the application, a glass rod is dipped into the oily solution, and after the surplus is allowed to drain off, the conjunctiva of the lower lid is lightly touched. The tables show that mydriasis begins in 10 minutes and is complete in 20; that cycloplegia begins in 10 minutes and is generally complete in 50; and that, ordinarily, the accommodation returns to normal in five days.

Nargol is a chemie combination of nucleic acid and metallic silver. It contains 10% of the metal, while protargol contains 8.3%. Schwarz² has made comparative tests with protargol in solutions of equal strength. His experiments extended over 200 cases, nargol being used in one eye and protargol in the other, and under the same conditions, as nearly as possible. Solutions ranged from 10% to 20%, and a fairly accurate idea was obtained of the amount and persistence of pain and injection. The following is a brief summary of the facts elicited from the above 200 cases: In 20% solutions, series of 60 cases, pain and injection decidedly greater and more persistent from protargol; in 15% solutions, series of 60 cases, pain and injection decidedly greater from protargol; in 10% solutions, series of 80 cases, pain and injection slightly greater from protargol; 20% and 30% solutions of nargol cause only moderate pain, and slight injection; 10% and 15% solutions of nargol cause slight degree of pain of average duration of two minutes, and very slight injection. All of the above solutions of nargol cause very decided blanching of the conjunctiva.

The general conclusions are as follows: Nargol is relatively nonirritating, has considerable range as an astringent, as well as superior penetrating power, stability, and solubility, and is most efficient in 10% and 20% solutions, which should not be kept more than five weeks. The addition of a few drops of a 1% chloreton solution retards decomposition. In solutions of equal strength nargol is more stable and less irritating than protargol, and appears to be equally efficient.

Amblyopia from Carbon Bisulfid Poisoning.—F. C. Heath³ discusses the previous literature on this subject and reports a case in a young woman who used this substance in splicing the inner tubes of bicycle tires in a large rubber factory. Her symptoms were great nervousness, excitability, irritability of temper, mist before the eyes, insomnia, muscular cramps, weakness, emaciation, impairment of mental powers, etc. There was no central scotoma and the vision was much better ($\frac{1}{2}$ in each eye) than is usual in these cases. The pupils were markedly dilated, but beyond a pallor of the optic disc there were no positive ophthalmoscopic signs. The outcome of a damage suit against the company was a compromise verdict of \$500 for the plaintiff.

The Operation of Couching Performed by a Mule.—L. H. Taylor⁴ reports an instance in a man of 55 who was

¹Archives of Ophthalmology, January, 1902.

²Lancet, London, February 8, 1902.

³Zeitschrift für Augenheilkunde, July, 1901.

⁴Zentralblatt für Augenheilkunde, March, 1901.

¹Archives of Ophthalmology, March, 1902, p. 132.

²Medicine, March, 1902.

³Annals of Ophthalmology, January, 1902.

⁴Ophthalmic Record, July, 1901.

kicked by a mule in the back and side of the head. The right crystalline lens was dislocated in the vitreous and could be plainly seen later lying in the lower part of the vitreous chamber. The eye was uninjured save the dislocation of the lens, and it made a perfect recovery. With the proper correcting convex lenses, vision was $\frac{3}{8}$ at the last examination.

Retinal Anesthesia.—W. F. Southard¹ reports a case of anesthesia of the retina in a girl of 21 with strong neuropathic tendency. The case was carefully followed for six years, and graphically illustrates the peculiar changes in the visual field often associated with profound neurasthenia. Southard's review of this interesting case shows an apparently healthy though not robust young woman of marked inferiority in size, with a history of acute rheumatic fever in early childhood. Otherwise she had always been in good health, and never previously exhibited symptoms of hysteria or nervousness. She became irritable, suspicious, and lost her cheerfulness, which was formerly a marked characteristic, and she became quickly fatigued on slight physical exertion. She developed such vasomotor and psychic disturbances as violent palpitation of the heart, flushing of the face and neck, great mental fatigue, loss of power of concentration, numbness of hands and arms, insomnia followed by unrefreshing sleep which was broken by unpleasant dreams, anemia, accompanied with rapid loss of flesh, severe frontal and occipital headache. All these symptoms precede by several weeks an attack of transitory blindness followed by diplopia; irregular and asymmetric visual fields, which are ever changing in size and form; rapid fatigue of retina while taking visual fields; normal vision with absence of pathologic change in retina and optic nerve. No organic disease was ever present, and rapid amelioration of all the above symptoms followed rest and medical treatment. With return to work these disturbances immediately reappeared, though not with same intensity. In the course of four or five years the symptoms have entirely disappeared, with the exception of the hemianopsia in right eye, which, at the time of writing, is certainly disappearing. The patient has been for about two years steadily occupied as nurse girl, and is now in robust health.

Podophyllin Dust Affections.—A. V. de Rocca-Serra,² in his inaugural thesis, describes a condition not infrequent among those who handle podophyllin in pharmaceutical processes. The contact of podophyllin dust with the eye produces a general reaction of the entire anterior segment of the eye, particularly of the iris; in fact, the action upon the iris is so intense that the affection may be termed podophyllin iritis, from this most characteristic and dominant symptom. The eyelids become edemic and present on their cutaneous surface papulous red spots which resemble so closely syphilitic eruption as to mislead the physicians. The cornea becomes infiltrated, and in some instances opalescent. The keratitis is always central, accompanied by erosions and desquamation of the anterior epithelial layer. The iritis which is rapid in its course and quickly attains to maximum intensity is the most striking symptom: the hyperemic and contracted iris reacts neither to light nor atropin, it becomes vague in color and design at the same time that the pupillary field is obstructed by exudates. Descemet's membrane becomes covered with light, punctiform, uveal deposit. Troubled vision, excessive intraocular pain and insomnia accompany the symptoms named. In the diagnosis it is important to avoid confounding the affection with syphilitic iritis, which error is favored by the copper-red spots on the skin of the patients. The prognosis is favorable notwithstanding the fact that during the first two or three days the condition of the eyes seems desperate. Under the influence of hot compresses, occlusive bandages and instillations of atropin recovery is rapid. [C.S.D.]

Influenza as it Affects the Eye.—Jordan³ considers only the changes in the nervous mechanism. Anesthesia of the cornea occurs, passing off in a few days. Herpetic keratitis has been described. Loss of accommodation with external ophthalmoplegia is common. The degree may vary and may be due

simply to debility or to organic lesion. One case of blue vision is recorded, and one doubtful case of yellow vision. Cases of optic neuritis and perineuritis and atrophy are reported, and others which, for want of better knowledge, are classified as retrobulbar neuritis. In these the failure of vision begins within two weeks of the commencement of influenza and proceeds rapidly. It is preceded by intense frontal and circumorbital cephalalgia. In some cases there is an absolute central scotoma; in others contraction of the field; in others both, depending, perhaps, as suggested by Weeks, on the location of the neuritis which, if near the globe would affect the macular fibers, and if near the optic foramen, the peripheral fibers. A striking feature was the widely dilated, fixed pupil present in several cases. [H.M.]

Treatment of Suppurating Keratitis by Solar Light.—Niésmamor⁴ has shown that a lens of 8 dioptries and 10 cm. in diameter, not only has no injurious action on the eye, but, on the contrary, a favorable influence on artificially provoked corneal ulcerations, provided care is taken to exclude heat rays by passing the rays through a layer of water colored by methyl blue. [C.S.D.]

A Case of Complete Absence of the Visual System in an Adult.—A careful study of a case of complete absence of the visual system in a man of 22 leads Spiller² to the following conclusions: (1) The chief "primary" optic center is the pregeniculum; (2) the pulvinar of the thalamus is also an important "primary" optic center; (3) the anterior colliculus of the quadrigeminal body in man has an unimportant relation to vision; (4) the subthalamus, the habena, the postgeniculum probably are not part of the visual system; (5) the cortex of the calcarine fissure may contain nearly the normal number of cell-bodies, even though the visual system may be undeveloped; (6) the nerves to the ocular muscles and their nuclei may be developed, even though the visual system is absent. [D.R.]

Epiphora Provoked by the Accessory Lacrimal Glands.—Gallemaerts³ secured immediate relief to a patient who had suffered from persistent lacerimation, by the excision of a small glandular mass anomalously located in the conjunctiva below the upper lid, but probably belonging to the group of acinous glands which normally occupy the superior fornix. [C.S.D.]

Carcinoma of the Eye in Cattle.—Voges, of Buenos Aires, describes a hitherto unrecorded affection of the eye in cattle, occurring in certain districts of Argentina. In place of the eye a large tumor is seen, the entire eyeball being destroyed, and replaced by a putrifying, stinking mass. Examination proves this to be carcinomatous in character. [C.S.D.]

Fly-larva in Anterior Chamber of the Eye.⁴—A child having symptoms of keratitis with hypopyon, having been unsuccessfully treated for several months, an inferior keratotomy was performed and a foreign body removed, which proved to be larva of the warble fly, *Hypoderma bovis*. [C.S.D.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended May 23, 1902:

SMALLPOX—UNITED STATES.				Cases	Deaths
California:	Los Angeles.....	May 3-10.....	3		
	San Francisco.....	May 4-11.....	4		
	Denver.....	May 3-10.....	7		
	District of Columbia: Washington.....	May 10-17.....	1		
Florida:	Jacksonville.....	May 10-17.....	2		
Illinois:	Belleville.....	May 10-17.....	2		
	Chicago.....	May 10-17.....	19	1	
	Freeport.....	May 10-17.....	4		
	Galesburg.....	May 10-17.....	4		
Indiana:	Indianapolis.....	May 10-17.....	23		
	South Bend.....	May 10-17.....	3		
	Terre Haute.....	May 3-17.....	4		
	Wichita.....	May 10-17.....	5		
Kansas:	New Orleans.....	May 10-17.....	1		
Louisiana:					

¹ Pacific Medical Journal, May, 1901.

² La Semaine Médicale, February 12, 1902.

³ Medical Chronicle, October, 1901,

⁴ La Semaine Médicale, January 1, 1902.

⁵ University of Pennsylvania Medical Bulletin, February, 1902.

⁶ Polyclinique, November 1, 1901.

⁷ Hygiea, September, 1901.

Massachusetts:	Boston.....	May 10-17.....	46	6
	Brockton.....	May 10-17.....	1	
	Chelsea.....	May 10-17.....	2	
	Everett.....	May 10-17.....	1	1
	Fall River.....	May 10-17.....	3	
	Lowell.....	May 10-17.....	3	
	Malden.....	May 10-17.....	6	
	Newton.....	May 10-17.....	1	
	Somerville.....	May 10-17.....	1	1
Michigan:	Detroit.....	May 10-17.....	2	
	Ludington.....	May 10-17.....	24	1
Minnesota:	Winona.....	May 3-17.....	4	
Missouri:	St. Louis.....	May 11-18.....	43	
Montana:	Butte.....	May 4-11.....	6	
Nebraska:	Omaha.....	May 10-17.....	26	
New Jersey:	Camden.....	May 10-17.....	3	
	Hudson County, including Jersey City.....	May 4-18.....	74	17
	Newark.....	May 10-17.....	54	9
	Plainfield.....	May 10-17.....	1	1
New York:	Elmira.....	May 10-17.....	2	
	New York.....	May 10-17.....	46	7
Ohio:	Cincinnati.....	May 9-18.....	7	
	Hamilton.....	May 10-17.....	1	
	Toledo.....	May 10-17.....	1	
Pennsylvania:	Columbia.....	Apr. 28-May 5.....	21	
	Erie.....	May 10-17.....	12	
	McKeesport.....	May 10-17.....	1	
	Philadelphia.....	May 10-17.....	12	1
	Pittsburg.....	May 10-17.....	9	2
	Scranton.....	May 10-17.....	2	
Rhode Island:	Providence.....	May 10-17.....	1	
Tennessee:	Memphis.....	May 10-17.....	2	1
Washington:	Tacoma.....	May 4-11.....	1	
Wisconsin:	Green Bay.....	May 11-18.....	5	
SMALLPOX—INSULAR.				
Porto Rico:	Arecibo.....	Apr. 19-May 3.....	75	
	Caguas.....	Apr. 19-May 3.....	36	
	Camuy.....	Apr. 19-May 3.....	56	
	Hatillos.....	Apr. 19-May 3.....	7	
	Ponce.....	Apr. 19-May 3.....	30	
	San Juan.....	Apr. 19-May 3.....	40	
SMALLPOX—FOREIGN.				
Austria:	Prague.....	Apr. 12-May 3.....	19	
Belgium:	Antwerp.....	Apr. 19-May 3.....	25	2
	Ghent.....	Apr. 5-May 3.....	3	
Brazil:	Pernambuco.....	Mar. 15-Apr. 15.....	52	
	Rio de Janeiro.....	Apr. 6-20.....	11	
Canada:	Halifax.....	May 3-17.....	4	
	Winnipeg.....	Apr. 26-May 10.....	11	1
China:	Hongkong.....	Mar. 29-Apr. 12.....	6	6
Colombia:	Cartagena.....	Apr. 21-27.....	2	
	Panama.....	Apr. 29-May 12.....	80	
France:	Paris.....	Apr. 5-12.....	2	
	Paris.....	Apr. 19-26.....	1	
Great Britain:	Dundee.....	Apr. 26-May 3.....	2	
	Glasgow.....	May 3-9.....	2	1
	Liverpool.....	Apr. 19-26.....	3	
	London.....	Apr. 19-26.....	367	42
	London.....	Apr. 26-May 3.....	250	43
	North Shields.....	Apr. 9-26.....	23	
	South Shields.....	Apr. 19-26.....	9	
India:	Bombay.....	Apr. 15-22.....	5	
	Calcutta.....	Apr. 12-19.....	10	
	Karachi.....	Apr. 13-20.....	7	2
	Madras.....	Apr. 12-18.....	5	
Italy:	Palermo.....	Apr. 12-May 3.....	65	16
	Rome.....	Mar. 22-29.....	1	
Mexico:	Vera Cruz.....	Apr. 26-May 3.....	1	
Russia:	Moscow.....	Apr. 12-26.....	10	6
	Odessa.....	Apr. 12-May 3.....	19	2
	St. Petersburg.....	Apr. 12-26.....	16	2
	Warsaw.....	Apr. 5-12.....	1	
Straits Settlements:	Singapore.....	Mar. 15-29.....	1	
Switzerland:	Geneva.....	Apr. 5-19.....	2	
Uruguay:	Montevideo.....	Apr. 15-22.....	75	2
YELLOW FEVER.				
Brazil:	Pernambuco.....	Mar. 15-Apr. 15.....	1	
	Rio de Janeiro.....	Apr. 6-20.....	67	
Costa Rico:	Port Limon.....	May 1-7.....	2 cases	
			suspected	
Mexico:	Vera Cruz.....	Apr. 26-May 3.....	10	7
CHOLERA.				
China:	Hongkong.....	Mar. 29-Apr. 12.....	56	50
India:	Bombay.....	Apr. 15-22.....	3	
	Calcutta.....	Apr. 12-19.....	153	
Straits Settlements:	Singapore.....	Mar. 15-29.....	17	
PLAGUE—INSULAR.				
Hawaii:	Honolulu.....	May 7.....	1	
	Honolulu.....	May 8.....	1	
PLAGUE—FOREIGN.				
Brazil:	Pernambuco.....	Mar. 15-Apr. 15.....	34	
China:	Hongkong.....	Mar. 29-Apr. 12.....	5	5
India:	Bombay.....	Apr. 15-22.....	608	
	Calcutta.....	Apr. 12-19.....	588	
	Karachi.....	Apr. 13-20.....	161	132

Changes in the Medical Corps of the U. S. Army for the week ended May 24, 1902:

GLENNAN, JAMES D., surgeon, granted leave for 15 days, from about May 19.

HICKS, JOHN R., contract surgeon, leave for one month, to take effect upon the arrival of Captain Charles F. Kieffer, assistant surgeon, at Fort Screven, with permission to apply for an extension of one month.

PERSONS, First Lieutenant ELBERT E., assistant surgeon, is relieved from duty at Fort Snelling and will proceed to Fort Flagler for duty, to relieve Contract Surgeon Jesse P. Truax, who will proceed to Skagway, Alaska, for duty.

LYON, Captain PALMER H., assistant surgeon, granted leave for 10 days.

BROOKS, JOHN D., contract surgeon, will join at Calro, Mont., troops A and C, 13th Cav., now en route from Fort Assiniboine to Fort Yellowstone. Upon his arrival at Fort Yellowstone Contract Surgeon Brooks will report to the commanding officer for duty with troops in the National Park during the tourist season.

WAKEMAN, Major WILLIAM, surgeon, leave granted April 28 is extended one month.

PINKHAM, First Lieutenant EDWARD W., assistant surgeon, resignation accepted to take effect June 10, 1902.

PINKHAM, First Lieutenant EDWARD W., assistant surgeon, granted leave to include June 10.

MILLER, JAMES E., contract surgeon, now at Des Moines, Iowa, will proceed to Fort Canby for duty to relieve Contract Surgeon Joseph W. Walsh, who will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

SHEPHERD, JOHN M., contract surgeon, is relieved from duty at the U. S. General Hospital, Presidio, and will proceed to Fort Schuyler for duty, to relieve First Lieutenant Theodore C. Lyster, assistant surgeon, who will proceed to San Francisco, Cal., and report for assignment to duty at the U. S. General Hospital, Presidio.

ROBERTS, First Lieutenant WILLIAM, assistant surgeon, now in Washington, D. C., on leave, will report to the Washington Barracks for treatment.

NEWLOVE, GEORGE, contract surgeon, leave granted March 26 is extended one month.

ESPIN, J. M., contract surgeon, leave granted April 28 is extended one month.

The following changes in the stations and duties of officers are ordered: Major James D. Glennan, surgeon, upon the expiration of his present leave will report at the U. S. Military Academy, West Point, N. Y., for duty, to relieve Major William L. Kneeder, surgeon. Major Kneeder will proceed to San Diego Barracks to relieve Contract Surgeon William G. Gregory. Contract Surgeon Gregory will proceed to San Francisco, Cal., and report for assignment to duty at the U. S. General Hospital, Presidio.

MILLEN, Hospital Steward DANIEL, Fort Robinson, is transferred to Boise Barracks to relieve Hospital Steward John S. Sweeney. Steward Sweeney will be sent to Manila, P. I., for assignment to duty.

ARNOLD, Hospital Steward WILLIAM E., Fort Robinson, is transferred to Jackson Barracks to relieve Hospital Steward Frank J. Wissell. Steward Wissell will be sent to Manila, P. I., for assignment to duty.

WINTER, Captain FRANCIS A., assistant surgeon, granted leave for 10 days from about June 1.

CALVERT, First Lieutenant WILLIAM J., assistant surgeon, is relieved from temporary duty at Fort Barrancas and will return to his proper station, Fort McHenry.

Changes in the Medical Corps of the U. S. Navy for the week ended May 24, 1902:

OMAN, C. M., and GRIFFIN, W. E., assistant surgeons, reported at Cavite, May 2 and 12, respectively—May 15.

CRANDALL, Surgeon R. P., detached from recruiting duty and ordered to San Francisco, and thence to Guam, L. I.—May 19.

JOHNSON, Passed Assistant Surgeon M. K., order of October 5, 1901, modified; detached from duty at Guam upon reporting of relief and ordered home to await orders—May 19.

FIELD, Assistant Surgeon J. C., retired, ordered to recruiting duty—May 19.

KERR, Passed Assistant Surgeon D. B., detached from the Wabash and ordered to the Boston Navy Yard—May 21.

HOYT, Assistant Surgeon R. E., to the Wabash—May 21.

TRAYNOR, Assistant Surgeon J. P., ordered to the Naval Hospital, New York—May 21.

STRINE, Assistant Surgeon J. F., ordered to the Naval Hospital, Norfolk, Va.—May 21.

Changes in the Medical Corps of the U. S. Marine-Hospital Service for the week ended May 22, 1902:

WERTENBAKER, C. P., passed assistant surgeon, leave of absence for one day, May 20, 1902, under paragraph 179 of regulations. Detailed to represent the service at the meeting of the Association of Military Surgeons to be held in Washington, D. C., June 5, 6, and 7, 1902—May 22, 1902.

NYDEGGER, J. A., passed assistant surgeon, granted leave of absence for 10 days from June 2—May 22, 1902.

BURFORD, HUGH, acting assistant surgeon—Department letter of May 7, 1902, granting Acting Assistant Surgeon Burford leave of absence for two weeks, amended so that said leave shall be for 21 days from May 15—May 20, 1902.

RICHARDSON, S. W., senior pharmacist, granted leave of absence for 30 days from June 10—May 20, 1902.

Promotions.

COBB, J. O., passed assistant surgeon, promoted and appointed surgeon to rank as such from April 20—May 21, 1902.

CLARK, TALIAFERRO, assistant surgeon, promoted and appointed passed assistant surgeon, to rank as such from March 27—May 19, 1902.

HASTINGS, HILL, assistant surgeon, promoted and appointed passed assistant surgeon, to rank as such from March 29—May 19, 1902.

LAVINDER, C. H., assistant surgeon, promoted and appointed passed assistant surgeon, to rank as such from March 27—May 19, 1902.

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Cholera in Manila.—The director of the Biologic Laboratory of Manila, Dr. Richard P. Strong, has reported to the Commissioner of Public Health, under date of April 2, 1902, that since the outbreak of Asiatic cholera in Manila on March 20, 1902, there have been performed autopsies on all bodies brought to the cholera morgue, and that in 84 cases the typical lesions of the disease have been found. Official copies of the reports of the Commissioner, dated March 22 and April 2, have been furnished *American Medicine*; the former is reproduced in another column. We regret to hear that the War and Navy Departments have within the last week received notice of the deaths from cholera of Captain Charles E. Russell, of the Eighth Infantry, at Laguna, Luzon, on May 27, and of Lieutenant Olof H. Rask, of the Marine Corps. Up to May 27 the announcement is made of 1,165 cases in Manila with 935 deaths; 30 were whites, 20 Americans, and 10 Europeans. In the provinces the records show 5,001 cases and 2,878 deaths. In view of the large number of troops now returning from the Philippines it is gratifying to know that our quarantine service is in such good hands and order on the Pacific coast, and that every effort will be made, possible to science and zeal, to prevent the spread of the disease into the United States.

Progress in the movement for interstate reciprocity in medical licensure is indicated by the reports of the American Confederation and of the National Confederation, to which we have elsewhere alluded. Both show that the members of these boards recognize not only the justice of the demand for reciprocity but that the method of reform by common standards, greater comity, mutual understandings, etc., must be without any abrogation of the control by each sovereign State. We understand that the committee of the American Medical Association on National Legislation will report to the House of Delegates at the Saratoga meeting, urging that a standing committee of three be appointed by the House on Uniform Medical Legislation, and recommending also that similar committees be appointed by the State Medical Societies. This we think most wise, because, as we have said, there is no body so well fitted to guide in national action in this most important matter as the House of Delegates. Its committee in the next year will be able to receive reports of all the suggestions and

demands of the various States and boards, and evolve a set of recommendations which shall do away with present injustices and which shall ensure progress.

The report on interstate reciprocity and uniform medical legislation by the committee of the National Confederation of State Medical Examining Boards, Dr. Emil Amberg, chairman, shows that valuable progress has been made. It is furnished us by the courtesy of the editor of the *Bulletin of the American Academy of Medicine*. Uniformity of legal requirements is believed easy of attainment in political divisions by forming the laws so that interstate reciprocity is allowed, by establishing the standards, and by an arrangement whereby the finding of one board may be accepted by another. The law now permits reciprocity in the District of Columbia, Delaware, Illinois, Indiana, Kansas, Maryland, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Virginia, Washington, Wisconsin. The division into working groups is shown to be feasible by the organization of the New England States Confederation of Medical Examining and Licensing Boards, the constitution of which may be found in the January-February, 1901, number of the Rhode Island State Board of Health Bulletin. The action of the New Jersey Board, to which we have previously made allusions, is commended. The committee advise the acceptance by the weaker divisions of applicants from States with higher requirements without demanding reciprocal recognition, together with discrimination against inferior schools. The conditions of reciprocity are, necessarily, the examination by a competent board, graduation from a reputable college, and uniformity of examination in all States. There is also urged a common understanding and intercommunication between State Boards.

The American Confederation of Reciprocal Examining and Licensing Medical Boards held a successful meeting in Chicago on May 20. Representatives from the Wisconsin, Indiana, Illinois, and Michigan boards were present, and the details for the reciprocal exchange of certificates between Indiana, Wisconsin, and Michigan were perfected upon the basis of the two qualifications passed at the January meeting of the confederation, viz.: (1) That a license or certificate of qualification of at least one year's date and based upon

presentation of a satisfactory diploma and an examination before a board in specified branches of medicine and surgery, may be accepted at the discretion of a board in lieu of an examination, and as a basis upon which the license of a State may be issued; (2) that a license or certificate of qualification issued by a State Board of Registration or Medical Examiners of at least one year's date, based upon presentation of a satisfactory diploma and upon the recommendation of a State Board of Registration or Medical Examiners as to the reputability of the applicant, may be accepted at the discretion of a board in lieu of an examination, and as a basis upon which the license of a State may be issued. The boards of the above mentioned States meet in June, and will take such action then as will result in the immediate exchange of certificates. The president is Dr. J. R. Currens, of Two Rivers, Wis., the secretary, Dr. B. D. Harison, of Sault Ste. Marie, Mich.

Article II of the constitution adopted states that:

"The object of this Confederation shall be to establish reciprocal relations between the Medical Examining and Licensing Boards of the States, Territories, Districts and Provinces of the United States; the purpose of which being that thoroughly worthy and well qualified physicians and surgeons who have been legally authorized to practise under the laws of one of said States, Territories, Districts or Provinces, may be given legal authority and be admitted to practise in any State, Territory, District or Province represented in this Confederation without a repetition of the tests of qualification to which said practitioner has submitted."

Unrestricted Interstate Medical Licensure.—In his excellent address as retiring president of the Medical and Chirurgical Faculty of Maryland, Dr. J. McPherson Scott wisely calls attention to the abuses possible if unrestricted interstate reciprocity is carried out in a mechanical and as it were commercial way. The most important condition in any licensing system, and especially when a physician passes from one State to another, is that as regards the applicant's moral and professional character. In Maryland such a man's antecedents are investigated. If of good standing, professional and social, at his home he is subjected to a "special examination," the terms and methods of which shall be prescribed by the Board of Medical Examiners. Dr. Scott does not know of an instance under this law of hardship to a worthy person desiring to come into Maryland. Only one out of 120 in ten years has been found unworthy. "The bars are easily let down" it is said for the capable and meritorious, and he emphasizes the prime necessity of keeping them up for the benefit of the State and the profession, and to exclude the unworthy. It is certainly true that unrestricted reciprocity would be the greatest misfortune, and herein lies the safeguard of the individual State control. No State should depute its right to adjudge the claims of any candidate for licensure. It almost goes without saying that in such action every State will have such stringent regulations that no man without good moral and professional character can be licensed in the State to which he removes and that the investigation of his antecedents shall be thorough.

The financial difficulties of a Voluntary National Examining Board are, we fear, not thoroughly

considered by its advocates. In the first place it adds another examination fee (of at least \$25.00) for the physician moving from one State to another. He has paid one in his local State, he will have to pay a second to the State in which he purposes settling, and that of the National Board makes a third. Except for the very few well-to-do this is a hardship that will weigh heavily on the candidates, and which will inevitably limit the number availing themselves of the benefit of licensure by a National Board. To this must also be added the candidates' expenses of travel, hotel bills, etc., wherever the board may be holding its examinations. Unless the board holds somewhat frequent examinations in all the chief cities and States of the United States, from New England to Louisiana and Texas, in all the Eastern, Middle, Western and Pacific Coast States, this item of expense becomes almost prohibitive, and if the board travels in this way its own annual expenses will run to \$50,000 or more. Will there be 3,000, 1,000, or even 500 candidates for licensure before such a National Board? In the long run the fees of the candidates must support the board, as any gratuity from medical associations would be only in the beginning, and to aid in establishing the board on a self-paying basis. This is only one of many reasons why any National Examining Board, at first sight so desirable and feasible, will at last, we believe, be recognized as an impossibility.

A discriminating National Board for the licensure of specialists has been advocated, and is, we judge, the subconscious plan of a number who look to some form of a National Board of Licensure. According to this it is admitted that the vast majority of recent graduates will apply to the State Boards, leaving the National Board to examine the "picked men," the old practitioners and the specialists. The National Board examinations, therefore, could not be uniform. The "select men" among the recent graduates, those fitted to pass in any branch of medical study, but not particularly fitted to pass as specialists, would necessarily be given an examination in all branches and as severe as that of the most severe of the highest standard State in the Union. Unless it did so its licensees could not be accepted by the high standard States without reexamination. But for the older practitioners moving to another State, and for specialists, such an examination is impossible, and is the very thing we are all wishing to avoid. Is it possible, therefore, that for these partial examinations, and principally in the specialty, are designed? Such a plan, however wise it may be for the individual State Board, would, for the voluntary National Board, land us at once in a wilderness of doubt, danger, even illegality, and certainly of ununiformity of conditions. With the best deference to those who propose such a method, and with all sympathy for their essential aims, nothing but disaster could come of a National Board acting with such powers of discrimination and establishing such varying standards. However trusted and honorable its members, its acts would either not be accepted by all the States, or it would fall under suspicion. All practitioners of ten years' standing are in reality specialists; and if successful examination in

a special branch of medicine may permit a man to pass, why should it not also in osteopathy, hypnotism, etc.? Discrimination there may be by the State Board, because it can investigate a man's moral and professional character and his history; this a National Board cannot do. If it did, the States would still be compelled to discriminate as to their discriminations.

Pet Animals and Disease Distribution.—The newspapers of New York have published the interesting details of a prominent society woman's display of affection for her dying and dead parrot. There was even question, it seems, of an expensive funeral with many of the accessories usually accorded to those higher in the scale of being. The parrot is said to have died of a severe throat disease. According to one of the New York papers, owing to the swollen and inflamed condition of the bird's throat it was unable to talk and seems also to have been unable to swallow. Notwithstanding this the family are said to have bestowed many caresses upon the ailing bird. It may be as well to remind foolish individuals whose affections are so perverted that there is a very contagious disease which attacks especially the throats of parrots and which on a number of occasions has been communicated to human beings with serious and even fatal results. This disease, called psittacosis, from the Greek word for parrot, was first studied about five years ago in Paris during an epidemic that developed in that city and was for a long time a mystery to attending physicians. Altogether about sixty human beings were attacked by the disease during one winter and of these about 40% died. It is very probable that pet animals are vehicles for the distribution of a good many more diseases than has been thought. Disease germs very seldom travel through the air, though this is popularly supposed to be the usual method of conveyance for microbes. Flies, mosquitos, birds, pet animals of various kinds, are undoubtedly quite often the medium of contagion. The more is known of the biology of disease germs and of the intermediate host between man and man the more is it realized that usually living things and not inanimate objects are the carriers of infectious material. Some time we will reach a stage of civilization in which it will be realized that wild extremism in making pets of animals, denaturalizing their lives and making them liable to all the ills of humanity besides their own, is a relic of savagery and is too often a manifestation of that barbaric selfishness of spirit that delights in slaves. When this bit of unthinking primevality is done away with we shall have less of the morbid spirit that fosters antivivisection and similar movements.

"System" (?) in Government Publications.—With so many professional librarians and experienced bibliographers at the service of our national government, it seems strange that the system of official publications should be so complicated. Each division appears to be imbued with the idea that a multiplication of publishing units is in the interest of simplicity, and each new chief upon assuming charge is likely to change the methods of his division. Thus, until quite recently, the Department of Agriculture had about seventy serials,

where seven would have been much better. Through the reorganization of a portion of the Department the number of these serials has very fortunately been reduced by uniting the bulletins of certain divisions, which have been formed into Bureaus, and if this reduction will be continued, the Department may some time arrive at a system which others besides its own officers and employees can understand.

We are now in receipt of Bulletins 1 to 7 of the "Yellow Fever Institute, Treasury Department, U. S. Marine-Hospital Service," and it is difficult not to express regret that the service did not profit by the sad experience of the Department of Agriculture. We already have several serials published by the Marine-Hospital Service, and it is difficult to understand why a new series was necessary for the Yellow Fever Institute. Furthermore, if a new series were to be adopted, we cannot see why such a complicated series was necessary. The Library of Congress is within a short distance of the Marine-Hospital Service, and technical advice could have been easily obtained. There are several unfortunate points in this new series. First of all, its name is misleading. We have come to look upon the word "circular" in government vernacular as indicating four to eight or twelve pages of print, while "Bulletin" indicates about twenty-four to several hundred pages. In this new series "Bulletin 2" has three pages, "Bulletin 7" has two pages.

Secondly, the cover and title page are misleading, and it is necessary to consult the separate bulletins to discover whether "History and Statistics" belongs to Section A or to Section C.

Again, the pagination of the bulletins of each section is continuous, but the numbering of the bulletins is not continuous for each section. Bull. 1 does not belong to any section, and is paged 5-10; Bulls. 2 to 5 belong to Section A, and are paged 1 to 3, 5 to 8, 9 to 13, and 15-24, respectively. So far the arrangement is not entirely beyond criticism, but it will do. Now, however, we suddenly change to Section C, Bull. 6, pp. 1 to 6, and Section D, Bull. 7, pp. 1 to 2. It is to be assumed that if Section C issues Bull. 8, this will be paged 7 to 10. The result will be confusing in the end. Suppose there are finally 100 bulletins, we may have an arrangement as follows:

Bulls. 1, 12, 13, 24 and 82, not belonging to any section, but paged 1 to 50.

Bulls. 2 to 5, 8 to 11, 14 to 23, and 83 to 100, belonging to Section A, and paged 1 to 300.

Bulls. 13, and 25 to 30, belonging to Section B, and paged 1 to 300.

Bulls. 6, 41 to 81, belonging to Section C, and paged 1 to 250.

Bulls. 7, and 31 to 40, belonging to Section D, and paged 1 to 200.

With the present standard of American library work we find it difficult to understand how a government service of such high standing could have been led to adopt such a complex system. We prophesy that in bibliographic work great confusion will result from this new series.

In this connection we would suggest that there should

be a permanent government board of publication, similar to the board of geographic names, and composed of the public printer, one editor, and also one author detailed from every department of the government, and two persons from the Library of Congress. Such a board might do much toward infusing some order into the present "system" (?) of government publications.

The Profession's Hospital Frankenstein.—The modern hospital system of the entire civilized world is the work of the profession, and its gratuitous labors are today the absolute condition of hospital and dispensary efficiency. In view of this fact it is strange that we are so blind to the danger we are running of the system becoming a Frankenstein which may enslave or ruin us. We allude, of course, to the abuse of the charity by which so large a part of the public, which could pay the physician, do in reality cheat him by their use of the hospitals. This abuse has of old been deplored and fought against, but little has been done to remedy it. The reason is that the hospital Frankenstein we have created is not our friend so much as he is the friend of the business and administrative management. He must be most liberally fed, and not only does he look to the feeder, but he compels the physician to act as waiter. In other words, the medical duty is too often subordinated to the demands of business success. The hospital physician who fills the private rooms and who treats in the dispensary all who come, regardless of their ability to pay, is naturally popular with the trustees, and the one who is not subservient to the commercial obligation, who seeks to exclude the thieves who can pay—he is far from popular. The result is that the profession suffers, and in part at the hands of its own members. The abuse grows and a hundred other related abuses grow, until many hospitals are becoming little more than huge hotels to which the profession devotes its life and labor for the benefit not of charity, not of the trustees, and not in accord with the intentions of the founders. One of the greatest of reforms which must be undertaken is that of reducing the dispensary and hospital to the function for which it was intended, the treatment of the worthy poor. The longer we delay the more will it prove impossible to free ourselves. Dr. George R. Fowler, of Brooklyn, has determined to make a stand against the abuse and he has instituted suits against patients who have deceived the hospital as to their ability to pay. We earnestly hope he may win, and we commend this method of procedure to our colleagues everywhere.

Seventeenth Annual Report, Bureau of Animal Industry.—In addition to our regular review of the medical journals, we give this week a brief summary of the recently published report of the Bureau of Animal Industry for the year 1900. Our limited space does not permit us to discuss the papers at length, but we would call our readers' attention to the fact that this report is a valuable addition to the library of any physician. To obtain a copy it is best to apply to one's senator or congressman, as every senator or congressman has his regular quota for distribution. The phenomenal growth of

this bureau continues, and together with the reduction of losses among the livestock of the country, thus saving the farmers many thousands of dollars annually and playing an important role in the economics of the country. The Bureau of Animal Industry is thus contributing its share of work in the general field of public hygiene and also in increasing our knowledge concerning infectious diseases. There are few organizations which can show a record more noteworthy than that of this office. It began life less than 20 years ago with a force of three men—Dr. Salmon, one clerk, and a negro messenger. Dr. Salmon and the messenger are still in the service, and the force now numbers about 1,200, with officers scattered all over the country. The officers and employes are all under the Civil Service rules, but are not subject to "waiting orders" or pension in case of infection in the line of duty. The financial conditions of the service are therefore far less favorable than those of the other medical and sanitary services in the government.

Professional Begging and Medicine.—An intimate clinical relation of the two which would not have been suspected by the inexpert, appears unexpectedly in the newspaper criticism of ambulance physicians, because, it is said, they try to detect epileptic malingerers in emergency cases. There are, it seems, a certain number of vagabonds and beggars in New York who have mastered the art of realistically simulating epileptic fits, and by its practice impose upon the charitable and gain admission to hospitals, which they regard as highly desirable places of temporary abode. The ambulance physician who allows himself to be deceived by one of these impostors is likely to be ridiculed and derided by his hospital associates when the imposition is discovered. And so, say the critics, the ambulance physicians, applying the ammonia-test, etc., do harm to real epileptics. And they end up the reportorial advice as follows:

"But young physicians, like other young persons, 'know it all,' exaggerate the dreadfulness of being laughed at by thoughtless and illogic persons, and so, not infrequently, cause a good deal of entirely unnecessary trouble and suffering for themselves and others."

To all of which, perhaps, the best answer is, Bosh!

The effect of war on vital statistics is clearly shown in the British returns for 1900, the first complete year since the Boer war broke out. According to a cable epitome to *The Sun* the marriage rate was 16 per 1,000, compared with 16.4 in 1898–1899. The births in 1900 numbered 927,062, or a rate of 28.7 per 1,000, the lowest record, and 1.3% below the mean rate for the last ten years. The deaths numbered 587,830, or 18.2 per 1,000, as against 17, 17.4, and 17.5, in the previous three years. Of the deaths 3,683 were immediately due to alcoholism or delirium tremens. The deathrate from alcoholism was 132 males and 95 females per 1,000,000. Both these rates were the highest on record. The deaths from tuberculous diseases were 10.4% of the deaths from all causes, aggregating 61,302. The strength of the army at home and abroad was 383,037. The deaths were 10,554,

giving a rate of 27.6 per 1,000 as compared with 10, 12 and 10.5 in the preceding three years. The mortality in the army abroad was 36.1 per 1,000 as compared with an average of 14.5 in the preceding five years. The deathrate at home was 8.2 as compared with an average of 4.3 in the preceding five years.

Centenarians.—A new book upon this subject has lately been published, written by Mr. T. E. Young, late president of the Institute of Actuaries of England. The records of life insurance and annuity societies have been ransacked, and among over 800,000 insured persons he has been able to find only 22 cases of centenarians. The oldest of these was a woman who lived 105 years and eight months. He accepts as demonstrated the mythical character of the story of the life of Henry Jenkins, who, it has been believed, lived 169 years, of Thomas Parr (152 years and 9 months), and of others. It seems difficult to believe that the dozen or more instances of people living 125 years or over are also all "mythical." And yet the life insurance companies should have found at least one such well authenticated case. It is a strange kind of weakness that makes people proud of great age, but this vanity often becomes ridiculous and has been the cause of the numerous cases of exaggeration. It is extremely doubtful if any one has ever lived 110 years. The subject has always been of interest, both to the scientific and the lay public. Those who have investigated it find that the most clearly ascertainable cause of longevity is longevity itself. If one wishes to live long, he should choose long-living ancestors!

EDITORIAL ECHOES

The suicide-rate in European armies far exceeds the rate of the country to which the army belongs. The German army has a suicide-rate of 670 per million; the Italian army 400; the Belgic 240; the English 230; the English-Indian 480; the Russian 200; the Spanish 140. The English-Indian rate is due to the depressed and suspicious states produced by moist heat. The suicide-rate of the French Army of the Interior fell from 470 under the Empire to 290 under the Republic. The African army of France has a rate of 630 per million, probably from causes similar to those affecting the English-Indian army. The increase of suicide among Americans in the Philippines is in the same direction. The United States suicide-rate is double that of the Irish and about one-half that of the English.—[*The Medical News.*]

Consultations by Telephone.—The three factors, as we understand it, that enter into the problem of the physician's remuneration, are: (1) The special skill and knowledge brought to bear; (2) the responsibility involved; and (3) the time and labor involved in bringing the two former into action. Now, the first two are constant factors, more or less, so far as the when, how, and where are concerned. It is on the last only that any modification of the fee must depend. That being so, a telephone consultation is obviously an office consultation, and if the responsibility is to some slight extent increased by giving an opinion *in absentia*, the benefit derived is doubtless so much the less from the lack of that personal confidence—inspiring influence that always accompanies the presence of the trusted medical adviser. On that point, therefore, physician and patient may do well to cry quits.—[*New York Medical Journal.*]

AMERICAN NEWS AND NOTES.

GENERAL.

Bill Defeated.—The bill to permit the retirement of Surgeon-General Sternberg with the rank of major-general was defeated 68 to 103 in the House June 2.

Smallpox.—Official reports from December 28, 1901, to May 30, 1902, show a total of 35,110 cases, with 1,090 deaths, compared with 25,355 cases and 427 deaths for the corresponding period in 1901.

Cholera.—Up to May 27 there have occurred 1,165 cases with 935 deaths in Manila, and 5,001 cases and 2,878 deaths in the provinces. Thus far 25 cases of the disease have appeared among Americans, 20 being fatal.

Naval Medical Service.—All the vacancies in the naval medical service are now filled for the first time since the Civil War. This is said to be due to the improved conditions brought about two years ago by giving medical men in the Navy the same status as was then enjoyed by medical officers of the Army. This has caused a larger number of better equipped young men to present themselves for examination.

To prevent smallpox from developing on troopships and to aid the medical authorities at San Francisco in determining the necessity of detention and observation of troops at that point Lieutenant-General Miles has directed that troops ordered to the Philippines shall be provided with certificates showing that they were inspected before leaving their respective stations and were protected from smallpox. It was also ordered that no recruits shall be sent from San Francisco until they have been under observation long enough to develop any infectious disease to which they might have been exposed prior to enlistment.

A New Publication.—We have received the first number of a new magazine called *Tuberculosis*, which in its introductory statement purposes to be the organ of the Central International Bureau for the Prevention of Consumption. This journal claims to be an international one in the proper sense of the word and it apparently accepts articles in any of the three great languages. It is intended not only for the physician and the scientist, but for all those who are interested in the warfare against the great white plague—such as Board of Health officials, factory inspectors, etc. The purposed international character of the magazine should permit of a collection in comparison of the results obtained in the different countries by the various methods in the combating of this disease. It remains to be seen how well this important aim will be carried out. Meanwhile, it will give us much pleasure to present to our readers abstracts from this magazine of those articles which will be of interest to them.

Disinfection of Vessels.—In connection with the transfer of authority of the United States to the new government of the island of Cuba it is deemed essential that the inspection and certification of vessels leaving Cuban ports for ports in the United States shall still be under accredited officers of the U. S. Marine-Hospital Service as provided by the law of 1893. The Surgeon-General suggests to the Secretary of War that either by preliminary agreement with the island authorities or as a treaty to be entered into between the United States and the Government of Cuba or in both manners the understanding be had:

1. That in Havana harbor the U. S. Marine-Hospital Service will disinfect such incoming vessels as may be turned over to them by the quarantine authorities, for which a reasonable fee shall be charged; and that all vessels leaving for the United States before their bills of health are signed by the Marine-Hospital officer shall be subject to such disinfection as may be required by him, making use thereof of the Service disinfecting steamer *Sanator*.
2. That at the four remaining ports of the island equipped with disinfecting barges, the use of this apparatus, the property of the island of Cuba, will be made available for use by the officers detailed in the offices of the consulates in such disinfection of vessels bound for the United States as may be necessary; and that these barges, with their disinfecting apparatus, shall be maintained by said Cuban Government in a state of efficiency for use at any time. It will be understood that the cost of disinfectants used in disinfecting vessels bound for the United States is not a charge against the United States Government, but should be borne either by the Cuban Government or by the vessels themselves.
3. That the U. S. Marine-Hospital officers stationed at the several Cuban ports will, on request, give such assistance in the matter of maritime quarantine as may be desired. In accordance with this understanding, it is proposed to detail medical officers of the U. S. Marine-Hospital Service in the United States consulates at Havana, Matanzas, Nuevitas, Santiago, and Cienfuegos.

EASTERN STATES.

Against Mosquitos.—A persistent campaign has been maintained in Brookline, Mass., for two weeks by the Health Board and good results reported. Nearly every pond, pool and stream and the 1,000 catch basins in the town have been examined and treated with crude petroleum. The areas treated have varied in area from 50 square feet to 50,000, and more than 100 gallons of oil have been used.

NEW YORK.

Cornell University Medical College held its fourth annual commencement June 4, 1902.

New York Polyclinic Medical School and Hospital.—J. H. Burtenshaw has been appointed adjunct professor of gynecology.

Elmira Reformatory.—Dr. Charles F. Howard, of Buffalo, has been appointed president of the Board of Managers in place of Charles H. Beckett, resigned.

Medical Unity.—The Erie County Medical Association has accepted to membership two prominent homeopathic physicians who applied, one of them the secretary of the New York State Homeopathic Society. These physicians will now be looked upon as regular practitioners.

Absence of Smallpox in Adirondacks.—According to a correspondent of the *Evening Post*, who received his information from the New York State Health Department, the newspaper reports circulated recently concerning the infection with smallpox of the Adirondack territory in the vicinity of Saranac Lake and Lake Placid are without foundation and that responsibility for these reports has been charged erroneously against the State Health Department.

A Family Record.—At a recent meeting in New York a Mrs. Annable made a statement that a certain woman of evil habits, which included excessive indulgence in alcoholic stimulants, and whose occupation was the keeping of a house of ill-repute, died in 1827, aged 51. Her descendants have now been traced. They number 800. Of these 700 are criminals, having been convicted at least once; 342 of them are drunkards; 127 are immoral women; 37 were murderers, and as such executed. For the trials and executions of this family the nation has paid out the sum of \$3,000,000.

Needs of Lying-in Hospital.—J. Pierpont Morgan, who erected the new maternity hospital on Stuyvesant Square for the Society of the Lying-in Hospital, did not endow it, believing that the public should support it. It is estimated that with one-third of the hospital building in use the expense of operation and maintenance will amount to about \$90,000 a year. The present income of the society from investments is a little over \$13,000 a year. It receives from the city an amount limited to \$12,000 a year, and it may reasonably expect from students' fees and other sources about \$5,000 a year, making a maximum total of \$30,000 a year. This will leave a deficit of about \$60,000 a year, for which the society must depend upon the public, to whom the Board of Governors is about to circulate an appeal in the hope that a sufficient fund may be raised to support the institution.

PHILADELPHIA, PENNSYLVANIA, ETC.

American Orthopedic Association. H. Augustus Wilson in the chair, held meetings in Hotel Walton, Philadelphia, on the evenings of June 5, 6 and 7, 1902. A demonstration of the plaster-of-paris bandage with various devices connected with its application was made in the amphitheater of the Jefferson Hospital June 5.

Rush Hospital for the Treatment of Pulmonary Tuberculosis and Allied Diseases on or about June 1 will open a country branch at Malvern, Pa. (Pennsylvania Railroad). Each patient will have a separate room, and the charges will be moderate. For information apply to Miss Elizabeth Brophy, superintendent, Thirty-third street and Lancaster avenue, Philadelphia, Pa.

Women's Medical College of Philadelphia.—The resignation of Anna E. Broomall as head of the Department of Obstetrics is announced, to take effect September 1, 1902. She has occupied the chair of obstetrics since 1878. The several departments of the college and hospital have been reorganized so that the heads of departments in the college will assume control over the same departments in the hospital. The chair of gynecology made vacant by the resignation of Hannah T. Croasdale will be filled by Ella B. Everitt, resident physician of the hospital.

SOUTHERN STATES.

Cooperation of the Army and Navy in educational matters in the future is inferred by the removal of the medical school at the Brooklyn Navy Yard to Washington, where it will be used in teaching young officers immediately after they enter the service. The naval officers will attend the lectures given by the Army medical officers, and the latter will also attend the naval school occasionally.

Permanent Hospital Corps.—In connection with the increase in the strength of the Maryland National Guard provided for by the Legislature, an order has been issued for the establishment of a permanent hospital corps. Each regimental corps will have 1 surgeon, 3 assistant surgeons, 1 regimental hospital steward, 3 battalion hospital stewards, 4 acting hospital stewards, 4 mounted hospital orderlies, and 40 hospital privates.

WESTERN STATES.

Salaries at State Hospitals.—The Ohio Senate has made a law to increase the maximum salaries of assistant physicians at State hospitals from \$700 to \$1,200.

Smallpox in Racine, Wis., is reported as alarming, there being 400 cases in the city. A house-to-house vaccination has been decided upon by the authorities.

A hospital for convalescents is urged in Chicago, where from Cook County Hospital alone 60 patients are discharged daily, many of them still too weak to resume their employment. The need is felt of some institution in which these patients might convalesce.

Smallpox was reported to the State Board of Health from 33 counties of Illinois during the month of May. In some counties there were as many as four centers of disease. The advent of warm weather, however, has brought a notable decrease in the contagion.

North Dakota State Medical Society held its annual meeting in Grand Forks, May 21, 22, 1902, the president, George A. Carpenter, of Fargo, in the chair. The many good papers and social features were enjoyed by 75 members. The next meeting will be held in Bismarck, May, 1903.

A health farm located six miles from Denver is planned by the Young Men's Christian Association for the benefit of tuberculous young men, where medical attendance, a sanitary home and nourishing food as far as possible may be offset against such outdoor work as patients may be able to do.

The American Röntgen Ray Society announces that its next meeting will be held in Chicago, December 10 and 11, 1902. A local committee of arrangements under the chairmanship of Ralph R. Campbell, and consisting of Drs. John B. Murphy, Louis E. Schmidt, M. L. Harris, W. L. Baum, H. G. Anthony and W. A. Pusey has been secured.

Health of Chicago.—For the week ended May 24 there were reported 501 deaths, an increase of 30 over the preceding week and of 92 over that of the corresponding week in 1901. The unseasonable hot weather had a very unfavorable effect on the public health as evidenced by the marked increase of mortality among infants, there being 111 deaths recorded of those under one year as against 63 of the previous week. A marked deterioration was noted in the quality of the milk supply, the number of samples below grade doubling that of the week before. Three samples were found to contain formalin, and a vigorous prosecution of the dealers was at once ordered.

CANADA.

Cattle quarantine will be rigidly enforced on account of Texas fever, and no cattle will be permitted to enter Canadian territory from California, Texas, Indian Territory, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Tennessee, Virginia and also the Republic of Mexico, unless accompanied by a health certificate of inspection signed by an official veterinarian of the United States Government, showing that the animals are free from contagious disease and that no contagious disease of cattle (excepting tuberculosis and actinomycosis) exists in the district whence they come.

FOREIGN NEWS AND NOTES

GENERAL.

Medical Reciprocity.—The authorities in Cape Colony have made an enactment forbidding the practice of medicine to all foreign physicians in whose home countries a similar privilege is not accorded to resident practitioners of Cape Colony.

GREAT BRITAIN.

Smallpox Scare.—A cruel consequence of the prevalence of smallpox in London is the refusal of the country cottagers, for fear of infection, to entertain the thousands of the poorest slum children which every summer get a week in the country through the exertions of various charitable organizations.

Cancer and Arsenic.—Mr. Jonathan Hutchinson's discovery years ago that the prolonged use of arsenic gave rise to callosities on the palms and soles which in certain cases terminated in cancer has been confirmed. On this basis he advances hypothesis that arsenic may be a factor in the increase of cancer of the deeper tissues and points out that in the epidemic of arsenical poisoning in Manchester the source of contamination of the beer beside the sugar was the coke used in drying the malt and that it is precisely during the period in which coke has supplanted wood in drying malt that increase of cancer has been noted.

Deterioration in Physique.—The frequent assertion that the inhabitants of towns deteriorate in physique has been corroborated by the recruiting returns for Manchester, where three years ago among 11,000 men examined 3,000 were found fit for service, in 1900 of 12,235 men examined only 4,030 were eligible to service; in 1901 of 11,896 applicants only 3,076 were acceptable. Although the authorities were anxious to recruit as many as possible those rejected were so poorly developed it was impossible to take them; many of the applicants were youths of 18 or 19, and were average specimens of the inhabitants of the poorer parts of the city. The standard is reported lower than ever before, and the officers attribute the narrow chests and want of physique to the habit of cigaret smoking which prevails.

CONTINENTAL EUROPE.

Fees of midwives in the canton of Tessin, Switzerland, according to a recent enactment, will be paid by the State.

Half Fares to the Sick.—Members of the sick insurance societies going to or from sanatoriums on medical advice, or poor persons holding medical and local certificates as to their destination and want of means, are now carried on German railroads for half fare by grant of the authorities.

Anatomy for Women.—The instruction of women medical students in anatomy was one of the subjects discussed at the German Medical Congress of Anatomy held at Halle, April 22, and among the professors most experienced in teaching there was unanimity in favor of separate medical instruction for women, although the women do not desire it.

Foreign Physicians in Italy.—An appeal made to the Italian Government by the native physicians to forbid the practice of medicine in that country to foreign physicians, in whose home countries reciprocity was not the rule, has been refused on the grounds that practitioners from other countries advertise Italy as a health resort and enactment in that direction would be a retrograde movement.

A Tabooed Hospital.—At the Gross Lichterfelde Hospital, near Berlin, which was avoided because of the peculiar views and methods of treatment of the chief medical officer, Dr. Schweninger (Bismarck's medical attendant), v. Bergmann, who was finally appointed on a committee of investigation, has secured the appointment of his former assistant, Dr. H. Stabel, as surgeon-in-chief to work with Dr. Schweninger and enforce scientific methods in spite of his opposition.

OBITUARIES.

William H. Watkins, of New Orleans, recently in Milwaukee, aged 54. He entered the Confederate Army as a boy of 15, and rose to the position of captain of cavalry when 18. Entering the medical profession, he became chief medical inspector of the New Orleans Sanitary Association, chief inspector of the New Orleans Board of Health and a member of that body, editor of the *New Orleans Medical and Surgical Journal* and chairman of the Yellow Fever Board during the epidemic of 1897.

T. Ritchie Stone, a prominent physician of Washington, D. C., May 31, aged 46. Dr. Stone was graduated from the University of Virginia and from the medical department of the Vermont University. He was connected with the medical staffs of the Emergency and Columbian University Hospitals.

Allen H. Hulshizer. A resolution has been passed by the staff of the St. Joseph's Hospital that the minutes of the institution shall record the death of this colleague as one devoted to the interests of the institution and to duty and whose absence is sadly felt in the extended circle of public usefulness.

Adolf Kussmaul, of Germany, May 27, aged 80. He was born near Karlsruhe, and taught successively at various universities. He introduced the stomach-pump into medical practice, and contributed materially to the literature of epilepsy and nervous diseases in general.

Cloyes W. Gleason, of Philadelphia, May 30, aged 81. He was a native of Barnett, Vt., and practised medicine in Philadelphia for 35 years before his retirement in 1897. He was the first professor of anatomy and physiology at the Women's Medical College.

Thomas F. Corson, of Philadelphia, May 29, aged 62. He graduated from the medical school of the University of Pennsylvania, and served as assistant surgeon in the Sixty-seventh Pennsylvania Volunteers.

N. P. Duffy, of Lubec, Maine, May 28, aged 48. He was a native of Harvey, N. B., and a graduate of University of Vermont Medical School.

Samuel C. Fitzgerald, connected with the medical department of the Army, in Washington, June 1.

Alfred Lee Royce, a surgeon in the United States Navy, in New York, May 27.

S. R. S. Smith, of Ardmore, Pa., June 1, aged 80.

SOCIETY REPORTS

AMERICAN SURGICAL ASSOCIATION.

Twenty-third Annual Meeting, Held at Albany, N. Y., June 3-5, 1902.

FIRST SESSION.

The twenty-second annual meeting of the American Surgical Association convened in the Senate Chamber of the Capitol at Albany, June 3, at 10 a.m. After a short executive session the scientific program began with the address of the president, by De Forest Willard (Philadelphia). Dr. Willard emphasized his appreciation of being called to preside over the most representative body of surgeons in the world. He then gave a short retrospect of the early history of the Association from its first meeting, largely due to the efforts of the elder Gross, in 1881. At the meeting of 1882 a full program was carried out. This consisted of two papers each day, six in all, which point was characterized as a good suggestion for the present management. At the first meeting listerism was a fruitful subject of discussion, and such expressions as these were heard: "Listerism is not going to die—it is already dead;" "This theory of microscopic organisms is bound to fall," etc. Others, however, claimed that mortality had been greatly lessened by antiseptic methods. The statement was made that some young surgeons, taught only antiseptic methods, are more careless in their technic than are older men who have had to unlearn their previous methods. Only six of the original members of the Association yet survive, among the deaths during the past year being Moore, Fenger, Lane and others. As to the part of laboratories in surgical fields, it was stated that the laboratory should always be an adjunct to surgery. And laboratory methods, as well as technic, can be obtained by the young men of the profession as well in this country as they can be secured abroad. Regarding membership in the Association, Dr. Willard said the standard should remain high and only those men of acknowledged eminence in practical surgery or teaching ability should be admitted. In this way membership is valuable to members and to those who seek admission. The plan of having names lie over for one year is an admirable one. In 1898 the membership was increased from 100 to 125 and further expansion should be very slow, in fact only when there is an increasing number of able surgeons on the waiting list. Short programs for the meetings and short papers should be the rule. The publication of galley proofs in advance, as done by some members this year, is a step in the right direction. But little time is then needed for the reading and the discussion can be made more valuable. One of the members in 1881 stated that surgery had reached its limit. Notwithstanding its great advances since that time Dr. Willard predicts for it still greater advancement during the next quarter century. Sarcoma, carcinoma, etc., which now baffle the surgeon will probably then be curable by the surgeon or physician.

The Report of a Successful Case of Gunshot Wound of Stomach and Liver with Posterior Drainage was read by Roswell Park (Buffalo). The patient was a female, aged 26, who shot herself with a 22-caliber revolver, the bullet entering one inch above the tip of the sternum, perforated and fractured the xiphoid appendix, perforated the left lobe of the liver and cut a notch, or practically made a double perforation in the stomach. This was closed with three rows of sutures. Hemorrhage was controlled by gauze, about two quarts of blood having been removed from the lesser peritoneal cavity during the operation. A posterior opening was made and a drainage tube carried six inches into the lesser peritoneal cavity. A gauze drain was placed in the anterior opening. No trace of the bullet was found and no prolonged search for it was made. The patient made an uneventful recovery. The use of posterior drainage in such cases is believed to be of the greatest value.

The Importance of Drainage in Bullet Wounds of Intraperitoneal Viscera was the subject of a paper by L. M. Tiffany (Baltimore). (This paper will appear in full in *American Medicine*.)

Results of Wounds of the Large Joints by Modern Military Projectiles was the subject of a paper prepared by C. B. Nancrede (Ann Arbor). Owing to the fact that a time limit of eight minutes had been made, Dr. Nancrede asked that his paper be read by title, he giving a few of its points later in the discussion of the preceding papers.

A Report of a Case of Gunshot Wound of the Spinal Cord was read by R. H. Harte (Philadelphia), who stated that the credit of the case belonged to Dr. F. T. Stewart. The patient was a female, aged 26, who had received a 32-caliber bullet wound of the cord at the level of the seventh dorsal vertebra. The patient was conscious, but had loss of motion and sensation below a line passing three inches above the umbilicus. Three hours after injury laminectomy was performed and the bullet removed. The cord was found to be completely severed. The ends were freshened, leaving a gap of three-quarter inch. The ends were apposed with difficulty and held together by three chromicized catgut sutures, two passed transversely and one anteroposteriorly. The dura mater could not be approximated. On the seventh day the superficial reflexes returned,

and some sensation was felt. On the twenty-first day the knee-jerks returned. The patient gradually improved until at the present time (16 months after operation) she has voluntary motion in the legs and can stand by placing a hand on a chair to steady herself. The senses of touch, temperature, pain, and position are present in all the areas that were anesthetic. The patient's general health is excellent, she has control of the bladder, and also control of feces except when diarrhea is present. Deductions from this case are: Cases of fracture of the spine should be treated as fractures of the skull—operate immediately if there are symptoms. There is no sure guide to indicate in these cases if the cord be cut. Inspection only can decide that point. If the cord is found to be cut it should be sutured. Suture is especially indicated where the cord has been cut by a sharp instrument or by a projectile. Where the cord is crushed, as after a fracture, there is no infallible method of determining if all the tracts are destroyed. Operation then should be to combat sepsis.

The discussion on the papers dealing with **gunshot wounds** was opened by Rodman (Philadelphia), who agreed with Park and Tiffany regarding the necessity for drainage. The vomiting of blood after gunshot wounds is usually said to be pathognomonic of perforation of the stomach, but late researches show that it may be caused by the impact of the missile without perforation. All gunshot wounds are primarily or secondarily septic and should be drained. In wounds of the stomach posterior drainage of the lesser peritoneal cavity is advisable. A tube, as well as gauze, is generally used. If there is not much apparent soiling of the peritoneum, the parts are wiped dry and no irrigation is used. If there is much soiling thorough irrigation is employed. Very little time should be spent in searching for a bullet in the abdomen. If it is accessible it will be soon found. If it has passed into the muscles of the back an abscess is probably the only untoward result to follow. When operating, time is very valuable to the patient. Carson (St. Louis) is opposed to irrigation, no recoveries having followed this procedure. Wiping with gauze has given him fair results. He favors posterior in addition to anterior drainage. Nancrede (Ann Arbor) emphasized the great difference between civil and military practice. Many of the textbooks say that wounds of the large joints will in almost every instance be followed by suppurative arthritis. This is false, and young men in military service have a wrong idea. The 30 or 40 cases recorded in his paper, with only two operations and one death, is proof of this statement. The modern bullet bores a smooth hole in cancellous bone and often does not fissure the compact portion. After results, without operation, are generally good. Immobilize the parts at first, then use passive motion. The younger men should be imbued with the idea that they are to keep fingers and probes out of such wounds, even if they do communicate with a joint. Mcadonald (Albany) said that posterior drainage was valuable in some conditions, as wounds of the liver, gallbladder, ascending colon, etc. Whenever a hollow viscus is involved drainage should be employed. Estes (South Bethlehem) emphasized the value of posterior drainage. He also reported a case of injury of the cord from fracture of the ninth and tenth dorsal vertebrae. Operation after eight days showed the cord to be cut through. Three-fourths inch of the cord was resected and the ends approximated, suturing of the membranes helping to relieve the tension on the cord. Improvement followed operation, and the patient after some months was able to stand with some assistance. After leaving the hospital he retrograded, and died of septic cystitis 18 months after operation. Improvement also followed suture in a case of partial section of the cord. McGraw (Detroit) in comparing military records said that deterioration in the resisting power of soldiers who had been for some time in service must be remembered. He stated that the government records of the Civil War were almost valueless, because each surgeon had so much work to do that he had no time for accurate statistics of cases. Weeks (Portland) said that drainage was not necessary in all abdominal wounds, each case being a law unto itself. Instances of perforation operated on without drainage were followed by recovery. When drainage is used a good plan is to saturate the drain and the first dressing with a sterile solution. To drain pus tubes are better than gauze. VanderVeer (Albany) mentioned a case seen by him shortly after the battle of San Juan. A bullet had gone entirely through the man's body from above Poupart's ligament through the sciatic notch. When the man reached Albany the original dressing was still in place and perfect healing had resulted. In wounds of liver, kidney, etc., he prefers glass tube or rubber tube for drainage. He uses very little gauze, which in itself may be a source of infection. Owens (Chicago) said that an argument for posterior drainage was that there was objection to making drainage through the large wound of entrance of the missile and of the surgeon, the dangers being sepsis or hernia. These are not incurred by posterior drainage. Rixford (San Francisco) reported two cases of bullet wounds of joints, knee and hip, where almost perfect results followed nonoperative interference. Abbe (New York) said that the spinal cord never seemed movable enough to obliterate a gap unless the bony canal was destroyed. The removal of bone to effect this may be employed, since Dr. Harte's case shows the possibility of functional restoration following suture. Elliot

(Boston) said the dictum should not go out that the Association believed in posterior drainage in abdominal cases. It might be all right in the lesser peritoneum. If the wound of intestine was near the anterior wall, posterior drainage would not be effective and should not be made to avoid draining through the original wound. It is much better to leave a large opening and then to change the gauze with the aid of retractors. In this way one can look in and see the condition of the wound. Gauze is the best material for drainage, the wounds healing more rapidly where it is employed. McArthur (Chicago) said that a more favorable opinion should be held regarding joints which have become infected. He makes a lateral incision on each side of the knee and carries the gauze through and through. Binnie (Kansas City) corroborated McArthur. Large openings are made and the dressings themselves are carried in as a drainage. Openings should not be regulated by the size of the joint, but by the size of the operator's fingers. Park said that Harte's case showed the contradiction between laboratory and clinical results. He mentioned a case of bullet wound of the chest and spine which showed a curious phenomenon during operation. When the injured cord was exposed by opening of the dura air passed through by way of the injured lung. This spinal respiration was distinctly audible for half an hour. Tiffany said that he would take out the body of a vertebra if necessary in order to unite the cord. Vomiting of blood in supposed injury of the stomach is of uncertain value. Posterior drainage of some wounds is wrong as the chest may be opened by this procedure, some cases recover without drainage, but this should never be taken as an argument against it. In posterior wounds of the stomach, anterior drainage will suffice. Harte stated that the character of the wound, the time of dealing with it, the conditions found, etc., have much to do with the question of drainage. In an abdominal wound, penetration of viscera can be determined only by opening the abdomen and as good results are obtained in a series of cases if every one is opened. Drainage in *all* is best. Surgeons often leave too small an opening for drainage. Gauze is the best material for drainage, but several large pieces, through a large opening, should generally be used.

SECOND SESSION.

The first paper at this session was read by M. L. Harris (Chicago) on **Removal of the Prostate and Bladder Through Suprapubic Incision for Carcinoma**. The patient was a man of 52, with carcinoma of the bladder which had extended to the prostate. Points to which particular attention were called were: (1) The method of operating, suprapubic incision with division of the urethra at the triangular ligament; the prostate and bladder were then separated from the rectum and drawn forcibly toward the opening, this materially lessening the hemorrhage; (2) the saving of a small portion of the bladder into which the ureters were transplanted; it is impossible to preserve a small portion in only a very few cases of removal of the bladder and it is a very important matter; (3) the remarkable regenerative powers of a small portion of the bladder thus preserved; in this case a small portion of the vertex was preserved and fixed in the lower angle of the wound. In two months a distance of 5 cm. to 6 cm. had been regenerated and nearly all the urine was passed through the penis. The patient then died of acute pneumonia.

Anatomic and Technic Reasons Why the Perineal is Preferable to the Suprapubic Route in Prostatic Surgery were given by J. E. Moore (Minneapolis) and illustrated by specimens. Moore stated that in the past patients suffering from prostatic trouble had not received the relief they were entitled to because of the unpopularity of operative methods. When a patient can no longer empty his bladder without the use of an instrument he should be operated upon. Age is no contraindication if the patient's kidneys are good. The perineal route is believed to be the one of the future. From all anatomic standpoints it is superior to the suprapubic route. The bladder is not the offending organ and infection most frequently comes from the bladder when it is opened. The loss of control of the urine in these cases is due to bladder injury and not to removal of the prostate. The horseshoe incision in perineal operations is too much surgery, hence the median one should be employed. In the perineal operation only a small portion of the floor of the urethra is sacrificed—a strong point in its favor. With the exception of kidney failure, sepsis is the greatest danger from operation. This danger is lessened by the more successful drainage through the perineum. Detritus cannot be drained suprapubically. The suprapubic route may be preferable when the third or lateral lobes are very soft and project far into the bladder, but under no other circumstances. A complete prostatectomy is not necessary in all cases.

The secretary read for Chas. A. Powers (Denver) a paper on **Permanent Suprapubic Drainage in Tuberculosis of the Bladder**. The patient was a man of 52, who had grown steadily worse under local treatment until he urinated almost constantly, suffered greatly from spasm, and had a bladder capacity of six drams. Tubercle bacilli were found in the urine. Operation revealed an ulcer at the neck of the bladder. This was curetted and permanent drainage inserted. Improvement was steady and for nearly five years after operation the patient was comfortable, except the trouble of a urinary fistula. The last three months there has been some irritation, but this is attributed to the use of a badly fitting tube.

Curvilinear prerectal operation for abscess of the prostate gland was the subject presented by Joseph Ranshoff (Cincinnati), who has used this incision in three cases with very satisfactory results. The incision extends from near one tuber ischii to the other and one inch from the anal orifice. This allows a blunt and almost bloodless separation of the rectum from the gland, the urethra not being opened. One valid objection to this procedure is that it may lead to sloughing of the anterior wall of the rectum with a resulting fistula. This occurred in one of the three cases, but the fistula was slight and soon healed. This danger is outweighed by the other good points of the operation. A short stone searcher is all that is needed to bring the prostate down. The median incision may be used for a quick exploration of the bladder, prostate, urethra, etc., in doubtful cases and for stone, but as diagnosis becomes more exact it will be used less. The opening of the membranous urethra is an objection against it which must not be overlooked.

The discussion on these papers was opened by Dandridge (Cincinnati) who said the perineal route seems to be the one of the future. But modern operators may go too far and forget the good results of older methods. Some patients get good results from the use of the catheter, it depending largely on their social condition whether they are comfortable with that expedient. Perineal incision and drainage with a large tube often does as well as the more radical procedures. Watson (Boston) believes that a good plan is to open the membranous urethra and explore with a finger; when this reveals the necessity for a suprapubic incision, that is made also. An argument for total prostatectomy is the fact that in three of his cases a small portion left has hypertrophied. A great aid in delivering the prostate is draining it down by means of two fingers in the rectum. Eliot (Boston) thought formerly that the suprapubic route was the best, but found it difficult to get all the prostate away from the urethra by that method. He then used a combination of the two routes, pushing down the prostate by a finger in the bladder. Later he found that a finger in the abdomen, without opening the bladder, answered as well. Now he finds the perineal route alone more satisfactory. Owens (Chicago) has obtained very good results in permanent suprapubic drainage by the use of an instrument on the principle of a tracheal tube. The inner tube can be removed and cleaned very satisfactorily. Weir (New York), in three removals of the bladder, has found that with a little good management some of the mucous membrane can be saved for the uterus. In one case the patient was able to hold 3 to 4 ounces of urine, the receptacle being formed from the portion of bladder left and from the surrounding raw tissue. In one case difficult of diagnosis the bladder was opened and found to be studded with tubercles. Drainage was instituted with good results. Ochsner (Chicago) has adopted the perineal method of prostatectomy. Meyer (New York) said that in many instances of descending tuberculosis of the bladder the latter organ would take care of itself when the kidney was removed. When not sure whether the process is an ascending or descending one, lumbar incision should be made to decide, as suprapubic incisions are objectionable to patients and should be made only when absolutely necessary. In cases of abscess of the prostate with enlargement, removal of the prostate should be followed by suprapubic incision. Finney (Baltimore) thought it strange that the Bottini operation should be mentioned so little. From Dr. Young's experience (soon to be published) he believes this the operation of the future. Abbe (New York) believes there are occasional cases where prostatectomy is wrong and only suprapubic drainage is indicated. Two points were emphasized: (1) This can be done under cocaine; (2) the patient can be kept dry if at time of operation a pursestring suture is inserted in such a manner that the mucous membrane of the bladder is inverted around the tube. This will prevent the dribbling of urine which is always so disagreeable.

Abdominal Hysterectomy.—This paper was read by J. B. Deaver (Philadelphia), who made a strong argument for abdominal, as opposed to vaginal, hysterectomy. Points in favor of the abdominal method are better facilities for manipulation, better control of hemorrhage, less liability of injuring the intestines or ureters, less possibility of infection, better handling of pelvic complications, and greater probability of entire removal of malignant growths. Myomectomy is indicated only in pedunculated fibroids or those of the broad ligament. In nearly every case supravaginal amputation of the cervix is better than a total hysterectomy. This is true except in malignant disease and sepsis. It does not disturb the vagina and there is less likelihood of hernia or prolapse of the abdominal contents. Deaver has used Cargyle's membrane in many cases with good results in preventing adhesions. One of his colleagues uses sutures to hold the membrane in place over raw surfaces.

A case of fatal acetonemia following an operation for appendicitis was reported by G. E. Brewer (New York). The patient was a boy of 12, who had acute perforative appendicitis, operated on 48 hours after the attack began. A small walled-off abscess was found and drained after removal of the appendix. All septic symptoms subsided, the temperature becoming normal, the belly soft, pulse normal, etc., at end of two days. The third night the boy screamed violently in his sleep and seemed somnolent the next day. A trace of albumin

and hyaline and granular casts were found in the urine. When the boy was awakened he screamed and appeared in an extreme state of terror. The wound was examined and found satisfactory. A sweetish odor of the breath suggested acetonemia. An examination revealed large quantities of acetone and diacetic acid in the blood and urine. The boy gradually grew worse, the paroxysms becoming more severe and the intervening sleep deeper until he finally died in deep coma, 32 hours after the first untoward symptom appeared. Sepsis was ruled out and by exclusion, with the blood and urine findings, the diagnosis of acetonemia was made. Autopsy was not obtained. The suggestion was made that when patients die two or three days after operation, too early for sepsis and too late for shock of operation, this acid intoxication may be the cause. Deaver (Philadelphia) ascribed the result to sepsis. Brewer strongly opposed such view, as there were positively no symptoms of that condition.

[To be continued.]

THE TWENTY-SEVENTH ANNUAL MEETING OF THE AMERICAN GYNECOLOGIC SOCIETY.

Held at Atlantic City, May 27, 28 and 29, 1902.

FIRST SESSION.

Seth C. Gordon (Portland, Me.) presiding.

The address of welcome was delivered by Philander A. Harris (Paterson, N. J.). The first paper was **A Case of Wandering Spleen Packed in the Pelvis and Complicated by Typhoid Fever**. A. Ashley (Baltimore). Splenectomy was performed with ultimate recovery of the patient, a woman, 22 years of age, who had been admitted to the Maryland University Hospital with a large mass in the left inguinal region, filling the pelvis and resembling an ovarian cyst or a soft niggmatous uterus. On abdominal section it was found that the tumor was a spleen three times the normal size wedged in the pelvis; the pedicle was much elongated and was ligated, and the spleen removed without difficulty. The convalescence was complicated by an attack of typhoid fever. The Widal reaction was typical. One of the chief points of interest in the case was the difficulty of diagnosis. Stone (Washington, D. C.) referred to a case in which a mass in the pelvis resembling a soft myoma was found to be a wandering spleen associated with an enlarged cystic ovary. The cyst was removed and the spleen allowed to remain. Five years later symptoms developed from torsion of a congenital elongated splenic pedicle. Operation was performed, the patient recovering. Howard (Baltimore) referred to three cases operated upon successfully by Kelly at the Johns Hopkins Hospital. They had been mistaken for either cystic kidney or ovarian cyst. He had seen many cases in North Carolina of enlarged spleen, and he deplored the tendency to perform unnecessary operations, as appropriate treatment often relieves these patients without operation. Laphorn Smith reported a case of splenectomy. The operation was easily performed, and the pedicle was carefully ligated; but in spite of his efforts a secondary hemorrhage occurred with death of the patient. Sutton (Pittsburg) suggested that an abdominal incision be made in cases of wandering spleen, and that this organ be rubbed with a piece of gauze, and the adjacent peritoneum similarly irritated, and that the spleen be replaced and held in this position until adhesions have formed. Dudley (New York) reported three cases of enlarged spleen that he had operated upon. Bovée (Washington, D. C.) called attention to the reactionary symptoms which occur after the removal of a normal spleen, which are absent if a diseased organ is extirpated. He emphasized the importance of blood examinations prior to operation, and considers that fixation of the spleen is a questionable procedure.

Medical Side of Gynecology.—Edward W. Jenks (Detroit). The speaker held that with many men practicing gynecology prognosis is a lost art, and the diagnosis is only made with the knife. He condemns the practice of operating in every case of pelvic trouble, and although the general surgeon has invaded the field of the gynecologist, the results of his work do not compare favorably with those of the trained specialist. He deplored the lack of knowledge of materia medica, and the tendency to neglect a study of the constitutional causes of disease. Although surgeons reap reward far out of proportion to that gained by the patient workers along medical lines yet recovery from operation is not always synonymous with cure of the patient. The first requisite to a successful practice in a specialty is a basis of sound general knowledge of constitutional diseases. His paper was a plea for more attention being paid to the medical side of gynecology, which is being neglected as our surgical knowledge increases.

Lacerations of the Cervix Uteri and Pelvic Floor: A Plea for their More Careful Study: Their Diagnosis and Treatment.—Walter L. Burrage (Boston, Mass.). The status of operations upon the pelvic floor and cervix was defined. Frequently the glamor and brilliancy of abdominal surgery leads to neglect of plastic operations. In cervical lacerations the operator should aim to restore the cervix to its original condition, and amputation should not be performed if the cervix can be repaired. The diagnosis immediately after labor is difficult. If hemorrhage is present the tear should be

repaired at once. Ordinarily it is better to wait until after the puerperium. Nature does not repair satisfactorily, but distorts the tissues, particularly if the unilateral tear is present. The diagnosis is made by using tenacula to restore the cervix. In cases of long standing, trachelorrhaphy is generally indicated. Preliminary treatment is often advisable. If a malposition is present, it is doubly important to repair the cervix. He described the method he employs. Lacerations of the pelvic floor are unimportant unless the sphincter ani is involved. The speaker follows the methods described by Emmet and urges their employment. Dickinson advocated repair of the cervix and perineum within four to seven days after labor, and cited a series of nearly 40 cases in support of this practice. It is easy to secure accurate approximation of the tissue in the normal position before cicatrization has occurred. He is a firm believer in both primary trachelorrhaphy and perineorrhaphy. When the injury has been severe the operator may require assistance which may not be at hand at the time of delivery, or, the patient may be exhausted or prone to bleed immediately after labor, therefore the operation may be deferred for a day or two and yet good results be obtained. Dudley advocated immediate repair of the cervix after labor. He delivers and operates with the patient in the Sims position, retracting the perineum with a duck bill speculum, exposes the cervix and rapidly introduces the sutures. This obviates the necessity for a second anesthesia and saves the patient the dread of a secondary operation. Williams (Baltimore) operates upon the cervix primarily only when hemorrhage is present. In perineal tears, however, he advocates immediate repair. Goffe (New York) is in favor of immediate operation on both cervix and perineum. Montgomery (Philadelphia) in reviewing the operation for repair of the cervix said that formerly it was often performed unnecessarily, and patients suffered from a subsequent contraction of the cervix which interfered with uterine drainage and produced a secondary involvement of the tubes and ovaries. He advocates amputation of the cervix in preference to trachelorrhaphy if much cicatricial tissue is present. Schroeder's operation is indicated if there are extensive lacerations or hypertrophy.

SECOND SESSION.

The session was devoted to a symposium on Retrodisplacements of the Uterus, opened by an extemporaneous discussion by Matthew D. Mann (Buffalo) on the **Etiology, Pathology and Symptoms of Uterine Malpositions**. After a description of the normal uterine supports he particularly emphasized the functions of the round ligaments as important muscular organs in sustaining the uterus in its anterior position. If they are weakened or stretched the organ drops backward. If the uterosacral ligaments are relaxed the uterus drops downward. Laceration of the pelvic floor permits backward and downward displacement; rupture of the perineum permitting the development of cystocele and rectocele is another etiologic factor. In retrodisplacements the circulation is impaired, endometritis results and disorders of menstruation occur. Lacerations of the cervix, increased intra-abdominal pressure and straining at stool are factors, and the latter may cause prolapsus in the multiparous woman. In the vast majority of cases symptoms are produced, if not immediately, they certainly will occur later. The direct and reflex symptoms were described.

The Nonoperative Treatment of Uterine Displacements.—Dr. Francis H. Davenport (Boston, Mass.). The use of pessaries is the most important and practically the only method. A great variety of novel pessaries have been invented, one instrument maker advertising 76 varieties. The method is a very ancient one, and until 25 years ago almost the only one employed for the relief of either prolapsus or posterior displacements. Massage has its advocates for the relief of this condition, and has been perfected in Sweden; but it is difficult to learn, the results are slow, and the frequent manipulation of the genital organs necessary is a distinct disadvantage. Recently there has been a reaction in favor of the pessary in many cases, and it is indicated in uncomplicated retroversion; in retrodisplacements following confinement, when, if worn for a few months, a cure will result; and in cases of faulty power due to nervous breakdown. If there are complications or lacerations present the pessary is only of temporary value, and operation must be performed to effect a permanent cure. He believes that in two-thirds of the uncomplicated cases an anatomic and symptomatic cure may be effected by the pessary if the cases are carefully chosen, studied and watched and painstaking care observed in fitting the appliance.

The Alexander Operation.—Dr. Clement Cleveland (New York). This is valuable in anterior as well as in posterior malpositions. He described the normal position and supports of the uterus. The size and strength of the round ligaments is important in estimating the value of the Alexander operation. If complications are present or constitutional dyscrasias exist the procedure is contraindicated and other intraperitoneal methods should be selected. In the Alexander operation the uterus should be replaced, and a pessary adjusted before the operation and the pessary should be worn for two months after to prevent pain, discomfort and dragging upon the newly united ligaments. The procedure is an anatomically and physiologically correct one for the relief of the malposition, and although it has many modifications the primary procedure still holds the

confidence of the profession. The writer detailed the technic of the operation and results obtained in indicated cases.

Suspension of the Uterus, the Advantages, Disadvantages and Results.—Hunter Robb (Cleveland, Ohio). In speaking of the advantages, disadvantages and results of suspension of the uterus, Robb insisted that suspension and fixation are not interchangeable terms, the latter procedure being always undesirable. Before we are able to speak with certainty as to the results we must have more accurate data, which can only be obtained by a more rigid classification and a subsequent analysis of sufficiently large series of (1) uncomplicated cases of malposition; (2) of those cases of malposition in which other pathologic conditions are present, but in which the malposition is the indication for operation; (3) of those cases in which the suspension is only a supplementary operation. Robb believes that in suspension we have a method of permanently relieving a large percentage of patients suffering from obstinate retroflexion. Difficulties in future pregnancies are mainly the result of fixation operations and not of suspension. Hernia of the abdominal wall, adhesions and localized or general sepsis are due to faulty technic and should not occur.

Intra-abdominal Shortening of the Round Ligaments per Vaginam.—Dr. J. Riddle Goffe (New York). The ligaments are the natural and logical supports of the uterus, and Goffe reviewed the various procedures in which they had been utilized for the support of the organ. He prefers to operate through the anterior vaginal fornix and shorten the round ligaments by the Wylie-Mann method. After making the transverse incision he dissects the bladder away from the anterior uterine wall and hooks the finger over the fundus, grasps the ovarian ligament and anteverts the organ, turning it into the vagina and after folding and suturing the round ligaments, the uterus is replaced and the vaginal incision sutured. His vaginal method is as follows: The patient is placed in the extreme lithotomy position and with a self-retaining perineal retractor in place the posterior lip of the cervix is grasped with a vulsellum forceps and drawn forward. An anterior-posterior incision is made through all the structures of the posterior vaginal fornix, except the peritoneum, and extending approximately from the cervix to the rectum. By careful dissection the ligaments are brought into view, and the fold of the ligament is brought down into the vagina. Then a curved needle armed with kangaroo tendon is passed through the extreme points and another through the loop thus formed and through the posterior portion of the cervix below the insertion of the ligaments. When the other ligament has been treated in a similar manner the two deep sutures are tied and then the others. The vaginal incision is then closed by a continuous kangaroo tendon suture. Goffe has operated upon 130 patients during the past six years by this method with only three known failures.

Operations on the Uterosacral Ligaments in the Treatment of Retroversion.—J. Wesley Bovée (Washington, D. C.). The speaker reviewed the history of this method of operating, which was first practised by Amussat in 1850. Amussat obliterated the spaces between cervix and the posterior wall of the vagina by the application of caustic potash and the actual cautery to these surfaces and caused the formation of adhesions. He then tamponed in front of the cervix. The evolution of the operation was traced from Amussat to the present time. Bovée's first operation for shortening the uterosacral ligaments through the vagina was done June 28, 1897. He also described his method of operating by the abdominal route. He has performed eight vaginal and four abdominal operations upon these ligaments, and the results have been highly successful. Certainly no operative procedure entailing less danger at the time of operation and subsequently offers better prospects for the relief of the retroversion or moderate prolapse of the uterus. Extraperitoneal shortening of these ligaments with the adjoining portion of the vaginal walls is practically devoid of danger and is frequently indicated. The abdominal route will be less frequently required. Yet, with the abdomen opened, perhaps for some other purpose, shortening of these ligaments will be of very little extra risk to the patient or extra tax upon the part of the surgeon. It does not have some of the conditions incident to ventrosuspension and ventrofixation that are considered by some as real dangers, and it is supporting nature's supports to this important reproductive organ.

THIRD SESSION.

The first paper read was **A Further Contribution to the Study and Practical Significance of Lactation Atrophy of the Uterus**. Hiram N. Vineberg (New York). Although the writer six years ago drew the attention of the profession in this country to lactation atrophy, the subject has not received the consideration here that it deserves, as is evidenced by the literature and the recent textbooks on obstetrics. It is a physiologic process accompanying lactation, with or without amenorrhea, the atrophy or superinvolution being temporary only, the return to the normal size being in some cases dependent upon the cessation of lactation. In others again, the regeneration of the uterine tissue occurring while lactation is still going on. It is not to be confounded with what is commonly known in this country as hyperinvolution, which is usually permanent in its character, although in some rare cases it terminates in this form. While the author has

seen during his 10 years' service at the dispensary over 500 cases of lactation atrophy, he has not met with more than 20 cases of permanent hyperinvolution. When the atrophy is slight and is manifest only by a thinning of the uterine walls, it is known as "eccentric atrophy;" when it is more marked, as is evidenced by a marked diminution in the size of the uterus, the term "concentric atrophy" is employed. The cervix usually participates in the atrophic process, but the ovaries do not as a rule. The hyperinvolution or atrophy is fully established between the eighth and twelfth week, and persists for a variable period in different nursing women, its persistence usually being dependent upon the continuance of lactation. Anemia does not play an important role in the causation of the condition, as has been stated by some writers, notably Engstrom. The author had the blood examined in a series of cases, and he found that the degree of atrophy bore no relation to the diminished number of red blood cells and to the lowered percentage of hemoglobin. Cases with the smallest uteri had the highest number of red blood cells and the highest percentage of hemoglobin. Hyperinvolution may occur independently of lactation, as shown by Hansen and P. Müller. Most writers hitherto have concerned themselves chiefly in showing that lactation atrophy is not an injurious condition, and that it seldom leads to permanent atrophy. But the writer drew attention to its decidedly beneficial effects upon the uterus in bringing about a normal hyperinvolution. Women, therefore, who nurse their babies are rarely the victims of subinvolution, with its usual sequel, chronic metritis, one of the most unsatisfactory and rebellious conditions to treat. When, as is usually the case among the better classes, the mother is unable or disinclined to nurse her baby, it is the duty of the attending obstetrician to keep the parturient under observation and treatment until nearly the same degree of hyperinvolution is established as obtains in lactation. This period will seldom be less than eight weeks and frequently will extend to three months. Unfortunately the importance of this desideratum is very generally not recognized. The accoucheur rarely considers it necessary to examine the parturient after the second or third week. In concluding, the writer drew attention to a peculiar circumstance—that in the class of women from whom he draws his material in dispensary practice uterine cancer is exceedingly rare. From the 1,500 or 1,600 new patients he sees yearly not more than one or two are the victims of cancer of the uterus. One would expect almost the opposite if improper attendance during the puerperium and lacerations of the cervix play any role in the causation of that dread disease. He asked the question whether the circumstance that these women are shielded, in a great measure, against the occurrence of chronic metritis they are thereby rendered less susceptible to the development of uterine cancer.

Relative Advantages of the Complete and Partial Hysterectomy.—E. E. Montgomery. In cases in which the extraperitoneal method of the stump has been employed the severe traction upon the stump of the cervix and vagina, the prolonged convalescence occasioned by the sloughing and retracted stump, the weakened ventrum and increased tendency to ventral hernia and the difficulty in preventing sepsis, are all arguments in favor of either complete hysterectomy or intraperitoneal treatment of the stump. He detailed the history of the operation in its evolution from extra to intraperitoneal methods. Of all the many procedures devised for performing panhysterectomy, that devised by Doyen is the most satisfactory to the writer. The uterus with the enclosed tumors is raised through the abdominal incision and is held by an assistant well over the symphysis, while an incision is made with scissors through the culdesac upon forceps which have been previously placed in the vagina. Through the opening thus made the cervix is seized, drawn upward and severed with scissors from its vaginal attachment. With slight pressure with the finger the cervix is easily drawn away from the bladder and torn from the broad ligaments. The uterine arteries are generally laid bare and can be seized before bleeding or upon the first spurt. The uterus is thus pulled upon until the vesicouterine pouch is reached, which may be broken through and the uterus remains attached only by that portion of each broad ligament which contains the ovarian artery. This is seized with compression forceps external to the ovary and the uterus cut away. The broad ligaments are cut with the angiotribe external to the forceps and ligated with chromic catgut in the groove. The uterine arteries are ligated with the same material and the peritoneum closed over the vagina with a continuous catgut suture. This suture should be introduced so as to draw up the vagina at each lateral angle. The advantages claimed for the complete operation are expedition in the performance of the operation, complete and secure hemostasis, increased freedom from septic infection and the entire removal of an organ, the retained portion of which may be the source of subsequent degeneration.

Pelvic Deformity in New York.—James Clifton Edgar (New York). This paper was read by title only.

The President's Address.—Seth Gordon (Portland, Me.). Reference was made to the present development of gynecology as a specialty, and it was observed that until modern obstetrics does more for women the gynecologist will be a necessity. He referred to the magnificent work of Marion Sims, who, as the founder of American gynecology, had done so much for woman-kind in his invention of the speculum introduction of silver wire sutures, and the perfection of plastic work. The obstetric teaching of the past had been too conservative, and students

were taught to regard parturition as natural and physiologic. Intelligent and skilful use of the forceps had practically eliminated fistula. Many of the diseases of women were due to, first, delayed use of the forceps; second, careless or needless use of this instrument; third, disregard of accidents of parturition, and fourth, neglect of aseptic precautions. Many old obstetricians were proud boasters who never observed lacerations of the perineum, but others did and repaired them. Normal labor should not be interfered with, as slow dilation is desirable. He condemned the too ready use of forceps, and affirmed that a man has no right to practise obstetrics who will not sacrifice his time for his patient's good. Tears must be treated immediately on the best surgical principles. Anesthesia during labor was endorsed. He prefers the A. C. E. mixture.

The Treatment of Placenta Prævia—Cesarean Section not Justifiable.—Robert A. Murray (New York). The varieties of placenta prævia were detailed and reference made to the frequency of its occurrence in from one to six hundred or in one to twelve hundred pregnancies. It is six times more frequent in the pluripara than in the primipara. The great danger is hemorrhage. The chief object is safe delivery of the mother and, if possible, saving of the child. If recognized early, abortion is advisable. If the child is viable the vagina should be thoroughly tamponed, and later delivery accomplished and the uterus irrigated. The tampon and bipolar version were advocated and cesarean section considered as unjustifiable as a routine plan. His conclusions were as follows: (1) The good statistics in elective cesarean section should not be used for comparison in this study, because of the hemorrhage, etc., having materially affected the patient; (2) these patients can seldom be moved to hospitals, even if the additional shock of operation could be borne; (3) good surgeons are rarely at hand and the operation is seldom elective, as hemorrhage is the symptom which usually leads to a call for a physician; (4) cesarean section might be justifiable if there had been no hemorrhage and the pelvis was contracted. Williams (Baltimore) said that there was but a small field for cesarean section in the treatment of placenta prævia. In primiparous women with a long, hard cervix it might be indicated; but the operation should be done by a trained operator in a well-conducted institution if good results are to be obtained.

FOURTH SESSION.

Two Conditions Simulating Ectopic Gestation.—Edward P. Davis (Philadelphia). Two cases were reported. The first was a pelvic hematocele, evidently due to traumatism, in which a vaginal section was performed. The second was a retroverted gravid uterus. In both instances the diagnosis was somewhat difficult, and he discussed various conditions that might be mistaken for ectopic gestation.

A Clinical Report of Ureteral Surgery.—Chas. P. Noble (Philadelphia). This paper will appear in a future number of *American Medicine*.

The Principles Underlying the Repair of Cystocele and an Operation Founded Thereon.—Edward Reynolds (Boston). This paper will be published in a future number of *American Medicine*.

The Unsutured Abdomen in the Treatment of the Extrauterine Placenta.—Ely Van de Warker (Syracuse). This paper was read by title.

FIFTH SESSION.

Anterior and Posterior Colporrhaphy by a New Method.—Isaac S. Stone (Washington).

Anterior Operation.—The vaginal wall is incised in the median line, and after clamping the sides of this incision the bladder is pushed away, upward and backward until the entire base of the bladder is separated from the vaginal wall and from the anterior surface of the uterus if desired. We particularly need to extend this separation as far out laterally as possible, for we have already seen that the whole pelvic roof shares in the prolapse. We proceed now to lift the bladder with fingers or gauze packing or with a sound inside the organ as far upward as possible to assure us of the extent of liberation. The excessively long flaps which presented over the base of the bladder as a cystocele (the distended anterior vaginal wall) are now excised and the wound brought together edge to edge, taking care to entirely obliterate the cystocele and to leave the new anterior vaginal wall straight across. The method of applying the sutures is important, for we invariably suture the flaps near the centre of the wound to the anterior surface of the uterus with silkwormgut, silk or chromicized catgut. This is done for the double purpose of holding the bladder high above the former attachment on the uterus and to hold the uterus forward if it has been retroverted. The bladder is held away and the deep suture passed through the uterine wall between the insertion of the round ligaments. The wound is then entirely closed with catgut sutures. It will be observed that we have applied the Mackenrodt method of vaginal fixation to my operation, but it was primarily to hold the bladder higher upon the uterus rather than to cure the displacement. In very large cystoceles the vaginal wall is of course greatly lengthened and we may shorten it by removing a V-shaped section from each side of the incision in front of the cervix. The longitudinal wound in the median line will then join one made transversely across the vagina in front of the cervix.

Posterior Operation.—The application of this method in

operating for rectocele has given great satisfaction especially when the vagina is capacious and there is decided prolapse of the uterus, bladder, and anterior wall of the rectum. It was suggested while repairing a bad median tear in a primipara, but is also applicable in any case if we wish to narrow the vagina high up toward the cervix. In the case just mentioned, the tear extended from the sphincter ani upward for nearly three inches and included every tissue down to the rectum, which was uninjured. The result was perfectly satisfactory and I did not have the difficulty mentioned by Dudley (see his work on Diseases of Women, 1898, p. 444), as the vagina was not excessively narrowed. The patient was placed in the lithotomy position, the labia separated by an assistant, and the extent of the injury fully disclosed by everting the rectum and vagina through the vulva with the left index finger. The torn fascia with adjoining muscle was from $\frac{1}{2}$ to $\frac{3}{4}$ inch thick on each side, the greatest thickness being near the anus. This rent in the fascia was closed with interrupted catgut sutures. The vaginal wall was then closed in a like manner, and finally two silkworm sutures were placed in the perineum transversely from the outside as is customarily done in recent tears.

Posterior Secondary Operation.—The injury to the posterior vaginal wall and perineum differ greatly in their extent and in the direction of the tear. In short, the rent may be either longitudinal or transverse, and in any event needs to be fully exposed below the vaginal mucous membrane, which in the past has borne the brunt of surgical attack, while the fascia, the objective point, is hiding with the much discussed and rarely seen levator ani muscle and is only influenced by sundry excursions of needle and suture, which after all only hold a denuded or scarified mucous membrane together while union progresses. The crest of the rectocele is grasped with the left hand, making a transverse fold which is divided with the scissors down to the rectum. Clamps are applied to the edges of the incision, and the rectum pushed away on both sides with a gauze sponge until it is quite free of all connection with the vaginal wall. The incision in the vaginal wall is extended above and below until we are satisfied that we can secure sufficient narrowing of the vagina to answer the purpose in view. The sutures are placed with greater facility when the rectum is separated freely on each side, and we need have no fear of obtaining good union after the operation. After we have completed the liberation of the rectum and have clamped such hemorrhoidal vessels as give trouble, we may proceed to close the wound in the following manner: With tissue forceps, or tenaculi if preferred, we catch up two points, one on either side, which we wish to unite in front of the rectum. These points are usually about $1\frac{1}{2}$ inches below the edge of each flap, but the size of the rectocele will necessitate a test in each case as directed, so that we may secure good approximation of the fascia over the rectum and which will not exert undue traction upon the sutures. The fascia is firmly and thoroughly united along the entire length of the wound. In some instances we have used a double tier of sutures which gives excellent support to the floor of the vagina and makes a firm obstruction to the exit of a proident uterus. After the buried sutures are placed, we excise the long flaps from each side and close the vaginal incision with interrupted catgut down to and rather below the former site of the crest of the rectocele. Emmet's or Hegar's method may now be selected for the final stage of the operation, according to the predilections of the operator. The operation, in some respects, resembles that of Hegar, the chief difference being in the method of exposing the fascia. According to Kelly (American Textbook Gynecology), Werth, of Kiel, Germany, was the first to use buried sutures in perineorrhaphy.

Fibroid Tumors of the Ovary.—Reuben Peterson (Ann Arbor). The speaker reported two recent cases of ovarian fibroid and added 82 collected from literature. His first patient was a woman 64 years of age, and the tumor, weighing $7\frac{1}{2}$ pounds, was removed without difficulty. The second tumor was much smaller and complicated by ascites. These growths are twice as common in married as in single women, and occur most frequently between 40 and 50 years. Menorrhagia and metrorrhagia are very common symptoms. The pain is usually slight if there are no adhesions. The pedicle is generally long, and in nine cases was found twisted. Calcification was noted in 11 cases, and cystic formation in 22. The uterus is rarely enlarged. In all of the 82 cases tabulated microscopic examination had been made to confirm the diagnosis, and the mortality in operative cases was 6%.

The Closure of Suppurating Abdominal Wounds following Laparotomies.—Philander A. Harris (Paterson, N. J.). When abscess forms in the abdominal incision the skin is reopened in the line of incision to the upper and lower limits of the mural abscess. The wound is then treated as an open one until the flow of pus becomes greatly reduced in quantity. All the granulations are then removed with a sharp curet until the muscle, fascia, fat and other tissues are distinctly recognizable. The separated edges of the deep fascia are then drawn together by a series of silkwormgut sutures, which interlock each other at the apposition line of the fascia. Each one of these sutures is introduced through the skin about one inch away from the incision, and each one is brought out either just above or below the point of its introduction. If the first suture both enters and emerges from the right of the median line, the next one is introduced and emerges at a point to the left of the incision, and

is so introduced as to interlock the first or preceding suture. The third suture is introduced and brought out from the same side as the first suture and interlocks the second one. The fourth suture is introduced from the same side as the second suture and interlocks the third or preceding one. This singular suture has for its chief object the coaptation of the deep fascia, and when properly introduced and tied, it is claimed that the fat and opposing edges of the skin fall in apposition, adhere and heal without additional sutures. Most of the few cases thus treated promptly heal and generally do so without suppuration. A not unimportant part of the technic of operation is the thorough and repeated washing with solution of bichlorid of mercury; always follow with a normal salt solution irrigation. The stitches were all removed on the twelfth and fourteenth days.

The following officers were elected for the ensuing year: President, J. E. Janvrin (New York); Vice-presidents, E. A. Jenks (Detroit, Mich.), A. P. Dudley (New York); Secretary, J. Riddle Goffe (New York); Treasurer, J. Montgomery Baldy (Philadelphia); Member of Council, Seth C. Gordon (Portland, Me.). Washington, D. C., was selected as the next meeting place.

THE AMERICAN PEDIATRIC SOCIETY.

Fourteenth Annual Meeting, Held at Boston, May 26, 27 and 28, 1902.

W. S. Christopher, Chicago, presiding. In his opening address the president drew attention to the important part which infancy and childhood play in human life and regretted that more time was not given to the study of pediatrics in general medicine. The plasticity of childhood was noticed as giving opportunity for development of physical strength and mental activity. By the study and careful observation of the child many of the diseases of manhood may be eliminated.

Intussusception: Clinical Remarks.—F. Huber (New York). Child, 8 $\frac{1}{2}$ months old, weighing 19 pounds, general health good, no history of trauma; diarrhea, no apparent pain; later, vomiting; paroxysms of increasing frequency; rectal injection followed by bloody mucous discharge; intussusception; rectal examination showed no tumor; reduction attempted by hydrostatic pressure. Under narcosis elongated tumor could be made out; mass reduced; mucus and bloody specks followed; no fecal evacuation; 24 hours big stool; recovery, two weeks. Infancy symptoms dependent upon degree of obstruction; in acute colic look for intussusception; fecal vomiting very rare in children; examination may be followed by bloody discharges; palpation not difficult under narcosis. John F. Erdman (New York). The ultimate outcome of operation for intussusception shows far less mortality than with hydrostatic pressure; child recovers rapidly from shock; the operation is a simple one requiring asepsis and rapidity more than anything else. Augustus Caille (New York) pointed to the value of percussion. F. A. Packard (Philadelphia) reported a case of five days' standing which it was impossible to reduce owing to large gland. C. P. Putnam (Boston) could not see how sufficient pressure could be obtained without the use of a plug as the water would flow out. Samuel S. Adams (Washington) thought a great deal depended upon location of tumor and related the history of three cases. Jacobi (New York) reminded the meeting that the bowels were not iron pipes and that gentle pressure was likely to secure better results than high pressure. T. M. Rotch (Boston) considered that the testimony borne by specimens in museums was rather in favor of gentle dilation than strong pressure.

Healed Septic Endocarditis.—Samuel S. Adams (Washington). This has been considered a rare affection in childhood and is sometimes found at postmortem when not expected. Osler has reported 209 cases and only three of them were under three years of age. Other authors were quoted. The disease has been classed as of two species, but trend of opinion today points to a difference in degree rather than in kind. The history of a case with recovery in a child of six years was given. Why, it was asked, should septic endocarditis be fatal? Jacobi (New York) thought these cases to be caused by bacteria or by toxins. When there are bacterial deposits on the valves, they may probably be called malignant; when caused by toxins they are apt to get well; the toxin will exhaust itself after a time and will be eliminated. Was it really endocarditis they had to deal with? Difficult to make diagnosis.

A Case of Chondrodystrophy Foetalis.—John Lovett Morse (Boston). A case was reported of a boy who died at the age of 4 months; weight, six pounds, legs short, otherwise normal. Little is known as to the cause of this disease; those affected mostly die in youth, mild cases reach maturity. Jacobi: This is what might be expected in a case of rachitis. J. P. C. Griffith (Philadelphia) mentioned two cases which might well be considered as chondrodystrophy foetalis; the patient had curious paddle-shaped hands and feet; fetal rickets is an extremely rare condition. Holt (New York) cited a case 4 years old, in which thyroid was used almost continually for about two years without progress. Christopher reported a case in a family of three where thyroid was no use; Walker thought them rachitic, but he himself did not think so. The reader of the paper said he could not agree with Jacobi that this was a case of rickets.

Pilocarpin in Scarlet Fever and Diphtheria.—E. W. Saunders (St. Louis). Read by title.

The Management of Rheumatic Children.—F. M. Crandall (New York). The speaker advocated exercise and outdoor life. Children should be kept in the open air except on damp days. Diet is not now regarded of so much importance; each case should be carefully studied and the child should not be kept too long on liquid food. He recommended alkaline treatment, small doses of bicarbonate of soda with milk in acute rheumatisms. H. D. Chapin (New York) considered that as a class physicians neglect their full duty in not familiarizing themselves with the importance of rheumatism. The child should receive attention for a period of years. He was not sure as to the modern view that the disease is of microbic origin. Sodium sulfate should be given for a long time. Jacobi said prevention was better than cure; physicians should get children more used to cold water, rub them well, attend to the throat and watch the tonsils. L. Carr (New York) referred to the employment of fats, butter, cod-liver oil, etc. Packard would administer digitalis in heart cases. A. D. Blackader (Montreal) preferred to treat the general condition of the child; rheumatic children are prevented from developing owing to faulty nutrition. Koplik (New York) gave a caution as to tonsillitis; better to let the case wait before operating. J. C. Wilson (Philadelphia) wanted a broad conception of the disease; sore throat points to endocarditis, growing pains to rheumatic fever; the heart should not be depressed by drugs; every possible attention should be paid to hygiene. Crandall gave a case of articular rheumatism in which the knees and wrists were involved. He did not think mere hygienic treatment would prevent articular rheumatism; he would feel that the best he could do would be to repeat sodium salicylate at intervals for a long time.

Typhoid Fever in Children Under Two and a Half Years of Age.—J. P. C. Griffith (Philadelphia). Considerable difference of opinion exists on the subject. It should be studied more in detail. It conveys a wrong impression to say that cases of typhoid fever in infants under two years are rare, and a number of cases were cited to prove this. Cases under three months were not recognized during life; autopsy revealed it. The author showed a number of tables to support his statement. Morse expressed his opinion that typhoid fever is rare among infants in Boston. Holt did not think there was sufficient evidence to show that typhoid fever was common during infancy. Seibert (New York) remarked that there was quite a difference in the prevalence of typhoid fever in Boston and in Philadelphia, as statistics collected during the last 10 years showed. Koplik considered that it was too early to say anything about the frequency of the disease, as methods were not familiar to all. Adams was of opinion that as they improved in methods of diagnosis they would find more cases.

Typhoidal Appendicitis in Children.—A. Seibert (New York). Typhoid fever has been somewhat neglected by pediatricists. Two cases of typhoidal appendicitis were described: (1) Boy aged 11; sudden marked pain in abdomen; temperature 106°; temperature reduced and later the appendix was removed and found to be ulcerated. The indications of typhoid fever formerly seen disappeared in two weeks. The patient was kept on liquid food. The wound discharged pus freely for five weeks. Diagrams were shown giving temperature variations. Rectal irrigations not used.

Report of a Case of Extreme Enlargement of the Spleen with Anemia: Autopsy.—Samuel McC. Hamill (Philadelphia). This case was first seen March, 1897; age 6 years; no information as to father. On mother's side the history was good; profuse epistaxis; gastric pains for several weeks; hemorrhage from stomach; blood from lower bowel; marked prominence of abdomen; palpation showed large firm mass to left; examination of urine negative. The child remained well for 19 months when physical examination showed spleen a little more enlarged and more movable. On January 15, 1900, the patient was suffering from cough; abdomen more distended; hemorrhage from stomach; blood from bowels and bladder. January, 1901, injury of knee; boy better than ever; no change in abdomen; latter part of January, severe cold, recovered. February, hemorrhage; put to bed, vomited; in two hours revived; following morning began to vomit; stimulants to restore consciousness; following morning small pulse; improved; later relapsed; convulsions; died in three hours without regaining consciousness. Autopsy limited to abdomen; glands embedded in fat; the adherent spleen measured 7 by 4 inches; pancreas embedded in fat; kidneys larger than in adult, on section exceedingly pale; conditions must have prevailed from infancy. Dr. Hamill had never seen such deposits of fat.

A Case of Venous Thrombosis Resulting in Extensive Cerebral Hemorrhage in an Infant Fifteen Days Old: Fusion of the Kidneys.—Samuel McC. Hamill (Philadelphia). Paper read by title.

Presentation of Cases of Tubercular Peritonitis.—T. M. Rotch. When there is tuberculosis of the mesentery laparotomy is indicated; if in the peritoneum, it is essentially indicated. Rotch then presented six cases, boys and girls of two and a half years and upward, giving a short history of each case. All had a healthy appearance. He said the patient should be given the benefit of the chance and laparotomy performed. Adams thought the paper opened a field for discus-

sion. He had been in favor of exposure by incision for years, but what were they to do when a surgeon refused to operate. F. Forchheimer (Cincinnati) thought it necessary to give the patient a pretty fair trial before laparotomy. He granted that laparotomy, when properly performed, was generally without danger, but how to determine what cases to operate on was the difficulty. Koplik remarked that in cases operated on and those left alone the percentage of recovery was about the same; if the child got along well with hygienic treatment they should leave it alone. Jacobi would not urge laparotomy so long as there was no fever; rest, air, food in winter with cod-liver oil would restore to perfect health. Potassium or sodium iodid were also good. Rotch deprecated the idea of waiting to the last in view of the lack of danger. It was not good practice to wait. He was against trusting to the use of iodids. Jacobi said that he had treated some of his patients with arsenic.

Hemoglobinuria.—A. Jacobi (New York). Paper read by title.

1. The Use of the Term Enanthem. 2. Some Remote Diseases Arising from Tonsillar Infection.—F. Forchheimer (Cincinnati). The author of these papers said it was difficult to say who first made use of the term "Enanthem," but it had been universally adopted by French and German authors. He considers the word as good as "Exanthem," and advocated its use when referring to inward eruptions.

In his second paper Forchheimer referred to absorption by the tonsils. Streptococci and tubercle bacilli are taken up by the tonsils. The author gave two cases in which he traced the trouble to infection through the tonsils. Packard instanced one case of infection in a similar manner. Jacobi found very few tonsils normal. Yale referred to cases of jaundice, and Christopher enumerated 200 cases in which cultures showed influenza bacilli only in two or three cases. The enanthem was not limited to the tonsil. Other involvements were also found, gripe, earache; in one case the appendix was involved, recovery followed operation.

1. Clinical Observations on the Management of Circulatory Failure in Acute Infectious Disease. 2. Chronic Parenchymatous Nephritis in a Child Treated by Renal Decapsulation (Edebohls' Operation). 3. Specimen of a Large Thymus Gland (Sudden Death).—Augustus Caillé (New York). Causes of circulatory failure were referred to; the choice of stimulants is not easy; cold water in moderation is useful in reducing temperature; saline infusion in case of sepsis; drugs apparently have no effect. Cases noted; typhoid fever third week, patient moribund, saline solution was infused, sudden death followed in one hour. Other cases were given in which saline solution was administered with varying results. Circulation failure was not always to be regarded as heart failure. Acker described the case of an adult apparently moribund, hemorrhage occurred the night before; injected into vein of arm one quart of saline solution; pulse 120; recovery. Jacobi used saline solution at almost any temperature. In his remarks on his second paper Caillé said a certain proportion of cases of kidney insufficiency did not recover; the proposal to cure Bright's disease by surgery should be met with frankness; it would be well to inspect kidneys by lumbar incision; decapsulation of one or both if necessary. In third section Caillé read no paper, but showed a large thymus gland taken from an infant of six weeks. Jacobi was of opinion that death in such cases was frequently caused by suffocation owing to pressure from the enlarged gland.

Effects of Tight Diapers.—A. C. Cotton (Chicago). The speaker pointed out the evils arising from the use of tight diapers, a habit which is especially prevalent in America as well as in England and Scotland. He condemned tight underclothing of all kinds and showed samples of what he considered the ideal underclothing for children. The proper undergarment is sleeveless, with a string at the bottom by which it could be drawn as tight as required. The wearing of tight diapers had a distressing effect upon the flexible pelvis of children, retarding its development; it had also a bad effect upon the children who grew to be women; diapers of cheese-cloth should be worn and never pinned tightly; when soiled by fecal discharge it was best to burn them.

Two Cases of Umbilical Fistula Due to Tubercular Peritonitis.—Geo. N. Acker (Washington). A report was made of two cases; the first a healthy child; in autumn of 1901 was troubled with ascites; last October bowels had not moved for seven days, no fever at night, micturition free, chest walls flat, percussion heart sounds weak; pulse rapid, 120; desired water constantly; after treatment stools frequent; intelligence impaired; lay in semi-stupor; urinalysis negative; died of exhaustion six days after admission to hospital. Necropsy showed tubercles everywhere. The second was that of a colored girl aged 8 with a tuberculous history in the case of one parent; opening in umbilicus; discharge from fistula; died nine days after admission to hospital.

Diphtheria With and Without Antitoxin.—Charles G. Kerley (New York). The speaker gave results in a great number of cases of diphtheria in which it was conclusively demonstrated that the use of antitoxin had been of service. Figures were quoted showing that the longer the delay in administering antitoxin the longer the time taken to clear off the membrane. There were three cases fatal after the use of antitoxin; one died from lobar pneumonia; another was injected on the third day and died twelve hours later; the third was injected on the fifth

day and died of heart failure. The early use of the serum was advocated; they should inject, then take culture; if no improvement after twelve hours, reinject. Early use of fair-sized doses, 3,000 units, was recommended; when in doubt it is wise to inject; see patients at intervals of twelve hours. Doses, 2,000 units under one year, 3,000 over one year, and so on.

Intubation in Diphtheria.—John H. McCollom (Boston). He referred to the previous paper and gladly emphasized the early use of antitoxin; a physician had no right to wait for cultures in diphtheria cases; had 134 cases of diphtheria among doctors and ministers and two doctors and four ministers lost their lives; no other fatalities because antitoxin was used at once. He had a strong belief in antitoxin. After referring to the great mortality from diphtheria before the discovery of antitoxin, the speaker compared the merits of tracheotomy and intubation, and showed how the introduction of the latter had reduced the rate of mortality in this disease. He showed a sample of the O'Dwyer tube which he used and also a sample of tube which he used in esophageal feeding. He advised intubation so long as there was a flicker of the pulse and instanced a case which occurred a few months ago at the Boston City Hospital, an ambulance case from a long distance; the tube was inserted at once on arrival and artificial respiration resorted to with the best results. Child now alive and well. They should operate on every hopeless case. In hospital or city practice intubation was to be preferred to tracheotomy, as with the latter there was but little shock and there was less chance of bronchial trouble. Caille concurred in all that had been said by Kerley with regard to the use of antitoxin. Jennings also endorsed Kerley's paper and said that his dosage of antitoxin sometimes amounted to from 6,000 to 12,000 units; advised 2,000 units repeated perhaps three times. Further discussion, in which Chapin, Buckingham, Cotton, Adams and Crandall took part, referred to the different kinds of tube used, the position of the patient, and the danger of swallowing the tube and the need to have the tracheotomy set ready in case of emergency. Dr. Kerley in closing said he mostly had been able to feed with the spoon, but he approved of McCollom's methods; recommended different sizes of tubes for different ages, and once more insisted on the necessity for using antitoxin, repeating the dose and not relying on one dose.

Tetany of the Type Called Pseudotetanus, with an Illustrative Case of Diphtheria with Persistent Trismus and Opisthotonos.—Irving Snow (Buffalo). This disease much resembles tetanus, with which it may ally itself; it is a rare disease in America. The history of several cases was given; treatment with morphin. Jacobi wanted to know if they were going to give this disease a different name from tetanus what the benefit would be. These were simply cases of mild tetanus, as shown by diagnosis and treatment; morphin and chloral had cured many cases. Dr. Koplik thought tetany was not rare; was used to seeing at least twelve a year; had seen epidemics of tetany. Holt agreed with the last two speakers; had great faith in what Jacobi had said—a case of mild tetanus. Jacobi said there was a time when tetanus was unknown in America; immigration and poverty had worked the change. Kerley had seen a number of cases every year; mostly rachitic.

The Management of the Percentages of Fat in the Feeding of Difficult Cases in Infants.—Thompson S. Westcott (Philadelphia). The author referred to the attempts which had been made to simplify infant feeding by means of percentages. Almost any combination would feed a healthy infant; pediatricists had to consider the abnormal and here manipulation was necessary. The author showed tables embodying his ideas with regard to the ratio of fats to proteids; referred to underfeeding; the regulation of diet to reduce proteids; dilution of plain milk; the danger of reducing both proteids and fats; in certain cases whey or egg water is of advantage.

1. Recent Investigations Upon the Proteids of Milk.
2. Local Variations in the Mortality From Summer Diarrhea.—Henry D. Chapin (New York). Tables were presented exhibiting the proteids, albumoses and peptones contained in the milk of six women, 200,000 quarts of cows' milk, five sheep, pig, two goats, buffalo, mare burro, and pointed to the varying quantities. The difference in the case of the animals of higher intelligence are not so great as in the lower animals. The principal object in infant feeding should be to improve the cells. In considering the infant mortality from summer diarrhea other factors beside the milk supply must be taken into account. While the bacteria in milk may play no part, it was plain that souring milk is bad for infants. It was pointed out that with the tearing up of the streets of New York for the subway the infant mortality has largely increased; local conditions must be attended to.

1. A Case of Autointoxication with Urinary Findings.
2. Note on the Temperature Curve in Acute Croupous Pneumonia.—C. G. Jennings (Detroit). A report was presented of the case of a girl with erotic mother; attacks of auto-intoxication; for two years suffered from mild rise of temperature; tuberculosis suspected; last attack, languor, somnolence approaching coma; when aroused, nauseated; vomited every few hours; on February 4 improved, opened eyes, pulse 100; gradual improvement; February 10, able to sit up in bed; urinary sediment of very rare occurrence. In his second paper Jennings briefly referred to his subject, which he illustrated by a number of diagrams. In discussion it was advised to make further examination of the urine, and in adult cases the value of saline injections was advocated. The high acidity of

the urine often found in autointoxication of children was remedied by bicarbonate of soda.

Report of a Case of Pneumonia.—Walter Lester Carr (New York). The history of this case was not conclusive.

The following officers were elected for the ensuing year: President, J. P. Crozer Griffith (Philadelphia); First Vice-president, Henry D. Chapin (New York); Second Vice-president, F. S. Churchill (Chicago); Secretary, Samuel S. Adams (Washington); Treasurer, J. Park West (Bellaire, Ohio); Recorder and Editor, Walter Lester Carr (New York); Council, F. A. Packard (Philadelphia), William Osler (Baltimore), C. P. Putnam (Boston), F. Forchheimer (Cincinnati), J. C. Wilson (Philadelphia), Floyd M. Crandall (New York), Thomas Morgan Rotch (Boston).

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-fourth Annual Congress, Held at Boston, Mass., May 26, 27 and 28, 1902.

FIRST SESSION.

The president, John W. Farlow, Boston, in the chair.

President's Address.—Farlow, in his opening address, referred to the fact that the association had met in Boston 20 years ago, and again 10 years later, and remarked that in the interval great progress had been made in this particular line of medical science. The general recognition of diseases of the postnasal space and of affections of the accessory cavities, and especially the discovery of cocaine, had so enlarged the field of their labor that one of the things that struck the laryngologist most forcibly in looking at the program of the present meeting was the great variety of subjects treated compared with 20 years ago, when only two papers related to the nose, while 10 years later there were again only two on the nose out of a total of 17. Since 1892 the greatest advances had probably been in the knowledge of the accessory cavities and their diseases. In certain classes of cases a great deal of harmful operating (such as sawing and burning) had been done by those who paid attention only to the anatomy. He sometimes felt on this account that the introduction of cocaine had not been an unmixed good, as by its power of opening up the nose to inspection, and also producing local anesthesia, it had incited to the performance of much unnecessary surgery. The relation of the nose and throat to voice production, whether in speaking or singing, had not received the attention from laryngologists which it deserved, and they were far from agreed as to the influence exercised on the voice by the different abnormalities of structure, catarrhal affections, chronic tonsillar diseases, shape of the hard palate, etc. It is found on the one hand that the voice may be very unpleasant when the air passages are practically normal, and on the other that quite marked pathologic changes may exist with a voice of excellent quality.

Tumor of the Pharynx.—E. L. Shurly (Detroit). A case was reported of a growth in the pharynx which assumed the appearance of an accessory thyroid gland, and the removal of which was followed by myxedema.

Subglottic Sarcoma.—J. W. Gleitsmann (New York). Report of a case in which a sarcoma in the subglottis had been removed endolaryngeally by means of a galvanocautery snare. The operation was performed under the influence of cocaine and adrenalin and was a complete success. John H. Mackenzie (Baltimore) had frequently called attention to the danger and folly of operating on such cases through the mouth. Even if the removal of cancerous growths by the mouth was recognized, it was too soon for the case to be reported, as a recurrence might be expected within a year. D. Bryson Delavan (New York) pointed out that the case was one of sarcoma and not carcinoma, and added that in his opinion the achievement was a notable one. Other speakers agreed generally with Dr. Mackenzie that where the growth was malignant the method followed in this case is not advisable, though they seemed to think it justified by the result in the present instance, where the diagnosis had been clearly one of sarcoma. Gleitsmann, in replying, said five cases had been reported in which sarcoma of the trachea had been operated on in the same way and had remained cured.

Epithelioma of the Larynx.—Charles H. Knight (New York). Report was made of a case in which the microscopic testimony was contradictory as to the nature of a growth. On the advice of another specialist that it was benign, the patient had it removed, but there was a recurrence of the growth, followed by death four months later. In the course of his remarks Knight observed that a case of cancer of the larynx so extensive as to demand a removal of the organs was not operable. This dictum was called in question by William E. Casselberry (Chicago), who cited cases to show that such cases had been operated on successfully. A general discussion followed as to the extent to which the affected parts should be removed, and at the close Dr. Knight said he believed that the operation in the case reported was a wrong one, but it had been undertaken because the patient declined to have a more radical operation.

The X-Ray in the Treatment of Malignant Disease of the Larynx.—D. Bryson Delavan (New York). The study of this method of treatment is still in its infancy, and no positive deductions can yet be made as to its value. To the best of the speaker's knowledge not a single case of carcinoma of the larynx had been reported as cured by the x-ray, though in some cases

relief of symptoms had been obtained. In laryngeal cancer the advantages of early diagnosis and radical operation were marked, but it might be desirable to submit certain cases to treatment by the x-ray, which only meant a delay of two or three weeks. H. L. Swain (New Haven) said he had had no experience with the x-ray in laryngeal cancer, but from the relief of symptoms which had followed the treatment in other cases he thought it should be resorted to in all nonoperable cases, and he was not sure but that in cases that were operable they might be justified in waiting a week or two to see whether it had any beneficial effect.

Paralysis of the Vocal Chords.—Farlow (Boston) presented a patient who was subject to recurrent paralysis of the right vocal chord with no apparent cause except a marked asymmetry of the pharynx, which seemed to be congenital. T. A. DeBlois (Boston) said he had occasionally found locomotive engineers suffer from similar affections, and he attributed them to the effect on the nerves of the cold air from the cab window.

Occlusion and Stenosis of the Larynx.—J. Payson Clark (Boston). A report was made of a series of cases to show an improved method the speaker had devised for stretching the larynx and making prolonged use of intubation tubes in cicatricial occlusion and stenosis of the larynx.

Treatment of the Falsetto Voice.—Dr. Marcel Natier (Paris). Read by title and referred to Committee on Publication.

SECOND SESSION.

This meeting was held at the Harvard Medical School, where a series of illustrated papers were read on **The Relations of Embryology to Laryngology**. Charles S. Minot (Boston) explained and showed specimens illustrative of the development of the tonsils. Thomas Dwight (Boston) followed with an elaborate exhibit showing the growth of the face, and especially of the pharynx. Howard A. Lothrop (Boston) exhibited a number of lime-light views to demonstrate the anatomy of the inferior ethmoidal turbinate, with particular reference to cell formation, accompanying the same with some remarks on the surgical importance of these ethmoid cells.

THIRD SESSION.

The proceedings commenced with a discussion on **General Infections of the Upper Air Tract**. It was introduced by J. L. Goodale (Boston), who dealt with the pathology of the subject. After referring to the great number of diseases that were directly or indirectly traceable to the tonsils, he said the clinical evidence favored the view that the lymphoid tissue was always affected in such cases. The tonsils could not be regarded as protecting organs, but rather as communicating channels through which infections might be introduced into the system. H. L. Swain (New Haven) followed with a paper on the symptoms and treatment. After remarking that the lymphoid tissue must be regarded as part of the general lymphatic system, he proceeded to say that in most cases the more thorough the removal of the tonsils the better, for even small tonsils when porous and otherwise diseased make quite as much trouble as larger ones. It might seem that laryngologic specialists needed no urging to do more than they are doing. As to the question whether the tonsils are normally a necessary institution, he believed there is no reason why they should be considered in any other light than as equally normal with any other lymph node in the body. No tonsil should be removed because it might give trouble later. What should be done is this, if it is known that the tonsils have done any mischief whatever then get rid of them, and of course the very large or very spongy tonsils must be removed for mechanical reasons. Apart from the question of removal, is there any way of guarding against systemic disturbance in attacks of acute adenitis in childhood? If the child is too young to gargle, a spray with a liberal delivery will accomplish much. If substances are used that open the nose and free it from discharge, a great deal can be done by insufflating simple boric acid through the nose itself and thus into the nasopharynx. Abundance of suprarenal extract sprayed into the nose not only opens it for the use of the boric acid, but does good in the way of contracting the tonsil, reducing inflammation, and giving more space for breathing purposes at night. Peroxid of hydrogen has also a legitimate use in some cases, but if sprayed through the nose it must be used in very much weaker solutions than one would think of using in the pharynx. In regard to the profounder systemic disturbances resulting from these infections, he felt little inclined to use arsenic or preparations of arsenic when the conditions were acute. He believed more dependence should be placed, first, on the local cleansing and thorough reduction of the inflammatory conditions, and secondly upon change of air, good food and nutrition. In addition the use of such substances as beef juice and bone marrow may be tried. After clipping off a portion from the adenoid tissue, only a part of the work is done; much remains to be done in the way of building up the system. Clarence C. Rice (New York) deprecated the use of astringents, and said he found warm applications of assistance. William E. Casselberry (Chicago) said he depended to some extent on the antiseptic properties of nitrate of silver. Emil Mayer (New York) said that mild cases could be relieved by clearing out the tonsils. E. Fletcher Ingals (Chicago) reported that there was a reasonable prospect of aborting the disease in some cases by using guaiacol oil.

[To be concluded.]

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

UNITED STATES BUREAU OF ANIMAL INDUSTRY.

BY

CH. WARDELL STILES,

of Washington, D. C.

Abstract of the Seventeenth Annual Report of the Bureau of Animal Industry, U. S. Department of Agriculture, for the Year 1900. Washington, D. C. 642 pp., 257 figs. Government Printing Office, 1902.

Report of the Chief of the Bureau (pp. 9-34) contains a general review of the year's work, statistics on meat inspection, etc. *The free distribution of blackleg vaccine* (pp. 35-51), by V. A. Norgaard. Of the 369,258 head of cattle vaccinated and reported upon, 2,051 head, or 0.55% died. The estimated annual loss from blackleg (symptomatic anthrax) in the same states before the use of vaccine, was 12.07%. It cost the Bureau \$3,421.28 to manufacture and distribute 1,076,000 doses of vaccine, or \$318 per 100,000 doses; the commercial price of 100,000 doses would have exceeded \$10,000.

Pathologic conditions found in meat inspection (pp. 52-62) is a reprint of Dr. D. E. Salmon's paper before the American Medical Association, at Atlantic City.

International live stock exposition of 1900 (pp. 63-68, pls. 1-9). Notes and illustrations of prize winners.

The work against sheep scab (pp. 69-86), by D. E. Salmon. The total number of sheep dipped was 934,431. Reports obtained from flocks aggregating 515,112 head showed effectiveness in 86%. This is a remarkable result for a single dipping. In a number of flocks the effectiveness was 100%.

Ocean transportation of cattle and horses (pp. 87-90, pls. 10-19). The losses have been reduced from 1.6% in 1890-91 to 0.19% in 1900.

Plant poisoning of stock in Montana (pp. 91-121, pls. 20-32), by E. V. Wilcox. A general discussion with excellent illustrations. During 1900, 14,425 sheep, 147 cattle, and 154 horses were poisoned; of these, 5,143 sheep, 90 cattle, and 6 horses died.

Rabies: Its cause, frequency and treatment (pp. 122-157), by D. E. Salmon. An excellent general discussion, reprinted from the Yearbook for 1900.

Market milk: A plan for its improvement (pp. 158-193, pls. 33-42), by R. A. Pearson. A responsible body of citizens should be organized as a milk commission and should secure assistance from a veterinarian, a physician, a bacteriologist, and a chemist. Circulars, explaining the conditions which should exist on every milk farm, should be sent to farmers announcing that when any dairyman notifies the commission that he is conforming with the requirements, his dairy will be inspected. If found to comply with the conditions, an endorsement to this effect should be given to the farmer or dairyman, who can use it in any proper manner to assist in securing trade.

Dairy products at the Paris Exposition of 1900 (pp. 194-222, pls. 43-52), by Henry E. Alvord.

Meats and meat products at the Paris Exposition of 1900 (pp. 223-234), by Henry E. Alvord.

Poultry raising on the farm (pp. 235-246, figs. 7-37), by D. E. Salmon. Of interest to country practitioners.

Chinese incubators (pp. 247-253, figs. 38-40, and pls. 53-55), by G. D. Drill.

The thirteenth International Medical Congress (pp. 254-259), by E. A. de Schweinitz.

The tenth International Congress of Hygiene and Demography (pp. 260-261), by E. A. de Schweinitz.

The bacillus of tuberculosis (pp. 262-280), by E. A. de Schweinitz. A paper read before the Congress of Bacteriology and Parasitology, Paris, August, 1900, prepared "for the purpose of emphasizing the fact that the study of tuberculosis in the United States is not in the background; that many men are devoting their time to these investigations; and that their results deserve very careful consideration."

Information concerning the angora goat (pp. 281-355, fig. 41, and pls. 56-73), by G. F. Thompson. A reprint of Bulletin 27, Bureau of Animal Industry.

Vermineous diseases of cattle, sheep, and goats in Texas (pp. 356-379), by C. W. Stiles. The intratracheal injections in verminous bronchitis do more harm than good; their value has been greatly exaggerated; 30 treated animals were examined postmortem and in only one case were the parasites dead. Vermineous gastritis in cattle may be caused by *Strongylus ostertagi* which encysts in the wall of the fourth stomach. Coal-tar creosote, 1%, is advised for infection with worms which are free in the stomach; treatment for encysted worms was unsuccessful.

The cattle ticks (Ixodoidea) of the United States (pp. 380-491, figs. 42-256), by D. E. Salmon and C. W. Stiles. This paper, which is profusely illustrated with black and white and with colored figures, is the most extensive article on the subject of ticks ever published in English. Besides the descriptions of all the species reported for American cattle (nearly all of which have been reported also as parasites of man), keys are given to all the known ticks of the world.

Contagious diseases of animals in foreign countries (pp. 492-502), by G. F. Thompson.
Miscellaneous information (pp. 503-591).
Rules and regulations issued in 1900 (pp. 592-607).

BERI-BERI FROM RICE EATING.

BY

ALBERT S. ASHMEAD, M.D.,
 of New York City.

To the Editor of *American Medicine*.—In your *American Notes*, "Beri-beri from Rice Eating," page 760, issue of May 10, you quote from a report by Assistant-Surgeon Littlefield of our War Department, whose conclusions are said to corroborate the theory advanced by Dr. Saneyoshi, of the Japanese Navy, that beri-beri is due to a diet of Chinese (white) rice, etc. Allow me to observe that one swallow does not make a summer and that Dr. Littlefield's conclusion has been made a few times before during the past 2,000 years. Specialists the world over do not hesitate to acknowledge that the etiology of the disease is today as puzzling as it was at the very beginning. Dr. Van Gorkom, of the East Indies, concludes a criticism of the rice etiology of beri-beri as follows:

1. It is evident that the hypothesis that beri-beri is an intoxication (Van Dierens' theory) cannot be sustained because of reasons, critical, historic, empiric, and chemic which oppose it.

2. A great number of facts, pathologic, anatomic, clinical and epidemiologic, oblige us to have the conviction that beri-beri is an infectious disease, caused by a living virus, but we do not yet know the nature of that virus.

3. Dr. Vorderman, in his inquiry, has not given proof of any dependence between nutrition and the appearance of beri-beri in regions not immune of that disease.

4. There is no relation between beri-beri and nutrition of rice, either from a geographic or etiologic point of view.

5. The experiments of Dr. Eijkman on polyneuritis of fowls, show that in an infected area of beri-beri the amount of rice consumed might probably exercise a considerable influence on the existence of the malady.

6. The inquiry of Dr. Vorderman gives only a slight suspicion of this view.

7. A modification in the nourishment of prisoners as a means to combat beri-beri is not admissible in the islands of Java and Madoura before we know the cause of the disease.

He also says that cases of beri-beri diminish as much in the army as in the prisons independently of nutrition with rice decorticated or non-decorticated.

Dr. Vorderman, in acknowledging the great influence of alimentation with decorticated rice, is aware that this is not the only cause, because one finds beri-beri in 71% of some Java prisons, where this rice is the principal nourishment, but that there is also a prison in Bangkallan where notwithstanding this nourishment there is not beri-beri. He believes that there is an influence of microorganisms. Dr. Vorderman found in 37 prisons where they had given red rice (with the pericarp), beri-beri in a single prison 2.7%; in 13 prisons, with alimentation mixed (red and white rice), he observed beri-beri in 6 prisons (46.15%), and in 51 prisons, where they gave white rice (without the pericarp), beri-beri existed in 36 prisons, or 70.98%. But it was to geographic position more than to white rice that he attributed the increase. In the eastern part of Java, and in the island of Madoura, nearly all the prisons were infected with beri-beri. But it is only within the last 12 years it was observed that beri-beri cases had occurred there after some other patients had been transported to these prisons independent of any change or difference in rice diet. Considering the cases aggregate we find of 88,028 prisoners who ate rice with the pericarp there had been 2.68% sick with beri-beri. And among 62,238 prisoners fed with rice decorticated the percentage was 2.95%, hardly any difference. The general conclusions of the Java doctors on the subject of beri-beri are as follow:

1. Beri-beri is only observed in certain countries or in certain regions, and within these regions in very definite places, where the alimentation does not differ from that of the surrounding country (sometimes it is limited to a few wards of a city, for instance, in Yokohama, Tokio, etc.).

2. Several times beri-beri has been observed where the soil had been stirred up, and where the coincidence could not fail to be recognized.

3. Several times it has shown itself only in certain buildings, and on these occasions the disease had an intensity which only appeared in exceptional cases outside of these buildings.

4. When a place or a building is free from beri-beri, the dis-

ease may appear when several patients, having that affliction, have spent some time in them.

5. Habitually the patients get better when they are put into new buildings.

6. Beri-beri appears especially in the seasons when the daily oscillations of the temperature are very great and when many colds are observed.

7. It attacks especially the middle-aged persons.

8. Beri-beri shows a great tendency to relapses, often in circumstances which preclude the possibility of any influence from alimentation and which are typical for an infection.

9. There are cases of cure (eradication) in which the patients have not changed at all their manner of living and their diet.

10. Beri-beri shows many anatomopathologic anomalies and clinical symptoms which belong to infectious diseases—inflammatory degeneration of the heart; the cells of the liver and of the kidneys are diminished and have a fatty degeneration; swelling of the spleen; anemia; swelling of the lymphatics; troubles of digestion and urination; the hair falls, and relapses are common.

A correspondent in the London *Lancet* recently objected to the alimentary theory of the Dutch East Indian physicians and the possibility of a germ being carried by white rice to propagate beri-beri, that the rice is always eaten well-cooked and a microorganism if it existed would be destroyed, and consequently could not have anything to do with the disease, I add to this very plausible objection that for many years Japanese rice (Chinese white rice) has been sold in all our New York stores. If it contained a microbe of beri-beri, that microbe would have been rampant among us for many years. We have never had beri-beri in New York, except on ships, and it had been contracted during the trip. I have found it on ships from East Asia arriving in New York harbor, in which no rice at all was eaten on the entire voyage, beans being used instead.

As to the white rice of the Chinese being a cause of beri-beri as alimentation pure and simple, let me observe that there is less beri-beri in China than in Japan and always has been. Besides, the geographic situation of beri-beri in Tokio is against the rice alimentation theory of Saneyoshi (and Littlefield). The low lying wards of Tokio are the notorious beri-beri localities; the higher wards are little affected even in June, July and August, the rainy season. Moreover, the patients convalesce quickly when removed from these low lying wards to the hilly districts behind Shinagawa. My own patients were carried up the hundred steps of Atango-yama every day to get oxygen from the stratum of air above the carbonic layer which they were forced to breathe on the lower plane. Carbonic gases were evolved from the millions of charcoal stoves in the city of Tokio, and these gases were held down by the heavy air of the rainy season. As to the improvement in February in Dr. Littlefield's district, in the cases supplied by native rice, I need only point out that in beri-beri districts improvement is natural, independently of change of diet, at the close of the rainy season. During the dry season no cases of beri-beri occur, although the people keep on eating their everlasting Chinese white rice in greater quantity than they do in the wet season, when beri-beri is most prevalent, for they need more rice in winter. The successful treatment by transportation of patients to an altitude for fresh air, or by administering oxygen, the hemoglobin only being deficient in every case of beri-beri, while the red corpuscles are normal, proves that the disease is not caused by insufficient alimentation. This beneficial effect of altitudinal treatment, and the fact that in cities where the disease is rampant the lowest wards have the largest percentage of cases, and the fact that it occurs only in the rainy season, taken together, make me infer that the disease is due to some poison heavier than air. As oxycarbonation of human blood does not diminish red corpuscles and does diminish the hemoglobin, and in the same proportion as presented in beri-beri, I conclude that carbon is the poison. In Japan the source of the carbon is the national charcoal stove, and the Japanese constantly sit around these "hibatchis" smoking, or drinking charcoal-heated tea. In the wet season there is no ventilation, because of the dampness, and the outside wooden walls are always closed to protect the paper walls from the rains. No one in Japan would claim that because the diet of a community had been changed during September or October, this being followed by a diminution of beri-beri cases in November and entire absence of cases in December, January, February, March, April and May, that the diet which had preceded the change was the cause of beri-beri.

ORIGINAL ARTICLES

ON HEREDITY IN BILATERAL CYSTIC KIDNEY.

BY

WILLIAM OSLER, M.D.,

Professor of Medicine, Johns Hopkins University.

Since reporting the two cases in *American Medicine* of March 22, the following case has come under observation, illustrating the unusual feature of heredity in this condition:

B. E. B., aged 39, Chestnuthill, Mass. He was perfectly well until two years ago, when he had influenza severely. He at that time had hematuria, and three years before, while coasting, he tripped and had a fall, and then had hematuria. Before this he had noticed that he had not been in as good health as usual, and had some fullness of the abdomen, more at times than at others, and had felt a hardness in it. He was under the care of Dr. Baldwin, of Chestnuthill, and he at this time began to fear that he had the same malady of which his mother died. In 1882 Dr. Fitz performed a necropsy on his mother and found bilateral cystic kidneys. This statement is confirmed in a letter from Dr. Fitz, who says that the patient was supposed to have scrofulous glands. She died unconscious in the fiftieth year of her age, probably in a state of uremia.

With the exception of occasional attacks of dyspepsia, the patient had been strong and well, had taken plenty of exercise, had no pain in the back, no lameness. He has been playing golf and has felt very well and vigorous. He had been seen by Dr. Folsom and by Dr. Fitz, both of whom decided that he had bilateral cystic kidneys.

Present Condition.—The patient looks very well, of good color. There is nothing in his appearance to attract attention. There is a little fullness in the upper abdomen. I dictated the following note at the time of examination: Robust, healthy-looking man; weight about 145, stripped; good color; tongue clean. Pupils are of medium size, react well to light and on accommodation. Superficial arteries are sclerotic. Heart: apex beat in fourth and fifth, in and just inside the nipple a little forcible; rather wide area of pulsation; aortic second palpable; soft systolic at apex; ringing, accentuated aortic second.

Abdomen.—Symmetrical; looks a little full in proportion to the chest. The costal border in the nipple line is lifted on both sides; a little greater fullness below the right costal border. The flanks bulge considerably. Girth of abdomen at navel, 85 cm.; at level of ensiform, 89 cm. From behind slight bulging in both flanks. When he stands up there is a marked prominence of the abdomen, particularly in the flanks. The lower ribs have been spread by the tumors. On palpation both flanks are occupied by large masses. On the left side, the larger, the tumor extends fully three inches below level of navel; not so much to be felt except on deep pressure below the costal border in the nipple line. On bimanual palpation the mass can be lifted up and visibly pressed forward; irregularities can be distinctly felt. The descending colon runs over it, and can be felt as a cord (he himself has noted that it can be moved from side to side). In the right side the mass is not so large. The colon is felt in front of it. There are several distinct nodular prominences; one can feel definite hemispheric irregularities with the greatest ease. Both masses descend with inspiration. The liver is not enlarged; perhaps a little pushed up by the tumor. The thyroid is not enlarged; both lobes are palpable. Both discs are clear.

Urine.—Pale, straw yellow; clear; no precipitate, acid, 1.012; faint trace of albumin; no sugar; no diazo. Microscopically (centrifugalized specimen) no casts to be found; few squamous cells.

The bilateral tumors, the cardiovascular changes, the recurring hematuria and the condition of the urine make the diagnosis quite clear. The unusual feature is the fact that his mother died of the same disease. So far as he knew, no other members of the family had been attacked.

With reference to heredity in this condition Morris notes as follows: "Polycystic kidney has been known to follow a natural labor in a mother of five children; it affected only one of her kidneys. There cannot be said to be more than a slight hereditary tendency to polycystic kidney. The three cases in the same family reported by Bar have been just referred to. A case is recorded in which it affected one kidney of a woman two members of whose family died of post-scarlatinal nephritis, and another child, a daughter, had a polycystic kidney." (Vol. i, p. 656.) In a recent paper by Borelius (*Nordiskt Med. Arkiv*, abstracted in the *Journal of the Amer. Med. Assoc.*, 1902, 1), three of the four cases which he described belonged to the same family, father, son and nephew.

PROGNOSIS OF PLEURISY WITH SEROUS EFFUSION.¹

BY

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I have undertaken in this paper to study the outcome of cases of pleurisy in which there was good evidence for believing that a serous effusion was present, but in which there was no evidence of tuberculosis, either in the lung or in other organs. I have excluded all cases in which the signs pointed only to a dry pleurisy or to a chronic pleural thickening, as well as those in which the effusion was known to be purulent, also all in which there was evidence of tuberculosis in the lung or in any other organ. In the group of cases so defined I have studied the following problems:

1. What are the chances that a patient who has had pleural effusion will later become more tuberculous than the rest of us, that is, will show a degree of tuberculosis demonstrable by our present methods of examination? I assume in this that we have all of us our bit of tuberculosis, and that the important question is how much we have.

2. In case the patient does become "tuberculous" in the sense above defined, what is the severity and what the rate of progress in the average case?

3. In case the patient does not manifest any signs of tuberculosis after recovery from the pleurisy, is he likely to develop any other disease which can reasonably be supposed to be due to the pleurisy?

4. Is there anything in the physical signs or in the history of cases of pleural effusion which should enable us to predict what will be the ultimate outcome of the case, whether recovery will be complete and permanent?

5. How long a time must elapse after the occurrence of the pleural effusion before the patient can consider himself free from the danger of contracting tuberculosis?

In studying these problems my material has consisted of 152 cases of pleural effusion which I have followed up by letter and by personal visit after their apparent recovery. The total number of cases sought for was about 300.

An analysis of these cases shows the following statistics:

Number living and sound after 15 to 20 years or more.....	21
" " " 10 to 15 " "	23
" " " 5 to 10 " "	36
Total over five years	80
Number living and sound 4 years after.....	14
" " " 3 " "	7
" " " 2 " "	16
Total under five years.....	37

¹ Read at the Association of American Physicians, April 3, 1902, at Washington, D. C.

Number died of other trouble not tuberculosis and not obviously connected with the pleurisy:

After 10 years or more.....	1	
" 5 " " ".....	2	
" 2 to 5 years or more.....	11	
Total.....	14	
Number contracted tuberculosis 16 years later.....	1	
" " " 10 to 15 years later.....	4	
" " " 5 to 10 ".....	8	
" " " 1 to 5 ".....	10	
Total.....	23	6 still alive

On the basis of the above statistics I am led to the following conclusions:

1. Eighty per cent of the patients, having uncomplicated serous pleurisy, who have been followed for five years or more are in good health. (More than half of these have been followed for ten years or more.)

2. Ninety per cent are apparently in full health at the end of from two to five years—that is, the pleurisy has no immediate connection with any other affection.

3. Fifteen per cent of the patients sooner or later developed demonstrable tuberculosis of lung or bone. But in only 3% has this tuberculosis manifested itself within two years of the date of pleural effusion.

4. The type of tuberculosis which occurred in these cases was, as a rule, mild and of slow course. Death did not occur until five years or more after the pleurisy in one-half of the 23 patients who developed obvious tuberculosis. Six of the 23 are still alive, in despite of the tuberculosis, after periods of 10, 9, 6, 4, 2 and 1 years.

5. Nevertheless, a very rapid form of tuberculosis may develop many years after the pleurisy—9 years and 16 years respectively in two cases of this series—so that the patient is never safe from the possibility of death from tuberculosis merely because his pleurisy lies 10 or 15 years behind him.

6. A study of the clinical records of the whole group of patients under consideration shows that among those who have remained in perfect health for five years or more only 25% had any family history or past history of tuberculosis, while of those who have become tuberculous two-thirds had tuberculosis in their immediate family, or in their own past history. A careful history, therefore, is of great importance in the prognosis of pleural effusion.

On the other hand, the physical signs during the course and convalescence of the pleurisy were not markedly different in the group of cases in which tuberculosis later developed from the signs in those who have remained well.

7. Recurrence of the pleurisy itself in patients who have recovered from the original attack occurred in only five cases, or 3% of this series.

Reaccumulation of the fluid immediately after tapping is rare, occurring in only two cases, or 1.3%.

8. Among the 14 patients who, after recovering from the pleurisy, died of some other disease, not one developed any disease which could reasonably be considered a result of the pleurisy—the causes of death were alcoholism, hepatic cancer, dysentery, pulmonary embolism, mitral stenosis, aortic regurgitation, chronic nephritis (3), cerebral hemorrhage, measles, pneumonia (3).

9. Finally, I would call attention to the fact that I have made no attempt to discover what percentage of this whole group of cases is due to tuberculosis. So far as my statistics go the cases may be all of tuberculous origin.

What my figures do tend to prove is, that whether pleurisy means tuberculosis or not, the outlook is bright provided no family history of tuberculosis clouds it. If pleurisy means tuberculosis, it is a very mild form of tuberculosis, and one from which recovery is usually complete under proper treatment. Even if the lungs are attacked later the type of the disease is unusually mild.

[In this research I found that the patients most difficult to trace and get news of were those who are still alive and in good health, while the data relative to the 31 fatal cases were much more easily gathered. The sick man is a marked figure in the minds and memories of his neighbors, and through them we easily get news of his last illness and surviving relatives. It is the sound and healthy individual who is lost sight of. This, I think, tends to explain the dark views often held of the outcome of pleurisy.]

A PRELIMINARY REPORT ON STERILIZATION OF RUBBER GLOVES, ETC., BY FORMALDEHYD GAS, AND ON THE USE OF MILD ANTISEPTICS INSIDE THE GLOVES.*

BY

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In 1899 J. Geppert (Bonn)¹ first revealed a serious error in the methods of testing the potency of the chief chemical antiseptics, by submitting microorganisms of various kinds, in pure cultures, to the action of the individual antiseptics experimentally.

Germs practically always ride on or in something, or are attached to some vehicle. It is only in connection with this carrier that they can be conveyed and exposed to an antiseptic and afterward implanted upon a culture medium. In this transfer the germ carrier, whether it be some filament or smallest particle of solid or fluid substance, is liable and often very capable of absorbing and carrying over, along with the germs experimented with, enough of the antiseptic to prevent the growth of the germs in the culture medium. This is proved by the fact that germs from the same lot and under the same conditions do grow upon the same culture medium if the antiseptic has been neutralized or otherwise eliminated from the germ carrier before it is implanted upon the medium for growth. Thus, in the case of bichlorid of mercury, for instance, Geppert neutralized the HgCl₂ in the carrier or vehicle by immersing it in a sterilized solution of ammonium sulfid, which is not an antiseptic. This has become the accepted reagent in such tests of HgCl₂ by practical bacteriologists who appreciate the principle involved. Many practical physicians and surgeons are still not informed of this principle, as is shown in a number of publications of detailed experiments, particularly with formaldehyd gas. A couple of instances to illustrate: At the Columbus (1899) meeting of the American Medical Association before the section on State Medicine, W. K. Jacques,² of the Chicago Board of Health, made a supposed test of the effect of formaldehyd gas upon streptococci, and diphtheria and typhoid bacilli, by exposing these germs, together with their culture medium, to the action of the gas. That was a mistake because the culture material or food for germs absorbs the gas most readily, and its qualities as a food for the germs are much more quickly destroyed than the germs themselves are killed by the gas; and then "no growth afterward" is far from being a proof of an adequate germicidal effect of the gas. The same error occurs in the experiments made by John E. Owens,³ chief surgeon of the Illinois Central Railway Company, and reported before the American Academy of Railway Surgeons, at Omaha, in October, 1899. He likewise exposed the culture medium (blood serum) after it was impregnated with pathogenic microbes, during 5½ hours to the action of formaldehyd gas from formalin evaporated from sheets suspended in a room. He came to the conclusion that two ounces of the 40% solution was enough, when

* Presented in part at the meeting of the Mississippi Valley Medical Association at Put-in-Bay.

evaporated, to effect at least a surface sterilization of everything in a room of 500 cubic feet, while the standard accepted by at least several creditable investigators is four times that amount. The experiments of both these men ending where they did, prove nothing at all. They might have been made to show something by grafting a platinum loop full of the exposed spoiled cultures upon new supplies of the medium that were not spoiled by any antiseptic, and then placing these in an incubator for about 10 days. Dr. Owens also subjected three kinds of pathogenic germs dried respectively in a loopful of some vehicle upon clean slides to the same test, and received no growth after 36 hours' incubation. But that is too short a time to decide for a nongrowth. C. H. Richardson,⁴ of the Boston General Hospital, early advocated the sterilization of rubber gloves in a simple tin box for two hours by formaldehyd gas generated by heating formic aldehyd pastilles with an alcohol lamp (Schering's apparatus). He mentions a number of germs that he says are killed by the same procedure, but he fails to state the important details in his bacteriologic methods or technic as every one should do if he wants to convince others. His brief, general and summary statements go for little in that respect.

Such inaccuracies and errors as I have cited on the one hand, and on the other the fact that men whose work in this line we have no cause to question, as J. J. Kinyoun and E. K. Sprague,⁵ of the U. S. Marine-Hospital Service, and Abba and Rondelli,⁶ in a disinfecting institution at Turin, Italy, have not found the germicidal action of formaldehyd gas alone so simple, uniform and certain even for surface disinfection; while its deeper penetrating effect is admitted to be small, these facts induced me to accept nothing as proved in this matter and to test every formalin apparatus myself with germs of known virulence, in pure cultures and supplied by competent bacteriologists, before relying upon the service of any standard or improvised apparatus.

As germ carriers, I chose little pieces of sterilized surgeon's silk, which would probably absorb and hold the least amount of the gaseous antiseptic. These were aseptically dipped into a watery menstruum containing the microbe desired in pure culture. They were then wrapped in small pieces of sterile gauze and these parcels inserted each in a sterile test-tube, half way to the bottom, and the cotton stopper replaced. Three or four tubes of each of the different kinds of germs were thus prepared and labeled with the name of the germ and 3, 4, 5 and 6 hours, the time that each was intended to be exposed to the gas.

The 3 hour tubes of all the kinds of germs were then wrapped in sterile gauze and towels to make a package by themselves. The same was done with the 4, 5, and 6 hour tubes, and each bundle marked plainly. When the formaldehyd chamber or box had become filled with gas these bundles were put into it in such order as would permit their withdrawal speedily and in the order desired. When all these bundles had been smoked, they were usually exposed out of doors for a few days, or in a place where the wind could strike them and blow out the gas from them, so that it could not be detected, by its odor at least. Then the different hour packages were opened, and the threads in each tube were placed into a bouillon culture tube, which bore a corresponding label and the date of the impregnation. All these culture tubes were then placed into an incubator and observed, never less than ten days.

Experiment 1.—Dr. Herzog, pathologist of the Chicago Polyclinic and of the German Hospital, supplied me with virulent anthrax bacilli with spores. Sterilized pieces of braided silk were impregnated with these and mounted in 12 sterile tubes as described. These were placed in two packages and treated for one and two hours, respectively, in the formaldehyd sterilizer in the laboratory of B. K. Hollister & Co. The threads were afterward placed in bouillon cultures by Dr. Herzog, and those smoked for one hour grew after 48 hours, while those treated for two hours grew after 72 hours in the brood oven.

Dr. Herzog remarked, "It appears, therefore, that the exposure to formaldehyd vapors retards the development of the spores, but does not kill them."

Experiment 2.—Fifteen sterile pieces of thread were impregnated with spores bearing anthrax bacilli, and placed in five packages, each having three threads amply wrapped in sterile gauze. One of these packages was marked "control" and kept in reserve, and the other four were marked 2, 3, 4 and 5 hours respectively, and treated with the gas in the Hollister apparatus for the periods of time indicated. They were then transferred in a sterile glass jar to the German Hospital laboratory, and after allowing two days for evaporation of the gas the threads in each package, and also those in the control package, were placed into an equal number (3) of bouillon culture tubes which were correspondingly marked, together with the date of implantation. All were then incubated for 12 days at a temperature of 30° C. The three control tubes grew, but no growth occurred in any of the 12 tubes containing the formalized threads, the two hour threads being also sterile, thus offsetting the nonsuccess of the two hour specimens in the preceding experiment.

Experiment 3.—Three sterile threads for each kind of germ were impregnated with streptococci, staphylococci, colon bacilli, and *Bacillus pyocyaneus aureus*, all of known virulence, by Dr. Herzog, and delivered to me in sterile petri dishes, each kind by itself.

I placed them, each one wrapped in a small piece of sterile gauze, into a sterile test-tube, dry, in about the center of the tube, not in contact with the cotton stopper, and labeled each tube. These tubes were then divided into three lots, each of which contained one of the four kinds of germs. These parcels were treated in Hollister's formaldehyd sterilizer for 1, 2 and 3 hours respectively. These packages were conveyed aseptically to Dr. Herzog's laboratory and by him placed into 12 bouillon tubes. After five days' incubation 11 of the tubes developed nothing, while one marked "colon" and treated three hours, showed a growth consisting of cocci (not bacilli).

Dr. Herzog reported: "This growth, of course, is due to a contamination of the silk in handling it after it had been sterilized. The outcome of the experiment shows that all four types of microorganisms worked with were killed by one hour's exposure to the formalin vapors."

The Hollister apparatus has a connection with a chimney flue at its top and the gas is generated by the lamp of his design placed under it.

Experiment 4.—Twelve test-tubes, each containing two small pieces of braided silk wrapped in a small piece of gauze and held in the tube about one inch distant from the cotton stoppers, were sterilized upside-down in a Boeckman steam sterilizer, and dried in the same.

The pieces of thread were then impregnated in sterile dishes, with spore-growing anthrax bacilli of known high resistance or virulence, from the laboratory of Prof. Zeit, of the Postgraduate Medical School, and were then returned to their respective tubes. Six of these tubes were then treated with the gas in a simple apparatus in my private laboratory, all for 3½ hours. After three days, allowed for evaporation of the gas, the threads in them were placed into bouillon tubes in which they remained sterile for over two weeks. The other threads in the remaining six tubes were treated in three lots of two tubes each for 1, 2 and 3 hours respectively, in a simple contrivance of Dr. J. Frank's, consisting of the bakeoven of a gas or gasoline stove without a chimney connection, but with a door on one side near the top. Into this oven was fitted one end of a tin tube of equal size and about 15 inches long, which was fitted at its other end to the top of the formaldehyd lamp (not Hollister's) and conducted the gas into the box. All the threads herein treated showed growth of the anthrax bacilli in the bouillon cultures subsequently in three days, with no difference between the one and three hour tubes.

Experiment 5.—Thirty-five tubes holding threads in gauze in each, and stoppered with cotton as in the last experiment, were also sterilized by steam, but by mistake not inverted during that process, so that their contents and stoppers were not dry afterward. The threads of five of these tubes were impregnated, one each with staphylococci, and bacilli of anthrax, pyocyaneus, colon and subtilis, and set aside as "controls." The remaining tubes were divided into lots of 15 each, and their threads impregnated exactly alike, as follows: Each of the five kinds of organisms here dealt with was placed upon the threads of three tubes, which were labeled 1, 2 and 3 hours respectively, with the name of the microbe.

The five 1 hour tubes (one of each kind), the five 2 hour and the five 3 hour tubes were gathered into three packages, well wrapped in gauze and marked 1, 2 and 3 hours, and treated accordingly, the three of one lot in my private apparatus and the three of the other lot in that of Dr. J. Frank. After respectively nine and six days' incubation, the result was as follows in the bouillon culture tubes: All the "colon" tubes and the 3 hour pyocyaneus tube in the "G" lot remained sterile, while the 1 hour and 2 hour pyocyaneus tubes and all the staphylococcus, anthrax and subtilis tubes showed growth.

The 15 tubes in the "F" lot all grew, and showed no difference between the kinds of germs or between the one and three hours of exposure. The five control tubes all grew. It was at once apparent that the poor result of this experiment was due to the cotton stoppers having become very moist and too firmly

packed in the 30 tubes holding the threads, to be acted upon by the gas. Therefore, this entire experiment was repeated as described, but with care to ensure the tubes and their stoppers being dry by having them inverted in the steam sterilizer.

The result then was far different. After 10 days' incubation all the 15 tubes in the "G" lot showed "no growth," excepting the "1 hour" anthrax and subtilis tubes, which developed a growth after six days.

But in the "F" apparatus each of the 15 tubes showed growth, as did also the five "controls."

As the "F" apparatus showed no positive germicidal effect at all in these tests it was no longer worked with. But six more of these culture tests, each with 15 tubes and five varieties of germs, each in pure culture and of known virulence, were made with my private apparatus. All of these experiments showed likewise that 3 hours' exposure to the gas invariably killed virulent spore-bearing anthrax and also *Bacillus subtilis*—the severest or most resistant test objects usually employed; while 2 hours' exposure usually killed all the pus microbes and others that are more generally encountered in medical or surgical practice.

My apparatus consists simply of a tin bread-box, 11 by 12 by 15 inches in size, well coated inside with white enamel paint and placed endwise on a four-footed frame upon a table. The Hollister lamp was placed under it with its chimney projecting into it a short distance, through a hole of just sufficient size cut in the bottom.

At the top this chamber is connected with a chimney flue in the building by means of a very small and controllable aperture in a speaking-tube connection. The object in this arrangement was to facilitate the desirable displacement of the air in the chamber, by warming it by the lamp underneath and permitting it to escape by the top. Then the formaldehyd gas would be less or not so long mixed or diluted by air and would be correspondingly more effective. Furthermore, a slight current would subsequently be favored in the gas filling the chamber, which would also add to its efficiency in a similar manner as in steam, of which we know that in the absence of a pervious vacuum succeeded by steam alone and under pressure it is not steam crowded with air into a closed receptacle, but a current of steam ("stroemender Dampf") that kills in steam sterilizers.

The sterility of the inner surfaces of three pairs of rubber gloves that had been treated in the apparatus described for three hours, was tested by pouring a culture medium (bouillon) into each glove and then into Petri dishes. No growth resulted in any of these. But we need more than sterility of the inner and outer surfaces of these gloves. Their impermeability can not be trusted in so serious a matter as surgical asepsis; because needle punctures and similar injuries of any new glove are too easily made and of frequent occurrence. Therefore the skin of the hands with its appendages and its excretions must be looked out for quite as much with as without the use of any kind of gloves. As many previously inaccessible germs in the deeper strata and crypts of the skin come to the surface and accumulate with the sweat (which without such gloves would mostly have evaporated), it appears to me to be extremely desirable to make this perspiration innocuous by using mild aseptics inside of the gloves. For this purpose I use boric acid powder (sterilized in the same apparatus) in place of the inert and insoluble talcum powder in the gloves to preserve the rubber and to facilitate their application, which is very much easier this way than when they are filled with water. After they are applied, each glove is held open in succession by the fingers of the other hand so as to enable some assistant to pour about half an ounce of 50% to 55% alcohol into the palm of each hand, from whence it is milked into each finger of the gloves, and after five to ten minutes the gross excess of this fluid and of boric acid dissolved in it is made to escape at the gauntlet if there is any likelihood of its dripping into the wound.

The germicidal action of alcohol so diluted was ascertained and proved by the very creditable investi-

gations of Ahlfeld,⁷ Reinke,⁸ Epstein,⁹ Schaffer,¹⁰ Petrasky,¹¹ W. v. Brunner¹² and Salzwedel and Elsner.¹³ According to their investigations such a large proportion of water must be combined with the alcohol because of its superior softening and penetrating effect upon the germ envelopes which are seemingly hardened but not readily penetrated by alcohol alone. Ahlfeld holds that germs are readily or safely killed by alcohol only, or chiefly, if they are water-soaked so that a diffusion of currents ensues by the abstraction of the water from them by the alcohol.

To determine the practical merits of this entire procedure, and to ascertain how much danger there might be from the little perforations in the glove fingers that they very soon get, I made several series of culture tests of the "glove fluid"—mostly sweat—that had accumulated inside of the gloves during several hours of operating, when certainly only very small traces, if any alcohol remained, because usually variable quantities of this fluid had already been repeatedly milked out at the gauntlets during the work. Thus as one series: the fluid from both gloves was received into a bouillon tube in eight instances, in which the hands had been scrubbed at least 15 minutes in hot water and soft soap, then treated with alcohol and with 1-2,000 HgCl₂ in succession and then the gloves were applied dry, powdered with sterilized boric acid, and finally the diluted alcohol was poured in. In another series of eight pairs of gloves in which the hands had been treated in the same manner, but with the HgCl₂ omitted, the fluid was tested in the same manner. In a third series of four instances the fluid in the gloves of one and the same assistant was tested, he having scrubbed his hands, then used alcohol and HgCl₂, and the boric powder dry without the alcohol in the gloves. In none of these 20 tests did any growth of any kind ensue during an observation of never less than 10 days—aside from an occasional growth of fungi owing to accidental contaminations. Then three pairs of used gloves were tested by pouring the culture into them immediately after taking them off and plating it. Here one colony was obtained in the culture from the gloves of a nurse assistant. Then thinking that the boric acid might possibly vitiate our results by inhibiting the growth of germs, we discarded it in the next series of 17 tests, and used the customary inert talcum powder, sterilized, in its place. In all of these instances the hands had been cleaned by scrubbing, alcohol and HgCl₂ solution in succession. In fourteen of these instances the dilute alcohol was used in the gloves with the talcum powder and in three it was omitted. But the results with this inert powder were as negative as with the boric acid, there never being growths aside from accidental fungi in a few cases. Therefore, the almost uniform nongrowth from the culture tests of the "glove fluid" when boric acid was used was not due to any inhibition from remnants of boric acid in that fluid; and if the boric acid had disappeared, it is quite certain that the dilute alcohol in which it was dissolved in the beginning had also practically disappeared from the fluid that was finally tested. And therefore it need not be feared that the nongrowth of the culture tests of that fluid was due to any retardation of their growth by the alcohol used at the outset.

But during the past six months I have discarded all lamps for the generation of this gas, because they are too extremely uncertain and unreliable in their action to be depended upon for many reasons, and they are practically out of use, except by a few who understand them well and are interested in their sale. The generation of formaldehyd gas by evaporating formalin (the 40% solution in water) is much more simple, more uniform and effective. To prevent polymerization I have added an equal amount of 4% boric acid solution to the formalin, after the suggestion of P. A. Dubois, *Pacific Medical Journal*, January, 1891.

This I use as follows: A sheet-iron pan of sufficient

size containing dry sand is placed approximately over the opening in the bottom of the sterilizer $2\frac{1}{2}$ inches in diameter, through which formerly the chimney of the lamp projected. This sand bath is heated by a small or gentle gas flame from an incubator lamp that is placed beneath it in such a manner that the flame strikes toward or against the exposed part of its bottom. Upon this sand bath the diluted formalin is evaporated in a shallow basin having a bottom area of about 25 square inches. In my sterilizer, before mentioned, which has a cubic content of almost exactly $1\frac{1}{2}$ cubic feet, $1\frac{1}{2}$ ounces of the diluted fluid (3vi of formalin) is required to kill the more resistant spore-bearing anthrax bacilli when the gas flame is so adjusted to effect complete evaporation of the ziss of liquid during three hours, as proved by numerous additional culture tests. During this procedure the apparatus becomes quite warm (not hot), and the larger proportion of warm watery vapor generated by this diluted liquid assists the germicidal effect of the gas, on general principles.

For sterilization in this apparatus, and to secure the far greater facility of their dry application, about one dram of the formalinized powdered boric acid is dusted into each glove. Then a strip of gauze about 18 inches long is tucked into its fingers, and its end is made to project from the gauntlet of the glove, to facilitate the entrance of the gas. The pair of gloves so prepared are then wrapped in gauze or light muslin in such a manner that their surfaces everywhere have cloth between them. This package is then wrapped again into a good towel upon the outer surface of which the user's name, etc., is written with a pencil. When they are to be used, an assistant opens the outer covering; the user the inner one; and after shaking out the superabundance of the powder from inside the gloves and rubbing it over his hands he draws them on dry with the greatest ease. He holds the gauntlet open so that about one-half ounce of the diluted alcohol (four parts of sterile water and five parts of alcohol) can be poured into the palm of the hand and from there forced into each finger.

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A CASE OF MENINGOMYELITIS OCCURRING DURING CONVALESCENCE FROM TYPHOID FEVER.*

BY

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Among the most serious complications or sequels of typhoid fever are those involving the nervous system. Any portion or all portions of this system may be involved. In the brain, thrombosis, hemorrhage or abscess may occur. Grissinger, Jackson, Benedikt, Berger, Nothnagel, Strümpel and Curschman¹ have recorded cases of hemorrhage into the brain or meninges; and Osler reports a case of thrombosis, while Welsh mentions four other cases,² and Hawkins³ has collected 17 cases of hemiplegia from the literature. Keen,⁴ in his admirable work, has collected four cases of

cerebral abscess and 15 cases of cerebral meningitis. Gondonin⁵ mentions a case of cerebrospinal meningitis as does also Lerebroulet.⁶ Eisenlohr⁷ has described three cases of "Conspicuous involvement of the bulbar nerves in the course of typhoid fever, which were characterized especially by dysarthria, and paralysis in the distribution of the facial nerve, and, in part, of the motor distribution of the trigeminal nerve." Curschman⁸ has reported a similar case. This same author also mentions a few cases of involvement of individual cranial nerves.

Affections of the peripheral nerves of spinal origin occur rather frequently; certainly they occur much more commonly than diseases affecting or involving the brain cord, cranial nerves or their coverings. Probably a large number of palsies and painful affections described by the older writers as occurring in the course of, or following typhoid fever were due to neuritis or neuralgia.

Affections of the spinal cord itself with its membranes are, on the other hand, no doubt, very rare when we throw out of consideration some of the older cases described as such, but which are clearly either cerebral or peripheral in origin or else described so indefinitely that their real nature cannot be ascertained by a perusal of their reports. Curschman⁹ describes a case of his own and mentions two others, one reported by Leudet¹⁰ and the other by Schiff,¹¹ and states that he knows of no other similar case, although he refers to spinal ataxia and insular sclerosis as occurring in typhoid fever. Schiff's case was one of transverse myelitis at the level of the 4-5 cervical segment and was verified by autopsy. The paralysis was flaccid; tendon reflexes were absent. In my case the paralysis was spastic. Ebstein is credited with first calling attention to disseminated sclerosis as a sequel of typhoid fever, and Pierre Marie¹² has collected 11 such cases.

All three cases of myelitis mentioned by Curschman terminated fatally, and in the case reported by himself, "microscopic and careful bacteriologic examination of the spinal cord discloses beyond doubt invasion by typhoid bacilli, which could be demonstrated both in transverse sections and in cultures." In a case of myelitis recorded by Vulpian,¹³ after a long course, recovery occurred, which the author attributes to the use of the induced current. In my own case, recovery is slowly but steadily taking place.

In reply to notes of inquiry, Drs. Wm. Osler and E. G. Janeway inform me that no cases of myelitis following typhoid fever have come under their observation. Indeed, I have been unable to learn of, or find reference to, any cases of myelitis or meningomyelitis other than the four cases to which I have just referred. To these I wish to add the clinical record of a case studied with Drs. O. Kniffier and Wm. Gill, of Pittsburg.

Infectious diseases other than typhoid fever may, of course, produce much the same sort of damage to the nervous system. Friedmann,¹⁴ for instance, has recently reported three cases of myelitis following influenza. But it is not now my purpose to consider the general subject of damage to the nervous system produced by infectious diseases, a subject which was so ably and exhaustively treated a few years ago by one of the members of our Association, Dr. J. J. Putnam.¹⁵ But it may not be amiss to mention that of 5,000 patients who presented themselves at the out-door department of the Massachusetts General Hospital, Dr. Putnam states that about 500, or 10%, had had within a year before the onset of the illness for which they presented themselves some infectious disease "which might be suspected to have been at least a partial cause," of which about 80% were post-influenzal or post-syphilitic, while 53 cases were preceded by diphtheria, 47 by typhoid fever, 14 by scarlatina, 13 by malaria, 9 by measles and 8 by gonorrhea.

The case I have to report is as follows:

A girl, aged 16½, who had previously enjoyed good health, was, after a week of premonitory symptoms, taken down with

* Paper read at the annual meeting of the American Neurological Society, held in New York, June 5, 6, and 7, 1902.

typhoid fever about May 20 last. During the next two weeks her temperature ranged from 99° to 103.5°. The characteristic course of the fever and the appearance of several crops of rose spots left no room for doubt as to the correctness of the diagnosis.

A month after the onset of the fever, a large bed sore developed over the sacrum, and two or three weeks later several smaller sores appeared about this primary sore. About July 20, two months after the onset of the disease, the fever left her, the large bed sore had made a good start toward cicatrizing, and by October 1 all of them were healed.

The fever left the girl weak and exhausted and still troubled with bedsores; so she continued to remain in bed from the time of the departure of the fever, about July 20. She seemed to be gaining strength slowly, although she was still in bed when the symptoms of meningomyelitis appeared.

On August 28, when she had been free from fever a little longer than a month, she complained of pains in the legs and drew them up to lessen pain; at the same time she complained of pain along the entire spine. Three days later, these leg pains were extremely severe; the thighs were flexed upon the abdomen and the legs upon the thighs. Both legs, the bladder, and bowels were completely paralyzed. The skin of the lower limbs was extremely sensitive to the slightest touch (especially the right). Any movement, especially an attempt to straighten out the legs, caused great pain.

This condition of absolute paralysis which had thus developed in the space of three days continued for two months, when the patient became able to make slight movements with her toes; and ever since this time motor power has been slowly returning in the legs. The loss of control over the bladder and bowels, however, continued until shortly before I saw the girl on December 15 (*i. e.*, a period of about 15 or 16 weeks), when she began to have some slight control over these organs; and this power has also grown steadily stronger. There was no mental disturbance at any time. She developed no rise of temperature.

Examination, December 15, 1901.—There is almost complete paraplegia, the patient being able to make only slight movements of the legs and toes. The legs are strongly contracted upon the thighs, and the thighs upon the abdomen. The legs are quite thin; indeed, there is marked general emaciation. From the level of the second lumbar spine downward there is marked general hyperesthesia, the slightest touch producing pain; of this region, the soles of the feet are most sensitive (the right more than the left). The healed cicatrices of the bedsores are quite apparent. The knee-jerks are exaggerated. The toe reflex (Babinski) could not be elicited because of the pain produced in the attempt. Efforts to straighten the legs (even slight movements) cause pain.

Above the level of the second lumbar spine sensation is normal. The grasp of the hands is quite strong. Pupillary reflexes are normal. Mentally, the girl is quite bright.

On March 28 Dr. Gill informed me that the patient can almost fully straighten out the legs without pain. She readily moves the legs about in all directions, but is not yet able to stand unaided. The hyperesthesia is much diminished but still present. Her general nutrition is much improved. For several weeks she has had sufficient control over her bladder and bowels to avoid accidents; but her stream of urine is slow and feeble. After a physic she may still fail to control her sphincter and must be waited upon promptly to avoid accident.

Her treatment consisted in most careful nursing, gentle turning from one side of the bed to the other, use of air cushions, hot and cold applications, sedatives, gentle sponging, and, since the middle of December, of the daily administration of 2 grams of potassium iodid.

Remarks.—In the presence of paraplegia, paralysis of bladder and bowels, contractures of leg, bedsores, intense hyperesthesia strictly limited to the portion of the body below the waist girdle, and exaggerated knee-jerks, the diagnosis of meningomyelitis affecting the lower cord, first made by Drs. Kniffler and Gill and afterward concurred in by me, seems quite plain. As to the poison at work, whether the typhoid bacillus itself or its ptomaines, or a pus infection through the bed sore, was responsible for the meningomyelitis, it would, in the absence of a culture, be unprofitable to speculate. But one feature stands out strikingly, *viz.*, that the symptoms developed very rapidly, attaining their height in the space of three days. Moreover the evidence indicates that the inflammatory process confined itself pretty closely to the lower cord region, its upper boundary being about the eleventh thoracic segment.

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⁶ Gaz. hebdomadaire de médecine, Paris, 1877, xxiv 2, p. 193.

⁷ Quoted by Curschman, op. cit., p. 276.

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⁹ Op. cit., p. 278.

¹⁰ Deutsch. Archiv f. klin. Med., 1900. Bd. lxxvii. Quoted by Curschman.

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¹⁵ Trans. Cong. Amer. Phys. and Surgeons, Vol. III, p. 228, *et seq.*

NOTES ON THE TESTS FOR GASTRIC ACIDITY: THE TUNGSTATE METHOD FOR COMBINED CHLORIDS.

BY

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In a preceding paper, attention was called to the comparison between the tests for combined hydrochloric acid in stomach contents by alizarin, which responds to free HCl plus organic acidity, but not to combine HCl; and by the diminution of total acidity by sodium tungstate, which is supposed to react with proteid in combination with HCl, so as to produce two neutral substances, NaCl and proteid tungstate, in the sense that proteid tungstate does not react as an acid to the usual indicator, phenolphthalein. For the purpose of brevity, I made no criticism of that theory at the time, but I wish now to report a typical titration to illustrate the view that proteid tungstate is not strictly neutral to phenolphthalein, but that the diminution of acidity after adding sodium tungstate is merely due to the insoluble state of proteid tungstate and that, if time enough is given, the sodium tungstate does not diminish the total acidity at all.

Stomach contents were obtained from a patient with gastric dilation, of many years' standing and of undetermined cause, six hours after a meal of malted milk and crackers. The tube was introduced for therapeutic purposes but, for the present consideration, the unusual character of the meal makes no difference, while the large volume of stomach contents obtained was exceptionally favorable to making comparative tests. Total quantity obtained, 875 cc.; free HCl about 100%, corresponding to 36.5:10,000 and to an absolute amount of nearly 3.2 grams of gaseous HCl, which is excessive. The total acidity varied from 122% to 132% in several titrations, the higher figures being derived from delayed titrations to allow the neutralization of the acid in the undissolved particles. In the preceding paper, I showed that, working with 10 cc. of stomach contents, 1 cc. of 10% Na₂WO₄ solution would be sufficient to neutralize combined chlorids, under ordinary circumstances, but perhaps not if the acidity were excessive. With 1 cc. of this solution the reading of the end-reaction was 104%, allowing a few minutes for the neutralization. Using 2 cc. of the Na₂WO₄ solution, the immediate end-reaction was 87% and with 3 cc. 88%, which is as nearly in agreement as any two such readings can be expected to be. Both of these end-reactions, however, faded out rapidly, as I had previously noticed in similar tests and, to learn how far this change of end-reaction would progress, the titration was continued at intervals, as follows:

Immediate end-reaction at 4.02 p. m.	88
End-reaction at 4.24 "	101
" 5.06 "	105
" 7.48 "	124
" 1.30 a. m.	130

The solution was left till the next morning, when it was found that no further fading had occurred, showing that there had been complete neutralization of acidity. In other words, not only was there no permanent reduction of acidity by adding an excess of Na₂WO₄ but, by slow titration, there had actually developed almost as high a degree of acidity as was reached by slow titration for total acidity and more than the total, as deter-

mined by immediate reading of the end-reaction. We have, therefore, to conclude that, if the tungstate method of determining combined chlorids is used at all we must not wait for the completion of neutralization, but must subtract from the total acidity the amount read off at the first transitory appearance of the magenta or cerise color with phenolphthalein. I subsequently made another titration with 1 cc. of Na_2WO_4 solution, the immediate end-reaction occurring after 91% of NaOH solution had been added. In the course of a little less than three hours the end-reaction had been run up to 132%, at which point it remained, showing that 1 cc. was sufficient and corroborating the conclusion as already stated.

Using alizarin as an indicator, we obtain a purple color as an end-reaction when free HCl and acid salts and organic acids have been neutralized, the difference between this reading and that for total acidity representing combined HCl . This test agrees approximately with that obtained by the tungstate method, but the two methods may vary several degrees and I have sometimes found one method to indicate a greater amount, sometimes the other. In reviewing my notes I am not able to speak more definitely because I have made the error of attempting to get a final result instead of taking the immediate reading after adding Na_2WO_4 and neutralizing. As I had not previously waited several hours for complete neutralization, the full significance of the change in reading had not occurred to me. In the present case the end-reaction with alizarin occurred at almost precisely the same point as with the tests for free HCl , indicating that there was practically no acidity except that due to free and combined HCl . From the high proportion of free HCl we should expect practically no formation of organic acids, while the time that had elapsed after the ingestion of the meal—six hours—and its nature, would lead us to expect a very minute proportion of acid salts.

In order, if possible, to throw light on what really happened after the addition of Na_2WO_4 , alizarin was added to 10 cc. of chyme plus 1 cc. of the Na_2WO_4 solution. The immediate end-reaction was at 79%, but this gradually ran up to the full reading obtained with alizarin without Na_2WO_4 . Now, alizarin does not react with combined HCl , yet some acid factor had temporarily—and only temporarily, as shown by all the experiments—been thrown out of action by the addition of the tungstate. The total percentage of acid factors thus thrown out was about 20, far too small to represent the free HCl , and about double the maximum that could be charged to organic acids and acid salts. In a preliminary note of inquiry, published in *American Medicine*, May 17, 1902, I called attention to the fact that the addition of Na_2WO_4 to chyme interfered with the dimethylamidazo-benzol test for free HCl , killing the red-to-yellow color change but not diminishing the total acidity by phenolphthalein correspondingly. This note was prompted by several tests with chyme of low free acidity. On adding 1 cc. of Na_2WO_4 solution to 10 of the present sample of high acidity, I found that the color of dimethyl was not entirely discharged but the free HCl was apparently reduced to 65%. On adding more tungstate, the characteristic color with dimethyl and free HCl was entirely discharged and I now discovered why there had been inconsistencies in comparing the readings with phenolphthalein. Dimethyl plus chyme plus a sufficient quantity of sodium tungstate produces a tint that is practically indistinguishable from that obtained in neutralizing for total acidity with phenolphthalein. It is usually the case that the small quantity of chyme available after a test meal, must be economized closely. Hence, free HCl is titrated with dimethyl, then a few drops of phenolphthalein are added and the total acidity is estimated from the same sample. In my previous experiments with Na_2WO_4 to determine its effect on free HCl titration I had noted most surpris-

ing diminution of total acidity, which I can now explain for the first time.

Just what happens in chyme after the addition of tungstate I do not know, but it seems evident that this method is not available for clinical purposes.

DERMATITIS MEDICAMENTOSA: REPORT OF A CASE.¹

BY

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In making a diagnosis of a skin disease, especially one of an erythematous type, it is of great importance that the physician take into consideration the fact that there are many drugs which, taken internally, produce eruptions on the body. The errors committed along this line are frequent, and are annoying both to patient and doctor. When the diagnosis is not entirely clear we should not fail to make inquiry as to the kinds and quantity of medicines taken.

In most cases of drug eruptions there is an idiosyncrasy on the part of the patient to a certain drug. Renal and cardiac diseases, by interfering with proper elimination, play an important role in the causation in not a few instances. In those with an idiosyncrasy, cardiac or renal insufficiency will usually aggravate the eruption. Large and long continued doses of some medicines will produce cutaneous lesions. In any given case of dermatitis medicamentosa there may be a combination of two or more of these factors. Nearly every physician can call to mind some particular person upon whose body will be produced an eruption from the ingestion of even a small dose of a certain drug. Medicines in small doses, which produce a local erythema, the most common form of drug eruption, will in many instances if given in large doses cause a general erythema, and even vesicular, pustular or bullous eruptions.

In reviewing drug eruptions we find a large number of medicines which produce erythema. Out of a list of 28 given by Crocker, we find that 23 will produce some sort of erythema.

As to the *modus operandi* by which certain drugs produce a given eruption, our knowledge is for the most part conjectural. No one theory satisfactorily explains all cases. Hyde, in speaking of drug eruptions, says: "Some, for example potassium iodid, are eliminated in part by the glands of the skin, and presumably have thus a local effect upon such emunctories; others, and in this class probably should be included quinia, induce an urticaria scarcely to be distinguished from an urticaria ab ingestis. Some operate, possibly, in either or both ways at different times and in different individuals." This presumably, probably and possibly means that he feels we need more light on this interesting subject.

Crocker says: "The presumption is in favor of all these exanthematous rashes being due to a vasomotor neurosis, either from reflex irritation or direct action on the vasomotor centers."

The case I shall report was an unusually extensive and severe erythema, produced by the ingestion of mercury. There is some marked difference of opinion among experts in dermatology as to whether mercury taken internally will produce an eruption. No less an authority than Hyde says: "The statement that mercury when ingested is capable of producing an erythematous rash upon the surface of the skin is made by several reputable authors. In view of the fact that the metal has been, in its various compounds, administered for so long a period of time, and for so many various diseases, without the production of cutaneous symptoms, it is a fair hypothesis that the few reported cases are those in

¹ Read before the North Texas Medical Association at Greenville, Tex., December 15, 1901.

which there was coincidence rather than causation. After observation of a large number of individuals in whom this drug has both properly and injudiciously been employed for so long periods of time, one may not be able in a single instance to discover any evidence upon which to base a belief in its power to produce a cutaneous exanthem." A similar statement was made by White, of Boston, when this subject was under discussion in the American Dermatological Association.

Crocker, in his admirable work on Diseases of the Skin, says: "Although it was denied by Hebra, it must be admitted on the authority of Fournier and Hallopeau, Engleman and others, to say nothing of older writers like Alley, that erythematous eruptions may arise from its internal administration. The eruption may be partial or general, is diffuse, deep red, accompanied by swelling, and may easily be mistaken for erysipelas, especially as it begins in the face, and the surface is smooth, shining and itching. It may extend over more or less of the body. It may be papular or scarlatiniform, as in the case of Robinson, of Constantinople: after $2\frac{1}{2}$ grains of calomel, miliary vesicles followed, which developed into pustules. Guelpa observed a papular eruption on the face and limbs from using a vaginal douche of a 5% solution of corrosive sublimate. Hypodermic injections of calomel, yellow oxid of mercury and thymol mercury have been followed by erythematous eruptions. The evidence goes to prove that in the case of mercury these eruptions may follow in certain people, whatever may be the mode in which the drug enters the body."

Universal exfoliative dermatitis from mercurial inunction is also mentioned. Petrini reports a case of bullous eruption in a woman of 22 after an intrauterine injection of the perchlorid. She was intolerant of mercury in any form.

Joseph Grinden, in the American Textbook of Genito-urinary Diseases, Syphilis and Diseases of the Skin, edited by Drs. Bangs and Hardaway, says: "Mercury internally produces rarely erythema, urticaria, herpes, bullas, purpura, impetigo, furuncles, ulcerations."

With this array of expert testimony, in favor of mercury given internally producing an eruption in certain individuals, I feel justified in placing my patient among the number so affected.

On September 25, 1901, I was called to see Mr. A., of Dallas, aged 40, weight 180 pounds. He is a fine specimen of physical development and has always had excellent health. His chief ailment has been several attacks of a severe and extensive erythematous eruption which in late years he has associated with the ingestion of calomel. His first experience was eight years ago. At this time he used mercurial inunction, one application, on pubes and adjoining regions, to rid himself of crablice. This was followed by a severe dermatitis of these parts and it extended some distance up the sides of the body far removed from the parts anointed. On the sides where no ointment was used several boils formed. These boils developed ulcers and were some time in healing. At the same time there were a few furuncles on his face. Between this time and 1896 he could recall three attacks of erythema following the ingestion of calomel. In 1896 he had quite a severe attack which confined him to bed for several days. This was the only attack in which there was any formation of crusts, or scaling of the skin. At this time a rather strong solution of iodine was applied which burnt severely for some hours. He was having light fevers before taking the calomel and was not taking any other medicine. Two weeks after this attack, noticing his tongue was slightly coated, he took calomel again. The eruption appeared within 12 hours. It was of a deep red color, smooth and shining. It was accompanied by more of a burning than an itching sensation. Mild lotions were used and there was no scaling. At this time he spoke to his physicians as to the probability of calomel causing the eruption. They assured him most positively that the eruption was an eczema, and could not be caused by calomel. In 1897, while on his way to New York City, the eruption promptly followed a five-grain dose of calomel. Although covering the greater portion of the body it had nearly disappeared before reaching that city. He consulted a dermatologist, who informed him that the mercury could not have caused the eruption. The patient, however, was so firmly convinced to the contrary that he resolved not to take any more calomel. He was faithful to this resolution for more than four years, and during this time had no eruptions on his body. About the middle of last September he felt that his liver was not functioning properly and began to take different medi-

cines. Not getting the desired relief, he debated with himself and wife the question of taking calomel again. He took the negative side but his wife advocated the affirmative, and using the testimony of the home physicians and of the dermatologist in New York, he was persuaded to take a five-grain dose of calomel. Within 12 hours the eruption appeared. I saw him about 16 hours after its inception. The entire abdomen and chest, most of the back and greater portion of the arms and legs were covered with a deep red, smooth, shining eruption, erysipelatos in appearance. About the shoulders the character of the eruption was more like that of an erythematous eczema. There was a dusky, edematous appearance over these places. The patient complained of an intense burning and stiffness of the skin. The itching was not so annoying as the burning. The skin felt warmer than normal, yet his temperature was not above 99°. Pulse not accelerated. Salines were ordered and also tepid alkaline baths every few hours. After the baths the body was sponged with a solution of borax and sodium hyposulfite. Within 24 hours the erythematous rash began to fade. Pulse and temperature were normal. The eruption disappeared within six days without any scaling. Excepting the intense burning, with slight itching, and the feeling that the skin would crack from any pressure or sudden movement, there were no subjective symptoms other than that at night he was restless and not able to sleep well. During the past eight years this gentleman has had eight attacks of this eruption, and each time it has followed the use of mercury, once from external and seven times from internal administration. He was questioned closely and he assured me he was very certain he had not taken mercury in any form except at these times.

ADDITIONAL NOTE.—Mr. A. promised that he would at some leisure time have me give him mercury and watch the result. He either could not spare the time or summon the necessary courage for the experiment, but an attack of lumbago furnished the desired opportunity to test the drug. On February 22 he telephoned his family physician, one recently employed, and who knew nothing of his idiosyncrasy, that he was suffering with pain in the back and requested that he should send a prescription. Six powders were ordered, each containing one grain of calomel. A powder was taken at 2, 4, and 6 p. m. At 7 p. m. he felt a peculiar, but familiar, pricking of the skin. He immediately telephoned his physician, asking if there was calomel in the powders. On learning that there was, he took salines freely. On the following morning the rash was out in all its force. I was called in on Monday, the second day of the eruption. The entire body was covered with an erythematous rash. There was some thickening of the skin. The arms were involved to the elbows, and the legs to the knees. No eruption appeared on the exposed surfaces. As before, the eruption was attended by a burning rather than an itching sensation. I saw the patient but once. He was able to keep at his place of business, but the eruption did not entirely disappear for several days.

Treatment of Incipient Tuberculosis.—Dr. Spadari, of Paris, in a recent communication to the Academy of Medicine, stated that the progress of incipient pulmonary tuberculosis could be successfully arrested by the administration of potassium iodid in solution, in very small doses, each dose being followed by a 10-minute inhalation of the essence of turpentine. This treatment must concur with the usual hygienic and dietetic treatment.

Venereal Diseases.—The Berlin Insurance Company has established a sanatorium with capacity for 50 beds for its male policy holders who are afflicted with venereal disease, and an appeal has been made by the company to all the sick insurance societies and to physicians generally asking them to cooperate and lend their efforts toward overcoming prejudice which would prevent those suffering from these diseases from entering such a sanatorium. The company calculates to save great expense by thus treating its policy holders in a closed sanatorium where they will be cured and where contagion of others will be prevented. During the detention of the bread-winner in the institution a pension will be paid to the family.

Physical Culture.—The Italian Government some time ago appointed a commission consisting of Professor Angelo Mosso, chairman; Deputy Luigi Credaro, and Commendatore Gennaro to investigate the means of improving physical training in that country. In the report of the first part of their labors, the commissioners recommend that an inquiry shall be instituted by the Minister of Education into the existing conditions of physical education, and they have scheduled questions to be sent by him to the heads of institutions asking why gymnastics have not been made compulsory in accordance with the Dr. Sanctis law of 1878. The commissioners point out that this law no longer corresponds to the standard required by the progress of medicine, hygiene and social pedagogy, and urge new legislation with provision for the physical education of the people. They advocate that Italy should follow the lead of other nations, in which universities are the most active centers for developing the physical condition of the people, and that the government should have a more active supervision over the private schools in respect to this and all matters concerning the maintenance of health in schools.

SPECIAL ARTICLES

THE WORK OF JENNER AND HIS MOST FAITHFUL DISCIPLE, WATERHOUSE.¹

BY

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In order fully to appreciate the value of Jenner's great discovery it is necessary to know something of the terror excited by smallpox in the prevaccination period. This dread destroyer of human lives is a very ancient malady. Galen and even others before his time are credited with a knowledge of the disease, although they failed to describe it definitely. It doubtless originated in the East and thence extended to other parts of the world, following, as infectious diseases usually do, the lines of travel and commercial intercourse; and wherever the contagium was conveyed there an epidemic was sure to prevail. In almost every country on the globe it long constituted one of the most dangerous and dreaded diseases to which mankind was subject. It was present in one place or another almost constantly, and frequently prevailed with great malignancy over vast tracts of territory, claiming as its victims persons of all ages and from every station of life. Not only the number of deaths but the marred visages of the people in every community bore testimony to the frequency of the disease. Indeed, it was so fatal in the middle ages that it was regarded as a very "scourge of God," and so generally prevalent as to give rise to the common saying that "from smallpox and love but few remain free."

When the infection was introduced among barbarous peoples it found them almost a defenseless prey, and the disease died out only when there was none left to be infected. John Ring, Jenner's friend, states that toward the end of the eighteenth century, doubtless before the prophylactic power of vaccination was fully demonstrated, a tribe of Eskimos on the Labrador coast was scattered by smallpox breaking out among them, and they did not venture to return to their land for three years. By that time the country had "become a desert without a living soul in it, but they found the skeletons of 500 persons who had fallen victims to that horrible disease." In civilized countries each visitation of the disease found a considerable proportion of the population protected by a previous attack, and hence the decimation was not so great as in uncivilized countries. As to the aggregate loss of life caused by it, it has been estimated that during the eighteenth century no fewer than 15,000,000 human beings died of smallpox every 24 years, which would give a yearly average of 600,000. De la Condamine says that this disease destroyed, maimed or disfigured the fourth part of mankind.

Smallpox is no respecter of persons. It claimed its victims in the palace as well as in the hovel. It nearly destroyed the entire family of William III, whose wife, Queen Mary, father, mother, uncle (who was the Duke of Gloucester) and two cousins, all died of the disease. The health of the King himself was so undermined by it in his youth that he was left a physical wreck. It caused the death of Emperor Joseph I, of Austria, at the age of 33, and carried off two Empresses of Austria, six archdukes and archduchesses, an Elector of Saxony, the last Elector of Bohemia, a Dauphin and a King of France, Queen of Sweden, and an Emperor of Russia. "Such was the dread of the disease that even the heir of the French crown was deserted on his death-bed by all but one faithful courtier, who had much trouble in finding any one to go for priests to pray beside his bed."² When Louis XV died of the disease his corpse was hastily thrust into a coffin and everyone fled except the priest whose duty it was to officiate at the last sad rites of the dead. It would be impossible to give a better descriptive picture of the terrible effects of smallpox before the discovery of vaccination than that given by Macaulay, the English historian, who writes:

"That disease over which science has achieved a succession of glorious and beneficent victories was then (in the last years

of the seventeenth century) the most terrible of all the ministers of death. The havoc of the plague had been far more rapid, but the plague had visited our shores only once or twice within living memory. The smallpox was always present, filling the churchyards with corpses, tormenting the constant fears of all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of a betrothed maiden objects of horror to her lover."

Vaccination as a means of protection against this dread disease has been on trial for a little more than a century, and its efficacy has been thoroughly proved the world over. If he who makes two blades of grass grow where but one grew before is a benefactor, what should be said of him who has placed at our command the means of safe-guarding the entire human race against a frequently recurring scourge? Our best words, indeed, are always too feeble when we attempt to do justice to the memory of a great benefactor; and of all the benefactors of mankind, Jenner is undoubtedly the greatest. Few, perhaps, appreciate today, in the comparative absence of smallpox epidemics, what an immense boon vaccination has been and still is to humanity. However this may be, there was, undoubtedly, a keener perception of the value of this beneficent agent at the time of its discovery than at the present. Previous to that time, smallpox was always present, and none knew when nor with what lethal force its arrows of infection would strike and destroy life, or, sparing that, leave the individual a scarred and deformed wreck of womanly beauty or of manly comeliness and vigor. At the present day how great is the change! Devastating epidemics of smallpox in most countries, however unlike angel's visits in other respects, are now "few and far between." It has been well said, "For us Edward Jenner has drawn the fangs of smallpox, and the only excuse for the fools who revile him is that they do not know the deadly scourge from which he has delivered them."¹

The fact that cowpox conferred protection against smallpox appears to have been noticed by dairymen in England as far back as the middle of the eighteenth century. It was observed by these people that when smallpox prevailed, those who had been accidentally infected by the matter exuding from certain sores, known as cowpox, which often appeared on the teats and udders of cows, resisted the infection of smallpox. Jenner's attention was first called to this tradition among the common people while he was yet a student of medicine. He never forgot the remark made to him by an humble country woman who came one day for advice, and something being said about smallpox she remarked, "I cannot take that disease, for I have had cowpox." It was also a matter of common observation that such persons were insusceptible to smallpox by inoculation.

After completing his course in medicine and locating at Berkeley, England, where dairy-farming was common, Jenner gave close attention to this tradition, and it was not long until he was convinced of its reality. In medical coteries and societies he frequently expressed his belief in the protective power of cowpox, but his views on this subject were always regarded by his confrères as idle fancies of an overcredulous mind. On one or more occasions in a certain medical society to which Jenner was a liberal contributor the proposition was made, half earnestly and half jokingly, to expel him if he did not cease boring them with his absurd notions about the prophylactic power of cowpox. But the evidence he had already collected from various sources was too convincing to be set aside by such idle threats.

At length, after having devoted much time and thought to the subject, Jenner determined to inoculate into a human being the vaccine disease, and to test its efficacy by actual experimentation. James Phipps, a lad of 8 years, has had his name made historic by having been the first subject to undergo the experiment. The virus used was taken from a vesicle on the hand of a milkmaid named Sarah Nelms, who had been accidentally infected while milking a cow. This vaccination was performed May 14, 1796, and was the beginning of Jenner's work which has made his name immortal. On the second day of July following, Jenner proceeded to test the efficacy of this vaccination by inoculating the lad with smallpox matter taken

¹Annual address before the Associated Health Authorities and Sanitariums of Pennsylvania, delivered May 7, 1902, at Butler, Pa.

²The Practitioner, May, 1896.

¹Loc. cit.

from a patient suffering from that disease, but no result followed. At various intervals afterward, until this lad grew to be a man, he was inoculated with smallpox matter, in all as often as 20 times, and each time was found to be immune to that disease. It is no wonder, then, that Jenner arrived at the conclusion in his treatise on vaccinia that a single vaccination confers permanent immunity from smallpox.

The course of the vaccine disease in this case was very carefully noted by Jenner each day from the time the virus was introduced until the crust came off spontaneously, and finding the affection was benign and wholly unattended by unpleasant results, he proceeded to subject others to the "new inoculation," as vaccination was called in those days. All his early cases were subjected to the same crucial test that was applied in the case of James Phipps to prove the protective power of cowpox. It will thus be seen that the investigations of Jenner were conducted so carefully and thoroughly as to demonstrate most conclusively the value of his discovery before he ventured to publish his observations to the world. Quoting his own words: "I placed it on a rock, where I knew it would be immovable, before I invited the public to look at it." Investigators of the present day in other fields of research would do well to follow Jenner's example.

It was not, therefore, until Jenner felt perfectly secure of his position that he ventured to detail his experiments and formulate his conclusions in a paper. This paper, I believe, was prepared in 1796. As a body falling from a great height makes a deep impression, so Jenner thought if his paper should emanate from a highly learned and dignified society it would make a greater impression upon the medical world than if read before a local medical society in his own neighborhood. Hence, Jenner determined to take it to London and offer it to the Royal Society of that city. On receiving the paper, the society, without having it read, referred it to a committee composed of eminent physicians. After carefully examining the paper the committee reported against its acceptance. On handing it back to Jenner these eminently learned gentlemen remarked that as he had already made for himself some reputation as a student of natural history, by his investigations relating to the habits of the cuckoo, they would advise him not to risk that reputation by publishing anything so absurd as vaccination for protection against smallpox. Little did this learned society know what great truth was contained in this rejected document.

This wholly unexpected rebuff from so high a source did not discourage Jenner, for he was fully convinced of the reality of his discovery and was prepared to stand by it until its value was admitted and universally recognized. He now returned to his home at Berkeley, taking his manuscript with him and continued his investigations for nearly two years longer. Having by this time collected a mass of evidence that was simply incontrovertible he resolved to rewrite his article and publish it on his own account. With this object in view he visited London again in June, 1798, and the publication soon afterward appeared in a modest brochure entitled "An Inquiry Into the Causes and Effects of the Variolæ Vaccinæ, a Disease Discovered in Some of the Western Counties of England, particularly Gloucestershire, and Known by the Name of Cowpox."

This publication at once attracted great attention from the medical profession in London and throughout England. Like all innovations the "new inoculation" was viewed favorably by some, with distrust and skepticism by others, while a few resolved to test it for themselves. Among the first in London to make use of the new discovery were Dr. George Pearson, physician to St. George's Hospital, and Dr. William Woodville, physician to the Smallpox and Inoculation Hospital. But the early work of these gentlemen tended to impair confidence in vaccination. They reported that vaccinia was attended with a generalized eruption more or less copious, resembling that of variola. When Jenner's attention was called to the matter he denied that such a result followed true vaccinia, and on investigating the cases presenting this eruption he found that Woodville had carelessly permitted the virus which he and Pearson were using to become contaminated with the infection of smallpox. A considerable quantity of this virus was sent by these gentlemen to various parts of England and the Continent, and in many instances its use was followed by disastrous results.

Foreseeing that vaccination was likely to be discredited by such carelessness Jenner remonstrated against their procedure with some vehemence, but, instead of being listened to, was rewarded by the ill-will of Woodville and the life-long enmity of Pearson.

It was not long after Jenner had published his discovery until the protective power of vaccination was proved by numerous investigators in England and on the Continent. Not only did physicians make use of the "new inoculation," but it was also frequently practised by the clergy. Clergymen found it more agreeable to perform the labor of vaccinating their parishioners than to officiate at a funeral when the death had resulted from a disease so loathsome as the smallpox. It is said that this beneficent work was not infrequently performed at the close of a sermon. Special mention is made of an eminent divine who vaccinated a large number of his congregation after preaching an eloquent sermon in which he spoke in terms of great praise of Jenner and his discovery, having taken as his text, "And he stood between the dead and the living; and the plague was stayed." (Numbers xvi, verse 48.)

Although vaccination was soon found to possess great merit, it must not be supposed that it was accepted without opposition. It was frequently threatened with discredit by the use of virus that had been taken at an improper time. While Jenner had distinctly stated that the virus intended for inoculation should be collected at a certain early stage of the vaccine vesicle, yet very many, through ignorance or in utter disregard of this advice, collected it at all stages, and consequently the results were often spurious and conferred no protection whatever against smallpox. Among those who carelessly practised vaccination in this manner there was engendered not only doubt as to its efficacy but often positive opposition to its employment. But there were others with whom the opposition assumed a more personal character. They attacked the honesty and integrity of Jenner, and called in question his veracity. Some feigned to believe that the practice of vaccination would add to the number of diseases to which human flesh was already heir, most of those peculiar to the bovine animal. And a few even predicted that if the practice of introducing this "beastly matter" into human beings be continued, it would eventually have the effect of transforming man into a horrid monster presenting some of the characteristics of both man and the ox. Very ludicrous drawings were made and scattered about the country illustrating how a human being would appear in this transformed state.

Jenner paid but little attention to these harsh criticisms and personalities, but was ever ready to protect and defend the cause of vaccination against dishonor or reproach. He labored incessantly to disseminate throughout the world a correct knowledge of this life-saving agent, and it was not long until its merit was universally admitted. In many instances the crowned heads of Europe set a good example by promptly accepting vaccination; and very soon arrangements were made to confer its blessings on the peasantry without cost. Honors were freely conferred upon Jenner from every European country, and he was regarded as the greatest benefactor the world had ever known. A letter from him served as the best passport one could have in traveling through foreign countries in time of war. As showing how highly he was esteemed, it is said that during the Napoleonic war two British subjects were held as prisoners by Napoleon, and that Jenner was importuned to write a letter requesting their release. The letter was read to Napoleon by Josephine, and when she mentioned the name of the writer, Napoleon exclaimed: "Jenner! Oh, we can refuse nothing to that man." And the prisoners were promptly released and permitted to return to England. But his influence, I am sorry to say, was not so great in his own country; for it was not long afterward that two French prisoners were confined in England, and Jenner was asked to intercede for their release. He did so, but his request was not granted. This brings to mind what is said of the prophet of old, that he "was not without honor save in his own country."

When the news of Jenner's discovery had reached the various civilized countries of the world he became literally overwhelmed with correspondence. Many wrote requesting virus with which to commence the "new inoculation;" others

wrote desiring information as to the appearance and course of the vaccine disease; and still others, complaining of disappointment, or detailing some unsatisfactory or unfortunate experience with the virus, wrote begging an explanation from Jenner. With commendable zeal he hastened to forward virus as far as possible to all who requested it, and encouraged his professional friends to do likewise. His letters of instruction as to the use of the virus and the appearance of the vaccine process were full and explicit. On one occasion a friend asked him what this new disease he had heard so much about looked like. Jenner's terse reply was: "Why, it's exactly like the section of a pearl on a rose leaf." To all complaints that the virus did not succeed, or that it had produced a disease not comparable to his description of vaccinia, he gave his immediate and most careful attention. In such cases he invariably found that the virus used was either inert, or had been improperly collected or imperfectly preserved. In this manner, for the reputation of vaccination, he labored incessantly to correct mistakes, and to disseminate a correct knowledge of the new disease.

It is evident, therefore, that the demands upon Jenner's time were very great—so great indeed that in order to do justice to the cause he espoused, he was forced to neglect his private work. His correspondence alone grew to such immense proportions that he had but little time left for anything else. He was, as he said, for many years the vaccine clerk of the world. All this involved a large expenditure of money, while he was reaping no substantial reward from his discovery. Finding that his small fortune was rapidly diminishing, some of his friends advised him to make application to the British Parliament for an honorarium. His claim was presented and ably supported. In the discussion it was contended that England owed to this worthy citizen not only her gratitude, but something more substantial in consideration of his great discovery, which had already been the means of saving thousands of lives among her subjects, and had prevented untold suffering; and that the author of which was magnanimous enough to spend his time and fortune in spreading the blessings of his discovery throughout the entire world. The claim was opposed by many members of Parliament, and by some physicians, I am sorry to say, who should have been friends of the claimant. In the opposing argument it was contended that Jenner should have kept his discovery a secret long enough to grow rich by it before giving it to the world. To this Jenner replied: "While I had thus been employed in filling my own purse, should I not have indirectly been filling the churchyard with those slain by the smallpox?" Surely there could be but one answer to this question. And the sentiment it contains must have gone very far toward convincing Parliament that its author was a man worthy of the name of great benefactor, and that the claims made for him as such could not be lightly set aside.

After the proposition to remunerate Jenner had been before Parliament a long time, and had been fully considered by a committee, a grant of £10,000 was voted him by a small majority. This occurred in 1802. But considerable time elapsed before the money was paid, and its collection cost Jenner £1,000. Feeling that this grant was very much too small for a great country like England to bestow upon her greatest benefactor, Jenner's friends petitioned Parliament again in 1807 for a second grant of £20,000. By this time the value of his discovery was better known and more generally appreciated, so that this grant was allowed with much less opposition than the first; and it was provided in the Act that the amount should be promptly paid without any expense to the grantee.

Jenner was now about 58 years of age. The grants he received from Parliament, together with his estate in the country, enabled him to spend the remainder of his years in comparative ease and comfort. He never ceased laboring, however, for the great cause of vaccination. He was a man of noble and generous impulse, and was constantly engaged in some benevolent work. It is said that James Phipps, at the age of 40 years, was found to be suffering from pulmonary tuberculosis, and that his income was limited and his home uncomfortable. Jenner built for him a carefully planned cottage, the drawings of which were made by his own hands, and planted the grounds around the cottage with flowers from his own garden.

Before parting with Jenner I should like to say that in the

midst of his more serious labors he found time to worship occasionally at the shrine of the Muse. While he was not noted as a poet, yet some of his metrical compositions were quite clever. It is said that on receiving an invitation from a friend to make a country excursion he sent his excuse in the form of a poem. As this poem shows very acute power of observation I think it worth reciting. It is entitled

"SIGNS OF RAIN."

"The hollow winds begin to blow,
The clouds look black, the glass is low,
The soot falls down, the spaniels sleep,
And spiders from their cobwebs creep.
Last night the sun went pale to bed,
The moon in halos hid her head.
The boding shepherd heaves a sigh,
For see! a rainbow spans the sky.
The walls are damp, the ditches smell,
Clos'd is the pink-ey'd pimpernel.
Hark! how the chairs and tables crack;
Old Betty's joints are on the rack.
Loud quack the ducks, the peacocks cry,
The distant hills are looking nigh.
How restless are the snorting swine—
The busy flies disturb the kine.
Low o'er the grass the swallow wings;
The cricket, too, how loud it sings.
Puss on the hearth, with velvet paws,
Sits smoothing o'er her whiskered jaws.
Thro' the clear stream the fishes rise,
And nimbly catch the incautious flies.
The sheep are seen at early light
Cropping the meads with eager bite.
Tho' June, the air is cold and chill;
The mellow blackbird's voice is still.
The glow-worms, numerous and bright,
Illumed the dewy dell last night.
At dusk the squalid toad was seen
Hopping, crawling, o'er the green.
The frog has lost his yellow vest,
And in a dingy suit is dress'd.
The leech, disturb'd, is newly risen
Quite to the summit of his prison.
The whirling winds the dust obeys,
And in the rapid eddy plays.
My dog, so altered is his taste,
Quits mutton bones on grass to feast;
And see yon rooks, how odd their flight,
They imitate the gliding kite,
Or seem precipitate to fall,
As if they felt the piercing ball.
'Twill surely rain—I see with sorrow,
Our jaunt must be put off tomorrow."

THE WORK OF WATERHOUSE IN THE INTRODUCTION OF VACCINATION INTO AMERICA.

The introduction of vaccination into this country marks an epoch of great importance. Smallpox had been present here almost from our earliest history. During the eighteenth century it was particularly rife in certain parts of the United States. The New England States attempted to prevent, by various legislative enactments, the introduction of smallpox into that section of the country. In some of these States variolous inoculation—a measure commonly practised during the middle and latter part of the eighteenth century—was prohibited by law. When persons residing in such localities wished to avail themselves of the advantages of smallpox inoculation they were in the habit of going to New York for the purpose of undergoing the disease in this way, and, after their recovery, returning to their homes. There was some inconvenience and considerable expense attending this procedure, but it was deemed wise by many to submit to this rather than run the risk of the indiscriminate introduction of smallpox into those States. In a large seaport town, however, such as Boston, where intercourse with foreign countries was constant, it was found impossible to exclude the disease by statutory law, so that the people of that city, thinking they would relieve themselves of the anxiety attending the constant risk of taking smallpox in the natural way, submitted by common consent on one occasion to a general inoculation. In order that the practice of inoculation should be conducted with as little risk as possible of the disease spreading by the natural transmis-

sion of infection, Dr. Benjamin Waterhouse, the first Professor of Theory and Practice of Medicine in Harvard College, published important rules and regulations governing the practice of the smallpox inoculation. Having thus been engaged in considering measures for restricting the spread of smallpox, it is not surprising that this physician should have been the first to urge upon the citizens of Boston the acceptance of Jenner's discovery.

Early in the year 1799 Waterhouse received from Lettson, of England, a copy of Jenner's brochure of "*Variolæ Vaccinæ*," and he became at once deeply impressed by the new and wonderful facts it contained. On March 12, 1799, he published in a newspaper of Boston a short communication entitled "Something Curious in the Medical Line," in which he gave a brief account of the new discovery, referring to its marvelous protective power against smallpox and predicting the incalculable benefits that the citizens of his own town and country would derive from it. "But," says Waterhouse, "this publication shared the fate of most others on new discoveries. A few received it as a very important discovery, highly interesting to humanity; some doubted it; others observed that wise and prudent conduct which allows them to condemn or applaud, as the event might prove; while a greater number absolutely ridiculed it as one of those whims which rise today and tomorrow are no more."

Soon after this Waterhouse received from London a copy of Dr. Pearson's book (the second publication on vaccination) entitled, "An Inquiry Concerning the History of the Cowpox, Principally with a View of Superseding and Extinguishing Smallpox." At a meeting of the American Academy of Arts and Sciences, held in the University building, and presided over by John Adams, then President of the United States, Waterhouse gave an account of the "new inoculation," read passages from Jenner's publication, and recapitulated from Pearson's book as much as he could remember, the book itself, he tells us, having been loaned and lost. The membership of the Academy included the most cultured men of Boston, and the communication was received with interest and satisfaction by all; but none manifested so great an interest as the illustrious President himself, "who," as Waterhouse says, "to a profound erudition in letters and politics joins no small knowledge in the science of medicine."

Before the next quarterly meeting of the Academy, Waterhouse received the third publication on the subject of vaccination, which was from the pen of Dr. William Woodville, physician to the Smallpox Hospital of London. This publication was entitled, "Reports of a Series of Inoculations for the *Variolæ Vaccinæ* or Cowpox, with Remarks and Observations on this Disease, Considered as a Substitute for the Smallpox." In lieu of a paper which he had been asked to prepare for this meeting Waterhouse read extracts from this publication. Having had as yet no experience in vaccination, not even having seen a case, he naturally failed to recognize the almost unpardonable mistake of Woodville. In his publication Woodville states that a large number of persons whom he "vaccinated" broke out during the course of the supposed vaccine disease with a vesicular eruption. Some, he says, had 200, some 300, some 500 and a few had from 1,000 to 1,500 vesicles. An infant at the breast died of convulsions on the eleventh day after the "vaccine matter" had been inserted, presenting at the time of death from 80 to 100 vesicles. The explanation of this unusual phenomenon is that Woodville first vaccinated a number of persons and then, three to five days afterward, inoculated them with variolous matter. The result was that these persons were affected by both vaccinia and smallpox. Now, it was the virus taken from this source that produced the eruption in the cases just referred to. This mixed virus was distributed freely in London and elsewhere and, as already stated, threatened for a time the reputation of Jenner's discovery. Of course, Woodville and some others regarded this generalized eruption as peculiar to vaccinia.

After Waterhouse had collected together a mass of evidence in support of the efficacy of vaccination, "too great," as he says, "to be resisted by any mind not perverted by prejudice," he began to seek the treasure. After several fruitless attempts to obtain the virus in an active state from England, he at length received some from Dr. Haygarth, of Bath, by a short passage from Bristol, and with it vaccinated successfully some

of the younger members of his own family. This virus was received the latter part of June, 1800, and on July 8 he vaccinated one of his sons, Daniel Oliver Waterhouse, aged 5 years. So far as existing records show, this boy was the first person vaccinated in America.

Finding that the course of vaccinia in this child was typical, as compared with Jenner's description of the disease, he then vaccinated another son, aged 3 years, with virus taken from the arm of the first child; next a servant boy, aged 12 years, with some of the infected thread received from England; then an infant, 1 year old, and its nurse, both from the arm of the 3-year-old boy. A few of the physicians of Boston and adjacent towns who felt an interest in the matter visited the subjects for the purpose of learning something about the new disease. The visits of these physicians gave rise to a malicious report that one of Waterhouse's children was so ill from the "new inoculation" as to require a consultation of several members of the profession. This was but the beginning of a long series of perversion of facts against which this worthy man had to contend in his work of introducing vaccination into Boston.

A number of persons now applied to Waterhouse for the benefits of vaccination, but he declined to vaccinate any one residing outside of Cambridge until he had proved that this new agent conferred protection against smallpox. To demonstrate this he applied to the smallpox hospital of Brookline for certain privileges. His letter, in part, reads as follows:

"I have collected everything that has been printed, and all the information I could procure from my correspondence respecting this distemper (cowpox), and have been so thoroughly convinced of its importance to humanity that I have procured some of the vaccine matter and therewith inoculated seven members of my family. The inoculation has proceeded in six of them exactly as described by Woodville¹ and Jenner; but my desire is to confirm the doctrine by having some of them inoculated by you.

"I can obtain variolous matter and inoculate them privately, but I wish to do it in the most open and public way possible. As I have imported a new distemper, I conceive that the public have a right to know exactly every step I take in it. I write this, therefore, to inquire whether you will, on philanthropic principles, try the experiment of inoculating some of my children, who have all undergone the cowpox. If you accede to my proposal, I shall consider it as an experiment in which we have cooperated for the good of our fellow-citizens, and relate it as such in the pamphlet I mean to publish on the subject."

Dr. Aspinwall, who was the physician in charge of the hospital, at once signified his willingness to assist in the experiment, and about two months after the vaccination of Waterhouse's children they were sent to the hospital and not only freely exposed to the infection of smallpox, but also inoculated with fresh matter taken from a patient. Finding the children resisted the disease absolutely when subjected to this most crucial test, Waterhouse exclaimed: "One fact in such cases is worth a thousand arguments."

Having now proved that vaccinia confers protection against smallpox, Waterhouse was ready and anxious to extend its benefits as widely as possible. He labored earnestly and persistently for the abolishment of smallpox inoculation, which was then commonly practised, and the adoption of vaccination in its stead. While he recognized the fact that inoculation had robbed smallpox of very many of its terrors, yet, like Jenner, he looked confidently to vaccination to effect its entire extermination. For the purpose of showing the public the danger from smallpox, the benefit of smallpox inoculation, and the still greater benefit of vaccination, he published in the *Columbian Sentinel* a comparative view, somewhat figuratively stated. Thus:

Natural Smallpox.	Inoculated Smallpox.	Kinepox.
"A contagious disease. One in 6 who take it dies."	"Contagious. One in 300 dies."	"Non-contagious. Never fatal."
"It is like an attempt to cross a dangerous stream by swimming, where 1 in 6 perishes."	"It is like crossing the stream in an old, leaky boat, where 1 in 300 perishes."	"It is like crossing the stream on a new and safe bridge."

¹There was, however, no eruption on the children, such as Woodville had observed in his cases. A single typical vaccine vesicle was all that was seen.

Waterhouse was desirous that vaccination should at first be placed only in careful hands; for he remembered that a few unsuccessful cases at the beginning of smallpox inoculation in Scotland deprived that country of the benefits of this measure for more than 20 years. But notwithstanding his great care in distributing the virus, it not infrequently fell into the hands of practitioners who misjudged and disregarded his cautions, and set at defiance all the rules of Jenner. Some regarded the whole matter as so extremely simple that they encouraged women and children to vaccinate each other. The result of such practice can easily be imagined. Early in the fall of 1800, vaccinia, in several localities, had degenerated from its originally mild character, and not infrequently were seen excessively sore arms and various forms of spurious results. In some of these cases the test of inoculation, still commonly practised, was followed by the development of smallpox, thus proving the vaccination to have been spurious.

"During this period," says Waterhouse, "a singular traffic was carried on in the article of kinepock matter by persons not in the least connected with the medical profession, such as stage-drivers, peddlers and, in one instance, the sexton of a church! I have known the shirt-sleeve of a patient—stiff from the purulent discharge from a foul ulcer, made so by unskilful management, and fully three weeks after vaccination, and in which there could have been none of the specific virus—I have known this cut up into small strips and sold about the country as genuine cowpox matter coming directly from me." After describing the result of introducing this septic matter into the system, and expressing surprise that, in such a country as ours, people should be found credulous enough to receive vaccination from such utterly incompetent hands, he concludes the paragraph by saying: "If any disagreeable occurrence arose in the course of this imprudent practice, the odium reverted to me."

As capping the climax of evil consequences resulting from such ignorant and careless practice of vaccination, I would mention the notable occurrence at Marblehead, a town 16 miles distant from Boston. Waterhouse had vaccinated two persons of that town, one being the son of a physician. This physician vaccinated 40 persons with virus taken from his son's arm. About the same time another physician, who resided in the town, obtained virus from the arm of a sailor who had just arrived from London, and who, doubtless, had been vaccinated with the mixed virus from one of Woodville's cases, as smallpox followed wherever this virus was used. The disease spread rapidly, and the citizens became so much alarmed that the municipal authorities were obliged to grant permission for a general smallpox inoculation. All but one of the 40 persons "vaccinated" by the first physician took variola, either by exposure to the infection or by inoculation. As a result of this misfortune there was a sudden depreciation of the reputation of vaccination in that vicinity, and the execrations heaped upon the head of the promoter of it were numerous and severe.]

As soon as Waterhouse learned what had happened at Marblehead he asked the Massachusetts Medical Society to appoint a committee to visit the town for the purpose of making a careful and complete investigation of all the facts connected with the disaster, and requested that the report be presented for consideration and publication without delay. A committee composed of some of the best men of the society was appointed, "but," says Waterhouse, "after making every arrangement with apparent exactness and sincerity, they never appeared on the ground, but left me alone to encounter, for aught they knew, the resentment of an enraged populace." Nevertheless, this brave and faithful advocate of vaccination visited the town alone, and found the facts to be about the same as already stated. In regard, however, to the 40 persons whom the physician just referred to vaccinated with virus from the arm of his own son, he learned that the virus had been taken as late as the thirteenth day of the vaccine process, and had therefore lost its specific character. It so happened at the time of the visit that Waterhouse's chaise-driver, who was present, bore upon his arm a vaccine vesicle on the eighth day of its development, and when the attention of the physicians at Marblehead was called to this vesicle they all agreed that the affection which had resulted from the use of the thirteenth-day virus was entirely

different. Moreover, there was one thing above all others in Waterhouse's favor, and that was that the two persons whom he had vaccinated did not take the smallpox, although they had slept with and nursed those who had suffered from the disease. When the popular voice condemned vaccination this latter fact pleaded strongly with the more intelligent part of the community for an arrest of judgment. Upon the whole, however, instead of receiving the censure and resentment of an enraged and very distressed people, this noble disciple of Jenner bore away with him their expressions of respect and gratitude, and he was cordially invited to visit their town again.

We cannot help admiring the sagacity and wisdom of Waterhouse in solving the difficult problems of vaccination which constantly confronted him. There were difficulties inherent to the subject itself, but most of them arose from the false teachings of Woodville, Pearson, and others. He did not receive, as he deserved, the support of his professional brethren of Boston, and in those days of slow and precarious communication with Europe he could not readily obtain advice from Jenner; hence he was compelled to depend on his own wisdom and courage. In his own words: "To rouse attention, to create belief, to inspire confidence, were laborious preliminary steps; but to confirm assertion by a public experiment, insulated as I was, and remote from all aid in case of embarrassment, was a task delicate, difficult and anxious."

Waterhouse very frankly admitted that, in spite of the best care he could exercise, the vaccine virus in his own hands had, by the end of the autumn or beginning of the winter of 1800, so far degenerated as to produce a vaccine vesicle showing considerable deviation from the original, and that he was unable to explain this change. He endeavored at first to account for it by supposing that the virus itself had become milder as it receded from the cow; but, upon considering the question more fully, he found that the process to which it gave rise was severer rather than milder. He then thought that cold weather aggravated the affection; but this explanation did not satisfy him; and so, he says, endless were his doubts, whims and fears while wandering through a perplexed path.

At this gloomy period he wrote to England for a fresh supply of virus, intimating at the same time that its loss in this country was owing to the cold weather. He gave Jenner a minute description of all the unfortunate occurrences he had met with, and begged him to explain the deterioration of the virus, as he himself was much perplexed about the matter. This worthy man replied that he had heard of the disasters in this country, and, in his great anxiety, had often wished he could convey these words on the wings of the wind across the wide ocean: "Take the virus before the efflorescence appears." And again, to be still more emphatic on this point, he wrote: "I don't care what British laws the Americans discard, so that they stick to this—never to take the virus from a vaccine pustule for the purpose of inoculation after the efflorescence is formed around it. I wish this efflorescence to be considered as a sacred boundary over which the lancet should never pass." This advice was so constantly given by Jenner, and was deemed of so great importance by him, that it became known everywhere as the "Golden Rule" of vaccination.

Early in the spring of 1801 Waterhouse received fresh supplies of virus from Jenner, Lettsom and other friends in England. With additional information and fresh virus he began vaccinating again, and was rejoiced to find that the vaccine disease presented all the characteristics of the first case in his own family. He was now anxious that the benefits of vaccination should be diffused throughout this entire country, and concluded it would be wise to establish a central point to which everything relating to vaccination might be sent and whence every ray of light pertaining to it might be reflected. He desired that the Massachusetts Medical Society should form such a center and made a request to that effect, offering at the same time to place himself under its direction and advice. "But," says Waterhouse, "an illiberal construction was put on my application and I was compelled to go on in this business as I began it—alone."

As Waterhouse had received from persons residing in the Southern States a number of letters containing inquiries about the "new inoculation," and requesting that it be introduced

into that section of the country, he was at a loss to know how to proceed to ensure success. He was anxious to spread this life-saving agent as widely as possible, but felt that it should be entrusted only in careful hands. As he had received some months before a letter from Thomas Jefferson, President of the United States, in which this high dignitary manifested considerable interest in the subject, Waterhouse concluded that if the Chief Magistrate of the nation could be induced to take hold of the matter, vaccination would be introduced into the South more speedily and safely than by any other agency. The letter of the President contained not only an acknowledgment of the receipt of Waterhouse's pamphlet on the subject of cowpox, but a very complimentary reference to his humane work. The letter read as follows:

WASHINGTON, December 25, 1800.

SIR: I received last night, and I have read with great satisfaction, your pamphlet on the subject of kinpeock, and I pray you to accept my thanks for the communication of it.

I had before attended to your publications on the subject in the newspapers, and took much interest in the result of the experiments you were making. Every friend of humanity must look with pleasure upon this discovery by which one evil more is withdrawn from the condition of man, and must contemplate the possibility that new improvements and discoveries may still more and more lessen the catalogue of evils. In this line of proceeding you deserve well of your country; and I pray you accept my portion of the tribute due to you, and assurance of high consideration and respect, with which I am, sir,

Your most obedient, humble servant,

THOMAS JEFFERSON.

DR. WATERHOUSE, Cambridge.

In pursuance of his purpose, Waterhouse forwarded to the President, June 8, 1801, some virus, together with books and drawings descriptive of vaccinia, and requested that they be given to some careful and discerning practitioner—to his own family physician if he preferred. He also sent a lengthy letter full of instruction as to the use of the virus, and courteously reminded the President that amidst the pelting storms of his adversaries Jenner had the countenance of his sovereign; that the Duke of York was a patron of the London Vaccine Institution; that Bonaparte took a lively interest in the dissemination of vaccination in France, and so did the German nobility at the Court of Vienna. He expressed the hope that the President of the United States would lend his influence to extend the blessings of the new discovery to the Middle and Southern States, believing, as he said, if it came from the hands of the Chief Executive of the nation it would make a greater and more favorable impression on the minds of the public.

The President's reply convinced Waterhouse that he had made no mistake in the course he decided upon. The virus which had been sent him was entrusted to a judicious and successful physician, but it failed to communicate the vaccine disease. So also did the second and even the third lot sent to the President by Waterhouse. A number of communications passed between these gentlemen, when at last Jefferson suggested that as the weather was warm the virus be placed in a small vial hermetically sealed, and that this vial be immersed in water in a larger one, which must also be hermetically sealed. The virus thus conveyed was used on some members of the President's family by Dr. Wardlaw, of Monticello, and proved successful. This occurred August 6, 1801. From his own family the President supplied Dr. Gantt, of Washington, with a small quantity of vaccine matter, and thus was the seed of vaccination planted at the capital of the United States.

All applications made to the President for virus received his careful attention. To him belongs the honor of sowing the seed of vaccination not only into the District of Columbia, but into Pennsylvania, Maryland, Virginia and the States farther south. He studied the process of vaccinia so carefully that he was able to advise others as to the proper time for taking the virus. This period he fixed at eight times 24 hours. His advice in this matter, I regret to say, was frequently disregarded by physicians, who believed themselves wiser than he, but never without detriment to vaccination.

The blessings of Jenner's discovery were extended even to the Indians, by President Jefferson. It so happened, in the winter of 1801, that there was at the capital an embassy of Indians, of which Little Turtle was the chief warrior. They were being supplied with ploughs and all other instruments in

common use in agriculture, and to crown all, the President explained to Little Turtle how the Great Spirit had made a revelation to the enlightened white men; first to one man in England, and from him to one in Boston, of the means to prevent them from ever having the smallpox. The copper-colored king placed so much confidence in what his great Father, the President, told him that he submitted, together with the rest of the warriors, to be vaccinated by the Rev. Dr. Gantt, chaplain to Congress. On their departure, the President caused them to be supplied with virus, and gave their interpreter an abstract of Waterhouse's letter of instruction. Not long after this 15 other warriors came to Washington to receive the same blessing.

It is apparent from what has been said that the principal difficulty of introducing vaccination into this country arose from the extreme delicacy of the vaccine fluid. The material which both Waterhouse and Jefferson first received was found to be inert, and they were obliged to continue their efforts for a long time before they met with success. Even after the vaccine disease was once established in a locality, it was not unusual for the virus to be lost through want of proper care in collecting and preserving it. That which was first imported into Boston, New York, Philadelphia, and some other cities, failed to produce the vaccine disease. Even that with which Waterhouse first succeeded was wholly lost when it had been in use only a few months. The virus by which vaccinia was permanently established in the various parts of this country was, what Waterhouse called, the lineal descendant of his second importation.

Waterhouse had the satisfaction of knowing that the virus which first proved effective in New York City came from him. To speak more definitely, it was taken from the arm of Governor Sargent's domestic, who had been vaccinated in Boston by Waterhouse, and thence was inoculated into several persons in New York City, on May 22, 1801, by Dr. Valentine Seaman. Vaccine virus first reached Philadelphia in an effective state November 9, 1801. It was forwarded by Jefferson, through Mr. John Vaughan, to Dr. John Redman Coxe, and was accompanied by a personal letter from the President, full of valuable instruction as to its proper use. The first person who is said to have been successfully vaccinated in Philadelphia was Dr. Coxe himself. It is remarkable that his system proved susceptible to the vaccine disease, for he is said to have passed through smallpox in early life. The affection, however, seems to have been typical, as he manifested the usual constitutional disturbance; and besides, the virus from his arm, he says, proved a considerable source of infection for the inoculation of other persons.

The efforts of Dr. Coxe to disseminate vaccination in Philadelphia are praiseworthy. He duly appreciated the value of Jenner's discovery, and labored zealously to have it supersede smallpox inoculation. But it must be said of him that he was not a faithful disciple of Jenner. Differing from the master, he believed that the virus might be taken in an effective state from the vesicle after the appearance of the efflorescence. In his practice, therefore, he continually transgressed the "Golden Rule" by disregarding the "sacred boundary" line of Jenner. As a result of this transgression, together with his teaching on the subject, the virus very soon began to deteriorate, and, finally, in the autumn of 1802, was entirely lost in Philadelphia. About the same time, and from the same cause, it was also lost in New York City. In sending a fresh supply of vaccine to physicians in these cities, Waterhouse told them that if they did not restrict the time for taking lymph from the vesicles within narrower limits than that which is allowed in the writings of Woodville, Pearson, and Coxe, they might expect to find not only the deviation in the vesicle of which they complained, but utter failure.

From what has been said, it may be seen how very completely the mission of Waterhouse was accomplished. By his efforts vaccination was introduced into almost every city and town in this country. Where the first efficient vaccine virus was not received from him, it was supplied through the agency of Jefferson. It is, therefore, not too much to say that the credit of introducing vaccination into the United States belongs almost wholly to these two men. In commenting on the laud-

able part the worthy President took in disseminating the blessings of the new discovery, Waterhouse says:

"Mr. Jefferson has long cultivated that kind of philosophy which Socrates was said to have brought down from the high heavens for the use of men, and still finds time to practise it. Mr. Adams, while executing the affairs of state, was president of the American Academy of Arts and Sciences; he was and still is esteemed its ornament and pride. Washington's whole life was a series of benevolent deeds. But the countenance of this modern Moses shone with a brightness too dazzling for me to delineate! I notice but one trait in the characters of these three illustrious chiefs, and merely to inform foreigners that, in our eyes, the lively interest which President Jefferson has taken in that discovery, 'by which one evil more is withdrawn from the condition of man,' has shed a lustre on the supreme officers of our nation."

Soon after Jenner's brochure was published there appeared in almost every civilized country in the world one or more supporters of the new discovery who adhered more faithfully than others to the teachings of the master, and consequently achieved distinction in this new field of beneficent work. But, of the many disciples of Jenner, Waterhouse was, without much doubt, the ablest and worthiest. It is, perhaps, not too much to say he was so regarded by the great benefactor himself. The published letters of Jenner clearly indicate his high esteem of this disciple. He well deserved the confidence of the master; for, singlehanded and alone, in his own city he faithfully and earnestly defended and vindicated vaccination against the ridicule of the profession and the prejudice of the public for seven years, or until conviction became too strong for argument, and theoretical objections were forced to give way to stubborn facts. So earnestly, constantly and successfully did Waterhouse devote his time and talent to the dissemination of vaccination in this country, and always so precisely in accordance with the teachings of Jenner, that he received the complimentary title of the "Jenner of America"; not, as might be supposed, by favor of the medical profession of his own country, but by the unanimous voice of the London Medical Society.

MEDICAL PARIS.

BY

NICHOLAS SENN, M.D.,

of Chicago, Ill.

During the period of the greatest prosperity of France, Paris was the center of medical science of the world. The university and great hospitals were crowded with practitioners and students from the adjacent and most remote countries. It was generally conceded that medical education could not be finished without a more or less prolonged visit to the great medical institutions of Paris. Nélaton, Velpeau, Malgaigne and Dupuytren in surgery; Louis, Broussais, Trousseau and Broca in medicine, were some of the strongest attractions whose influence molded the teaching and practice of the art and science of medicine and surgery the world over. Most of the books written by these distinguished celebrities were translated into English, German and other living languages and became the recognized authorities in most of the medical schools. Medical science is deeply indebted to the French investigators who have done so much in eliminating erroneous ideas and in establishing new facts by original research and careful clinical observation. Many of the leading medical men of Paris of recent and present date occupy a well-deserved prominent and influential position as authors, teachers, scientists and clinicians. Without a Pasteur, bacteriology might have remained unborn at the present time. Charcot was a profound thinker and a brilliant clinical teacher. Péon and Ollier were recognized masters in laying the foundation of modern surgery. Since the use of the science of medicine in France it has at no time gone into decline. The good work of progress has never come to a standstill, but the influence of the French school has no longer such a firm hold on the medical profession outside of its national limits. The Vienna school, under the leadership of Hyrtl, Rokitsansky, Oppolzer, Carl Braun and Billroth, has since enjoyed the greatest popularity and wielded the strongest influence in molding the medical

ideas during the middle of the last century. Since the awakening of Germany in 1871, after her victorious conquest against France, the seed of science has flourished upon her soil, and has yielded fruit which in quantity and quality has surpassed anything heretofore accomplished in the same space of time. With the political victory came a general prosperity which has become the means of erecting and maintaining scientific institutions which in efficiency surpass those of any other country. The universities of Germany, with their model laboratories and hospitals, have become the acknowledged medical centers for the entire world. The current of medical students and graduates seeking additional advantages has been recently turned away from Vienna in the direction of Germany. The immense clinical material offered by the hospitals of Paris and the unexcelled facilities for the study of pathology presented by the Allgemeines Krankenhaus and other large hospitals of Vienna are powerless in deviating the course of the present current. How long Germany can hold this supremacy is impossible to predict. It is not so difficult to predict where the next temple of medicine will be erected. In less than 25 years the United States will be the Mecca toward which pilgrim medical students from all climes will wend their way.

Science has been moving westward and will continue to do so in the future. The United States is in its direct pathway and will be reached in due course of time. There can be but very little doubt that when our country has fulfilled its mission the inheritance will next be appropriated by the youngest of civilized nations—Japan. The young vigorous private institutions so richly endowed by our public-spirited men of wealth will become the great centers of learning and will meet their exalted future requirements in a way that will astonish the outside world. Paris presents today clinical advantages of far reaching value that are not sufficiently appreciated by those who feel the needs of postgraduate education. Undoubtedly one of the reasons for this is the preference given by our students to the German over the French language when it becomes necessary to acquire another language for the purpose of completing their medical studies. A speaking knowledge of French is practically of but little use to our practitioners, while the large percentage of German-speaking patients adds much to the desire of mastering this language. Another inducement for obtaining a practical knowledge of the German language is the richness of the German medical literature, which exceeds by far that of any other country. Any one who wants to keep pace with rapid advances of medical knowledge must be familiar with the deep researches of German scientists and the accurate observations of the German clinicians.

A Forenoon at the Hôpital Tenon.—During my limited sojourn in Paris I spent one very profitable forenoon at the Hôpital Tenon. This is one of the older hospitals in Paris. It is a solid stone building outside of the great business center of the city and can accommodate 1,000 patients. On that particular day I had the pleasure of familiarizing myself somewhat with the surgical technic of one of the noted surgeons of Paris—Dr. Broca. I was particularly impressed with the simplicity of his details in rendering hands and field of operation aseptic. Hand disinfection is obtained by scrubbing with warm water and soap and by immersion for a short time in a 1:2,000 bichlorid solution. The field of operation is disinfected by the same means after the patient is fully under the influence of a general anesthetic. The dressing material consists of plain gauze and absorbent cotton sterilized by dry heat, the former kept ready for use, in tin boxes. Chloroform is the anesthetic used, dropped upon a thin gauze compress held in contact with the face. Reverdin's needle is used in suturing. Inside of the peritoneal cavity silk is used, outside catgut. The harmonious action between operator and assistant in suturing and ligaturing was a pleasure to observe. Dr. Broca is a very expert operator and his work is the best proof of his familiarity with the technic of the different operations and his vast experience in the operating room. He uses very few instruments and makes free use of his hands in separating and approximating wound surfaces. His movements are quick but deliberate and certain. During the forenoon he performed the following operations:

CASE I.—Appendicitis in a badly nourished boy about 14 years of age. First attack; duration nine days. Clinical symp-

toms were mild. There was no swelling in the ileocecal region. Abdomen was flat. An incision three inches in length over the appendix and parallel with the fibers of the external oblique muscle was made. Internal oblique and remaining layers were incised to the same extent. There were adhesions. Appendix was not enlarged, but very vascular. Subserous amputation was done. Mucosa of stump not cauterized, but was buried by two rows of Lambert sutures of fine silk. Peritoneum, internal oblique; external oblique and skin were united separately by continuous catgut suture.

CASE II.—Boy, aged 15. Had multiple enchondroma of metacarpal bones and phalanges of left hand. The tumors varied in size from a hazelnut to a pea. Most of them were central, and near the epiphyseal lines. Operation without elastic constriction. Short incision over center of tumor; removal of tumor by excochleation. Six tumors were removed in this manner, and all of the wounds sutured throughout.

CASE III.—Patient was a girl, aged 12. She was anemic, and the subject of tuberculosis of the lymphatic glands in the submental and left parotid region. Glands were in a state of far advanced caseation, with overlying skin discolored. They were removed by clean excision. In the parotid region a thin mantle of parotid tissue was removed with the caseous glands within the capsule of the parotid. Before draining and suturing, the wounds were touched freely with a 10% solution of zinc chlorid.

CASE IV.—Boy 10 years of age, operated upon for hypospadias. Termination of urethra half way between glans penis and scrotum. A urethra was made by dissecting upon each side a narrow quadrangular flap, which was sutured over a catheter inserted into the bladder.

The operator was not pleased with the result of this operation, and in all probability next time will make use of the method described by Dr. Carl Beck, of New York, which has yielded such brilliant results in such cases in the hands of this and many other operators.

ASIATIC CHOLERA IN MANILA.

From the Report of Richard P. Strong, M.D., Director of the Biological Laboratory at Manila.

To the Commissioner of Public Health, Manila, P. I.:—During the evening of Thursday, March 20, I was notified that there were two cases of suspected cholera lying in the San Juan de Dios Hospital. On investigation these two cases proved to be male Filipinos, one about 45 and the other 24 years of age.

It was ascertained that the former had been taken sick early in the morning of March 20 with violent purging and cramps in the abdomen. He had been removed to the hospital, where early in the day the severe diarrhea had continued, and he had complained of cramps in his legs. On examining the patient at 9 p.m., March 20, he was found to be in a state of extreme collapse. The skin was cold and bathed with perspiration. The rectal temperature registered 102°. No pulse could be felt in the wrist, and the heart sounds were very rapid and feeble. He was already unconscious. An examination of the rectum showed no discharge, and it was stated that there had been no bowel movement for about six hours. A coverglass preparation was, however, made from the rectal mucosa and examined microscopically. While a few organisms present possibly resembled, morphologically, the spirillum of Koch, the majority did not suggest this organism.

An examination of the other patient (Case II) showed a somewhat similar condition to the first. He was still, however, conscious and stated that he had been attacked with severe diarrhea, cramps and vomiting the previous night (March 19). There had been no diarrhea since morning. He complained of great thirst and the voice was very husky. The skin was cold to the touch and no pulse was perceptible at the wrist. An examination of the chest showed rapid, feeble heart sounds. The abdomen was retracted.

These cases were regarded as very suspicious from a clinical standpoint, but as attacks of cholera nostras have occasionally been observed before in Manila a bacteriologic examination was most desirable. As there was also no discharge from the bowels in this case and no soiled linen among the bed-clothes an attempt was made to secure a rectal speculum or rectal tube in order that satisfactory material for a microscopic examination might be secured.

At this time, while a search was being made in the hospital for these instruments, a telephone message was received stating

that a native had just died under suspicious circumstances in one of the districts near by and that the body was then on the way to the morgue. The further examination of Case II was, therefore, deferred in order that an autopsy might be performed on Case III as soon as possible.

CASE III.—The necropsy on this case took place about one hour after death. The body was still warm, but rigor mortis was already marked. The following is a brief summary of the more important changes found present:

The intercostal muscles were dry and red in color. The right chambers of the heart were distended with dark, clotted blood. The bases of the lungs were congested. Upon opening the abdominal cavity, the serosa of the ileum and jejunum presented a rose pink color. The small intestine was dilated, but the large bowel was contracted and pale grayish in appearance. The bloodvessels of the small intestine were markedly injected. On opening the ileum, a large amount of watery fluid containing whitish flakes escaped. The solitary follicles were swollen and reddened, particularly at their margins. There were many small diffuse hemorrhages in the mucosa. This process continued nearly through the jejunum. The mucosa of the large intestine was in general pale gray in appearance, but its vessels were injected and numerous small hemorrhages were present. The spleen was small and firm. The capsules of the kidneys stripped easily. The kidneys were much congested, and their surface vessels deeply injected. The stomach was distended with gas and contained a small amount of fluid. Its mucosa showed a few small superficial hemorrhages. The liver showed moderate cloudy swelling. The mesenteric glands were not particularly swollen. Coverglass preparations were made from the mucosa of the ileum and from the spleen. Those from the latter were negative for organisms. The former showed a number of comma-shaped bacilli, but there were also a large number of other organisms present. Cultures were made from the spleen and from the small intestine in Dunham's solution.

Shortly after midnight, and just before the completion of the above autopsy, a second case was brought to the morgue.

CASE IV.—This body was also examined. Moderate rigor mortis was present. The abdominal cavity was free from fluid. The spleen was small and firm. The liver showed cloudy swelling. There was moderate atheroma of the arch of the aorta, and congestion of the lower lobe of the left lung. The vessels of the mesentery and of the small intestine were deeply injected. The mucosa of the latter showed numerous diffuse bright red hemorrhages, but the swelling of the solitary follicles was not so marked as in Case III. The mucosa of the large intestine also showed numerous hemorrhages, but was elsewhere in general pale in color. Cultures were also made from the intestines of this case.

On arriving at the laboratory, plate cultures were made from the Dunham's tubes inoculated with material from the small intestine of Cases III and IV. At 9 a.m. of the same day an examination of the culture tubes in Dunham's solution inoculated from the spleen showed no growth. In those from the small intestines of Cases III and IV there was a distinct cloudiness of the media. Hanging drop preparations made from the top of the media showed a motile bacillus, often curved in shape and occasionally appearing in S-shaped forms. Stained preparations showed a comma-shaped bacillus measuring about 4 inches in length by .4 to .5 inch in thickness. Preparations made from the colonies which had developed on the plates, inoculated with intestinal material, showed the organism to possess but a single terminal flagellum. Several large loops from the plate colonies were suspended in 1 cc. of salt solution and injected into the abdominal cavity of a guinea-pig. The same amount was injected into the breast-muscles of a pigeon.

Cultures in glucose agar and Dunham's solution were prepared from colonies on the plate-cultures, and in the latter media also from the upper portion of the original tubes of peptone solution inoculated from the intestine at necropsy. On Friday afternoon the Dunham's tubes all showed a marked indol reaction on the addition of specially prepared nitrite-free sulfuric acid, while the glucose-agar tubes showed no gas production.

It was, therefore, reported verbally to the Board of Health that probably the spirillum of Asiatic cholera had been isolated.

On Saturday morning the guinea-pig was found dead. During the afternoon before its temperature had been subnormal.

On autopsy there was a large amount of cloudy serous fluid in the abdominal cavity. A hanging-drop preparation showed very large numbers of comma and spiral-shaped bacteria, all clumping in the serous exudate. The pigeon was still alive, and has since remained well.

The patient in Case I died on Friday morning, and the autopsy showed in general a somewhat similar condition to that observed in Cases III and IV. The large intestine, however, showed more numerous and extensive hemorrhages. There was a large amount of rice water material in the small intestine. Coverslip preparations from a floccule of mucus in the ileum showed almost a pure culture of comma and spiral-shaped organisms. Cultures in this case have revealed an organism similar to that isolated from Cases III and IV.

The patient in Case II is still alive and is apparently recovering.

I, therefore, have the honor to inform you that cases of Asiatic cholera have occurred in Manila, and that the spirillum of Koch has been isolated and obtained in pure cultures from these cases.

MARCH 22, 1902.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

May 31, 1902. [Vol. xxxviii, No. 22.]

1. Need of Much More Accurate Knowledge Concerning Both the Immediate and Remote Effects of the Remedial Agents in General Use. N. S. DAVIS.
2. Transient Monocular Blindness. WILLIAM CAMPBELL POSEY.
3. Perforating Wounds of the Eyeball and Sympathetic Inflammation. H. GRADLE.
4. Action of Silver Nitrate and Chromic Acid on Chronic Glositis, Under the Influence of the Electric Current. M. L. RAVITCH.
5. Foreign Body Within the Orbit. ALBERT B. HALE.
6. Some Atypical Forms of Disease. JAMES L. TAYLOR.
7. A Case in Which a Large Bone Cavity Was Healed by Means of Thiersch Grafts. JOHN PRENTISS LORD.
8. The Value of State Control and Vaccination in the Management of Smallpox. J. N. MCCORMACK.
9. The Lung Development of the Child. J. ALLEN GILBERT.
10. Rotary Lateral Curvature and Pott's Disease of the Spine. DANIEL W. MARSTON.
11. Surgical Conservatism of the Ovaries and Fallopian Tubes. EDWIN RICKETTS.

2.—Transient Monocular Blindness.—Apart from momentary blurring due to a tired ciliary muscle, the partial blindness of migraine, or the periodic dimness which is so frequent a precursor of glaucoma, transient loss of vision limited to one eye is very uncommon, or at least has been rarely recorded. Posey reports several cases, and reviews the literature of the subject. The writers cited attribute the blindness to disturbance of the vascular supply by spasm, this not being maintained long enough to cause permanent change in the tissues. Sometimes the blindness becomes permanent, therefore prognosis must be guarded. Recurrence of attacks should be prevented by combating any tendency to endarteritis, as it is probable the spasm is induced by this process. Iridectomy to cause dilation of the vessels and reduce intravascular pressure is too radical in view of the uncertain course of these cases. Amyl nitrite and massage should be tried during attacks. [H.M.]

4.—Silver Nitrate and Chromic Acid Under the Electric Current in Chronic Glositis.—Ravitch paints the tongue with silver nitrate, 15%, or chromic acid, 5%, and applies the negative metal electrode with the positive in the patient's hand. The Ag and H ions go to the negative pole. The NO₃ is driven deeper and deeper into the tissues where it forms nitric acid and oxygen. The CrO₄ also penetrates and is decomposed to form with the water oxygen and chromic acid, which in contact with the tissues oxidizes, producing basic chromium oxid. Pain is greatly relieved and in 20 to 30 applications the tissues become normal. He reports five cases treated. [H.M.]

7.—Bone Cavity Healed by Thiersch's Grafts.—The case reported is the first in which a large hollow bone defect has been grafted. To fill the cavity by granulation would have required months. To fill it by decalcified bone chips or sponge would probably have resulted in failure, being too favorable a medium for lurking germs. In six weeks epidermization was complete. [H.M.]

8.—Smallpox.—McCormack gives the statistics of the recent epidemic in Kentucky, in which there were 11,700 cases, with 191 deaths. Only 15% of the population were protected by vaccination. The spread was due to the mildness of the type and the unfamiliarity of the medical profession with the disease. Efforts at control were hampered at first by ignorant officials, who, however, were brought to terms by threats of quarantine. Study of epidemics in country districts leads to the conclusion that smallpox is slightly, if at all, contagious until the beginning of the pustular stage. If those exposed can be thoroughly vaccinated within 48 hours they will almost certainly be saved an attack. Later than this inoculation is safer. No person should be quarantined with patients unless previously vaccinated in three places with fresh virus. Physicians are responsible for the carelessness as to universal vaccination. Varioloid occurs in those only partly protected. If three or more good marks are secured a second vaccination is seldom successful to any degree in after life. Humanized virus should be used as far as possible. It "takes" more certainly and produces less local and constitutional disturbance and gives longer and better protection. Systematic vaccination and prompt isolation would stamp smallpox out of the country in six weeks. [H.M.]

9.—Lung Development in the Child.—The blessings of a gymnasium are seen by comparison of the lung capacity of children in public and private schools. The averages, based on hundreds of examinations at different ages, are tabulated. The chart shows enormous differences in development. That at 6 years the lung capacity is less in private school children, and that the relation is reversed within a year or two is a convincing argument in favor of the gymnasium. The relatively slight increase in girls after 12 is a significant criticism on lacing. [H.M.]

10.—Rotary Lateral Curvature and Pott's Disease.—Kyphosis is sometimes caused by typhoid infection, actinomycosis and acute osteomyelitis. Tuberculous spondylitis is due to infection in an area of previous inflammatory action from trauma. Rotary lateral curvature, when occurring in the dorsal or cervical region, is nearly always congenital or rachitic; in the lumbar region it is due to a shortened limb or tilted pelvis. Paralyzed muscles or adhesions following pleurisy may cause it. Deformity is from absorption of the vertebrae from pressure. The commonest symptoms are the projecting shoulder-blade and drooping shoulder. In tuberculosis the diagnosis should be made before deformity occurs. In the treatment of rotary lateral curvature mechanic support and gymnastics should be combined. The exercises must be taken while wearing the support, and the apparatus should be removed when the patient is in bed. When deviation is more than half the diameter of the vertebrae, an unyielding support is imperative. When absorption has occurred, "cure" lies in establishing compensating curves which maintain the equilibrium of the column. In tuberculosis fixation and extension must be employed. Sinuses do not contraindicate immobilization. Forceful correction of deformity is advised only in selected cases. In cases requiring a permanent brace, aluminum is recommended. [H.M.]

Boston Medical and Surgical Journal.

May 29, 1902. [Vol. cXLVI, No. 22.]

1. An Abstract of Some of the Prevailing Opinions on the Periods of Incubation, Observation and Isolation of Some of the Infectious Diseases. ELBRIDGE G. CUTLER.
2. Remarks on Intestinal Obstruction by Bands, Following Operations on the Peritoneal Cavity, with Report of Cases. F. B. LUND.

1.—Periods of Incubation, Observation and Isolation of Some of the Infectious Diseases.—This report is based on the authority of numerous observers who are quoted. The following are some of the conclusions: In typhoid, incubation oftenest covers 12 to 14 days. The period of observation should extend over 25 days when the water supply cannot be changed. Isolation should extend through convalescence. Disinfection of dejecta should be practised for a month after symptoms have ended, or better, until bacilli have disappeared from the urine. In mumps incubation lasts usually three weeks; observation, 25 days; isolation, 28 days, if swelling and tenderness have disap-

peared. In scarlet fever incubation is 2 to 3 days; observation, 10 days; isolation from the appearance of the eruption to the disappearance of all complications. In whoopingcough incubation is from 4 to 10 days; observation, 21 days; isolation till the characteristic cough has ceased. In measles incubation is 11 to 12, possibly 10 to 14 days; observation should be 16 days; isolation should last until desquamation and catarrhal symptoms have ceased. Chickenpox: incubation usually 14 days; observation, 20 days; isolation until the scabs are detached. Rôtheln: incubation usually 18 days; observation, 23 days; isolation, 14 to 21 days, according to severity. Smallpox: incubation, 11 or 12 days, usually; observation, 3 weeks; isolation until the crusts have fallen and the patient is disinfected. Diphtheria: incubation usually 2 days, occasionally 7; observation, 12 days; isolation until there are two consecutive negative cultures from nose and throat. Influenza: incubation, 2 to 3 days; observation, 6 or 7 days; isolation until the catarrhal symptoms have ended. [H.M.]

2.—Intestinal Obstruction by Bands.—Lund asserts that care and neatness in the technic, especially in the finishing of operations, is the duty of the surgeon if he would avoid post-operative complications. If possible no part should be left uncovered by perineum within the abdominal cavity after an operation, and the complete removal of all infected tissue should be accomplished to prevent the formation of adhesions. Adhesions form so readily and almost universally, especially in infected cases, the wonder is that there are not a greater number of cases of intestinal strangulation. The symptoms of intestinal strangulation from adhesions are the same as those from any cause of acute obstruction. In cases of grave doubt, operate. The fact that the bowels may move one or more times after the onset of the symptoms should not deceive the surgeon—it is simply the emptying of the bowel below the seat of obstruction. Four cases are reported by the author, in one of which 21 inches of gangrenous bowel was removed. Recovery followed in each case. [A.B.C.]

Medical Record.

May 31, 1902. [Vol. 61, No. 22.]

1. The Treatment of Cholelithiasis. HOWARD LILIENTHAL.
2. Acroparesthesia (the Paresthetic Neurosis): The Analysis of 100 Cases. JOSEPH COLLINS.
3. The Symptoms of Chronic Nonalcoholic Gastritis. GEORGE ROE LOCKWOOD.

1.—The Treatment of Cholelithiasis.—Lilienthal calls attention to the similarity of cholelithiasis and appendicitis—spontaneous permanent cures are in both equally impossible; acute infections are as dangerous in the one as in the other; and both diseases call for surgical treatment. He reports 10 cases in which he has operated, adopting his operation in each to the existing exigencies—doing cholecystotomy, a cholecystectomy, cysticotomy or choledochotomy as indicated. The latter is the most difficult operation. In one of the reported cases he did a cholecystectomy on a child of 11 for chronic cholelithiasis with recurring attacks of biliary colic and jaundice. A perfect recovery followed. [A.B.C.]

2.—Acroparesthesia, or abnormal sensation of the extremities, is characterized by sensations of pricking, tingling, stinging and subjective numbness. It is a symptom or a symptom complex in some cases, and in others a neurosis. There are many reasons for looking on it as a fatigue or exhaustion state like neurasthenia. There is lessening of manual dexterity, both subjective and objective, sometimes followed by weakness or stiffness after the paroxysm is over. Analysis of 100 cases shows that persons are most likely to be affected between 30 and 50, the period of greatest strenuousness. It is closely related to occupations producing exhaustion of the upper extremities; in dishwashers and laundresses it is probably an expression of vasomotor dilation. It is rarely attributable to any cause but overwork. Now and then tea-drinking, alcohol, tobacco, dyspepsia and constipation seem to be the cause. The pathogenesis is unknown. It may be due to insufficient lymph in the nerve-sheaths, auto-intoxication or exhaustion of the sympathetic nervous system. Treatment consists in removal of the constipation, rest, diet, hydrotherapy, and electricity. [H.M.]

3.—Symptoms of Chronic Nonalcoholic Gastritis.—Lockwood groups the cases into six classes—hyperacid, normal acid, and anacid, with and without atony. In uncomplicated cases, if the muscular power is good, the only symptom apt to be referred to the stomach is acidity. This occurs in half the hyperacid cases and in some of complete achylia. Cases with normal acidity and the vast majority of cases of anacidity, give no gastric symptoms. Hyperacidity may resemble a neurosis. In gastritis, contrary to the accepted teaching, the appetite is good, except in advanced atony and in neurasthenia. Pain occurs from acidity and gas. Nausea does not occur in relation to meals, but usually when the patient is tired and nervous. Vomiting does not occur in nonalcoholic cases. Unless there is diarrhea, nutrition is good and there is no anemia. If the muscular power is poor, gas is prominent, especially in hyperacid cases, and is due to swallowed air. As this is observed in simple atony, the symptom is not due to gastritis. Gastritis may cause severe diarrhea and emaciation, mistaken for colitis or malignant disease of the colon. This occurs in both hyperacid and anacid cases, and diagnosis is possible only by gastric analysis. Bilioussness is generally due to intestinal toxemia, traceable to improperly prepared chyme. Anemia and constipation are the only symptoms in many cases of gastritis, and their continuance justify analysis. [H.M.]

New York Medical Journal.

May 24, 1902. [Vol. LXXV, No. 21.]

1. The Pathology of the Tissue Changes Caused by the Röntgen Rays, with Special Reference to the Treatment of Malignant Growths. CARL BECK.
2. Albumin in the Urine: A New Way of Applying Nitric Acid and Other Reagents. L. NAPOLEON BOSTON.
3. Suprapubic Prostatectomy. FLOYD WILLCOX MCRAE.
4. Tracheal Injection in the Treatment of Bronchial and Lung Diseases. LARUE D. ROCKWELL.

1.—See *American Medicine*, Vol. III, No. 7, p. 257.

2.—Albumin in the Urine.—Boston discusses the methods of applying reagents, and gives a new application of nitric acid. A pipet is filled for a distance of from 1 inch to 1½ inches with the urine to be tested. The surface of the pipet is then cleansed by a damp towel and placed with its contained urine in pure nitric acid, when the pressure of the index finger is lessened and the acid allowed to flow gradually up into the pipet. When it contains about the same amount of acid and of urine, the finger is again pressed firmly and the pipet held toward the light on a level with the eye, and in the presence of albumin a distinct white cloud in the form of a ring appears at the zone of junction. The nitric-magnesium and nitric-acid tests were found to be the most reliable, yet sodium tungstate and sulfosalicylic acid gave results which were highly gratifying. [C.A.O.]

3.—See *American Medicine*, Vol. II, No. 22, p. 847.

4.—Tracheal Injection in Bronchial Diseases.—Rockwell has used tracheal injections in some forms of bronchitis and winter cough with asthma, and is confident that this is the most direct and effective means of treating them. The medicines used are volatile substances of thoroughly tested germicidal power, and are held in solution by sterilized olive oil, which, when thrown into the trachea, spreads itself over the bronchiotracheal walls, giving a considerable surface for volatilization, and thus the currents of respiration are constantly loaded and carry these vapors to all portions of the lungs penetrated by air. The author has used with success a solution of oil of eucalyptus, oil of thyme, oil of cassia and iodoform in sterilized olive oil in cases of chronic bronchitis. [C.A.O.]

Medical News.

May 31, 1902. [Vol. 80, No. 22.]

1. A Contribution to the Subject of Infant Feeding. S. HENRY DESSAU.
2. The Bacterial Pathology, Symptomatology, Diagnosis, Treatment and Quarantine of Tonsillar Inflammations. WILLIAM G. BISSSELL.
3. The Diagnostic Uses of the Gonococcus. E. D. BONDURANT.
4. Poisoning by Aconite (the Condon Case) and the Physiologic Analysis of Alkaloids. WILLIAM SEAGROVE MAGILL.
5. Some Suggestions Relative to the Treatment of Tuberculosis. F. M. POTTINGER.
6. The Smallpox Problem. ERNEST WENDE.

1.—Infant Feeding.—Dessau epitomizes the history of infant feeding and emphasizes the importance of breast milk.

Cows' milk is the best substitute. In artificial feeding simplicity, readiness of preparation, and economy of cost, with a reasonable assurance of successful results, should be kept in view. Time and quantity are important. Dessau recommends taking the upper portion of milk that has stood from four to six hours at a temperature not above 60°. The proportion of fat in this is better. A pinch of table salt or sodium phosphate is added, as cows' milk contains no sodium salts; also a heaping teaspoonful of raw cane sugar to the quart. This is set in cold water in a double boiler and allowed to remain on the fire ten minutes after the water has begun to boil. This not only Pasteurizes the milk but modifies the casein and consequently the curd; and does not injure the nucleins, globules and calcium salts. This is diluted one-half for infants under 3 months; for older babies one part of water to three of milk is usually satisfactory. Barley or oatmeal water cooked one hour and dextrinized with cereo or diastase may be used for dilution when there is intestinal disturbance. In constipation increased dilution or malt extract is indicated. [H.M.]

2.—Tonsillar Inflammations.—A follicular tonsillitis may be of a communicable or noncommunicable type. In view of this fact it is advisable to adopt a nomenclature expressing the microorganismal pathology, those conditions without such a causal factor affixing the term "simplex." Cultural methods are the only means of positive diagnosis. The prognosis of tonsillar and pharyngeal diphtheria is excellent if the infection is recognized early. The time of the introduction of the antitoxin has a material effect in regard to the length of illness. The bacillus remains on an average 14 days after complete recovery. In streptococcus infections diphtheric antitoxin does little or no good, but improvement has been reported from antistreptococcus serum. Such infections should be quarantined. For the micrococcus of sputum septicemia no antitoxin has been discovered. This does not require quarantine, neither do cases of tonsillar inflammation produced by thrush. The predominating organism in suppurative tonsillitis or quinsy is *Staphylococcus pyogenes aureus*. Bissell discusses the treatment of the various forms of tonsillitis, and disinfection by means of formaldehyd, recommending a candle of paraformaldehyd and also the washing of glazed and other hard surfaces with a 5% solution of formalin or carbolic acid. [H.M.]

3.—The Gonococcus.—Bondurant describes the gonococcus and the staining methods by which it is differentiated. The only indubitable bacteriologic proof is obtained by growing the organism in culture, for which he gives the special media required. Culture diagnosis is the only absolute dependence in medicolegal cases, and when great importance attaches to a cure, as when marriage is contemplated. [H.M.]

4.—Poisoning by Aconite and Physiologic Analysis of Alkaloids.—No evidence of criminal poisoning can be conclusive unless the poison be absolutely identified and its quantity determined. Magill claims that with aconitin this can be done readily. The study of the hydrolysis of aconitin leads to the conclusion that it is monobenzoyl aconitin. This has been substantiated by reversing the hydrolysis. There are two isomeric varieties with different melting points, Aconitin having only one-sixth the toxicity of B aconitin. Magill failed to experience the tingling, numbing sensation of the tongue said to be characteristic. He describes the symptoms of poisoning, the physiologic action and the sensitiveness of different animals. In the human being it is the most poisonous of alkaloids, one-tenth milligram producing decided effects. Three milligrams could be fatal. It is little used by poisoners. The exact estimation of minute quantities, as well as the determination of relative toxicities, is based on the idea of intravenous injection of a determined volume or weight of the suspected substance in a series of animals. The resulting symptoms are tabulated by the graphic method. Standard solutions are then prepared and injected into similar animals until a graphic curve is found which exactly corresponds to the curve previously obtained, thus determining the quantity in the suspected substance. In the experiments the quantities never varied by more than 6/1,000 of a milligram. [H.M.]

6.—The Smallpox Problem.—Wende sums up the obstacles arising from the ignorance of the public which inter-

fere with the eradication of smallpox, and holds that the public should be educated in the methods of prevention and shown the harmony which exists between compulsory vaccination and other laws for the protection of life and health. The lack of qualification of our health officials is due to a defect in almost all our medical schools which have no distinct chair for instruction in sanitary science. Health officers should qualify by a course of study before being eligible to office, and the privilege of naming the health officer and his subordinates should be denied the political boss. Instability and variation have been characteristics of the present epidemic. Not only the dissimilarity but the analogy of smallpox and chickenpox should be well studied. Success in checking the disease depends on an enlightened system of isolation, quarantine and disinfection. As isolation under ordinary circumstances cannot be accomplished at home, the patient should be immediately removed to a suitable hospital, no distinction being made between pauper and nonpauper cases. [H.M.]

Philadelphia Medical Journal.

May 31, 1902. [Vol. ix, No. 22.]

1. Tumors of the Nose and Nasopharynx. ANTHONY BOWLBY.
2. A Case of Perforation in Typhoid Fever, with Operation. GEORGE ERETY SHOEMAKER.
3. Attempted Self-Castration in an Insane Patient. A. R. MOULTON.
4. On Cystoscopy: Its Value and Dangers. FREDERIC BIERHOFF.
5. Two Cases of Folie du Doute. JOHN H. W. RHEIN.

1.—Tumors of the Nose and Nasopharynx.—Bowlby considers the following tumors which originate inside the nose, and which are arranged in the order of their frequency of occurrence: Mucous polypi, myxofibromatous polypi, angiofibromas or fibroangiomas (of the nasopharynx and nares), the sarcomatous carcinomatous growths. The adenomas, enchondromas, etc., are classified among the rare tumors. The first named group may be readily mistaken for a deviated septum, hypertrophic rhinitis, foreign bodies, and syphilitic and tuberculous swellings. The differential diagnosis of the various growths are detailed. The symptoms of nasal tumors may be classified under the following groups: Nasal obstruction, nasal discharge, nasal hemorrhage and deformity. The recognition of angiofibromas is of the greatest importance. It is almost exclusively seen in the male. Cases of epistaxis which prove rebellious to ordinary treatment will be found frequently to be due to an angiofibroma. He details the operative procedures for the removal of this last named growth, and is of the opinion that when properly removed it will not recur. [F.C.H.]

2.—Perforation in Typhoid Fever.—Shoemaker details a case of perforation of the bowel on the twenty-fourth day of the disease. The patient was operated upon seven to ten hours subsequently, but died six days after the operation from exhaustion due to the continuance of the malady. He gives the following points as to the management of such cases: The patient cannot be moved to a hospital for operation; if in a private house this must be done at the bedside; every effort must be made to save time in operating; there must be no handling of distended bowel outside the abdomen (once escaped this usually cannot be returned without an amount of trauma which is most fatal); inflamed visceral peritoneum splits and peels off with the greatest ease; a short incision of the bowel made under constant irrigation is by far the less of two evils, and may be quickly and safely repaired; an intestinal leakage has already occurred so that the additional danger of soiling the peritoneum may be disregarded; the external incision should be the same as for an appendicitis; the point of departure for search should be the ileocecal junction, as the majority of perforations occur in this neighborhood; if possible the lateral abdominal wall should be made to form one side of the area, packed and drained; infusion of salt solution is useful as a stimulant; the external wound should not be closed; other things being equal, the patient, who is most likely to recover, will be the one to whom the least has been done; even establishing drainage along with a fecal fistula would be far better than prolonged manipulation, which is sure to kill. [F.C.H.]

3.—Attempted Self-Castration in an Insane Patient.—Moulton reports an insane patient who scratched through his scrotum with a safety pin, through which opening the right

testicle protruded. The testicle was replaced and the wound eventually healed. [F.C.H.]

4.—**Cystoscopy, its Value and Dangers.**—Bierhoff discusses the uses, dangers, method of employment, and difficulties encountered in cystoscopic examination, with a few remarks relative to ureteral catheterization. While the more intricate and delicate cystoscopic manipulations must remain in the hands of those to whom experience has given command over the necessary *finesse* in technic, it appears that the use of the simple examination cystoscope has not reached the general application that it deserves. Especially is this true in America. When properly employed it is attended with so little danger, and is capable of aiding so materially the diagnosis of obscure conditions affecting the genitourinary tract that its field of usefulness should be greatly broadened. [F.C.H.]

5.—**Folie du Doute.**—Rhein details two cases illustrating this disease, which was first described by Esquirol in 1838. He concludes that folie du doute, *i. e.*, a train of symptoms in which doubt and fear of contact with external things predominate, may be a manifestation of neurasthenia, with the same prognosis as this disease, or that it may be a distinct form of mental disorder of degenerative type, having some relation to neurasthenia, but incurable with remittent symptoms, occurring mainly in women, and beginning about the menopause. The symptoms of this disease may also be observed in certain forms of insanity, such as hypochondria, melancholia and syphilitic insanities. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

Uncinariasis or Ankylostomiasis?—The question has arisen with a number of physicians as to which term is correct, uncinariasis or ankylostomiasis. The facts in the case may be briefly stated as follows: Both terms are based upon generic names (*Uncinaria* and *Ankylostoma*) of the parasites which cause the disease. *Uncinaria* dates from Froelich, 1789, and is based upon a species (*U. vulpis*) found in the fox (*Canis vulpis*) of Northern Europe. *Ankylostoma*, originally written *Agchylostoma*, and now spelled in several different ways, dates from Dubini, 1843, and is based upon a species (*Agchylostoma duodenale*) found in man. According to the generally accepted opinion of zoologists since Diesing, 1866, the parasite (*U. vulpis*) of the fox and the European parasite (*U. duodenalis*) in man, both belong to the same genus; hence, according to the Law of Priority, *Agchylostoma*, 1843, must be rejected in favor of *Uncinaria*, 1789. Most medical writers and certain zoologists have overlooked these facts, and even the Law of Priority, so that the medical term ankylostomiasis and the zoological name *Ankylostoma* are more commonly used by some writers than are the expressions uncinariasis and *Uncinaria*. Still other authors use dochmiasis, based upon the generic name *Dochmius*, Dujardin, 1845.

The name of the disease, according to present custom, should be based, if possible, upon the correct name of the parasite, and until it is shown that *Ankylostoma duodenale* of man is not congeneric with *Uncinaria vulpis* of the fox, the determination of the point at issue is very simple, namely, since the oldest generic name for the parasite is *Uncinaria*, the corresponding name for the disease is uncinariasis, or as often written uncinariosis.

In an article by Looss¹ (1902), which has just appeared, an ingenious attempt is made to show that *Uncinaria* is not based upon *U. vulpis* of the fox, but upon *U. melis* (originally described as *Ascaris criniformis*) from the north European badger (*Meles taxus*), and that this species is not congeneric with *Ankylostomum duodenale*, hence that the name *Ankylostoma duodenale* should be preserved for the European parasite of man, and that ankylostomiasis should be adopted as the name of the disease.

The question as to the generic relationship of the forms in discussion is a point for zoologists to decide, and to decide it satisfactorily may take some time, as it will involve an anatomic and a bibliographic study of all the species of this group. Even then there may still be room for a difference of opinion.

Looss does not appear to have helped us out of the difficulty. Not only has he failed to make a comparison of a sufficient number of species and their individual variation, in order to determine whether the semilunar lips of *Uncinaria* and the recurved hooks (which are probably homologous structures to the semilunar lips) of *Agchylostoma* present valid generic characters, but he has failed to consult the literature thoroughly enough to determine the points at issue, as is seen from the fact that he has overlooked the designation of *U. vulpis* as type of *Uncinaria*.

Again, in some animals, such as the dog, the wolf, etc., both of the alleged genera (*Uncinaria* and *Agchylostoma*) occur, hence ankylostomiasis could have no inherent rights over uncinariasis. The newly described *U. americana* can certainly not be considered an *Agchylostoma* in case Looss' ideas relative to the division into *Uncinaria* and *Agchylostoma* are adopted. The point therefore remains to determine whether it belongs to *Uncinaria* or *Monodontus*, but we certainly hope that no author will add a monodontiasis to the diseases of man!

If *Uncinaria* is divided, the several genera formed must be included either in a special subfamily or possibly in a supergenus—a zoologic rank rarely recognized. Under the circumstances it would be best to recognize Uncinariinae as the name of this subfamily, and use the term uncinariasis to designate any infection of any animal by any genus or species belonging to this subfamily. Such a solution of the question has several advantages. It immediately establishes as the name of the disease a word which will be independent of the personal opinion of zoologists regarding the validity of the genera in question. If, for instance, all the species in question are eventually placed in one genus, that genus will be *Uncinaria*, and the name uncinariasis will be adopted. If, on the other hand, several genera are recognized, uncinariasis will still hold as name of the disease if we adopt the subfamily name Uncinariinae. Again, in this solution of the question, we avoid all discussion as to the correct manner of writing ankylostomiasis (anckylostomiasis, agchylostomiasis, etc.), a point which Looss has overlooked.

The point at issue gives rise to the thought whether it is really a wise policy for physicians to adopt at present a system of terminology which is dependent upon zoologic nomenclature. If the law of priority had been rigidly enforced years ago such a system of terminology would undoubtedly be wise. While the zoologic nomenclature is in its transitional stage, however, it does not seem practical for medical terminology to try to keep step with the changes in generic names, and in all cases we believe it much wiser and in the interest of stability to adopt a medical term based upon a family or subfamily name, rather than one based upon a genus.

The Causes and Treatment of Diabetes Mellitus.—Croftan,¹ as a result of experimental investigation, has determined that the blood and the lymph contain an agent that can destroy sugar, and that this agent is a "ferment," and is present in the leukocytes (or plaques) and that degeneration of the leukocytes must occur before the ferment can develop its powers. Other experiments showed that removal of the pancreas decreases the glycolytic power of the blood, from which it was concluded that the pancreas was probably in some way concerned in the manufacture of the glycolytic ferment. Later it was found trypsin (a pancreatic ferment) in the presence of hemoglobin possesses glycolytic powers, and that the glycolytic ferment of the blood and trypsin, if not identical, are so similar that they cannot be distinguished by known methods. Until

¹ Ueber die Giltigkeit des Gattungsnamens *Ankylostomum* Dubini; Centralbl. f. Bakteriol. Parasitenk. [etc.], Jena, 1. Abt., v. 31 (9), 5 Apr., Originale, pp. 422-425.

¹ American Journal of the Medical Sciences, Vol. cxxiii, p. 662, 1902.

proof to the contrary is forthcoming it is believed that the glycolytic ferment of the blood is trypsin. The experiments, therefore, showed that a glycolytic ferment, probably trypsin, exists in the body—in the blood and in the tissues. It was further shown that it is by a process in the formation of bile-pigments and bile-acids that the disintegration of the sugar molecule can occur anywhere in the body where hemoglobin is liberated in the presence of trypsin. A perversion of this glycolytic function must lead to hyperglycemia and glycosuria; whence one is justified in seeing one of the causes, if not the only cause, of diabetes in a reduction of glycolysis. It is not probable that a common cause for this perversion exists in all cases. Certain therapeutic suggestions referring to increasing glycolysis by supplying a glycolytic ferment are given. Details of experimental work are promised later. [A.O.J.K.]

Chloroma.—Dunlop¹ reports the case which occurred in a male child of 5, and gives an exhaustive history of the case, together with the progress of the illness. The etiology, pathology, symptoms, and prognosis of the disease are discussed. The earlier symptoms are anemia, loss of strength, rapid pulse, hemorrhage into the skin and mucosa. These, together with the great leukocytosis, give it the appearance of leukemia. The later symptoms are exophthalmos, failing sight, deafness, tumors in the temporal region and other parts of the body. The disease is always fatal, and on necropsy the tumors and various tissues of the body present a greenish hue. The disease is of the nature of lymphosarcoma, and is very rare. [A.B.C.]

The Association of Stone and Tumor of the Urinary Bladder.—Rosenow,² reporting a case of vesical calculus associated with carcinoma of the bladder occurring in a man of 35, gives a summary of 44 similar cases reported in the literature. In 18 cases the stone was primary, in 8 the tumor. It is not known which was primary in the others. The following arguments favor the view that the tumor increases the liability to the formation of calculus: (1) In 8 cases there is no question that the calculus was secondary to the tumor; (2) tumors, especially malignant tumors, are not infrequently incrustated with phosphatic material; and (3) villous growths are especially liable to cause calculi because a poorly-nourished projecting villus while yet attached or when torn off may afford a nucleus much the same as a foreign body around which urinary salts are deposited. The following facts indicate that vesical calculus is a factor in the causation of tumors of the bladder: (1) In over half of the cases it appears that the stone was primary; (2) inflammation of the urinary bladder caused by irritation other than that produced by a calculus has been found to cause an increased liability to newgrowths; (3) tumors of the urinary bladder uncomplicated by stone occurs more frequently in the lower segment; (4) the large number of cases in which the calculus was primary and the fact that both calculus and tumor occur more frequently in the male sex and nearly at the same age, may be taken to indicate that the calculus was not without etiologic significance in the development of the tumor; and (5) since in 90% to 95% of primary carcinomas of the gallbladder biliary calculi are present, analogy would lead us to expect a somewhat similar relation between stone and tumor in the urinary bladder. It is believed then that there is an etiologic relationship between calculus and tumor of the bladder, and that calculus seems to favor the development of tumor in a larger percentage of cases than tumor favors the development of stone. [A.O.J.K.]

Monohydric Magnesium phosphate, a hitherto undescribed urinary deposit, is described by Bradshaw.³ It was found in the urine of a man with dilation of the stomach who had taken considerable doses of "powdered magnesia." [A.O.J.K.]

Report of a Case of Subcutaneous Emphysema Due to a Tracheal Ulceration, Probably Diphtheric.—J. G. Taylor⁴ reports the case of a female child of 4. The subcutaneous emphysema extended from the upper border of the left clavicle over the whole of the precordial region, laterally to the midax-

illary line and down the forearm to the lower third; posteriorly it spread to the spinal margin and down the left forearm to the finger tips, but did not extend to the tissues of the abdomen. There was very little swelling but a very marked crepitation, which rapidly disappeared within a few days. The case is of especial interest on account of the limitation of the emphysema. It was probably due to a diphtheric ulceration, situated deeply in the trachea, which allowed the escape of air into the interlobular connective tissue, and thence out into the subcutaneous tissues, the slight stenosis being the direct cause of this resulting condition. The stenosis developed on the first day, and rapidly disappeared. [F.C.H.]

Bubonic Plague and Rats in Odessa.—At the session of the Paris Academy of Sciences, held April 29, M. Pernst read a communication from M. Gamaleia,¹ of Odessa, to the effect that he had in four instances isolated *Bacillus pestis bubonica* from domestic rats obtained from ships arriving at that port. The domestic rat appears to be the only one that frequents ships. He also found the plague bacilli in sewer rats, but the infrequency of its occurrence indicates that it is not communicated from one rat to another but is transmitted by means of infected food. The feeble susceptibility of the domestic rat and the fact that this species predominates in Europe accounts for the immunity of this region to the disease. [C.S.D.]

Fibrinous Bronchitis.—Bettman² reports a case of fibrinous bronchitis occurring in a woman of 22 and discusses in detail the features of all cases reported in the literature, which are divided into nine groups: (1) Chronic bronchitis with expectoration of branching casts of the bronchial tree—23 cases; (2) acute bronchitis with expectoration of branching casts of the bronchial tree—15 cases; (3) cases in which branching casts were not expectorated, but were found in the bronchi at autopsy—6 cases; (4) cases in which the casts expectorated showed no dichotomous branching—11 cases; (5) expectoration of branching casts in organic heart disease—10 cases; (6) expectoration of branching casts in pulmonary tuberculosis—14 cases; (7) expectoration of small casts, often nonbranching, in association with asthma—5 cases; (8) formation of casts in the bronchi in association with pulmonary edema following thoracentesis—4 cases; and (9) cases whose classification is doubtful, because of incomplete reports—6 cases. A critical and detailed analysis of the cases of each group is given. [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

Surgical Treatment of Obstruction in the Common Bile-Duct by Concretions.—When once gallstones have reached the common duct their attempted dislodgement by purely medical means is with very few exceptions disappointing in the extreme and the unfortunate patients are condemned to a lingering and a painful illness, usually ending in death unless the obstruction can be removed by surgical means. During the eleven years since Courvoisier first removed a gallstone from the common duct by direct incision the progress in this branch of surgery has been great. Probably no one has contributed more to this progress than Mayo Robson, of Leeds, and his recent paper (*Lancet*, April 12, 1902) must be regarded as a specially authoritative one on this subject. He reports the results of sixty operations on the common gall-duct and in a short postscript added after his main article was written he states that he has since had eight additional cases of choleductotomy, all of which have recovered. He estimates that the common bile-duct has to be attacked in one out of every five or six cases of cholelithiasis and bases this opinion on an experience in several hundred cases. The various methods of treating stone in the common duct are reviewed briefly. In a few cases it is possible to push concretions backward into the gallblad-

¹ British Medical Journal, May 3, 1902.

² American Journal of the Medical Sciences, Vol. cxxiii, p. 634, 1902.

³ Lancet, May 3, 1902.

⁴ Annals of Gynecology and Pediatrics, May, 1902.

¹ La Semaine Médicale, April 30, 1902.

² American Journal of the Medical Sciences, Vol. cxxiii, p. 304, 1902.

der whence they can be extracted quite readily. Occasionally they may be pressed into the duodenum, but this is exceptional and usually inadvisable for the stone is likely to be pushed into the diverticulum of Vater so that it may be missed and the operation rendered futile. In patients too old or too ill to bear choleductotomy rapid cholecystostomy will relieve the jaundice, but Robson's experience in this treatment with the after use of solvent injections has not been favorable. Crushing concretions by pressure through the duct walls is only available for soft concretions, and fragments are apt to be left to produce further trouble. Cholecystenterostomy he believes should never be performed as an operation of choice for obstruction caused by gallstones, as it leaves the cause untouched and the small opening is apt to contract and lead to speedy recurrence. If patients are too ill for choleductotomy the gallbladder may occasionally be rapidly united to the colon or to the duodenum. The operation of uniting the dilated duct to the intestine, draining of the dilated duct on the surface may be occasionally indicated for the same reasons. Reaching the common duct through the opened duodenum is an easier operation than ordinary choleductotomy, but there is much greater danger of sepsis. Any of these various procedures may be adopted in certain cases, but the ideal operation, the method of choice in all cases, is choledochotomy with removal of the stones and suture of the duct. Robson considers this the only operation that can be relied upon, and in ordinary cases when there are not many adhesions it is a comparatively simple operation which can be performed in from 30 to 40 minutes. After closure of the duct he advises drainage of the gallbladder and the use of small gauze drains until firm adhesions have occurred. Among the causes of mortality after operation he mentions hemorrhage first as most important. In all cholemic conditions the blood becomes so altered that its coagulability is seriously diminished. During the past two years Robson has used heroic doses of calcium chlorid in all cases of deeply jaundiced patients with very satisfactory results. He believes that it is important to tie all bleeding points, and not trust simply to forceps' pressure; while in nonjaundiced patients adhesions may be separated. He prefers in such cases to divide them between ligatures. Shock has the next claim to attention as a cause of mortality. The best preventive treatment is to allow as little loss of blood as possible, and to keep the patient warmly covered. He envelopes his patients in a roughly made gown of gamgee tissue and if the patient is feeble or the operation likely to be prolonged a heated table is used. A large enema of normal saline solution before the operation with the administration of strychnin is also advocated. Expedition in operating is an important factor in ill patients with whom exposure of the viscera and prolonged manipulation is specially badly borne. Sepsis is no longer the bugbear that it used to be, thanks to the introduction of careful aseptic methods, the use of gauze to prevent soiling of the wound by infected bile and the employment of gauze drainage. In his series of 60 choledochotomies Robson's mortality has been 16.6%. In the cases operated upon before 1900 the mortality was 23.8% and in the cases operated upon since June, 1900, there has been a mortality of 5.5%.

Several facts seem worthy of special notice in connection with Robson's paper. The care which he advocates in the arrest of hemorrhage, the use of calcium chlorid in jaundiced patients, the employment of gauze in packing off during the operation and for drainage, the prevention of shock by maintaining the bodily temperature of the patient and by preliminary administration of stimulants are all apparently minor details, but it is the attention to all these smaller details in surgery which gives evidence of the thorough conscientious surgeon and which does so much to reduce his mortality. No surgeon should attempt the removal of gallstones

unless he is prepared for any of the various operations on the biliary passages, and no operation should be concluded until it is determined that the ducts, including the hepatic and common ducts, are free from concretions, otherwise disappointment is certain to follow. There are a large number of so-called surgeons who extirpate ovarian tumors, resect the appendix and do many other more or less simple operations, including drainage of the gallbladder. It is questionable whether such half-trained surgeons should attempt any operation on the gall passages, for these operations are not emergencies and for the safety of the patient might far better be turned over to men who by special experience and training are fitted to do them best. Robson's results show the advantages of a large experience in a special field of operation. His mortality of 23.8% in the cases operated upon before 1900 is in striking contrast to 7.1% mortality in cases operated upon since 1900, and 5.5% mortality in cases operated upon since June, 1900. Comparing Robson's results with those reported by Kehr in his recent book on gallstone disease, we find that Kehr has had 62 choleductotomies with six deaths, a mortality of 10.2%. Mayo, of Rochester, Minn., reported eight consecutive cases operated upon during 1899 and 1900 without a single death. Such results as these are not accidental, but come from long experience and thorough training in abdominal operations, and emphasize better than any argument could possibly do the importance of such special training for those who desire to obtain the best results in any line of surgical work.

Cancer of the Breast.—Bryant¹ expresses the conviction that the results of operation for cancer, whether of the breast or elsewhere, would be much better than they now are if they could always be undertaken during the early development of the disease; that every breast tumor, neither clearly inflammatory nor encapsuled, which seems to involve gland tissue, and may therefore be cancerous, should be at once explored and removed, if found to be cancerous, with the whole gland; and that recurrent growths when localized should be similarly treated. In cases of recurrence not favorable for operation, unless the removal of the ovaries can be shown in the future to be successful, the x-rays should be employed, for the benefit which has been derived by this treatment when judiciously applied by men of understanding has, in his experience, been so successful as to raise hopes which he hardly likes fully to express, and at the same time seems to be free from danger or serious consequences when utilized by those who know the dangers of penetrating rays carelessly employed, and the difficulties with which the practice bristles. He adds that the influence of the rays, to make them effective, must be maintained for several months after it has seemed to be beneficial; a three-months course, with about three applications a week, appears to be the shortest from which any permanent good is to be expected, and this treatment is full of hope. [A.B.C.]

Pott's Fracture, with a Reference to Treatment by the Ambulatory Method.—L. C. Sanford² recommends the ambulatory method as a routine treatment for simple fractures about the ankle joint. He uses Pilcher's splint which consists of a soft pad of cotton or gauze an inch or more in thickness which is applied to the sole of the foot on a thin basswood splint, corresponding in size to the sole of the foot. The fracture is now held in careful position, the ankle at a right angle, slightly inverted. Strips of plaster bandage, six to ten in number, are placed on each side of the limb and posteriorly, terminating just under the internal and external tuberosity of the knee. The weight of the body on the injured side is thus supported entirely by the splint which is removed and reapplied every two or three weeks. The patient walks from the onset and at the end of the period of immobilization suffers only a very little from persisting stiffness and swelling. This splint is applicable in all cases of simple fracture of the fibula in its lower half, of the tibia in its lower third, and of Pott's fracture where there is not too extensive swelling and too great damage

¹ British Medical Journal, May 17, 1902.

² Yale Medical Journal, May, 1902.

to the soft parts. It is particularly adapted to those cases where there is overriding of the fragments. [C.A.O.]

Operation for Removal of Malignant Disease of the Breast.—Douglas Drew¹ says if it is considered necessary to remove the sternal portion of the pectoralis major (and this, I believe, is the practice most general at the present time), a great advantage is gained by removing with it the whole of the pectoralis minor; by so doing the operation becomes more thorough in that the clearing of the axilla from the clavicle downward is greatly facilitated. Other advantages of the procedure may also be mentioned: 1 At all times it is difficult to close the wound, owing to the extensive removal of the skin; this is rendered considerably easier in the absence of the pectorals. 2. When the pectoralis minor is left the lower border of it is apt to form a prominent cord of indurated tissue which overhangs the axilla, and this at times is a cause of considerable discomfort to the patient. The chief disadvantage that can be urged against it is that it renders an already extensive operation more extensive, but this is more than compensated for by the shortening of the time occupied in clearing the axilla, for instead of working in a limited space the whole of it is laid open and the fat and fascia cleared from the axillary vessels with greater precision and rapidity. From the point of view of the subsequent movements of the arm the pectoralis minor has practically no influence, owing to its insertion into the coracoid process, so that in this connection there does not appear to be any reason for preserving it; and, for the same reason, the division of it and subsequent suture has little to recommend it. Furthermore, if the function of this muscle is preserved it is absolutely necessary to refrain from injuring the anterior thoracic nerves—a point not insisted upon and most difficult of accomplishment. [A.B.C.]

Suprapubic Prostatectomy.—In early enlargement before atony or other complications have arisen Wallace² advises the initiation of catheter life or if this is difficult castration or vasectomy. The operation is as difficult, however, as cystotomy and useless if there is malignant disease. Diagnosis is often impossible. If the condition proves to be sepsis without enlarged prostate suprapubic cystotomy is the operation of election. Drainage can be as well carried out as in perineal incision if Cathcart's modification of Sprengel's pump is used. The risks of cystotomy are not increased by prostatectomy. The latter is specially indicated in fibroadenomatous enlargement when masses of glandular tissue can be enucleated. Sepsis is no contraindication. The operation should be done at one time as the bladder contracts after draining, and removal of the prostate later is more difficult. The risk of permanent fistula is small. [H.M.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

Decline of Fecundity in America.—In this era of practical ideas and materialistic advances, every profession, specialty, or division of labor must give good and satisfactory reason for its existence. The question, *cui bono*, is ever on the lips of the twentieth century man or woman. It is customary with us to apply vigorous tests to our fellowmen to ascertain whether the products of their hands and brains are as complete as we have the right to expect. When Sir John Lubbock had fed the chief in the South Sea Islands, he began to ask him questions; but within 10 minutes the savage was sound asleep. When awakened the old barbarian said, "Ideas make me so sleepy." But in our civilized and cultured present the demand is for ideas, and their support becomes imperative. Engelmann³ has put the gynecologist and obstetrician to a thorough statistical test in determining how their ideas and work have influenced the birth and deathrate of the human race. He has made a comprehensive study of the brilliant operative procedures in conservative gynecologic sur-

gery, has compared the present fecundity of the human female with that of the past and finds that in American women it is decreasing with astonishing rapidity. Benjamin Franklin allowed eight children to a family, and seventeenth century records in the American colonies showed an average of six children per marriage, while at present the fertility of American women has been so much reduced that there is little over two children to each marriage, much like the condition in France. Engelmann has studied the frequency of stillbirths and the maternal deathrate in hospital and private practice and estimates that the total hospital maternal mortality of the present is probably near 1% while that of 40 years ago was 3%. But a careful review of all the figures presented shows that obstetric and gynecic progress has left no distinct impress upon the records of vital statistics comparable to the decreasing deathrate and control of epidemics which mark the development of medical science. Vital statistics show that in the community, at large the effect of antiseptic precaution is distinctly marked by but a very trifling decrease in the maternal deathrate only, more especially by a diminution in the deaths from puerperal fever; those from eclampsia are more frequent. The maternity deathrate in the community, *i. e.*, in private practice, which in the light of modern scientific medicine should be an inappreciable figure, is still greater than in most maternities. All in all, mortality in childbirth shows with some distinctness the evidence of obstetric progress; but the number of stillbirths and the birthrate show fluctuations which are controlled by contrary factors totally different in character and completely obscuring the influence of medical science. In the high deathrate of the child in illegitimate labor, the results of criminal interference appear distinctly evident. In decreasing fecundity we see the deteriorating influences of refinement, of the higher civilization, of luxury and of social aspiration—all in part accountable for the low birthrate. But, whatever the motive, the distinct cause of diminishing fecundity is the intentional limitation of the family, the determination not to be troubled with children at all, or only in such numbers as are deemed by husband and wife compatible with their comfort, with their social and financial status. In the unequal contest medical science yields to human vanity and desires, and its influence is completely effaced so far as the population at large is concerned. Only in the somewhat lessening deathrate of child-bearing women and in the sporadic decrease of stillbirth do we see any evidence of its progress.

Political economists such as Malthus were fearful of the over-population of the world, with consequent distress and destruction from starvation. Therefore it is comforting, possibly, to the fearsome of this kin to learn from a recent writer¹ that we have nothing to fear from overpopulation for the next few centuries, as it has been calculated that the earth, properly cultivated, will provide space and food for forty times the inhabitants it has at present, providing the Sahara be irrigated by artesian wells and Mesopotamia be rid of fever by the planting of a few million eucalyptus trees and the cultivation of the greater part of South America be accomplished by the establishment of waterways and railroads through the vast forests of the Orinoco and Amazon. It is, however, somewhat disheartening to find that after scientific inventions have opened the way for the accommodation of an increased population we are confronted by the fear that the resources will exceed the demand, because the human race is not increasing as rapidly as we had a right to expect. Yet what seems to be of chief importance is an improvement in the quality of the human race, rather than an increase in quantity. Population is self-regulative. A high degree of civilization and mental culture imposes an immediate and natural check upon the growth of num-

¹ British Medical Journal, May 17, 1902.

² The Medical Press and Circular, December 18, 1901.

³ Boston Medical and Surgical Journal, May 15 and 22, 1902.

¹ Science and Christianity.

bers. Multiplication brings the civilization that is the one effectual and all-efficient check to undue multiplication. As Herbert Spencer expresses it, "the excess of fertility has rendered the process of civilization necessary, and the process of civilization must inevitably diminish fertility and at last destroy its excess." Without in any sense justifying the intentional limitation of the family, condoning abortion, or excusing selfish married individuals from parental duties, we cannot become very much alarmed because of a slight decrease in human fecundity. The really alarming thing is the moral condition which makes possible what every family physician knows only too well, that the efforts to prevent conception, interrupt gestation, and avoid parental duties are omnipresent, unceasing and conscienceless. Men and women whose moral sense upon other subjects is developed and correct, are extremely lax upon this point. The conclusions of Engelmann furnish food for thought, and the extent of this moral obliquity even in the higher strata of society demands the consideration of pulpit, platform and physician.

The Problem of the Premature Infant.—Ballantyne¹ considers the problem of the premature infant an urgent one. Since the birthrate in England and Wales has decreased from 35 per 1,000 in 1871 to 28 per 1,000 in 1901, there is more need to conserve the lives of those actually born. He gives in detail the anatomy and physiology of the premature infant and claims that it has been clearly shown that during the last three months of intrauterine life there is a marked storing up of iron and potash salts, and also a flush of lime through the placenta during the last few weeks. The placenta has the power of selecting as well as transmitting material to the fetus. The peculiarities of the transplacental interchanges of the last three months of intrauterine life would seem to be specially associated with the formation of red blood-corpuscles, of striped muscle and of bone. However incomplete our knowledge, enough is known to prove that the premature infant, by reason of his prematurity losing the physiologic experiences of the last two months of fetal life, suffers a great loss. He has a small degree of resistance to pathologic organisms that gain access to his body and is specially liable to attacks of thrush in the mouth, of diarrhea and dyspepsia; these are generally due to infection through the gastrointestinal canal and he is predisposed to them by the defective secretions of the digestive organs. Some have placed the morbidity of premature infants as high as 100% and the mortality at 50%. In this connection Ballantyne discusses the best management, the advantages of the incubator, also of keeping the infant much in the dark, and the proper methods of feeding it. However, the ideal management of the premature infant is, of course, prevention; and no doubt much is possible in this direction. [w.k.]

Deep Transverse Arrest of the Head as an Indication for Forceps.—C. B. Reed² thinks that the obstetricians do not pay proper attention to this position, which is of a definite character, and its frequency and pronounced effect upon labor is worthy of more especial consideration. In the last 3,600 cases in the Chicago Lying-In Hospital the condition has been recognized 33 times, and doubtless there were other instances in which spontaneous rotation occurred. He summarizes as follows: Deep transverse arrest of the head is a relatively common complication in labor; the diagnosis is easily made from the position of the sagittal suture and the fontanels; the normal termination of the case cannot be waited for in most instances, but forceps should be applied as soon as it is evident that rotation will not occur spontaneously; the blades should be applied in that pelvic oblique diameter toward which the occiput lies; the location of the occiput must be determined before the blades are applied; and traction and rotation must be simultaneous. [f.c.h.]

An Experimental Investigation of Puerperal Pyemia.—Gaertner,³ with a view to prove that puerperal pyemia is due solely to infective thrombi, irrespective of the variety of bac-

teria concerned, undertook a series of experiments whereby he inserted an infected cotton wick into the jugular veins of a number of dogs with resulting thrombosis, phlebitis, and pyemia. He concludes that it made no difference whether staphylococci or streptococci, alone or both together, were used for infection of the artificial cotton wick thrombi; the insertion of the wicks in the jugular veins of 18 animals caused uniformly pyemia with its characteristic symptoms—phlebitis, suppuration in the surrounding tissue, embolic abscesses in the submaxillary and parotid regions, in the cerebrum, and general blood poisoning and death of the animals. The intensity of the pyemic infection depended upon (1) the local source of the cocci (staphylococci from carbuncle pus and streptococci from erysipelas proved the most virulent, no matter how many passages of their cultivation they experienced); and (2) the duration of the preservation of the completed artificial thrombi before their insertion into the jugular vein (the longer staphylococci and streptococci were kept in a dry state, the greater the loss of virulence, no matter how virulent the cocci were at their first examination. [A.O.J.K.]

Fibroids of the Uterus and Broad Ligaments.—In the discussion of the etiology of fibroids, and in view of the fact that the ovum occasionally becomes "lost" within the abdominal cavity, Ricketts¹ asks the following questions: Why may not the ovum adhere to the abdominal surface of the uterus, to be organized and covered by its sensitive peritoneum, and by stimulation of muscular overgrowth result in a subserous fibroid? Why may not the same process occur as a result of an unfertilized ovum, or a dead fertilized one, in the uterine cavity, hence the submucous variety? Lastly, why may not the intramuscular variety develop when the ovum lodges on a portion of the uterine cavity, which is for the time devoid of endometrium, and by the same stimulation thereby form the already mentioned intramuscular variety? There are numerous clinical facts which suggest that arteriosclerosis is a much more important etiologic factor in uterine fibroids than is generally conceded. The great frequency of fibroids in the negro race, associated with the marked prevalence of syphilis in the negro, is especially suggestive, if we consider the intimate relation of the latter disease to arteriosclerosis in general. He has seen uterine fibroids in syphilitic subjects in a sufficient number of instances to make more careful observations along this line in the future. Four operative cases are cited. [f.c.h.]

Ovarian Tumor with Spontaneous Rupture.—Savage² gives the history of a woman of 61, suffering from an abdominal swelling and edema of the legs, the diagnosis being malignant ovarian tumor. When the abdomen was opened, about a pint of colloid, gelatinous material was found free in the peritoneal cavity. An incision of the tumor showed its contents so viscid that they had to be removed by ladleing out with the hand and amounted to about a half a bucketful. The points of interest in the case were the spontaneous rupture of the cyst, the edema of the legs as a pressure symptom, and the difficulty in diagnosis. The clinical history indicated that the colloid material had been free in the peritoneal cavity for two months, and had produced a simple inflammation of the peritoneum without any constitutional poisonous effects. This proves that cyst-contents of a simple nature are perfectly harmless, provided that germs have not been introduced from without. That the edema of the legs, so extensive as to prevent locomotion and keep the patient in bed, was the result of pressure on the iliac veins was evident, as it disappeared upon removal of the tumor. [w.k.]

Premature Senility of the Uterus.—Addinsell³ reports the case of a woman of 26 who consulted him for sterility in 1894. Two weeks after her marriage she had sustained a great shock from what she feared might be a fatal accident to her husband. The accident occurred about the time of her period, and she never menstruated afterward. He saw her again after six years of amenorrhea; she was in good health and very active, though she complained some of heats and flashes. The ovaries seemed entirely normal, but no cervix could be felt and no uterus could be made out bimanually. This condition seemed wholly the result of the shock. [w.k.]

¹ British Medical Journal, May 17, 1902.

² The Chicago Medical Recorder, May 15, 1902.

³ American Journal of the Medical Sciences, Vol. cxliii, p. 429, 1902

¹ The Chicago Recorder, May 15, 1902.

² Lancet, May 3, 1902.

³ British Medical Journal, May 17, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

The hot sulfur spring or "Saint's Bath" at Biskrah and the springs at Hammam R'Irha are described by Thompson (*Journal of Balneology and Climatology*, Vol. v, pt. 3, p. 179), forming the most interesting part of his paper. The temperature of the water is about 115° F. at its source. A table showing the saline constituents is given. The water is also copiously charged with hydrogen sulfid. It has a soft, and by no means unpleasant taste, resembling that of Aix-la-Chapelle. It is diaphoretic, diuretic, and resolvent; it promotes biliary secretion, acts as a laxative and encourages mucous secretion in the laryngeal and bronchial membranes. It is customary to let the water stand until it is cooled down to 100° F., when the atmosphere of the bathroom is filled with vapor and hydrogen sulfid gas. The patient remains in the bath from 3 to 30 minutes, and the temperature is gradually raised by the introduction of fresh water to 110° F. After the patient has left the bath, massage is applied, and he lies down in the cooling room, or basks for some time in the sun. The combined effect of the bath and of the inhalations of steam-laden air and sulfurous vapor on the pharyngeal, laryngeal, and bronchial membranes is said to be very beneficial. Patients suffering from affections of the eustachian tube are also greatly benefited. The waters are not to be recommended in cases of tuberculosis. They enjoy a reputation among the natives for the relief of syphilis, which is quite common among the Arabs. The latter have a rooted objection to physic of any kind, so that this reputation is all the more valuable. The resident French physician prefers to trust to the water alone, without the addition of mercurials or iodids. Hammam R'Irha is 60 miles from Algiers, and can be reached in 4 or 5 hours. It occupies a well-sheltered position 2,000 feet above and 15 miles distant from the sea. The climate is more exhilarating than that of Algiers, and the place possesses three mineral springs of distinct value; two of these are hot (99° to 113° F.) and the third a cold chalybeate. The analyses are given in the article. The air is bracing and stimulating like that of the Engadine, although, of course, much warmer, and has proved beneficial in the early stages of tuberculosis, provided the waters are not taken. The conditions treated at Hammam R'Irha are muscular rheumatism, neuralgic affections, gout, and lithemic conditions. The thermal waters are particularly useful in pharyngeal and laryngeal catarrh, and in chronic bronchitis. It is a place where stout people do well. In concluding, Thompson states that he is impressed with the belief that the Hammam R'Irha is at least equal to the European baths of like composition (Contrexéville), and that the Biskrah waters, as waters, are really more potent and valuable than those of Aix-la-Chapelle. [R.M.G.]

Sodium Bisulfate in the Treatment of Tuberculosis.—

M. Nicolas (*Bulletin Général de Thérapeutique*, June 23, 1901) considers that the daily administration of three to six grains of sodium bisulfate in the treatment of tuberculosis exerts a remarkable influence on the appetite and digestive functions. The drug must always be given in a quarter of a glass of water when the stomach is absolutely free from food, usually about 1½ hours before meals. A single dose is sufficient for 24 hours, although it must be continued for three or four weeks. The solution has no taste, and patients accept it readily. [L.F.A.]

Infusion Therapy in the Various Intoxications, Infectious Diseases, Etc.—The possibility of using infusions as a means of washing out from the blood stream ("lavage du sang") toxic products of one sort or another had its first advocates in Dastre and Loye. These authors by experimental evidence furnished a scientific basis for this form of treatment. Such a lavage of the blood may be carried out in one of two ways: Either by preliminary extraction of blood and a subsequent intravenous infusion to take its place; or, on the other hand, as a perfusion, by a slow continuous administration of the saline solution, which is found to be productive of a diuresis sufficient to carry off the fluid as rapidly as it is introduced. These authors demonstrated in animals that four times the volume of the blood

may thus slowly be given, and that a corresponding quantity of fluid will in the same time be passed through the renal epithelium. Such an actual perfusion naturally has the tendency to wash away and dilute toxic products; at all events those which are soluble. An immense field of therapeutic possibilities was thus opened by these investigators, and the experimental observations have been in a degree corroborated by clinical experience. However, it is in the treatment of conditions of this sort that the proper saline percentages of complex saline solutions become matters of moment; and inasmuch as at present no fixed rule can be laid down for their selection, the treatment must be considered to be decidedly in its probationary stage. It remains for institutions in which large groups of cases are treated to determine the appropriateness of the treatment in special diseases, and for the experimentalists to determine the solutions best fitted to combat the varying conditions of toxicity. These criticisms, however, which I wish to make concerning the usage of saline infusions in this group of cases apply especially to its *intravenous* introduction. If therapeutists would confine themselves for the present, or until appropriate and safe solutions can be determined upon, to the method of *subcutaneous infusion*, the dangers of the treatment would be reduced to a minimum and the results, in so far as they are due to the principle of perfusion, be almost equally good.—Harvey Cushing, in Vol. IX of "Cohen's Physiologic Therapeutics."

Inefficacy of Cacodylates.—Thomas R. Fraser (*Scottish Medical and Surgical Journal*, May, 1902, p. 385) says the fact that such large doses of the salts of cacodylic acid have been administered without harm led him to doubt whether the arsenic which entered into them was active in the body. Thus, 1 gram of sodium cacodylate contains 7½ grains of arsenic, and such a quantity has been given in a single dose. Originally the dose recommended was about 0.1 gram daily, equivalent, therefore, to ½ grain of arsenic. His clinical trials of the action of cacodylates have borne out his conclusion concerning the inactivity of the arsenic in this acid. He has employed it especially in chorea and anemia, in which the results can easily be compared with those obtained by well-known methods. In three cases of *chorea*, in one of which the dose of sodium cacodylate was increased to a quantity equal to 5 grains of arsenic daily, it had no effect. All of these cases, however, yielded readily to the use of Fowler's solution in doses representing ½ grain of arsenic. In a single case of *leukemia* the remedy was equally inefficient. In *chlorosis* he did not expect good results because he has never seen a chlorotic anemia benefited by arsenic. In five cases of *chlorosis* sodium cacodylate was of absolutely no benefit; all cases, however, yielded readily to the iron salts. On the other hand, when iron cacodylate was administered instead of the sodium salt, the anemia was distinctly benefited. It thus appears that the arsenic in cacodylic acid is almost inert either as a toxic or therapeutic substance, but that the bases with which it is combined still retain their activity. The cacodylates do not give the ordinary chemic reaction of arsenic, do not even yield themselves to the Reinsch's test, except after a prolonged oxidation process. When Fowler's solution is given it is readily detected in the urine, but in the cases in which the arsenic was administered in the form of a cacodylate there was no reaction to the arsenic reagents except after the oxidation process mentioned. These observations demonstrate that cacodylic acid is eliminated through the kidneys unchanged. Chemic analysis agrees with clinic observation that the arsenic is not liberated from the radical and that the drug, therefore, is useless as a means of exhibiting arsenic. In those cases in which it was administered by the mouth there was often nausea, vomiting, diarrhea; so that the remedy had to be suspended. It is interesting in this connection to note that in no case was the characteristic puffiness of the eyelids in arsenic poisoning produced. When the drug was administered hypodermically these unpleasant disturbances were not produced. [H.C.W.]

Culture Filtrates of Koch's Bacillus in Tuberculosis.—

J. Denys (Louvain) communicates to the Academy of Medicine, of Belgium, at the April 26 session the results of his treatment of pulmonary tuberculosis by injections of filtered cultures of *Bacillus tuberculosis*. Out of 131 patients with whom he began

the treatment in the first and second stages of the disease 28% were completely cured and altogether 80% were benefited. [C.S.D.]

Indications for Lithotomy.—Guyon (*Bulletin Général de Thérapeutique*, Vol. exxii, No. 22, 1901, page 875), in reviewing the indications for lithotomy in the treatment of vesical calculi, states that when in the course of lithotripsy it is necessary to discontinue the operation, lithotomy should not be performed at once; it is better to wait and make another attempt by lithotripsy which, however, should not be prolonged. Large stony calculi are but little less dangerous for lithotomy than for lithotripsy. Very long duration of the calculus, indicating a uric acid calculus of more than two inches in diameter, or deformities of the bladder, may render the operation impossible. Calculi formed over foreign bodies are sometimes impossible to crush. A great number of calculi necessitate lithotomy. The state of the urethra may hinder the introduction of a lithotrite, as in children, as may also a greatly enlarged prostate. In cases of phosphatic calculi it is first necessary to disinfect the bladder before performing lithotripsy; when this cannot be done, lithotomy should be performed. [L.F.A.]

Unguentum Credé in Meningitis.—Daxenberger (*Klinische therapeutische Wochenschrift*, 6, 1901, from *Therapeutische Monatshefte*, Vol. xv, No. 9, 1901) used unguentum argenti colloidii Credé with success in three severe cases of meningitis, while 15 other cases, in which the ointment was not used, although all the other customary therapeutic measures were tried, ended fatally. The inunctions were given in the same way as mercurial inunctions, from 2.5 to 3 grams (35 to 45 grains) being rubbed in every day. The good effects are apparent early; the temperature falls and the irritative motor symptoms subside. [R.M.G.]

Diagnosis and Treatment of Pain in the Ear.—Macleod Yearsley (*Treatment*, Vol. v, No. 11, 1902, p. 51) classifies pains referred to the ear as follows: 1. Reflex otalgia, unattended by deafness or inflammation is due to carious teeth or disease of the tongue or pharynx; hearing is not affected. 2. With the pain of diffuse inflammation of the external auditory meatus the meatus is red, swollen and tender, and the walls covered with a slight discharge; pain is not severe. Foreign bodies or collections of wax produce the same kind of pain. 3. The pain attending furuncle is paroxysmal, severe, and usually worse at night, awakening the patient and preventing sleep. Introduction of a speculum may be almost impossible; on inspection one or two rounded swellings are seen. 4. Pain due to middle-ear disease may be the pain of myringitis, that due to acute catarrhal otitis media, or that of acute middle-ear suppuration. The pain of myringitis is severe, deep-seated, and diffuse, accompanied by throbbing and tinnitus and aggravated by external sounds. There is moderate impairment of the hearing. Politzerization increases both the pain and deafness. The surface of the drumhead becomes lustrous and bluish-red. In both simple and suppurative otitis media the pain begins suddenly and is attended with a sense of fullness and obstruction; there is tinnitus, and the ear pulsates. Deafness is considerably greater than in simple myringitis. Autophony, or hearing one's own voice with extreme loudness, is an occasional symptom. The pain of otitis media is violent and much worse at night; it radiates from the side of the head and is intensified by movements of the jaw. It is accompanied by considerable constitutional disturbance, especially in children. As a rule, acute otitis media attacks only one side, but both ears may be implicated and with different intensity. In suppurative conditions the symptoms are similar, but more intense; the pain is always worse at night and causes insomnia, but it does not cease during the day. As soon as perforation takes place, the symptoms abate. Perforation occurs most commonly in the anterior inferior quadrant. The appearance of the membrane is not characteristic, except that there may be bulging from the exudate in the tympanum. Finally there is the pain of mastoid disease which may be of three varieties, inflammation of the mastoid lymphatic gland, mastoid periostitis, or cortical mastoiditis. Mastoid periostitis is usually due to disease in the external meatus. The process spreads either by way of the fibrous connective tissue or by way of the blood-

vessels. The most important form is deep mastoiditis, which may be a complication of acute or chronic middle-ear suppuration. The pain is of a deep, throbbing character, a typical bone pain. Pus in the mastoid antrum is attended by severe pain increased by pressure or percussion, with or without edema of the overlying soft parts; there is also considerable fever. The most important objective sign is bulging of the posterior superior wall of the meatus close to the membrane. The subjective signs of chronic mastoid empyema are not marked. The objective signs consist of discharge, usually fetid and sometimes bloody; granulations, especially in the region of the attic; enlarged glands around the ear and beneath the pinna; facial paralysis from caries of the aqueduct; and the pathognomonic sign, bulging of the posterior superior wall of the meatus. The treatment may be summarized briefly as follows: In reflex otalgia the cause must be removed. The two cardinal methods of treating external otitis and in fact most varieties of diffuse inflammation in and about the ear are depletion, and heat or cold, or both combined. From two to six leeches are applied just in front of the tragus, the meatus having first been closed with a cotton plug. Heat, especially in the form of poultices, is to be avoided, as it is apt to cause perichondritis and tends to keep up an increased supply of blood to the entire ear. Cold is applied by means of the icebag or Leiter's tubes to the mastoid and retromaxillary regions. A combination of cold and heat secures the good effects of both without the ill effects of continued application of heat. A cold application is made around the ear and heat is applied to the inside of the meatus by means of hot instillations or cotton pledgets. Sedatives to be used in instillations are cocain in 2% to 5% strength, or morphin in 1% strength, or the two combined. Furuncles must be incised, either under local anesthesia with cocain or eucain, or better, with the use of nitrous oxid and oxygen. The incision must pass through the center of the boil, any small sharp knife such as a tenotome sufficing. Both before and after the incision the meatus must be cleansed with a 1:2,000 bichlorid solution or Lister's strong mixture, and the patient may be given a milder antiseptic to instil twice a day. Recurrence may be due to the presence of cerumen or dead epithelium in the meatus; sewer gas is also mentioned as an undoubted cause of aural furuncle. In all forms of inflammation, whether of the external auditory canal or of the middle ear, the treatment should begin with a brisk saline purge or calomel; and if the patient is debilitated, general constitutional and tonic treatment must be instituted. The treatment of otitis media in general does not differ from that of inflammation of the canal; leeches, heat and cold being the most common remedies. The question as to insufflation during acute inflammatory conditions of the middle ear is still unsettled. Yearsley advises politzerization after the inflammation has begun to subside, believing that hearing is thus more quickly restored and that ventilation and consequent drainage of the tympanum accelerates the resolution of the inflammatory processes. He even mentions catheterization of the eustachian tube to abort acute inflammation of the middle ear. Such hazardous procedure should not, however, be attempted by anyone but a specialist. If the symptoms continue for 12 hours under the simple treatment described, and extreme tension develops, the drumhead must be incised. The indication for incising is bulging of the membrane; in a doubtful case it is best to decide in favor of incision. Yearsley advises that the patient take gas, as the pain, though momentary, is excruciating. The incision should be made where there is the greatest bulging, after previous thorough cleansing of the meatus. If the bulging is uniform, the point of election is the posterior inferior quadrant. A free and bold incision should be made. All that is required after the incision is a dressing of antiseptic gauze. Syringing is not only unnecessary but harmful. Politzerization is attended by the danger of blowing microorganisms from the nasopharynx into the tympanum and thus infecting the cavity, or if pus is present of driving it into the attic or mastoid antrum. Syringing is required only in exceptional cases, when the contents of the tympanum are very tenacious. [R.M.G.]

Subcutaneous Injection of Gas.—Dr. Cordier,¹ of Lyons,

¹ La Semaine Médicale, April 2, 1902.

has secured favorable results in a large number of cases in the treatment of neuralgias by the extension of the nerve filaments obtained by means of gaseous insufflation of the painful tissues. He has used sterilized gases of various kinds; air, oxygen, hydrogen, nitrogen and carbonic acid without any peculiar gain or disadvantage, and without accident. [C.S.D.]

Picric Acid.—Dr. Louis Maddock¹ states that his experience leads him to regard picric acid as one of the most valuable topical applications known for the treatment of all skin affections in which itching and burning pain are prominent symptoms, and in all superficial, parasitic, and bacterial diseases of the skin or hair. When used in solutions of one-fifth of 1% to 5% there is little or no danger of poisoning through absorption after repeated applications over a wide surface of the body. For burns and scalds of the first and second degree he considers it the best and most reliable remedy we have. In erysipelas it acts as a specific; applications of a hydroalcoholic solution of from 1% to 3% relieve the burning and itching directly, and the spread of the disease is stopped as if by magic. For chilblains, in 1% solution, it is also a specific, and is very useful in the treatment of the erythema of poison oak, pruritus ani, moist eczema, seborrhea sicca, cracked nipples, chapped hands, pediculus pubis and chronic ulcer. [C.S.D.]

Vesication by Chloral Hydrate.—Bonnet (*La Médecine Moderne*, Vol. 13, No. 1, 1902, page 424) states that rapid vesication may be produced by the use of chloral hydrate. A layer of the drug is spread over diachylon plaster, using about 45 grains for a surface five or six inches square; it is then applied to the skin, over which vaselin or oil of sweet almonds has been previously applied; in about 15 minutes the patient experiences a sensation of heat which soon assumes a burning character; the plaster is then removed and the area covered with cotton; at the end of 20 or 30 minutes a blister is formed and the patient falls asleep. As a rule the sleep produced by the absorption of chloral is less harmful than the cystitis produced by cantharides. Care should be exercised that chloral is not applied as a vesicant over too large a surface in children. [L.F.A.]

The Injection of Horse-serum Into the Abdominal Cavity.—Petit (*La Médecine Moderne*, Vol. 13, No. 1, 1902, page 430) found that in 24 hours after injecting a small quantity of horse-serum into the abdominal cavity of a rabbit he was enabled to inject four or five times the ordinary fatal dose of typhus bacillus or staphylococci without any ill effect. He injected 2½ drams of the horse-serum, heated to 190°, into the abdominal cavity after three grave operations for suppurative salpingitis. Cure followed with remarkable rapidity. [L.F.A.]

Subarachnoid Cocain Anesthesia in Labor.—According to Porak (*La Presse médicale*, 1901, No. 9) this method is not applicable in cases of ordinary labor, as the duration of the anesthesia, two hours, is too short. The method should be reserved for obstetric operations. [R.M.G.]

Pancreone.—(*Münchener medizinische Wochenschrift*, No. xxxi, 1901.) This substance is a fine reddish-gray powder without unpleasant taste, insoluble in water and dilute acids, but readily soluble in faintly alkaline media. It is obtained by the action of tannin upon pancreatin. The dose is 0.5 gram (8 grains) for adults and 0.1 to 0.15 (1½ to 2½ grains) for children. It is given in the form of a powder or a tablet, shortly before or during meals. Pancreone is used by Loeb in the condition known as achylia gastrica, in which there is total absence of hydrochloric acid with reduction of pepsin. He is able to report improvement in 9 out of 13 cases and believes that it is a valuable addition to the pharmacopeia. [R.M.G.]

The Action of Orchitic Extracts.—W. E. Dixon (*Journal of Physiology*, Vol. xxvi, Nos. 3 and 4, February 28, 1901) finds that orchitic extract, which is prepared by macerating the fresh gland with normal salt solution, contains three groups of bodies: (1) proteids; (2) organic substances unaltered by boiling; (3) inorganic salts. Of the proteids, nucleoproteid is the most plentiful and the only one producing any marked action. It causes a fall in blood pressure due to cardiac inhibition after a somewhat lengthy latent period. Inhibition lasts for a varying length of time, depending upon the amount

injected. Recovery is gradual. Respiration is quickened by small amounts, but temporarily stopped by quantities which cause well marked cardiac inhibition. When thus stopped it begins again gradually, and finally becomes both quicker and deeper than before the injection. This effect is associated with some dilation of the splanchnic area, spleen, and testes, but the kidney always shows a very considerable and prolonged constriction. Both cardiac and the respiratory effects are absent if the vagi have been cut previously. The effect, therefore, would seem to be central in origin. If injections are made directly into the brain through the peripheral end of the carotid artery, the latent period, from the moment of the injection to the time of cardiac inhibition, is prolonged. Cardiac inhibition and cessation of respiration are therefore probably reflex, originating in the periphery, the impulses in the case of the heart passing to the brain and down the vagi. Splanchnic dilation still occurs after section of the vagi or after injection of atropin. Brodie believes that the renal and testicular constriction produced in the dog is due to excitation of the vasomotor center. The precipitated and redissolved nucleoproteid has a slightly different action from the native substance in orchitic extract. The latent period is prolonged, and the cardiac inhibition, when once obtained, is continued for a considerable time. Injections of nucleoproteid produce protrusion of the eyeballs and slight dilation of the pupils, but death never results from intravascular coagulation of blood. Injections of testicular substance give rise to prolonged hypoleukocytosis followed by hyperleukocytosis. The hypoleukocytosis is largely the result of altered distribution of the leukocytes, and mainly affects the polynuclear corpuscles. This effect is principally due to the nucleoproteid. The effect of the second group of substances may be observed after section of the vagi, and following the administration of the filtrate from the boiled extract, or upon taking the gland into the stomach. By any of these methods the nucleoproteid effect on the heart and respiration is eliminated. The action of this group of substances corresponds closely to the action of a number of leukomaines, of which cholin may be taken as an example. Cholin differs from these substances in that the splanchnic dilation is synchronous with the initial fall in blood pressure. Inorganic salts are present to 7.5% of the dried ram's testes, and chlorids, sulfates and sodium, potassium or calcium phosphates can be detected in the ash. The vasodilator substances which are not destroyed by boiling are more powerful in the epididymis and seminal vesicles than in the testes, and hence are probably derived from the metabolism of the glandular epithelium of the testes. [L.F.A.]

Lecithinated Cod-liver Oil in Rachitism.—G. Carrière² presented to the Académie des Sciences, of Paris, April 14, a report on the successful use of lecithinated cod-liver oil in the treatment of rachitism. Muggia in 1898 pointed out the beneficial effects of lecithin in the treatment of atrophy, but this is its first application to the treatment of rachitism.

Treatment of Soft Chancre by Refrigeration.—The experience of A. Brandweiner,³ of Vienna, is confirmatory of the value of refrigeration in the treatment of soft chancre. He employs ethylechlorid alone, or a mixture of ethylechlorid with 15% of methylechlorid. The treatment lasts about five minutes and is applicable to all chancres except in the case of phimosis, where the ulcer is located on the inner face of the prepuce. [C.S.D.]

FORMULAS ORIGINAL AND SELECTED.

Treatment of Freckles.—*La Médecine Moderne*, Vol. 13, No. 9, 1902, page 74, directs that the following lotion be applied to the face with a tampon of absorbent cotton:

Corrosive sublimate	15 grains
Zinc sulfate	} of each 30 grains
Lead acetate	
Rose water	6½ ounces
or the face may be washed night and morning with	
Zinc sulfocarbonate	1 dram
Glycerin	2½ ounces

[L.F.A.]

¹ Comptes rendus hebdomadaires des séances de l'Académie des Sciences, Paris, April 14, 1902.

² La Semaine Médicale, April 30, 1902.

³ Occidental Medical Times, April, 1902.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended May 31, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles.....May 10-17.....	5	
	San Francisco.....May 11-18.....	1	
Colorado:	Denver.....May 10-17.....	1	
Illinois:	Chicago.....May 17-24.....	14	
Kentucky:	Covington.....May 10-24.....	22	
	Lexington.....May 10-17.....	2	
Louisiana:	Shreveport.....May 17-24.....	1	
Massachusetts:	Boston.....May 17-24.....	28	6
	Fall River.....May 17-24.....	1	1
	Lowell.....May 17-24.....	3	
	Malden.....May 17-24.....	2	
	Melrose.....May 17-24.....	2	1
	Somerville.....May 17-24.....	1	
Michigan:	Detroit.....May 17-24.....	6	
Minnesota:	Minneapolis.....Apr. 18-May 17.....	23	
	Winona.....May 17-24.....	4	
Missouri:	St. Joseph.....Apr. 1-30.....	50	2
New Hampshire:	Nashua.....May 17-24.....	2	
New Jersey:	Camden.....May 17-24.....	2	
	Newark.....May 17-24.....	53	8
New York:	New York.....May 17-24.....	36	11
	Yonkers.....May 16-23.....	1	
Ohio:	Cincinnati.....May 16-23.....	14	
	Cleveland.....May 9-16.....	8	4
	Dayton.....May 17-24.....	2	
Pennsylvania:	Johnstown.....May 17-24.....	4	
	Philadelphia.....May 17-24.....	30	3
Tennessee:	Memphis.....May 17-24.....	8	
Utah:	Salt Lake City.....May 10-17.....	1	
Washington:	Tacoma.....May 11-18.....	1	

SMALLPOX—FOREIGN.

Belgium:	Liege.....Apr. 24-May 3.....	1	
Canada:	Winnipeg.....May 10-17.....	3	1
France:	Paris.....Apr. 26-May 3.....	4	
	Rheims.....Apr. 25-May 4.....	2	1
Great Britain:	Glasgow.....May 9-16.....	1	
	Jarrow-on-Tyne.....May 3-10.....	2	
	London.....May 3-10.....	248	44
	Newcastle-on-Tyne.....May 3-10.....	1	
	South Shields.....May 3-10.....	6	
India:	Calcutta.....Apr. 18-26.....	6	
	Madras.....Apr. 19-25.....	1	
Italy:	Palermo.....May 3-10.....	9	2
Japan:	Formosa, Tamsui, Jan. 1-31.....	15	
	Nagasaki.....Apr. 21-30.....	1	
Mexico:	Vera Cruz.....May 10-17.....	6	5
Russia:	Moscow.....Apr. 26-May 3.....	8	1
	St. Petersburg.....Apr. 26-May 3.....	7	1
Straits Settlements:	Singapore.....Mar. 29-Apr. 12.....	1	
Turkey:	Smyrna.....Apr. 27-May 4.....	2	

YELLOW FEVER.

Mexico:	Vera Cruz.....May 10-17.....	14	8
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CHOLERA.

India:	Calcutta.....Apr. 19-26.....	146	
Straits Settlements:	Singapore.....Mar. 29-Apr. 12.....	48	

PLAGUE—INSULAR.

Hawaii:	Honolulu.....May 8-13.....	5	
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PLAGUE—FOREIGN.

China:	Canton.....May 19.....	Epidemic.	
	Yitang.....May 19.....	"	
	Taipei.....May 19.....	"	
India:	Calcutta.....Apr. 19-26.....	577	
Japan:	Formosa, Tamsui, Jan. 1-31.....	159	141

Changes in the Medical Corps of the U. S. Army for the week ended May 31, 1902:

GOLTRA, JOHN N., contract surgeon, is granted leave of absence for one month, with the understanding that he will provide a satisfactory substitute during his absence without expense to the government.

HARVEY, Captain LUTHER S., assistant surgeon, extension of leave on account of sickness May 3, 1902, is further extended 15 days on account of sickness.

MAZZURI, Captain PAUL, assistant surgeon, is granted leave for one month with permission to apply for an extension of one month.

COLLINS, First Lieutenant CHRISTOPHER C., assistant surgeon, is relieved from duty at the United States General Hospital, Presidio, to take effect upon the arrival at that hospital of First Lieutenant Theodore C. Lyster, assistant surgeon, and will then report for transportation to the Philippine Islands, where he will report for assignment to duty.

HENDERSON, JOHN L., hospital steward, Army and Navy general hospital, Hot Springs, Ark., will be sent to Seattle, Wash., for temporary duty to the commanding officer U. S. troops en route from that place to Fort Egbert. Upon arrival at Fort Egbert he will report to the commanding officer of that post for duty.

DEAN, First Lieutenant ELMER A., assistant surgeon, is relieved from duty at Nozaleda Hospital, Manila, P. I., and will report on the Buford for duty as transport surgeon, relieving Major John M. Banister, surgeon.

KENDALL, Major WILLIAM P., surgeon, is detailed to represent the medical department of the Army at the eleventh annual meeting of the Association of Military Surgeons of the United States, to be held at Washington, D. C., from June 5 to 7, in addition to the officers designated in orders of April 2. Major Kendall will proceed at such time as will enable him to reach Washington on or about June 5, and upon the adjournment of the association will return to his proper station.

The following named medical officers are assigned to stations as follows: Major Thomas C. Chalmers, surgeon, will proceed to Zamboanga, Mindanao, for duty, relieving Captain Charles F. Kieffer, assistant surgeon. Captains Herbert Gunn and Fred F. Sprague, assistant surgeons, and Contract Surgeon Harrison W. Stukey will proceed to Tacloban, Leyte, reporting upon arrival to the commanding general, Sixth Separate Brigade, for assignment to station. Captain Francis J. Pursell, assistant surgeon, will proceed to Dumaguete, Negros, for duty, relieving Captain John S. Hill, assistant surgeon, who will proceed to Cadmon, Cebu, for duty, relieving First Lieutenant Charles R. Reynolds, assistant surgeon, who will proceed to Cebu, Cebu, reporting at the base hospital for duty. Major Henry I. Raymond, surgeon, will proceed to Vigau, South Ilocos, and assume command of the brigade hospital at that station. Contract Dental Surgeon John A. McAlister will proceed to Aparri, Cagayan, for duty. Major John M. Banister, surgeon, will proceed to Dagupan, Pangasinan, and report to the commanding general, First Separate Brigade, for duty as chief surgeon of that brigade.

SHORTLIDGE, First Lieutenant, EDMUND D., assistant surgeon, is relieved from further duty as attending surgeon at headquarters, department of North Philippines.

WHITTINGTON, Major WILLIAM L., surgeon, is granted leave of absence for one month, with permission to visit the United States.

Captains Charles W. Hack, William C. Le Compte and George R. Plummer, assistant surgeons, and First Lieutenant John H. Allen, assistant surgeon, are relieved from duty at their present stations, and will proceed to Zamboanga, Mindanao, reporting to the commanding general, Seventh Separate Brigade, for assignment to duty.

MILLER, Captain ALBERT L., assistant surgeon, is granted leave for one month and twelve days, with permission to visit Japan.

DICKINSON, CLARENCE F., contract surgeon, is granted leave for one month, with permission to visit the United States.

WOOTTON, Captain TURNER W., assistant surgeon, is relieved from duty at the division hospital, Los Banos, province of Laguna, Luzon, and will report to the commissioner of public health, Manila, for duty; Contract Surgeon William L. Keller is relieved from duty in the department of North Philippines, and will report to the chief surgeon of the division for instructions; Contract Surgeon Charles C. Billingslea is relieved from duty at the first reserve hospital, Manila, and will report to the commanding general, department of North Philippines, for assignment to duty.

HALLOCK, Captain HARRY M., assistant surgeon, is detailed as summary court officer at the first reserve hospital, Manila.

MINOR, Major JAMES C., surgeon, is relieved from duty at the division hospital, Los Banos, province of Laguna, Luzon, and will report to the chief surgeon of the division of the Philippines for duty.

GIBSON, Captain EDWARD T., assistant surgeon, is relieved from further duty on the transport Crook, and will report to the commanding general, division of the Philippines, for assignment to duty.

BLOCK, Captain WILLIAM H., assistant surgeon, now in Baltimore, Md., will upon the expiration of his present leave, report in person to the commanding officer Fort McHenry for temporary duty.

DEANE, Captain HOWARD C., assistant surgeon, is relieved from further duty at the artillery defenses of Havana, Cuba, and will report at Morro Castle, Santiago, Cuba, for duty, to relieve First Lieutenant Edward F. Geddings, assistant surgeon. Lieutenant Geddings will proceed to Indianapolis, Ind., and report for duty.

MANLY, First Lieutenant CLARENCE J., assistant surgeon, leave granted April 21 is extended one month.

DEAN, First Lieutenant ELMER A., assistant surgeon, now at San Francisco, Cal., will report for assignment to duty at the U. S. general hospital, Presidio.

POMEROY, William H., contract surgeon, is granted leave for two months, from about June 18, with permission to go beyond sea.

Orders of May 17, which directed Contract Surgeon John M. Shepherd to proceed to Fort Schuyler, are amended so as to direct him to proceed to Fort Hamilton for duty.

GIBBENS, GEORGE, hospital steward, now at Washington, D. C., having relinquished the unexpired portion of furlough, will be sent to Fort Morgan for duty, to relieve Hospital Steward William J. Donahay. Steward Donahay will be sent at once to Manila for assignment to duty.

CHAMER, CHARLES W., hospital steward, Fort Egbert, will accompany Company E, Seventh Infantry, to its new station in the United States. Upon completion of that duty he will be sent to the Army and Navy General Hospital, Hot Springs, Ark., for duty.

Changes in the Medical Corps of the U. S. Navy for the week ended May 31, 1902:

FIELD, J. H., surgeon, appointed surgeon from May 19—May 23.

ULAH, W. H., assistant surgeon, granted sick leave for 3 months—May 24.

WAGGENER, R., pharmacist, ordered to Key West Naval Station—May 26.

DOUGLASS, S. W., pharmacist, detached from Key West Naval Station and ordered to duty at the Naval Proving Ground, Indian Head, Md.—May 27.

BENTON, F. L., passed assistant surgeon, detached from the Columbia May 31, and ordered to duty with a recruiting party leaving New York City on that day—May 27.

American Medicine

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The election of Prof. Frank Billings, M.S., M.D., to the Presidency of the American Medical Association is significant of the progressive spirit which animates the medical profession. Dr. Billings, well known from his numerous contributions to internal medicine and from his position as professor of medicine and dean of the faculty of Rush Medical College, Chicago, is a representative of the educational product of the middle West, which, during the last two decades has contributed largely to the list of leaders in the educational and scientific work of the country. There is scarcely an educational institution of prominence in the Eastern or Western States that has not availed itself of the sterling qualities possessed by these men of the prairie and lake region. The expansiveness and freedom of the great West has communicated somewhat of its comprehensiveness and vigor to men and institutions, and the strenuous life so necessary to the rapid development of vast natural resources, along absolutely new lines and on a scale never before attempted, is now producing results in fields of endeavor which lie outside the domain of commerce, but in which the same breadth of mind, the same boldness and freedom in action are essential. In selecting Dr. Billings for its president the American Medical Association is but following the lead of many American colleges in giving practical recognition to exemplars of typical Americanism as applied to professional and educational matters. The address delivered by Dr. Billings at the Saratoga meeting, and published in the columns of *American Medicine* of this issue, is indicative of the mental grasp which has placed Dr. Billings in the twenty-one years of his professional career in the front rank of practitioners in the nation, and finally in the distinguished position to which he has now been elected.

The Evolutionary Factor in Medical Licensure and Reciprocity.—To those capable of reading between the lines, the adverse report of the National Confederation upon the proposal to establish a Voluntary National Board of Examiners will have a vast significance. We have repeatedly called attention to some of these phases, but all are based upon the fundamental principle of careful evolution by modification and progress along lines indicated by established laws and present facts. There must be evolution, not revolution, in order that

finally harm may not be done to all in the effort to do away with temporary and individual hardships and injustice. A voluntary board is simply not feasible and would undoubtedly destroy the substantial progress in reciprocity already attained and the more perfect results that are surely coming by the outworking of present tendencies and aims. It is constantly forgotten that in the long run there can be no absolute settlement of the great problem of reciprocity until there is a consent and practical harmony on the part of all the States as to the standards of preliminary education. This places far in the future the ultimate solution of the question, because the States cannot and, moreover, should not, hurry too much the orderly progress by any revolutionary enactment of remarkable laws. The greatest danger lies, in the unit of the Confederation report, that in the present condition of the popular and legislative mind any extensive attempt to tamper with the great body and attainment of medical laws would at once bring the whole structure tumbling to ruins about us. In the meantime, by individual and considerate action, State Boards can do a great deal toward extending to incoming older practitioners from other States who are professionally and socially honorable a courteous welcome which shall do away with many instances of injustice which have taken place in the past. These exceptional cases, however, should not make us forget our greater duty to the entire profession and especially to the profession of all the future.

A Voluntary National Examining Board Impossible.—Our readers will remember that from the first and continually we have taken the position that the proposal for a National Examining Board under government authority is out of the question, because of the established principle of State rights and State sovereignty in the regulation of such matters. We have as persistently emphasized the fact that the plan of a Voluntary National Board is also impossible of realization because of many reasons which we have set forth, especially in the last two or three numbers of *American Medicine*. These reasons are epitomized and endorsed by some able editorial writer of the New York *Tribune*, reproduced in another column. As we go to press we learn that the proposal made by our honored colleague, Dr. Rodman, has been considered by the National Con-

federation of State Medical Examining and Licensing Boards, recently meeting at Saratoga. The following report of its committee was endorsed and referred to the House of Delegates of the American Medical Association in session at Saratoga:

"In the opinion of your committee this Confederation cannot endorse nor approve such a proposition [as that of Dr. Rodman] for the following reasons: (1) A Voluntary National Examining Board would have no power, no authority, nor legal right to exist; (2) no guarantee could be given of the continuance of permanency of such voluntary board, even were the laws of the several States so modified as to meet its requirements; (3) being a voluntary board there could be no legal manner of constituting, changing or limiting its membership, or of defining its duties; (4) such a board would be representative of the profession only, and of the regular profession alone; (5) without the endorsement of a State Board authorized by law to grant a license to practise, a certificate of qualification from the proposed voluntary board could have no value whatever, and under the existing laws of the several States the State Examining Boards are required to conduct the examinations, and such boards cannot evade nor surrender such duty, even if they desired to do so; (6) to attempt the stupendous task of securing the amendments to the existing laws regulating the practise of medicine in the several States would entail enormous labor and expense, and would probably endanger the laws themselves."

Dr. Wyeth's presidential address, presented in full in the present number of *American Medicine*, by the courtesy of the editor of the Journal of the Association, met most admirably the demand of the occasion. Unity and harmony, applied to the Association, to its business and social methods, and to the grand opportunity opening before the entire profession of our country, were the consistent motives which inspired Dr. Wyeth as president of the newly-organized Association. The statement made as to the changes in organization clearly set forth the conditions of the new government and representation, whereby the inchoate and unwieldy body of the past has been replaced by one that is democratic, American and businesslike. The advice to the House of Delegates that they consider the present evils of licensure and report upon a plan of reform is, as our readers know, what we have repeatedly advocated. The discontinuance of many independent medical societies and their union with the national organization was also advice which we hope may soon be acted upon. That also as to the place of meeting, and especially in regard to the old habit of shifting upon the local profession so large a share of the expenses of the meeting, was indicative of the renewing desire to avoid every form of commercialism. Dr. Wyeth wisely calls upon all physicians to heed not the flatterings of professional pride, but the warnings of self-scrutiny, and to realize the incomplete duty of higher medical education and of more efficient organization. Such a reformation of the code of medical ethics and customs, as well as of State laws, must be undertaken as will do away with all the present hindrances to professional unity and power.

House of Delegates of the A. M. A.—To the conservativeness displayed at the first meeting of the House of Delegates is directly attributable the smoothness which has characterized the movements of the organization machinery at the Saratoga meeting of the American Medical Association. The wisdom of confining the

legislative work of the Association to a compact body, unencumbered by business foreign to it, will, year by year, become more evident. Effectiveness of action in an organization with such varied and extended interests can be secured only by specialization of function, by the delegation of special duties to men especially adapted to the accomplishment of the same. Fears expressed of hasty and unwise action have not been justified, and the general feeling of those present at the meeting has been that of satisfaction with the results obtained.

Office-seekers Ineligible for Office.—Such is the determination that has been formed in the minds of those who are shaping the future of the American medical profession. This spirit has even been formulated into a command by the Kentucky State Medical Association, which, on May 9, adopted the constitution and by-laws as recommended by the American Medical Association. In this document there is a clause as to the election of officers which provides that if it is known that any person presenting himself as a candidate for office thereby becomes ineligible. Such an office-hunter at the meeting of a large national organization, recently held, was told that seeking the place is now the most certain method of not getting it. At the meeting of the American Medical Association the placing of power in the hands of the House of Delegates has served to bring into effective action the resolve that office-seeking will disbar the very consideration of claims. There is nothing more encouraging than this spontaneous resolve on the part of the better men of the profession to have done with the medical politician and office-seeker.

Suture of Heart Wounds.—The occurrence of three successful operations for the suture of wounds of the heart in America during 1901 has attracted much attention to this subject in this country recently. Hence the thorough study of this subject by Dr. Sherman, which appears in this issue of *American Medicine*, by courtesy of the editor of the Journal of the Association, is specially timely. To very many who have not followed the literature of this subject it will be a surprise to see that 34 operations of this kind have been performed since 1896. The wounds of the kind that produce such injuries of the heart are comparatively infrequent in this country for the reason that stabbing affrays are relatively uncommon. Sherman finds that out of the total number of 34 heart wounds, all except two were punctured or incised wounds, the remaining two being bullet wounds. The hesitancy of surgeons to undertake suture of the heart is a matter of surprise when one remembers that for years animals have been experimented upon, and the tolerance of the mammalian heart to manipulation, and its persistent action in spite of wounds and obstacles, has long been known to physiologists. There are no doubt many other fields of surgery which have not yet been opened up, but in which the experiments of physiologists would suggest intervention in case their work was better known. In discussing the results of this series of cases, Sherman finds that 5 patients died on the operating table of hemorrhage and 10 died very soon afterward from hemorrhage or shock; that is to say, 15 or nearly half the cases died during or very shortly after the operation. Of the remaining 19 cases only 13 recovered, 6 succumbing to infection, and 4 of the others recovering in spite of such infection. The mortality is not bad when we stop to think that the 15 who died of hemorrhage or shock during the operation would probably have died in exactly the same way without operation. No fatal traumatism is inflicted by exposing the heart and stopping hemorrhage from a wound in the ventricles is in most cases a simple matter. The patients had from the first practically no chance to recover. The remaining 19 cases had a chance, and in each of them the suture was successful in that there was not a single instance of fatal outcome from hemorrhage. Hence, if we wish to

consider only the final success or failure of suture of the heart, we must limit our inquiry to those cases in which this procedure is really tested, and then we see that the percentage of recoveries may be considered a little more than two-thirds. To study the conditions in wounds of the heart, Sherman exposed the hearts of 11 dogs and made wounds of different sizes and directions. He found that it was difficult to hold the heart while sutures were placed, and to overcome this difficulty he used two long suspension loops of silk. These did not tear the heart muscle as did forceps, the heart continued its function when hanging from them much less tumultuously than in the bite of the forceps, it could be lifted half way out of the pericardial incision, and by crossing the loops bleeding could be completely arrested before the permanent sutures were inserted and tied. Contrary to most surgeons who have studied this subject, Sherman considers catgut the ideal suture material, and found that it acted very satisfactorily. Infection results from the wounding instrument in about one-third of the cases, and of infected cases more than half die. Hence the necessity for drainage. Nine cases were drained with seven recoveries, while with nine other cases not drained only five recovered. The details of the method of exposure are of no great importance, provided room enough is obtained.

Sherman believes that the operations thus far recorded mark only the beginning of the surgery of the heart, and that the heart is now destined to be submitted to many manipulations, provided they can be done without stopping its action. With this conclusion we can scarcely agree, for there would seem to be but few pathologic conditions in which operative intervention would be of any special avail, even if the heart's action were not disturbed. The division of mitral stenosis as suggested by Brunton may be possible, but it remains to be shown that this procedure can be done successfully upon the human subject, and even if it could it seems doubtful whether the unyielding nature of the thickened valves which are usually found would give the needed relief. It can scarcely be hoped that surgeons will be able to excise vegetations from the heart valves or by plastic operations repair valvular insufficiency, and operative intervention for simple myocarditis and endocarditis would at the present state of our knowledge be scarcely likely to give very brilliant results. While we believe that the amount of surgery which will be practised on the heart will always be very limited, we recognize the importance of such operations as suture of wounds of the heart and of draining the infected pericardium. Probably nine out of ten general surgeons will never meet a case requiring heart suture unless the proportion of Italian immigration rapidly increases; but when such injuries do occur it is extremely important that the tenth man is prepared to act with the utmost promptness, and experimental studies such as Sherman's, which give valuable information as to the best methods of intervention, are of great value.

A Time-Limit on Papers at Medical Conventions.—The twenty-third annual meeting of the American Surgical Association, held in the Senate Chamber of the New York State capitol at Albany, June 3-5, was made particularly profitable by the adoption of an eight-minute rule as to the time occupied in the reading of papers, whereby the presentation of thirty papers and of considerably more than 100 discussions was made possible. This method of enforcing brevity is highly commendable, tending to conciseness and perspicacity, and by affording time for discussion it tends to the development of a consensus of opinion of those present. A prime object of the annual gathering of medical and other scientists is to establish the mean high-water mark of practice in the particular group of authorities involved rather than to allow the exploitation of novelties in procedure and innovations in technic. By means of a time-

limit the program is made more comprehensive, and individual members, though prevented from monopolizing the attention of the meeting, are afforded opportunity for reviewing a wider field of interest. While few medical gatherings may enjoy such splendid quarters as those placed at the disposal of the American Surgeons, all may partake of that element of success which follows a wise distribution of time such as served to make this meeting one of the most successful in the history of the Association.

Galley-proofs of Papers Presented at Medical Gatherings.—The spirit of innovation so characteristic of modern surgeons was evidenced at the recent meeting of the American Surgical Association in the happy idea of providing galley-proofs of papers presented, which being distributed among the members greatly facilitated intelligent discussion. This is in direct line with the suggestion made recently in the columns of *American Medicine* that contributors to medical conventions should supply printed or type-written abstracts of their papers. Every arrangement of this kind helps the author to make clear the essential thought of his paper and gives opportunity for some consideration of the same on the part of those who may wish to discuss the thesis. Misunderstandings and incorrect reports are obviated and the effectiveness of the paper is greatly enhanced. Two good points at least in convention management have thus been taught.

"Except as to pathology and the practice of medicine"—such are the words of the new Massachusetts law as to the examinations of osteopaths for licensure. The bill has passed the Senate. "The graduates of authorized schools of osteopathy" are to be examined the same as those of other "schools," and are to be admitted to practice if they show satisfactory proficiency. They may treat all diseases, of course, whether due to misplaced or dislocated bones or whether not possibly so caused. There could be no objection to licensing such candidates if they passed satisfactorily the same examinations as all others, but to except pathology and the practice of medicine is like excepting the Moor and Desdemona from the play of Othello. What is "medicine" with pathology and treatment omitted? Where is the hole in the sand, asked the child, when you take the sand away. On such grounds and by such logic may not every street-corner peddler of wizard oil and magnetic ointment be permitted to practise "medicine?" The belief that there can be more than one science of pathology should alone disbar the holder from practice.

The Fourth of July noise-makers have for years maimed and killed their hundreds, and have made well persons ill, and ill ones more ill. But now the indifference of the American people is to be asked to an extension of this criminal nuisance over a period of a month or two instead of a single day. The newspapers generally are complaining editorially and publishing the protests of indignant citizens that more than ever this year the laws against the exploding of torpedoes, etc., have been broken with impunity by boys day and night during several weeks preceding the Fourth of July. The police are indifferent to the crime—a perfect method of encouraging boys to despise and defy laws. In many parts of our cities sleep is impossible, and convalescence of the sick is interrupted for a month or more about this inglorious and frightful season. The year 1900 showed 59 deaths and 2,767 injuries, and 1901, 3,147 injuries and 56 deaths directly caused by this heathenish custom. There is needed an awakening of public sentiment as to this important matter. The enactment of proper laws against the abuse and their strict enforcement should be demanded of the mayors of cities by journals and citizens, both professional and lay.

The Refracting Optician Does Not Treat Disease!—An illustration, one of many similar ones constantly seen in the oculist's office, recently occurred in Philadelphia. A man consulted a physician asking for spectacles that would give him better vision than those he was wearing. The eyes-examined-free man had changed his lenses three times in a month. The oculist told the patient he had retinal hemorrhages, urged him to consult his general physician, warning him of the danger he ran by his carelessness, by continuing an active life, etc. Seeing that the patient would not take his advice, and even returned to the "ophthalmotrician," the oculist wrote to the general physician (who had not seen the patient for a long time) concerning the man's condition, his arteromatous arteries, hemorrhages, etc. It was all in vain. The quack's glasses were the best; the patient refused to pay the bill of the oculist, would not see the general physician, and his suspicion of medical men grew under the fostering care of the refracting optician. Last week, two months after the oculist's warning, the patient dropped dead from cerebral hemorrhage.

EDITORIAL ECHOES

Relicensing Physicians.—An embarrassment under which many physicians in this country labor is pointed out by *American Medicine* with a view to securing its removal. Existing legislation or established usage in most States requires a doctor from one to pass a fresh examination before he can practise in another. This requirement makes trouble in a variety of ways. Specialists in the metropolis who have neglected this formality are not at liberty to respond to a call to meet local practitioners in consultation in Connecticut or Rhode Island. It not infrequently happens that a doctor and some of his own patients will go to the same summer resort, but one in another State than that in which they spend the greater part of the year. Many New York people make prolonged stays at Lenox and Newport, Philadelphia people patronize Atlantic City, and Bostonians visit the White Mountains. In some of these cases the physician may not attend his regular patients while they are away from home. Under such circumstances, and others that can be readily imagined, the restriction works a double injustice. Both the patient and the practitioner suffer. Rarely can the situation be foreseen long enough for the latter to go through the formality of an examination. Travel to another State, days and weeks in advance, merely for the sake of qualifying one's self to practise there, and without definite expectation of a request to do so, looks like a waste of time, convenience and money. To a man of established reputation, too, or to a medical officer retiring from the army or navy and desiring to engage in private practice, that step involves a real or imaginary loss of dignity. It has been suggested that the difficulty could be met by having a national licensing board, whose certificate should entitle a man or woman to practise anywhere in the United States. To this scheme there are several objections. It makes necessary reexamination and perhaps a journey to the national capital. If the examining board should be itinerant its members would doubtless find their duties irksome. Perhaps it would not be easy, moreover, to fix dates that would be equally satisfactory to different sections of the country. The most serious drawback to the plan, though, is that it is too much of an invasion of state rights. The desirability of uniform regulations of business and social usages has led to propositions for national food laws, national divorce laws, national control of medical practice and no end of kindred measures. For some of these a constitutional justification exists. But it is exceedingly doubtful whether any can be found for the project to let the federal government prescribe the qualifications of a physician. The power has hitherto been exercised by the States, and it ought to remain with them. Another and much better principle is recommended by *American Medicine*. That periodical wants more of the States to exercise reciprocity in the matter, each accepting as satisfactory the standards set up by another. To be sure, these vary considerably. Some States demand more than others from a candidate. One whose requirements are moderate, of course, should be willing to recognize as adequate those which are more strict. The only hesitation would be felt when the conditions were reversed. Even then any reluctance might vanish when the advantages of the whole broad scheme were carefully considered, and when the spirit of professional courtesy had full play. If the thing were so managed as to exclude quacks it would probably satisfy all reasonable physicians. Both for its discussion of the problem and for the particular solution which it offers *American Medicine* is entitled to the thanks of the medical profession.—*New York Tribune*, June 11, 1902.

AMERICAN NEWS AND NOTES.

GENERAL.

Women physicians in the world are said to number almost 8,000, of whom 6,000 live in America.

Teaching the Dumb to Speak.—It has been practically demonstrated that children born without hearing if taken in infancy can be taught not only to speak but also to understand the speech of others simply by observing the motion of the lips; also that this faculty can be developed in time to permit such children to enter the public schools provided for children with hearing at the ordinary school age. With the aim of placing this new method in the hands of competent instructors in all sections of the country, Galusha A. Grow, of Pennsylvania, chairman of the Committee on Education of the House of Representatives, has introduced a bill in the House providing for \$75,000 to defray the expenses of sending one competent teacher from each State and Territory to the Philadelphia Home for Teaching Articulate Speech to Deaf Children for a sufficient length of time, not to exceed six months, to acquire the method which are there so successfully practised by the Garrett sisters, who were the originators of the new system.

EASTERN STATES.

The Massachusetts Eclectic Medical Society has elected Lillian G. Bullock, of Manchester, N. H., as president. She served last year as vice-president. This is no doubt the first innovation of the kind that has ever occurred in New England.

Against Malaria.—The Board of Health, of Brookline, Mass., has issued a circular to the residents asking their co-operation in taking certain simple precautions against the spread of mosquitos, especially in the direction of doing away with unnecessary standing water, however small in amount, and advises that as mosquitos breed only in standing water and often in quite small pools and ditches, a great many of them can be destroyed by filling up or draining off holes and pools and emptying water barrels, pails, clogged gutters, tin cans, unused cisterns and other receptacles. When for any reason standing water is unavoidable, a thin coating of kerosene oil spread over the surface kills the young mosquitos. The Board of Health should be notified of all pools which cannot be taken care of by individual effort.

NEW YORK.

Cornell University Medical College held its fourth annual commencement June 4, 1902, at Carnegie Hall, New York.

A monument to Dr. Thomas Dunn English is contemplated by the Society of American Authors and an appeal for subscriptions has been issued. Contributions should be sent to Morris P. Ferris, 32 Broadway, New York.

Ophthalmia Contagious.—As the result of a recent investigation made in some of the public schools by members of the New York County Medical Society, the Board of Health has declared ophthalmia, both acute and chronic, to be a contagious disease. Under this decision, physicians will be required to report promptly to the Department of Health all cases of the disease that they may find. The Board of Education will also be asked to aid in eradicating the disease from the public schools where it is now prevalent.

The carelessness of ships' surgeons is complained of by the Commissioner of Immigration for passing in diseased passengers by entering them on the manifest as in good health, over 45 cases of dangerous contagious disease having been brought to the port of New York in the past month, many, if not all, of which must have been active at the port and time of embarkation. He is enforcing vigorously the law relating to the manifesting of steerage passengers and fining the steamship companies \$10 for every steerage passenger improperly manifested.

PHILADELPHIA, PENNSYLVANIA, ETC.

Atlantic City Hospital.—A new department of gynecology has been created with Drs. Wm. Edgar Darnall and Emery Marvel in charge.

Bequests to Hospitals.—Under the will of the late Valentin Geng, of Darby township, St. Mary's Hospital, Presbyterian Hospital, German Hospital, Jewish Hospital and the Pennsylvania Training School for Feeble-minded Children, Elwyn, each received \$5,000; the Chester Hospital, \$1,000.

St. Margaret's Memorial Hospital at Pittsburg, for the erection of which John Schoenberger left more than \$600,000, has been completed for two or three years but has never been opened. By the terms of Mr. Schoenberger's will the institution was put under the fostering care of the Episcopal Church, but without giving to it any jurisdiction in the matter. The bishop and clergy, supported by prominent laymen, have suggested measures by which the hospital could be maintained and

have been untiring in efforts to have it opened, but the laymen directors who were appointed by the diocesan convention hold aloof from all their propositions with dogged persistency to the great indignation of the church.

SOUTHERN STATES.

The Right of a State to Quarantine.—The United States Supreme Court has declared the right of a State of the Union to pass laws excluding bodies of persons from going into a city or community which is quarantined. The owners of the French steamer *Britannia*, which attempted to land 400 Italian immigrants in New Orleans in 1878, brought suit against the Louisiana Board of Health because, as the city was then infested with yellow fever, a quarantine was in force against it and the Board of Health enforced the State law authorizing exclusion from a quarantined municipality and refused permission to the immigrants to land. After a defeat in the State Courts the owners of the steamer appealed to the United States Supreme Court on the ground that the law is a violation of the Interstate Commerce law and also in contravention of the treaty of 1803 with France. The opinion of the Supreme Court, handed down by Justice White, sustained the State law on the ground that until Congress takes the quarantine power from the States each State is entitled to make and enforce its own quarantine regulations.

WESTERN STATES.

Union of Medical Colleges.—Announcement is made that the ruling bodies of the Denver College of Medicine and the Gross College of Medicine, of Denver, have decided to consolidate the two.

Agnes Memorial Sanatorium.—A hospital for tuberculous patients it is announced will be given to the State of Colorado by Lawrence C. Phipps, lately of Pittsburg, in memory of his mother, Agnes Phipps. A tract of 160 acres has been purchased in Denver and the design of the Trudeau Sanatorium in the Adirondacks will be followed in the construction. One of the important features will be an elaborately equipped laboratory for research work and the treatment will be in accordance with the best methods. The institution will not be purely charitable, as patients will be expected to pay when it is possible. The local members of the medical department are Drs. Thomas Gallaher, G. W. Holden, W. H. Bergtold and Carroll E. Edson.

CANADA.

McGill University.—Dr. Wyatt Johnson, assistant professor of hygiene, has been appointed successor to Dr. Craik as dean of the medical school.

Religious differentiation will be carried out, it is said, in the proposed new civic hospital for contagious diseases in Montreal. It is to be built on the pavilion plan, and the pavilions so arranged and the nursing staff so divided that there will be entire separation of the Catholics and Protestants.

Vaccination.—The by-law providing for compulsory vaccination in Montreal having been rejected by a considerable majority, owing to prevalence of untoward after-effects of vaccination in that city, which has made the operation unpopular, a new by-law has been substituted. This provides that vaccination shall be performed by duly qualified physicians only, and that proper aseptic methods shall be employed.

FOREIGN NEWS AND NOTES

GREAT BRITAIN.

Convalescent Home for Epileptics.—The National Society for the Employment of Epileptics has had an anonymous donation of \$17,500 for building a convalescent home for epileptics, with capacity for 24 male patients, in connection with the epileptic colony at Chalfont, England.

CONTINENTAL EUROPE.

Legal Fee in Paris.—In a recent judgment against a physician who had presented a bill at the rate of 20 francs for the first visit and 10 francs for each subsequent one, it was decided that 10 francs (\$1.93) is the usual fee in Paris for the visit of a physician to persons in the medium station of life.

The microphonograph, a combination of the microphone and phonograph, was invented by M. Dussaud, professor of physics in the School of Mechanics, Geneva, Switzerland, and perfected by M. Janbert and M. Berthon, of Paris. This instrument does for sound what the microscope does for objects, increases the intensity of sound while regulating and graduating it at will—making it deep-toned or shrill, feeble or intense. Acoustic exercises by means of it make the education of deaf mutes possible at a very early age. The excitation of the auditory nerve leads directly to the reviving of the sense of hearing and encourages the utterances of words. Good results have followed its use.

Sterilization of Salads.—The report that the outbreak of cholera in Manila was due to the importation of germs on vegetables brought from Hong Kong has given rise to a discussion in the Italian medical journals concerning the most efficient method of sterilizing salads which form one of the staple articles of diet in Italy. In times of epidemics the question has a bearing on maritime hygiene. Large quantities of lettuce, cabbage and other plants which are eaten raw are usually taken on board ships by emigrants leaving Italy. During the cholera epidemic in 1893 all such articles were prohibited and their exclusion was made a condition to granting the United States consular bill of health. Heat and antiseptic treatment applied to salads would not be conducive to good cheer it is agreed, but one experimenter, G. Ceresole, says in *Il Policlinico* that a salad plant infected experimentally with a culture of *Spirillum cholerae asiaticum* was sterilized in five minutes by a 2% watery solution of tartaric acid. To avert danger from the consumption of crude greens it is sufficient to immerse them for half an hour in a 3% solution of tartaric acid and that when the plants thus treated are afterward washed with water they are absolutely nontoxic and their gastronomic qualities are unaffected by the process. It is also recorded that the bacilli of plague and of diphtheria are destroyed in five minutes by a 5% solution of tartaric acid. The recent studies of Wurtz and Bourger demonstrate that the use of washings of cesspools for manuring truck gardens is perilous to health. Pathogenic organisms thus deposited on vegetables are capable of retaining their virulence for long periods. In France an official inquiry has been made into this matter and a hygienic commission composed of Brouardel, Roux, Wurtz, and Ogier has confirmed the conclusions of Wurtz and Bourger.

OBITUARIES.

William Miller Ord, consulting physician to St. Thomas' Hospital, London, May 14, aged 68. By the death of Dr. Ord, of St. Thomas' Hospital, London, the profession of Great Britain has lost one of its most distinguished members. Many physicians on this side of the Atlantic will hear of his death with regret, as in his visits to this country he had made an enduring impression. Dr. Ord was a clinician of an unusual type. He will always be remembered by one brilliant piece of work—he named and made myxedema a familiar disease. In this connection Dr. Ord's work has, in some quarters at least, not received the recognition which it deserves. Gull described the disease, but only the energy and perseverance of Ord gained for it a general recognition. The "Report on Myxedema" of the Clinical Society is one of the most noteworthy contributions to medicine made by the British School, and a large share of the credit is due to Dr. Ord, the chairman of the committee.

William Armistead Nelson, of New York, June 4, aged 85. Dr. Nelson was born at Fredericksburg, Va., and was graduated from the medical department of the University of Pennsylvania in 1839. He was soon appointed as assistant surgeon in the United States Navy, and accompanied Commodore Perry on his expedition to Japan. In 1851 he was appointed surgeon. He resigned shortly before the Civil War, and on the outbreak of that conflict joined the Confederate Army as surgeon, serving at Yorktown, Richmond, and in Louisiana. After the war he moved to Missouri, where he practised medicine for many years. He was a cousin of Thomas Nelson Page. Governor Nelson, the signer of the Declaration of Independence, was his great-uncle.

Joseph Scholl, of Washington, D. C., June 6, aged 80. He graduated at Tübingen, Germany, in 1850, and soon after came to America and settled in Newark, N. J., where he attained prominence in his profession. During his term of coroner there he, with others, established the first free hospital. In 1861 he moved to Washington and identified himself with that city's welfare. He was one of the oldest members of the Medical Society and Medical Association, and one of the originators and incorporators of what is now the Emergency Hospital.

Colonel Dallas Bache, a retired surgeon in the United States Army, in San Diego, Cal., aged 61. He served during the Civil War at the United States Military Academy; with a battalion of artillery in the Department of the Cumberland, in the General Hospital at Nashville, Tenn.; as staff surgeon, Department of the Cumberland, and in the Mower General Hospital at Philadelphia to the close of the war.

Otis R. Freeman, of Freehold, N. J., believed to be the oldest practising physician in America, June 8, aged 94. Dr. Freeman was a native of New Hampshire, and was appointed a surgeon in the Civil War by Governor Olden, of New Jersey. After the battle of Sailors' Creek, Va., he worked at the amputating table without cessation for 14 hours. He continued his practice to within five days of his death.

Benjamin A. Church, of Oneonta, N. Y., June 6, aged 47. He was a prominent member of the New York State Medical Association.

W. Snowball, for 24 years the senior medical officer on the honorary staff of the Melbourne (Australia) Children's Hospital.

Agnes B. Robinson-Messner, assistant demonstrator of anatomy in the Woman's Medical College since 1897, June 5.

Joseph Eastman, a prominent surgeon of Indianapolis, June 5.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION.

Fifty-third Annual Meeting, Held at Saratoga Springs, New York, June 10 to 13, 1902.

[Specially Reported for *American Medicine*.]

Proceedings of the House of Delegates.

FIRST SESSION.

The House was called to order by President WYETH. He spoke of the critical period through which the Association is now passing because of the **change of organization**, and of the fact that after 53 years of trial the original plan had not secured that concert of action in the entire profession which had been hoped. As a result there had been one year ago accepted the plan of the Committee on Organization, and the testing of it by experience at the present meeting. Forbearance and charity are therefore required of all toward those who differ, in order to bring about the union desired by all.

Dr. WYETH also advised the appointment of a committee on sections and section work, composed of members of the House who have had experience as chairmen of sections, the chief duty of such committeemen being to advise or aid the inexperienced chairmen-elect of each section in the organization of that section, the arrangement of the material program, etc.

The need of **interstate comity, or reciprocity**, said WYETH, requires the attention of the delegates, and the plan of Rodman was spoken of as "worthy of careful consideration."

As to the **management of the annual meetings** and the payment of expenses, it was recommended that the House of Delegates, with the secretary acting as its agent, hereafter assume the entire responsibility and management of the annual meetings.

The **retention of the national committee of three on medical legislation** was advised as a part of the Committee on Medical Legislation.

The establishing of a **Department of Public Health** at Washington was held to be one of the duties incumbent upon the Association, and the necessity of the continuance of the Committee on National Legislation was emphasized, as well as our common duty to impress on the community in which we reside the necessity for and the safety of the immunizing process of vaccination.

The appointment of an officer who shall act as a **national organizer of the profession** was earnestly recommended one who, specially fitted for such work, would add largely to the membership of the Association by visiting those States or Territories where, as yet, medical organization and society work are practically neglected.

The report of the **Secretary** contained, among others, the following points of interest:

State Societies and Reorganization.—Almost without exception, the State and Territorial societies, through their officers, have shown not only a willingness but an earnest desire to cooperate with the American Medical Association in this work of reorganization, but it is evident that the various State societies, or the committees representing them, while anxious to conform to the recommendations of the American Medical Association, were at a loss to know how to arrange their constitutions and by-laws so as to incorporate the principles recommended, and many of the members of these committees wrote me asking if the American Medical Association could not suggest a form that could be adopted by all State societies that desired to do so. Dr. Wyeth appointed as the committee to formulate a constitution and by-laws for State societies the original Committee on Reorganization, viz., J. N. McCormack, P. Maxwell Foshay and George H. Simmons. Several of the State societies have adopted this constitution and by-laws, some with slight modification and others exactly as submitted by the committee, except verbal changes. But few of the State societies appointed committees last year, so they were not able to take final action in changing their constitution and by-laws. All of the States thus far heard from have appointed committees on organization, so that we may expect next year to see most of the State societies falling in line.

Members of the American Medical Association not Members of Affiliated Societies.—On March 8 the secretary of the New York State Medical Association forwarded a list of 161 names of members of the American Medical Association residing in New York who were not members of the New York State Medical Association or any of its branches, and asked that these be dropped from the roll of members of the American Medical Association. I declined to take this action, because I could find nothing in the constitution and by-laws authorizing me to do so. While it is plain that such membership as that referred to is not possible if the by-laws are enforced, there is nothing to indicate who shall take action, and I so informed the officers of the New York State Medical Association. There are many men holding

membership in the American Medical Association in practically every State and Territory who are not entitled to membership even under the old constitution and by-laws. These became members while eligible, but have lost their membership in the society through which they obtained their membership, either by change of location, by expulsion or suspension, by the society becoming defunct or in other ways. Whatever the cause there has been no way of keeping in touch with such matters in the past, since there has been no close relationship between this Association and its subordinate branches and no attempt to report to the higher body on the part of the lower. In the future, when we become organized according to the proposed plan, it is presumed that a systematic method of reporting by the county society to the State society, and by the State society to this Association will be adopted and carried out. The present conditions are certainly not satisfactory. We have had on our books as members until quite recently, and probably have yet, men who are the veriest quacks and the most notorious advertisers in the country. This has occurred from the fact that it is impossible to keep in touch with each individual member unless it is done systematically by such reporting as it is hoped will soon be adopted.

Verification of Membership Qualification.—On my suggestion, the President, last February, authorized me to proceed to verify the membership list by sending to each member a blank on which he should give all necessary information in regard to his membership and other biographic information. The former was put in the form of questions to elicit the following points: When the member joined the Association; through what society; if there is a county society in his own county, and if so, if he belongs to it; and also if he belongs to his State society. The biographic information asked for, while it has no relation to membership, we thought would be advisable to obtain at this time as a basis for a biographic list of members in the future. For various reasons it has been impossible to make much more than a beginning in this work. We have covered only seven States, viz., Alabama, Arkansas, Arizona, California, Colorado, Connecticut and New York (the blanks received from New York shows only 104 not eligible), showing a total from the seven States of 158 not eligible to membership. The total number of those not responding, even after a second request, is 330, and it is fair to presume that these have not responded, in many instances at least, because such response would show them to be ineligible to membership. The total number of members in these States, January 1, 1902, was 1,726, showing that over 9% are not eligible to membership. The same percentage covering the whole country would show that there are over 1,000 members in the American Medical Association who are not eligible to membership, if the constitution and by-laws are strictly enforced, but this will probably be below rather than above the real number.

Enforcement of Law Necessary to Successful Organization.—There should be a rigid enforcement of the constitution and by-laws in every instance, for only in this way can we have an organized profession. By dropping certain ones under the rules, we may lose temporarily, but I believe that we will gain many more than we will lose. This assertion is based on individual cases that have come to my knowledge. Nevertheless, I can not but believe that we should act in a conservative manner toward those who are now in the Association and who are not eligible to this membership.

Associate Members.—The new constitution wisely provides for "representative teachers, and students of all allied sciences, not physicians" as associate members, the idea being to have such men as physiologists, pharmacists, etc., take part in some of the Sections. According to the constitution, however, these must be elected by the House of Delegates. Would it not be better to have them become associate members in the same manner as members by invitation? Under the present circumstances, the names of these men appear on the program before they are elected.

The Report of the Board of Trustees of the American Medical Association for the fiscal year beginning January 1, 1901, and ended December 31, 1901, was as follows: Instead of the usual debit and credit exhibits showing the cash receipts and disbursements for the year, we present you the report of the auditors employed to examine the books and accounts, vouchers, etc., of both *The Journal* and the Treasurer's offices. The auditor's report states that the circulation of the publication has increased from 17,446 to 22,049, and that the cost of publishing has decreased from \$5.18 to \$4.81 per year, which is certainly very gratifying. A schedule of members of your Association who are delinquent for the year 1899 and 1900 shows that 167 have not paid for the year 1899, and 459 for the year 1900.

STATEMENT OF RECEIPTS AND DISBURSEMENTS BY H. P. NEWMAN, TREASURER.

1901.		RECEIPTS.	
Jan. 1—Balance on hand.....			\$15,512.23
June—Registration fees at St. Paul meeting.....			5,050.00
Dec. 31—Interest on government and city bonds.....			860.00
Dec. 31—Membership fees for the year, not including registration fees at St. Paul.....			46,505.00
Disbursements.....			\$47,927.23
			37,166.75
Balance on hand.....			\$30,760.48

STATEMENT OF CONDITION, DEC. 31, 1901.

ASSETS.	
Treasurer, cash.....	\$33,760.48
U. S. bonds, par value, \$10,000.00.....	10,812.50
Chicago city school bonds, par value, \$14,000.00.....	15,168.13
<i>Journal assets</i>	\$56,741.11
	34,824.54
	\$91,065.65
LIABILITIES.	
Accounts payable.....	3,225.74
Net worth.....	\$87,839.91
Net worth, 1900.....	61,821.80
Increase during year 1901.....	\$26,018.11
ANALYSIS FOR 1901.	
Income from all sources.....	\$157,645.86
Less membership commission.....	197.20
	\$157,448.66
Less transfers.....	7,463.00
	\$149,985.66
EXPENSES.	
<i>Journal</i>	113,740.06
<i>Journal gain</i>	\$36,245.60
Treasurer and Association expenses.....	\$9,230.12
Treasurer and <i>Journal</i> account.....	\$97.37
	10,227.49
Net gain for year.....	\$26,018.11

The investment referred to in the last annual report of a sufficient amount of money which, when added to the \$10,000 in government bonds already owned by the Association, would make about \$25,000, which was approved by the Association, was made by the purchase of fourteen (14) Chicago City school bonds of a par value of \$1,000 each, which cost, including premium and interest, \$15,168.13. This gave us an interest-bearing investment of \$24,000, which yielded us an income of 3½%, bringing in \$860 in 1901.

Advertising Department.—To the ordinary *Journal* reader, it would appear to be an easy matter to lay down an inflexible rule by which the advertising department of any publication should be governed—that this should be like the laws of the Medes and Persians—but when brought face to face with many propositions, it is found to be a very difficult matter to decide what to do in each individual case. The Trustees are endeavoring to eliminate from the pages of *The Journal* all advertising that could be considered objectionable from an ethical standpoint. Some money has been lost to *The Journal* by the enforcement of the rule given above, but advertisements of a better class take the place of every one that drops out. We feel that we are making steady improvement along these lines.

The Board of Trustees has instructed the Editor to comply with the letter of the law in getting out programs for the Saratoga meeting, but it has been impossible for him to do this inasmuch as no explicit rules had been adopted by the Association. We refer to this matter to ask the House of Delegates to rule definitely in regard to all matters connected with the number of papers in each section; the parties who may or may not be invited to read papers before the sections; the question of abstracts of papers; the publication of papers read, and the date at which all titles of papers must be in the hands of the Editor, from and after which time no changes are to be made in the program. Too many papers are entered on our programs, many of them not to be read but to advertise the parties who have entered their names. Not more than thirty papers, if all are read, can be discussed and disposed of in each section at our annual meetings; hence your secretaries of sections should be notified not to exceed that number in the program of their sections. All papers not read will be treated as volunteer papers, and no papers from members of the medical profession in the United States who are not members of the American Medical Association will be allowed on the program. All papers read in the sections, to be entitled to publication in *The Journal*, must have the approval of the three members of the Executive Committee of the section in which they were read, this approval to be evidenced by the signatures of the members to such papers.

Accounts and Expenses.—The Board has had before it several accounts for postage and other expenses presented by the secretaries of some of the sections. We have been forced to decline to pay these bills, as we could find no authority for so doing. If such accounts are to be paid, a definite amount of money, not to exceed \$10, should be appropriated to the secretary of each section to cover postage and the incidental expenses of his office.

In conclusion.—The Board, at the Chicago meeting, was confronted with two questions of much magnitude and importance to the Association: (1) The status of the Association in view of the amendments to our constitution and by-laws; and (2) the best plan by which relief could be gotten for the overcrowded floor-space in our rented quarters.

To determine the first question and thus to enable us understandingly to discuss and solve the second the Trustees deemed it best to secure the advice of able legal counsel, and to be guided by the opinion thus had. This was done as a result of the last meeting of the Board at St. Paul. The Resident Trustee, Dr. E. Fletcher Ingals, at some future meeting of the House of

Delegates will report upon this matter. The opinion given by the attorney justified the Board in taking up and acting on the second question.

The Secretary and Editor reported an early expiration of the lease upon the floor space in the building occupied by *The Journal* office, and that at the end of the present lease we would be expected to pay double the amount of rent for the same floor, and that we could not secure room enough for *The Journal* work in the building, and besides that some new machinery needed would be too heavy to be placed anywhere in a building except in the basement, the Resident Trustee had been requested to inspect and report upon any desirable lots that might be put upon the market.

When the Trustees met in February, Dr. Ingals was able to price to the Board 8 or 10 plats of ground, some with and some without buildings. We inspected several of these pieces of property, and finally instructed the Resident Trustee to purchase a piece of property.

This property is on the corner of Dearborn avenue and Indiana street, and had on it five houses. This purchase was made and the title passed to the Association through a guarantee company on March 3 for the sum of \$42,646.96. This includes all fees connected with the purchase. Two of the houses have been torn down, and on the site occupied by them we have in process of erection a "Home for *The Journal* and a Headquarters for the American Medical Association." The other three houses are rented out, and we will get a good interest on our money for that part of the property, and as soon as the new building is ready, we will be in fine shape. When the building is completed the property will have cost us about \$70,000. Of this amount we had on hand, April 1, after paying out the \$42,646.96 for the building, nearly \$12,000. This does not include the money invested in the United States Government or Chicago City bonds, which amounts to \$24,000 face value.

Respectfully submitted,

T. J. HAPPEL, Pres.,	W. L. RODMAN,
E. E. MONTGOMERY, Vice-Pres.,	W. W. GRANT,
JOSEPH M. MATHEWS,	JOHN F. FULTON,
MILES F. PORTER,	H. L. E. JOHNSON, Sec.
E. FLETCHER INGALS,	

According to a resolution offered McCORMACK (Kentucky), the president appointed a business committee of five, naming McCORMACK, Murray, Moyer, Ferguson, and Foshay. A communication was received from the Council of the New York State Medical Association asking the House of Delegates to appoint a committee of five to revise the Code of Ethics, and with the same they submitted such a proposed revision. The committee was instructed to report next year upon the revision of the Code. The motion to appoint the committee was eloquently seconded by REED (Cincinnati).

A resolution was passed placing the control of the exhibit hall in the hands of the Secretary of the Association; the resolution also provided that no exhibit shall be allowed of an article not acceptable as an advertisement in *The Journal*.

SECOND SESSION.

Professor O. HAAB, of Zurich, Switzerland, who had been elected to honorary membership in the Association at the request of the delegates from the Section on Ophthalmology, was introduced to the House of Delegates by the president, and thanked the members for the honor conferred upon him.

E. ELLIOTT HARRIS (New York) offered a resolution that a committee be appointed for the revision of the code of medical ethics. Upon its adoption the following committee was named by the president: E. Elliott Harris, of New York; Wm. H. Welch, of Baltimore; Nicholas Senn, of Chicago; T. J. Happel, of Tennessee; Joseph D. Bryant, of New York, and J. N. McCormack, of Kentucky.

J. N. McCORMACK (Kentucky) the chairman of the Business Committee which had been appointed at the previous session of the House of Delegates, recommended that this committee be discharged and the following committees named to take its place: A Committee on Sections and Section Work, a Committee on Revision of the List of Members, a Committee on Finance, a Committee on the Relation of Dentists and Pharmacists, a Committee on Organization, and a Committee on Place of Meeting.

The report of the Committee on National Legislation was read by its chairman, H. L. E. JOHNSON (Washington, D. C.). The report noticed the gratifying fact of increased respect on the part of National and State legislators for the newly-organized Association, and the growing power of the Association to influence legislation in the interest of the profession and the public. The conduct of the Congressmen responsible for the failure of passage of the bill as to the retirement of Surgeon-General Sternberg, with increased rank, etc., was severely criticized.

The report of the Committee on Organization was presented by P. MAXWELL FOSHAY (Ohio). The committee reported its suggested form of constitution and by-laws for State societies in affiliation with the Association, stating that four States had already adopted the same, and others would soon do so. Its report was adopted, and the committee was asked to continue its work in bringing forward a form of constitution and by-laws for County Medical Societies. The appointment of a National Organization Officer was recommended. The committee was thanked for its work.

Dr. FOSHAY presented a memorial from the Cleveland Academy of Medicine, calling attention to the dangers of impure or inert vaccine virus, and requesting the House of Delegates to petition the Congress of the United States to pass such laws as will place the production of vaccine virus directly under the control of the United States Government, under the jurisdiction of either the Department of Agriculture or the Marine Hospital Service. This memorial was referred to the Business Committee.

A resolution was presented by Dr. VAUGHAN, calling attention to the long and distinguished public services rendered by Surgeon-General Sternberg, of the U. S. Army, who has just been retired, and asking the Association to petition Congress to take appropriate action that his work may receive the official recognition which it deserves.

A vote of thanks was tendered to Drs. REED, AGRAMONTE, CARROLL, and their associates in Cuba, whose brilliant work, with the able cooperation of the late Governor, Dr. LEONARD WOOD, has resulted in ridding that island of yellow fever.

The following officers were chosen for the ensuing year: President, Frank Billings, of Chicago; first vice-president, J. A. Witherspoon, of Nashville; second vice-president, G. F. Comstock, of Saratoga; third vice-president, C. R. Holmes, of Cincinnati; fourth vice-president, James H. Dunn, of Minneapolis. Board of Trustees, E. E. Montgomery, Philadelphia, H. L. E. Johnson, Washington (reelections); and A. L. Wright, Carroll, Iowa. Henry P. Newman was reelected Treasurer and George H. Simmons, Secretary. The next place of meeting will be New Orleans, Louisiana. The orations have been assigned as follows: Surgery, A. F. JONAS, of Omaha, Neb.; Practice of Medicine, J. M. ANDERS, of Philadelphia; State Medicine, WILLIAM H. WELCH, of Baltimore. Registration on Tuesday was 1,410.

General Sessions.

FIRST SESSION.

The meeting was called to order by the President, Dr. JOHN A. WYETH, of New York. Prayer was offered by Rev. T. F. Chambers.

The report of the Committee on Arrangements was made by Chairman G. F. COMSTOCK.

Dr. Wyeth then introduced Hon. S. F. NIXON, Speaker of the New York State Assembly, as a politician of the highest type, a man who has never failed to support a measure endorsed by physicians. Speaker Nixon, in his address of welcome to the State of New York, spoke of the work of the Association as having much to do with placing the medical colleges of this country on a plane high as that of the colleges of the Old World. The desirability of having but one or several standards for admission to practise in the United States instead of 45 separate standards as at present was emphasized. He said that the opportunities for advancement in medicine are as great now as in the days of the preceding century.

Senator E. T. BRACKETT, of Saratoga, then extended to the Association a cordial welcome to Saratoga Springs, the greatest health resort on the continent; as such it cannot fail to be of interest to the profession. He congratulated the profession on the advances of recent years. High tribute was paid to the profession, especially as represented in the last quarter of the past century.

The Presidential Address, reproduced in the foregoing issue of *American Medicine*, was then delivered by JOHN A. WYETH.

In the evening at 7.30 o'clock the Oration on Surgery was delivered by HARRY M. SHERMAN, of San Francisco. This is given in full elsewhere in this issue.

Section on Practice of Medicine.

FIRST SESSION.

Address of the Chairman.—FRANK A. JONES (Memphis, Tenn.) discussed the preliminary education necessary for a student of medicine. While he considered French, German, Greek, Latin and mathematics desirable accomplishments, he did not think that a man was incapacitated for the study of medicine because he did not know them. However, he pleaded for a more thorough knowledge of English. The endowed medical institutions of this country are a source of much gratification, and the time is near at hand when public-spirited rich men would recognize the importance of medical institutions. He considered that a student possessing a good high school education, who is thoroughly acquainted with English grammar and rhetoric, is qualified to study medicine. If he has a knowledge of the languages it will be of much assistance to him, although it is not an actual necessity. To such a student a four years' course of eight months each is all that should be asked for. He questioned the advisability of forming a National Board of Examiners because of the incident expense in reaching the place of meeting. He thought it better that each State should have an Examining Board, as many now have, composed of representative men. He believed that we should encourage reciprocity between each board.

Amebic Dysentery in Michigan.—GEORGE DOCK (Ann Arbor, Mich.) reported a case of amebic dysentery which was interesting by reason of the geographic source of the infection and because it emphasized the need of further work in this class of cases. Owing to Karyu's epoch-making observations, and

the striking relations of amebæ to "tropical" liver abscesses, it could not be forgotten that the parasites were first recognized in St. Petersburg, and in chronic dysentery. He claimed that *Amœba coli* was probably a parasite having a world-wide distribution. The discovery of the ameba in different parts of the country, and the results of the investigations of Councilman tended to fix its geographic and anatomic, as well as the clinical features of the disease. We must still learn the exact relation of *Amœba coli* to dysentery and intestinal ulceration, not to mention the remoter complications in the liver and thoracic regions. In view of the fact that Gasser produced colitis in cats by injections of garden earth, Sorgo with nonamebic dysenteric dejections, and also the fact that the previous observers have usually produced lesions not identical with those in human amebic enteritis, we must await further observations. The occurrence of amebas in the stools of persons apparently well, or in those of patients with cholera or other diseases, or in the feces of the lower animals, cannot be considered proof that the amebas found in dysentery have no pathogenic relation. From certain observations he was of the opinion that it could be assumed that amebas are not present in about one-half of all normal intestines in all parts of the world. In the literature upon this subject there were many contradictory observations, and the subject had still been further confused by premature efforts at nomenclature.

Discussion.—McCRAE (Baltimore) said that several years ago he had seen one case occurring in a man who had never been out of the State of Maryland; this contradicted the assertion that all cases came from the South. In Maryland the disease was not infrequently found. A point of increasing interest was the fact that the disease was being more often noted in children, the majority of cases coming from the habit of many of these children drinking from the street gutter the impure water. JAMES J. WALSH (New York) had seen two such cases occurring in New York. E. LIBMAN (New York) mentioned the frequent occurrence of liver abscesses at the Mt. Sinai Hospital, New York. Dock, in closing, said that he did not include in his paper such cases occurring in those soldiers who returned from Cuba or the Philippines.

The Origin of the Vesicular Respiratory Sound.—C. F. HOOVER (Cleveland) said that the origin of vesicular breathing was attributed by Laennec to friction of the inspired air in the bronchioles and its entrance to the infundibula from the bronchioles. This explanation was sanctioned by Skoda and others, and remained unquestioned until Baas attempted to explain, upon purely acoustic grounds, the impossibility of any audible sound originating in tubes the size of the bronchioles from the passage of a current of air with the slow velocity which must attend the entrance of inspired air in the vesicles of the lung. Penzoldt later offered experimental evidence to sustain the logic of Baas. His experiment consisted in inflating a calf's lung and placing it over the trachea of a man, who was instructed to breathe in the ordinary way; if a stethoscope be placed over the inflated lung the observer will perceive the tracheal breathing transformed to the vesicular type of respiration. This is accounted for by the fact of refraction and partial reflection of sound waves, which must occur during their transmission through such heterogeneous media as are presented by the inflated lung. If a more homogeneous medium is used, such as a calf's liver, the tracheal breathing retains its so-called bronchial character. Sahli tried the experiment as described by Penzoldt but found that the respiratory murmur transmitted through the inflated lung retained the bronchial character. The only modification, according to Sahli, is a diminution in the intensity of the respiratory sound. His own observations confirmed those made by Sahli. In repeating this experiment it seemed to him that only the vigorous use of the imagination could transform the audible sound into a vesicular murmur. Vesicular breathing and bronchial breathing have several differences which will not admit of the transition of the former into the latter on the acoustic grounds cited by Baas. The term sound and murmur are differentiating terms which are descriptive of the two phenomena. Bronchial respiration gives a clearly definite and simple sound, which can be assigned to a certain pitch. Vesicular respiration gives a confused mingling of sounds, which suggest a multiplicity of points of origin. The pitch is much lower and the respiratory sound is of shorter duration than in bronchial breathing. However remote and faint bronchial breathing may be the long duration of the expiratory sound remains the same; whereas, in vesicular breathing, the expiratory sound is relatively short whatever its intensity may be.

The Causal Relation of Blood Poverty to Gastric Ulcer, with Report of an Illustrative Case with Atypical Findings.—ROBERT N. WILLSON (Philadelphia) read this interesting paper and gave the following conclusions as to the etiology of peptic ulcer of the stomach: 1. In many, perhaps in most cases, a high grade of anemia precedes the appearance of the peptic ulcer, and this anemia usually assumes the chlorotic form. 2. With few exceptions, gastric ulcer is attended by the symptoms of marked anemia. In certain cases in which the blood-picture fails to show a reduction in the hemoglobin percentage and in the number of red-cells the fact seems to be due to concentration of the blood dependent upon anemic causes. 3. General anemia means anemia also of the pylorus, and consequent inanition of its mucous membrane. 4. The venous outlet from the pylorus is one that in anemic

subjects would predispose still further to an unhealthy condition of the muscular and membranous coats of the pyloric wall. 5. Hyperacidity is usually present in chlorosis and often in other forms of anemia, and that when present in any condition it is an influence predisposing to gastric ulcer when associated with an anemic gastric wall. 6. Hyperacidity is not essential to self-digestion of the stomach wall, provided that the wall lacks proper nourishment and stimulation from a healthy or sufficient blood-supply. 7. Any form of hemorrhage, menstrual, operative, or anemic, may either predispose to, or accentuate, an already present anemic condition of the gastric wall, and such hemorrhages are *de facto* often followed by gastric ulcer. 8. The foregoing facts, in association with the general one that gastric ulcers are seen almost invariably in anemic subjects, warrant the conclusion that blood poverty is a leading and the usual predisposing cause of peptic ulcer.

Discussion.—FENTON B. TURCK (Chicago) said that the chief factor in the causation of gastric ulcer was a lack of motility. He reported an instance in which ulcers appeared in the jejunum after a gastric enterostomy; here there was a lack of motility together with some disturbance of the splanchnics and especially the liver circulation. It was his opinion, from a purely clinical standpoint, that there were two factors present in such a condition, the disturbance of the circulation and the lack of gastric tone, or motility, sometimes referred to as myasthenia. JAMES J. WALSH (New York) said it was well known that an anemic condition was the basis of the causation of gastric ulcers. He referred to the traumatic causes, from the use of vibrating machines. H. B. FAVELL (Chicago) considered the lack of hemoglobin the active determining cause and he emphasized its importance on account of its bearing on therapeutics.

On the Association of Graves' Disease and Glycosuria.—HENRICH STERN (New York) said the association of glycosuria and Graves' disease may occur as alimentary glycosuria *e sacchara*, as spontaneous transitory glycosuria, as diabetic glycosuria. Under the 10 cures of Graves' disease which he had seen within two years, alimentary glycosuria could be induced in one instance. Transitory glycosuria associated with Graves' disease he had seen in one case, a negro, aged 41, who soon died after this association had arrived. He had also seen a case of Graves' disease associated with true diabetes mellitus. He said there were altogether 24 cases reported in which two affections had occurred at one and the same time. This case was the only one as yet described by an American observer. He said the association may occur in one of the following ways: (1) Diabetes antedates Graves' disease; (2) both affections are produced contemporaneously; (3) diabetes ensues after Graves' disease is fully established. When both affections are produced at the same time, or when Graves' disease is the original and diabetes the secondary affection, there must be an interdependence. This interdependence is seen by the comparative frequency of alimentary glycosuria *e saccharo* in hyperthyroidism; it is also demonstrated after thyroid medication, when it occurs occasionally. It is not due to hyperthyroidism as such, but to a ferment not occurring in the thyroid secretion.

Discussion.—E. F. WELLS (Chicago) said that when he considered the frequency with which Graves' disease is encountered and the frequency with which diabetes is encountered, it seemed to him remarkable that only 24 cases should be found in the literature in which they were associated. For many years he had derived much benefit in exophthalmic goiter from the use of codein in fairly large doses; the beneficial use of this drug, of course, is well known in diabetes.

Section of Surgery and Anatomy.

FIRST SESSION.

The Surgery of Tuberculous Cavities of the Lungs. (Chairman's Address.)—DE FOREST WILLARD (Philadelphia). The paper was based upon a series of experiments made upon dogs whose lungs had been rendered tuberculous by injections of emulsion of tuberculin, and afterward operated on by pneumonotomy, pneumonectomy, and the production of pleural adhesions. Both incision and drainage and the excision of a portion of the lung were demonstrated to be perfectly feasible. If adhesions exist between the two layers of the pleura, the dangers of pneumothorax and empyema are greatly diminished, and entrance to the lung is safe. If adhesions are absent, the operation should be temporarily delayed, or divided into two stages. Adhesions, when nonexistent, are best produced, after subperiosteal resection of the ribs, by long sutures carried through the wall into the lung, and then out through the wall again in the form of a parallelogram around the operative field. When tied just sufficiently tightly to bring the two pleural surfaces in apposition, adhesions occur in from 24 to 48 hours; the incision of the lung can be then completed under local anesthesia. Conclusions as to human surgery: 1. Pneumonotomy is a feasible operation, even in cavities at the apex, and is likely to be helpful in the early period of cavity formation, but it is exceedingly difficult at this stage to obtain the consent of the patient. 2. In advanced cases, both tuberculous and streptococcal infection are present; the cavities are usually multiple, and the operation cannot cure. It may be employed, however, as a palliative to cough, hemoptysis and sepsis. 3. In abscess of the lower lobes, following pneumonia or pleurisy,

whether tuberculous or not, incision and drainage should be recommended in any stage. 4. Pneumonectomy in our present stage of surgical technic is not advisable in tuberculosis. 5. Pneumothorax is so serious a menace to life that in all operations upon the lung an artificial respiration apparatus, like the Fell-O'Dwyer, or the Matas instrument, should be at hand, together with a full jar of oxygen. With improved technic, tuberculous foci will in the future be eradicated, as we now eradicate local tuberculosis in joints and other tissues.

The Surgical Treatment of Pulmonary Abscess Following Lobar Pneumonia.—FLOYD W. McRAE (Atlanta, Ga.). The results of the study of literature and observation of surgical cases were reported. McRae has collected 75 cases of drainage of pulmonary abscess from literature. The diagnosis has given great difficulty in some of these cases, but it was not found difficult in cases which McRae has treated personally. McRae has had two cases, one occurring in a man of 18 years old who had had pleural pneumonia. Three weeks after the illness the patient had an elevation of temperature and expectoration of pus; then at intervals of certain days the pus was expectorated, sometimes in such large quantities as nearly to produce suffocation. The lower right lobe was aspirated and the cavity was located. The tubercle bacilli were found in the expectorated matter. Pneumonotomy was done after resecting two ribs, and the cavity was swabbed out and packed with iodoform gauze. There was no expectoration of pus after the operation, and 40 days later complete healing had resulted. In the second case, a man of 57 had an abscess of six years' standing. He was a laborer formerly in very good flesh, but he had become emaciated almost to a skeleton. He had not been able to lie down because of dyspnea. The whole lower lobe seemed to be involved. The sixth and seventh ribs were resected. Calcareous deposits were found in the lung cavity. A large amount of pus was discharged after draining the cavity, and on every attempt to remove the tube an elevation of temperature occurred. McRae believes that it is a mistake not to make a large opening and to drain freely in these cases. It is better to resect several ribs if necessary. In 75 cases of abscess of the lung following pneumonia the mortality has ranged about 25%. With early diagnosis and operation the mortality would no doubt be greatly lowered.

A Contribution to the Surgery of the Lung as Based Upon Original Observations.—HORACE J. WHITACRE (Cincinnati, O.). The literature of this subject was reviewed at some length. Whitacre then reported the results of examinations of 978 cases of postmortem of which he has had an opportunity to examine during the past five years. The object in this study was to determine the locality of tuberculous lesions and their fitness for surgical intervention. Only cases involving the apex are suitable for surgical intervention, and the results of medical treatment are so good as to make surgical treatment seem inadvisable in many cases. Excision of tuberculous lesions he believes to be impossible and irrational in most cases. Incision and drainage is accompanied by much greater dangers than in the drainage of an ordinary abscess and cannot nearly always be advised. The drainage of partly-healed cavities may result in stirring up the partially-healed lesion and giving rise to general tuberculosis. Whitacre found that in 90% of the cases the location of the lesion was such as to exclude the possibility of surgical intervention. The evidence against the desirability of draining most of these cases is overwhelming. The injection of nitrogen into the pleural cavity has been followed by favorable results in certain cases, but the cases should be carefully selected and the number of cases suitable for such treatment is very limited. Resection of the chest-wall to produce compression of the cavity is attended with great danger and its results are doubtful.

Discussion.—SMITH (Hartford, Conn.) has operated upon and reported three cases of pulmonary abscess, one of them following aspiration of pus from an abscess in the mouth. He believes that the possibility of draining tuberculous cavities is limited to a very few cases. MAYO (Rochester, Mich.) emphasizes the importance of securing a sufficiently large opening for operable intervention. At least two ribs should be resected. Adhesions are frequently not present and the lung looks normal on opening the pleura. To prevent collapse of the lung he advises stitching wet gauze into an opening made through the pleura. If stitched both to the parietal pleura and skin an opening can be made through which to drain if necessary. He emphasizes the importance of not tearing bands which extend across abscess cavities. If necessary to divide such bands it should be done after they have been doubly clamped and tied. DUDLEY ALLEN (Cleveland, Ohio) believes that it is of advantage to turn patients on the side on which the opening is made when operating upon the lung. There is much less danger of collapse of the lung and dyspnea following if this is done. KRAUSE (Iowa) reported the case of a man whose chest wall was perforated by a two-inch scantling, which passed through the lung, coming out in the back near the seventh vertebra. The man is still alive, but the track left by the foreign body has not yet healed. FERGUSON (Chicago) reported the case of a colored man aged 24, who had an abscess on the chest-wall beneath the pectoralis muscle. On dissection this was shown to be connected with the region of the third and fourth rib. On resection of the chest wall the section of lung was found to be consolidated in this region, but on inserting the trocar and cannula no abscess was found.

Iodoform oil was injected in dram amounts two or three times a week into the area for weeks. The man has now recovered. OLIVER (Cincinnati, Ohio) believes that intervention is possible within certain limits, probably not less than 1% of the cases of pulmonary tuberculosis, but he does not believe that surgery of the lung will be extended much beyond the present limits. FRANK (Chicago) reported the case of a child who had on several occasions coughed up large quantities of pus. A rib was resected. At the instant of opening the chest a large quantity of pus was vomited. No cavity was found, probably because the pus was expelled and the cavity collapsed entirely. McRAE, in closing, stated that he believed intervention should be limited to cases following pneumonia. WHITACRE, in closing, expressed his belief that the cure in the Ferguson case was because by a happy coincidence only one focus of disease existed. This is true of only a very limited number of cases.

Report of a Case of Encysted Dropsy of the Peritoneum, Tuberculous in Character, with Hernia of a Portion of the Cyst; Operation; Recovery; Light as a Curative Agent in Tubercular Peritonitis.—MILES F. PORTER (Fort Wayne, Ind.). All forms of tuberculous peritonitis may recover under medical treatment, or all forms may recover under operation, but Porter believes that the mortality of operation in these cases has not been underestimated and advocates operative measures in certain cases. He emphasizes the importance of opening the abdomen freely and exposing the contents to light and air for 10 or 15 minutes. He believes that there are great possibilities in the treatment of these cases by exposure to the x-rays. He reports the case of a child who had a hernia with nothing but fluid in the sac. On dissecting down to the sac he suspected that it contained the bladder, but was able to eliminate this possibility by injecting a potassium solution by the urethra. The sac contained nothing but fluid and was studded with tuberculous nodules.

Discussion.—RANSOHOFF (Cincinnati) emphasizes the point that the important changes which occur in the cure of tuberculosis probably occur in the cells of the tissues and it is possible for the x-rays to produce such changes. He reported two cases in which he had operated, young women suffering with tuberculous tubes and tuberculous peritonitis, both patients recovering and now practically well. HALSTEAD (Chicago) believes that light and air are not so important as trauma in producing the changes which occur in tuberculous peritonitis. He advises swabbing and sponging the cavity as better than exposure to air and light, and he believes that in many cases it is desirable to drain the cavity. WEIR (New York) believes that in most cases it is impossible to determine the origin of tuberculous peritonitis. Improvement follows usually as a result of inflammatory reaction rather than as the result of exposure to air and light. In his own cases the results have been sufficiently encouraging to lead him to go on in operating. OCHSNER (Chicago) believes that certain cases of acute tuberculous peritonitis get well under medical treatment, but in chronic cases with large accumulations of ascitic fluid surgical treatment is positively indicated. He believes that it is not always wise nor necessary to remove diseased organs, and he cited two cases of tuberculous peritonitis accompanied by pus-tubes, in which the tubes were left, and the patient afterward became pregnant and bore children normally. LAPLACE (Philadelphia) believes that the danger in many of these cases arises from the fact that secondary infection occurs by streptococci or other pathogenic bacteria. FERGUSON (Chicago) reported a case in which he resected a large section of tuberculous intestine in a patient suffering from tuberculosis, an excellent recovery following. In another case, a patient suffering from tuberculosis of the peritoneum and tubes, afterward became normally pregnant. HALL (Cincinnati) advises operating in cases of encysted peritonitis. In about 50% of his cases a permanent recovery has followed operations. Drainage is advocated. GIBBONS (Scranton, Pa.) emphasizes the importance of medical treatment in connection with the surgical treatment in these cases. PORTER, in closing, stated that it seemed certain that trauma alone was not the sole cause of a cure in these cases, and probably the favorable result was from the influence of many different causes.

Low Lateral Pharyngotomy for Approach to the Lower Portion of the Pharynx, Upper Portion of the Esophagus and Posterior Surface of the Larynx, with an Illustrative Case.—JOSEPH D. BRYANT (New York City). The case of a patient 45 years old is reported, in whom a large fibroid sarcoma was removed from the lower part of the pharynx. Tracheotomy was performed preliminary to the operation and after the removal of the growth the external wound was sutured with catgut and silkwormgut.

Discussion.—ALLEN (Cleveland) has operated upon a case similar to that reported by Bryant, but the patient died on the tenth day from pneumonia. RANSOHOFF (Cincinnati) showed an x-ray of a case in which a jackstone was lodged in the lower part of the pharynx and which was successfully removed by operation. DAWBARN (New York) mentioned a case in which he removed a plate of false teeth from the lower part of the pharynx. The question of feeding after an operation is important. He advises inunctions of cod-liver oil in connection with rectal feeding. By massage for one hour it is possible to rub in from 4 to 6 ounces of the cod-liver oil. RIXFORD (San Francisco) mentioned an operation for a case similar to that of Bryant. SHURLY (Detroit) reported having recently removed a tumor

in a situation similar to that reported by Bryant with a snare. This operation obviates the difficulties and dangers of pharyngotomy and preliminary tracheotomy is unnecessary. This operation would not be suitable in cases of malignant growth. LUTZ (St. Louis) has operated upon a case of this kind and emphasizes the importance of the use of local anesthesia. FERGUSON has had a case of tumor similar to that reported by Bryant which has been previously published. GOODHUE (Dayton, O.) calls attention to the exposure of the pharynx which one sometimes sees in cases of cutthroat. He believes that in certain cases the anterior incision would be preferable to the lateral incision which was used by Bryant. WEIR (New York) believes that it is wise to pack the external wound in these cases. He uses gauze which is impregnated with a solution of iodoform in ether and benzoine. BRYANT, in closing, said that before operation he had considered the various other possible methods of operation, but the nature of the growth and its location was such as to make this method seem advisable.

Section on Obstetrics and Gynecology.

FIRST SESSION.

The section was called to order by the chairman, J. H. CARSTENS (Detroit), who gave an address on the topic, **What of the future?** He stated that the questions of obstetrics were practically settled, papers on that subject being really compilations of textbook statements. The dangers of the physiologic processes of confinement are now practically *nil*. The gynecology of the past, with its leeches, tampons, iodine, etc., has largely been discarded, papers now treating of mechanics, of surgery of the pelvis, of removal of tumors and the uterus and tubes, etc. The questions concerning these modern doings of gynecology are now being settled. But how will they be settled? "What of the future?" One question that needs consideration is the decrease in birthrate, which even with the aid of fertile immigrants, persists. Many of the wives of this country have but one child. The young married woman wishes to have no offspring for a time and uses every means to prevent this, at the same time destroying that power in the future, when it is desired. There is something beside operating for the gynecologist to do. The faulty methods of education are the cause of much suffering among women. The girl is mentally crowded and physically neglected. When such a woman, often passionless, marries, her husband is naturally dissatisfied, he contracts disease elsewhere, transmits it to the wife, and in addition to being a neurasthenic individual she falls into a condition which demands the interference of the gynecologist. Some change should be made; either the sexes separated in school at puberty or the girl allowed to remain from school a week during each month and not be obliged to keep pace with the boy in studies. This great problem of future education must be settled. Prostitution must also be discussed. Public opinion is averse to legal control, but there appears no other way. The physician must settle that question firmly and then go with his views to the public and enforce them. Another evil which makes invalids of women is the idea that men must have money before they get married. Marriages are postponed and the girl seeks employment where competition is keen and employers exacting. Ruined health follows, especially at the menopause, many of these women never marrying. People must be rid of the idea that men are to be gauged by the dollars they possess. Another pernicious practice to be stopped is the suggestion to young women of trouble with menstruation. Meddlesome women call attention to slight irregularities or wonder at the lack of them. Attention is called to what has not been noticed before and this results in harm. More right living is needed, more exercise, regulation of diet, massage, etc., in cases with beginning local symptoms and in young girls during puberty. More discussions on the subjects named are needed. The gynecologist must do missionary work as well as operate. Gymnastics and physical exercises must be taught in every school, the effect of erethism on the human body be studied. In the future the physician must study the position of the individual and be the counselor and guide of the race.

The Permanent and Harmless Results that Should Constitute the Normal Minimum Requirement of Surgical Treatment of Complicated but Aseptic Retroversion of the Uterus in Fruitful Women, and by what Methods They Are Best Obtained.—A. GOLDSPOHN (Chicago). The paper strictly concerned females who retain a reasonable capacity of conception. He stated that retroversion never caused death, and in uncomplicated cases operation gave such small relief from disorders present that any operation should be small, not dangerous, and give permanent results. Reasons were given why ventrofixation, vaginofixation, and ventrosuspension of the uterus by artificial ligaments should be abandoned in patients who may conceive, these being pathologic surgery. The question is how best to use the round ligaments. By median, ventral, or vaginal sections these ligaments are shortened at the expense of their strongest median portions while their weakest distal portions are left intact. By way of the inguinal canals from without, the method strongly advocated, the frayed-out and weak portions are eliminated and the strong parts brought into use. Other organs are not disturbed, unless when in lesions

when inflammation has subsided it is advisable to interfere with the adnexa or free adhesions. In such instances the abdominal ring, without cutting, will admit a finger to free adhesions or to deliver adnexa for treatment. This operation is without mortality, it does not invite hernia, it favors conception and does not embarrass pregnancy or labor, and gives better results regarding recurrences. In 80 cases reported, 11 being the author's, there resulted only two recurrences of retroversion after subsequent pregnancies, and in these two there were circumstances that made them really not fair tests. This double test of pregnancy is considered full proof of the after-results of the operation.

Surgical Treatment of the Uterosacral Ligaments Through the Vagina in Retroversion of the Uterus.—J. WESLEY BOVÉE (Washington) said that the question whether retroversion *per se* is a condition for operation is still unsettled. He is inclined to think operation is necessary. The method he described is not his own discovery. The round ligament he believes to have a very small part in the support of the uterus. If the pelvic diaphragm is perforated too far front or posteriorly by the cervix, version will result. The anatomy of the pelvis was reviewed, one function of the uterosacral ligaments being to hold the cervix in the hollow of the sacrum. When the cervix is held well up and back there is no retroversion, hence the operation under consideration, shortening of the uterosacral ligaments. Work along this line was done by others at least 50 years ago. Bovée has operated thus on eight cases with entire satisfaction and 83 other cases have been reported, nearly all being successful. The technic was described. The culdesac is entered when adhesions are present, other cases being done extraperitoneally. For suture material kangaroo-tendon, lasting several weeks is used. Both ligaments are shortened. When other conditions require opening of the abdomen the transperitoneal method should be used. Danger is slight when the peritoneum is not incised.

Discussion on these two papers was opened by KOLISCHER (Chicago), who said that the Alexander operation probably gave the best result of any. He objected to the theoretic statement of Bovée regarding the part played by each ligament. No one knows this, and retroversion has been found when the uterosacral ligaments were shortened by adhesions and it has been found when those ligaments were relaxed. He thinks operation so near the peritoneum without opening it is dangerous. The knife or needle may injure the intestine. GOFFE (New York) said that we should now come to the conclusion that the ligaments of the uterus are its support the same as the ligaments of other organs support them. He does not favor ventrosuspension. The question in retroversion is what ligament to use. The true support of the uterus is the tissue extending from the pubic arch to the promontory of the sacrum—the uterosacral and uterovesical. The ideal operation is to shorten the uterosacral through the posterior vaginal fornix and the round through the anterior. He has used this method in three cases with good results. The peritoneum was opened and silk sutures used. DUDLEY (New York) believes that retrodisplacement of the uterus is the direct cause of pelvic disease not due to infection. Ventrofixation is a pernicious operation. Ventrosuspension is perfectly satisfactory and safe. The pelvic floor is analogous to the diaphragm and the ligaments would be of little value without this. It is useless to speak of there being any one method of curing retroversion. The dynamics of the pelvis, not the ligaments, must be dealt with. As to suspension, he believes that a perfect ligament can thus be made out of the peritoneum and this operation does not interfere with the dynamics of the pelvis. He has long since abandoned the Alexander operation. In closing Goldspohn said that the Alexander operation was now really a misnomer, it had been changed so much. It is not true that the round ligament operation is applicable only to cases without adhesions. Bovée said he had no fear of wounding the intestine when not opening the peritoneum and it should not be opened unless the case demands it.

Electrothermic Hemostasis.—A. J. DOWNES (Philadelphia). The paper was a review of a similar paper read last year, with report of cases operated upon and changes made in instruments. Downes has used this method in 12 hysterectomies, 20 salpingectomies, 42 appendectomies, and 5 cases of hemorrhoids. Many of the cases were suppurative, even ruptured appendices being among the number, yet the abdomen was closed without drainage, aseptic recovery following. The past year only two deaths occurred, these being cases of pelvic suppuration, in which operation with ligatures were used, the appendices being removed by cautery. Sepsis is retarded by this method, there is less pain after abdominal operations, and adhesions are less apt to form. In answer to a question, Downes said that the surrounding tissues were protected from the instrument by means of gauze.

A Method of Curing Rectovaginal Fistula.—A. PALMER DUDLEY (New York) supposed the method original with him until after it had been used in two cases, when a description of the method by Segond (Paris) was discovered. The latter's minute description of the operation was read by Dudley. Briefly it consists in doing the Whitehead operation, the pulling down of the mucous membrane of the rectum, doing away with the opening in the bowel. The opening in the vaginal mucous membrane is then closed. In high fistula it is not necessary to resect all the mucous membrane below the fistula, but

just enough to allow the opening in the bowel to slide past that in the vagina onto healthy tissue.

Section on Hygiene and Sanitary Science.

FIRST SESSION.

Sanitation and Politics.—Surgeon-General WALTER WYMAN, of the Marine-Hospital Service, showed that, while sanitation and politics are often antagonistic, politics may be made to aid sanitation. Of course there were bad politics and bad politicians, but there were also good politics and good politicians, and in a free, self-governing country it was all important that the best classes in the community should take an active part in politics, and insist on questions pertaining to sanitation and the public health being made public issues at elections. At present the rich more than the poor enjoyed the advantages to be derived from good hygiene and sanitary surroundings, but even they could not get the full benefit of them unless the poor were also protected, as disease breaking out in the ranks of the latter might spread to classes of the community far removed in social condition.

Discussion.—H. O. MARCY (Boston), STEPHEN SMITH BURT and S. A. KNOPE (New York), and SENECA EGBERT (Philadelphia) described the difficulties that had been encountered in these respective cities and the triumphs that had ultimately been obtained by bringing the force of public opinion to bear on political elections.

The Drainage Canal of the Valley of Mexico.—H. O. MARCY (Boston), who spent some time last winter in the adjacent republic as the guest of the Society of Civil Engineers, said it was a revelation to Americans to visit that country and see the progress which was being made, largely by means of American capital and under the direction of American enterprise. There was also, however, cause for marvel, as he showed in the work that had been done centuries ago—even before the time when the Pilgrim Fathers arrived on the New England coast. Plans of a very comprehensive character for the drainage of the valley were prepared as far back as 1607 by a French engineer named Henri Martin, and the works, though on a somewhat modified scale, were carried to completion in a period of 11 months, 15,000 Indians being employed on them. In spite, however, of this and other elaborate undertakings, the City of Mexico, besides being exposed to the danger of destruction from inundation, remained in a very unsanitary condition until the completion of the modern system of improvements, which was commenced in 1879 and finished in 1900, at a cost of \$16,000,000. By these works five great objects were accomplished: (1) the city was freed from the danger of destruction by the flooding of the streams; (2) arrangements were made for the reception and disposal of the sewage of the valley; (3) the water level of the valley was placed under control; (4) the water was rendered available for dynamic purposes, and (5) provision was made for the irrigation of what had previously been an arid waste. Marcy did not hesitate to describe the undertaking as one without parallel in the mechanic achievements of the nations.

Discussion.—On the motion of KNOPE (New York), seconded by BENJAMIN LEE (Philadelphia), a vote of thanks was accorded the author for his instructive paper. The latter speaker caused some amusement by telling of the introduction of wheelbarrows to save the natives from the laborious work of carrying the material for the embankments as they were wont to do in baskets on their heads. When the laborers saw the barrows they expressed delight at their ingenuity and eagerly distributed them, but when the American contractor went up next morning to see how the work was getting on, his surprise was not inconsiderable to find all the men carrying the barrows on their heads.

Microscopic Aid in the Diagnosis of Scarlet Fever.—W. K. JACQUES (Chicago) showed the value of microscopic evidence dependent upon knowledge of the presence or absence of *Diplococcus scarlatinae*. Immunity in man and animals was the rule; susceptibility the exception. The throat might be susceptible and the rest of the body immune; but more important than the presence of the germ was the degree of its malignancy. In answer to questions he said that by means of cultures taken from the throat a diagnosis of scarlet fever might often be made before the rash appeared, and it was possible by the same means to detect mixed infections of diphtheria and scarlet fever. In all cases of the latter kind, where there was any doubt, he advised the giving of antitoxin which, if it did no good in cases of scarlet fever, had never, so far as he was aware, been known to do any harm. He did not feel justified in saying much on the prospects that there are for the speedy discovery of an antitoxin for scarlet fever, or even in speaking too positively as to whether they should look for a prophylactic agent along the lines of vaccination or those of antitoxic treatment. A German investigator was reported to have rendered a number of persons immune by means of a serum taken from a patient who had recovered from scarlet fever. There were obvious objections to the use of human serum, notably the danger of conveying other diseases, and therefore it was desirable that further experiments should be conducted on animals to see whether the desired antitoxin could not be discovered.

Boards of Health and the Manufacture of Vaccine Virus and Antitoxin.—H. O. MARCY (Boston) introduced a

discussion on this subject, which he explained was at present causing a great deal of discussion in Massachusetts, the question being whether they should rely on private manufacturers for these products or should allow the State to extend its paternal functions to the extent of undertaking their manufacture.

Discussion.—S. H. KNOPP (New York) said he had heard this question a good deal discussed in New York, and the opinion which he had expressed before, and now begged to repeat, was that control laboratories should be established in every State for the testing of serums and similar products. LEE (Philadelphia) was inclined to the view that the necessity which a manufacturer was under in his own interest, to maintain a high standard in the quality of his products, probably afforded a better guarantee of their purity and strength than was to be expected from their examination by officials who might be appointed for purely political reasons. At the same time some such control as the last speaker had suggested seemed called for in view of the fact that some of the commercial virus put on the market in recent years had proved inert, while other virus had been found to be positively dangerous. C. B. JOHNSON (Champaign, Ill.) said the University of Illinois had been making its own vaccine, but they had failed to get it put on the market. He thought bodies of this kind should be allowed to make it and sell it at cost price. SENECA EGBERT (Philadelphia) said that he agreed with Lee as to its being the interest of manufacturing houses to maintain the quality of their products; but in the recent past demand for vaccine virus it appears as if some one had been careless, and as a result a prejudice had been created against vaccination which it was not going to be easy to remove. H. M. BRACKEN (Minneapolis) contended that any control which was established should be in connection with the Federal Government. H. MITCHELL (Asbury Park, N. J.) spoke of the difficulty of arranging the details of inspection; J. E. STUBBERT (Liberty, N. Y.) paid a tribute to the quality of the antituberculous serum produced by the Agricultural Department at Washington, and STEPHEN SMITH BURT (New York) claimed credit for the Board of Health of that city for its work in introducing antitoxins and practically exterminating smallpox by means of the vaccine it made on its own farm. The chairman said that Chicago continued to buy antitoxin from New York in spite of the statement that some inferior goods from that city had once been palmed off on it. Marcy concluded the discussion by saying that the principle involved was one that should be discussed.

Section on Diseases of Children.

FIRST SESSION.

Chairman's Address.—H. M. McCLANAHAN (Omaha) suggested the appointment of a committee on necrology and also a committee for the general investigation of the subjects relating to the diseases of children. His address reviewed quite thoroughly the current pediatric literature for the year, 477 papers having been written during the year on this subject. He emphasized the fact that the wonderful advances made in the subject of the diseases of children have been accomplished almost entirely by the physicians of this country.

Tuberculous Peritonitis.—T. M. ROTCH (Boston) said that a clinical differentiation of cases based solely on the pathologic findings is inadequate for satisfactory decision, first as to diagnosis, second as to etiology and treatment. The reason why laparotomy in cases of tuberculous peritonitis has proved to be curative is not definitely known. Tuberculosis of the peritoneum may be a primary infection. Most commonly, however, it is secondary. We may practically speak of three forms from a pathologic standpoint. First, a miliary tuberculosis with ascites; second, a fibrous form, and this form is essentially chronic; and third, a later stage of the form just described in which there occurs tuberculous deposits with caseation and softening. This has been called the ulcerative form. We are confronted with four salient questions—(a) the diagnosis of the presence of tuberculous peritonitis; (b) the detection of which pathologic form is present; (c) whether the tuberculosis of the peritoneum is localized or is secondary to tuberculosis elsewhere; (d) which of these forms is amenable to treatment and under what circumstances laparotomy should be performed. The symptoms in infancy and early childhood of tuberculosis of the peritoneum are very unsatisfactory and obscure. The tuberculin reaction is therefore of value when it occurs, although its negative evidence is not decisive. When we have a localized tuberculous process in the peritoneum which is chronic in its course, it is this class of cases which should be treated by laparotomy. The most favorable of these cases for treatment by laparotomy is the occurrence of miliary tubercles in the peritoneum accompanied with ascites, while the less favorable form for laparotomy is the fibrous form. In the so-called ulcerative tuberculosis of the peritoneum on physical examination, tuberculosis is usually found elsewhere than in the peritoneal cavity, and these cases as a rule cannot be benefited by laparotomy.

Discussion.—J. M. DOBSON (Chicago) emphasized the great value of tuberculin as a diagnostic measure and called attention to the x-ray, which had been used in a number of cases as a remedial measure. While the x-ray has been used with gratifying results, in many cases the number is not sufficiently large to speak with certainty as to its positive value.

Cerebrospinal Fever.—J. P. CROZER GRIFFITH (Philadelphia) said that this is a disease prone to vary, especially toward certain types. This variation, on account of the often obscure symptoms, renders the diagnosis often difficult or impossible. Some of the cases are of the fulminant type, while some are so mild that the child seems scarcely ill. In some of the cases the effect of the germ appears to be localized more upon other regions of the body than upon the brain and spinal cord. Three family epidemics were reported in detail illustrating this tendency to variation.

Discussion.—I. A. ART (Chicago) called attention to the relation of cerebrospinal fever to deaf-mutism and stated that observations had been made showing a greater increase of deaf-mutism after severe epidemics of cerebrospinal meningitis. T. M. ROTCH (Boston) spoke of the great difficulty in making a diagnosis oftentimes in the earlier periods of life. We do not get marked symptoms of either cerebral or spinal nature in many cases. We may have cases without rigidity and without opisthotonus. A lumbar puncture is exceedingly important for diagnosis, but in order to be of value, it must be made in the first few days of the disease. If we wait until later, the conditions may have so changed that it loses its value. The Widal reaction, as in one of Griffith's cases, may show the presence of an accompanying typhoid fever or that the child has had typhoid fever in the past. It is exceedingly important to make the diagnosis in cases occurring in private practice. The prognosis in chronic cases is bad, and the disease may leave the child mentally and physically imperfect. The child, indeed, may become idiotic. It, however, sometimes passes off, and while this is always a dangerous disease, there is always some hope of complete recovery.

Typhoid Fever in an Infant.—This interesting case was presented by E. F. BRUSH (Mt. Vernon, N. Y.). A. C. COTTON (Chicago) disagreed from the statement that children are exempt from typhoid fever because they did not drink water. Even the children *in utero* may develop typhoid fever, and it must not be forgotten that the nursing child oftentimes may develop typhoid fever.

Serumtherapy.—EDWIN ROSENTHAL (Philadelphia) reviewed the general status of the serums used in the treatment of disease.

Discussion.—A. C. COTTON (Chicago) said that his experience with antitetanic serum had proved to be unsatisfactory. There are many cases that will recover any way, and it is doubtful whether the serum has any effect. Croupous pneumonia does not have that formidable aspect to him as to most physicians. With good hygiene most cases get well with very little medication; hence serum treatment yields clinical evidence of very little value, and in catarrhal pneumonia, with its many uncertainties, he thinks serum treatment of very little value.

Section on Nervous and Mental Diseases.

FIRST SESSION.

Hospitals for the Neuropathic and Psychopathic.—RICHARD DEWEY (Wauwatosa, Wis.), the chairman of the section, commented upon the close relation that existed between these two conditions, and expressed the belief that what is ordinarily termed "insanity" is but a greater manifestation of the psychopathic symptoms that exist in the neuropathic. The need of special institutions for the treatment of the neuropathic and psychopathic patients was marked, and it was felt that the best results could be obtained by having the two departments connected with the same institution, owing to the fact that many of these patients are one day in a neuropathic condition and the next in a psychopathic state, which would permit of the transfer from one to the other as the occasion demands. The ordinary use of the term "insanity" was thought to be faulty, as it has a tendency to carry to the public mind a shadow of disgrace, which prevents many persons from seeking relief in institutions who would do so but for this reason.

Memorials to J. T. Eskridge, of Denver, Colorado. were read by CHARLES K. MILLS (Philadelphia) and FRANK P. NORBURY (Jacksonville, Ill.).

The Treatment of Locomotor Ataxia by Educational Methods.—JOHN H. W. RHEIN (Philadelphia) considered this subject under three headings—exercises in bed; exercises in a sitting posture; and standing and walking exercises—giving a full written description of the movements applicable to each class of patients, as well as illustrating the same by drawings. Under the first heading were included five exercises; under the second four; and under the third, seven. Following the exercises for the lower extremities was a series of seven for the correction of ataxia of the hands illustrated in like manner. It was thought that the best results are obtained by giving a few exercises of a simple character and insisting upon uniformity and accuracy in carrying them out, rather than giving a number of movements or those of a complex nature, as either of the latter courses is likely to be incapable of proper performance by a person of average intelligence. Whenever practicable it is thought advisable that the exercises be performed under the direction of a trained assistant, and the duration of the treatment should be for months or years, even although the improvement in the incoordination has been so great as to make this apparently unnecessary.

Discussion.—J. D. MCCARTHY (Philadelphia) stated that he

had several cases in which very good results had been obtained in overcoming the tabes but in which the patient had not sufficient strength to practise the exercises recommended. W. M. LESZYNSKY (New York) stated that, although he had for several years employed the treatment of Fränkel in these conditions, yet this could not be considered the ideal method in every case, as all cases of tabes are not incoordinative. The reason why the exercises were not applicable in the class of cases referred to by McCarthy was thought to be that these patients were suffering from motor disturbances as well as from the sensory ataxic conditions. Attention was called to the fact that, as the disease is purely one of the brain and not of the cord, treatment to benefit the condition must be such as will affect the former organ. Reference was made to the report of a case which has recently been published in which a man claimed to have entirely cured himself of this condition by exercises of his own device, and the opinion was expressed that this was probably multiple neuritis, instead of the true ataxia, the supposed cure being simply a mistake in diagnosis. RHEIN stated that in the cases where there was loss of power the treatment was not likely to be followed by very encouraging results. For such cases a support for the leg by means of a pulley and weight was recommended, in order that the entire strength of the muscles might be devoted to the exercises. A case of combined sclerosis in which the difficulty was due not only to the incoordination, but also to a moderate degree of paralysis, was reported, and under the treatment above referred to, which was carried out with an unusual degree of intelligence and persistence, the patient became sufficiently improved to ride a wheel and to ride horseback.

Symmetrical Gangrene (Raynaud) versus Enderteritis Obliterans.—JAMES D. MORGAN (Washington, D. C.). The symptomatology and etiology of the disease was fully gone into and two cases of symmetric gangrene reported, the first occurring in a Jew, and the second in a young colored woman. In neither of these cases could any history of specific disease be elicited. In the latter case the disease almost simultaneously attacked all four extremities, and, although radical measures were resorted to, it resulted fatally.

Alcoholic Epilepsy.—T. D. CROTHERS (Hartford, Conn.) considered the subject under three subdivisions: (1) the convulsive and maniacal type; (2) dementia and confusional states, and (3) automatic trance and psychical cases. As predisposing factors in the production of this condition were mentioned heredity and the condition of the patient's health. Reference was made to the development of the delusional state among epileptics, among the most common manifestation being the fear of death or injury, which is usually but temporary. Cases illustrating each of three forms of the disease were reported and as a sequence of the first was mentioned pneumoparesis; of the second cerebral hemorrhage and nephritis; while in the third epileptic convulsions are more common. The increase in alcoholic epilepsy was commented upon, and was thought to be due to the change in the character of the spirits used at the present time from those employed in former years, wood alcohol being believed to be among the principal constituents of the never mixed-drinks. For the treatment of these conditions total abstinence, nerve-and-brain rest, sharp elimination, restricted diet, and a radical change in business and surroundings were thought to be the most efficient methods.

Discussion.—C. H. HUGHES (St. Louis) reported the case of a young man who had come under his observation several years ago, suffering from a convulsion which had occurred while he was in a drinking-place, and from the effects of which he had fallen under the table. The patient was taken into the hospital under the charge of the speaker, where he remained unconscious until the next day. Since that time he has abandoned the habit of drinking and has never again suffered a similar attack. J. D. McBRIDE (Los Angeles, Cal.) referred to a case of alcoholic epilepsy which had come under his observation, the patient being a young man who was in the habit of going on a periodic spree about once a year, which would continue for about three or four weeks, and at each of these times and at no other would the epileptic symptoms appear. J. H. LLOYD (Philadelphia) stated that he did not consider that there was any distinct form of epilepsy that could be properly called "alcoholic epilepsy." In his opinion it was better to look upon alcohol as a causative agent of the general condition of epilepsy, rather than producing a special form of the disease, and he also thought that it was quite as likely that the inebriety was the effect of the epilepsy, in at least some of the cases, as it was that the epilepsy was produced by the alcoholism. It was deemed best to limit the classification of these conditions to as few headings as possible, as too large a variety of names for the same condition would be apt to lead to confusion. J. M. KENISTON (Middletown, Conn.) stated that, in his experience, which has been entirely confined to male epileptics, the symptoms did not disappear on the removal of the alcohol and that there had been a marked tendency to dementia among this class of patients. HERDMAN (Chicago) stated that he thought there were many other symptoms which would account for the epileptic convulsions and did not favor the classification of alcoholic epilepsy as a separate variety. RICHARD DEWEY (Wauwatosa, Wis.) reported the case of a man who had never indulged in alcohol to excess except upon very few occasions, and at each of these times he had suffered from epileptic convulsions. F. SAVARY PEARCE (Philadelphia) stated that he believed that

a great many of these attacks were due to acute congestion of the brain, and reported the case of a man who during the recent warm spell was seized with a typical epileptic convulsion. When first seen by the speaker he was lying in the third convulsion which he had had within four hours. Venesection was promptly performed, a pint of blood being withdrawn, and in about a week the patient was apparently well. In closing Crothers remarked that while there was no doubt that there were many other causes for epilepsy, yet he felt that such a distinct number of the cases were brought on by alcohol that he felt we were justified in making this classification.

The Babinski Operation in Insane Epileptics (Results of 1,000 Observations).—J. M. KENISTON (Middletown, Conn.) directed particular attention to the reflexes, particularly the plantar, which have been but little noticed by the majority of writers. After giving an abstract of the available literature on the subject and the methods of testing and precautions, he made a brief report of 35 cases, including two autopsies, and appended a review of 1,088 cases directly after clonus had ceased, and a similar number one hour later. In each case the individual intervalary reflex carefully obtained by numerous tests was used as a basis for comparison.

Section on Laryngology and Otology.

FIRST SESSION.

Address of Chairman.—G. HUDSON MAKUEN (Philadelphia) suggested that the necessary measures be taken to have the name of the section changed so that it will read: The Section of Laryngology, Otology, and Rhinology of the American Medical Association. Reference was made to the work of George Avellis, of Frankfort a/M., who claims to have found that the larynges of the birds possessing beautiful voices do not differ widely from those not so gifted, and that laryngoscopy reveals no conformation peculiar to the larynges of singers, and that the power to sing depends not so much on the structure of the larynx as upon the mental and intellectual bent of the individual. Referring to further work on the larynx, he mentioned a new aseptic throat mirror, described by Allen T. Haight, Chicago. The instrument is made of German silver, highly polished, and may be sterilized by boiling. The address presented quite an extensive review of the recent progress in laryngology, otology, and rhinology. The following subjects were discussed: "Laryngectomy," "X-ray in Treatment of Malignant Tumors of the Larynx," "Tubercular Laryngitis," "Eruptions and Ulcerations Due to Orthoform," "Diphtheria," "Antitoxin," "Intubation," "Anesthesia," "Removal of Foreign Bodies," "Adrenalin Chlorid," "Formic Vapors in the Treatment of Whoopingcough," "Angina," "The Tonsils," "Tonsillotomy," "Adenoids," "Cleft Palate," "Rhinology," "Saddle-back Nose," "Plastic Surgery," "Formaldehyd for Hardening Specimens," "Rhinoliths of Large Size," "Hay-Fever," "Operations on the Nose and Accessory Sinuses," "X-ray in Diagnosis," "Otology," "Testing the Hearing," "Dilation of Strictures of the Eustachian Tube," "Otitis Media in Cases of Acute Pneumonia," "Formalin and Methylene-blue in Middle Ear Suppuration," "Aural Surgery." The address closed with a list of foreign and American books recently published.

Conservatism in the Treatment of Acute Mastoiditis.—SARGENT F. SNOW (Syracuse, N. Y.) said that he would be conservative, in that he would not operate immediately in all cases showing pain, tenderness, or other evidence of pus in the mastoid, but, on the other hand, he condemned ultra-conservatism as a crime. He believes that there is a middle ground for treatment that is practically safe, based on well established principles of drainage and prevention of pus developments. Acute inflammation of the mastoid cells, which practically always comes from an extension of inflammation in the middle ear, will not follow if free drainage is obtained early. Such drainage may be obtained by a thorough Wild's incision. The inflammatory action and pus development should be kept within bounds, if possible, by the application of cold or heat. Cold applications, to be of value, must be cold and continuously applied. Good nursing is important. A brief report was made of three cases.

Discussion.—GEO. L. RICHARDS (Fall River, Mass.) stated that he had recently lost a case of mastoiditis, the first for a number of years, after following out the lines advocated by the essayist, which he believed more dangerous than operation. Usually it is difficult to get permission to operate early enough in such cases. Operation should be insisted upon as soon as there is evidence of pus in the mastoid. W. L. BOLLINGER (Chicago) also opposed what appeared to be the general trend of the paper. C. M. COBB (Boston) had found the so-called conservative treatment not so dangerous in the cases with swelling and perhaps involvement of the superficial mastoid cells, but such treatment should not be considered in the other cases. A collection of pus under the cortex in the mastoid may not be safely temporized with in any way. J. E. BROWN (Columbus) called attention to the frequency of early relapse following successful conservative treatment, and that such cases also furnish the chronic cases later on. The fact that operation often reveals serious involvement with few symptoms makes the conservative treatment dangerous. A. H. ANDREWS (Chicago) believes the conservative policy recommended by the essayist dangerous. The fact that patients may get

well without treatment should not be a bar to the treatment of these cases, for many of them will not recover without treatment. The cases without superficial symptoms are the more dangerous. Furthermore, a definite distinction should be made between those cases which are primary, in which operation may be neglected, and the cases which may have had otitis media before, in which the conservative treatment of the essayist is not permissible. L. C. CLINE, (Indianapolis) emphasized the importance of accurate diagnosis. The advocacy of the essayist's method to the profession generally is dangerous. KLINE-DINST (York, Pa.) believed the plan outlined by the essayist applicable in early cases. The local application of leeches may be beneficial in early cases. G. McAULIFFE (New York City) believed the method of the essayist applicable when the process is limited, but it would not be successful when there is pus in the mastoid cells. Conservative treatment gives us some of the most difficult secondary operations in mastoid surgery. Drainage is important, but could not well be obtained by the incision recommended by the essayist. D. G. GIBBONS (Syracuse) believed regret might follow the conservative but not the operative treatment. The great danger of the paper is that it might be misunderstood by the laity and by some physicians. N. H. PIERCE (Chicago) believed that the essayist had been misunderstood, since he was generally known to be radical. Therefore, he asked that the essayist state the indications for opening the mastoid in acute cases. Snow, in closing, stated that he would operate as early as possible when there is evidence of intracranial trouble, and in the cases presenting recurring attacks. But in the cases of acute inflammation that are primary and uncomplicated, it is safe to make the incision described in the paper and apply ice continuously for 24 hours. Then, if there are not definite results, we must operate externally. There is often an interval between diagnosis the first time we see the patient and radical operation, and this time may well be used in the way described. But the essayist would regret it should the paper create an impression among the general practitioners that anything but prompt and vigorous action is safe in these cases.

"Is the Operation for the Removal of Adenoids a Justifiable Surgical Procedure, and if so, Shall it be Done in Accordance with the Principles of Surgery?"—GEORGE L. RICHARDSON (Fall River, Mass.) was of the opinion that the only logical answer to these questions is "Yes." He gave a short description of adenoid hypertrophy and the indications for operation. The paper was inspired by some personal experience of the essayist, a few months ago, in which he saw the operation done in the worst manner possible, the removal being most incomplete and almost brutal, in many European teaching clinics where Americans who are to be our future surgeons and specialists and members of our societies are taught. A number of instances were related, mostly from German clinics, in which the operation was done without anesthesia and without any attempt at asepsis. The finger-nail operation, recommended a few years ago by an American, was mentioned only to condemn. The essayist did not enter into details, but discussed only general principles and made a strong plea for good surgery.

An unusual case of serosanguineous exudation from both ears was reported by M. A. GOLDSTEIN (St. Louis).

Treatment of Chronic Purulent Otitis Media.—D. A. KUYK (Richmond, Va.) said that some plan of treatment other than surgical is desirable for the cases that will not submit to surgery. These cases may be relieved, and many of them cured, by conservative treatment. By conservative treatment, in the case of his own person, though the ear had suppurated and at times been excruciatingly painful for 15 years, he had caused the ear to remain dry, free from pain, comfortable and with fair hearing power for eight years. A number of other cases were mentioned. For cleansing the ear the essayist uses the absolutely dry method, employing water very exceptionally. After removing the visible secretion with dossils of dry absorbent cotton the Siegel otoscope is used to aspirate the secretion from the hidden recesses of the middle ear, and this process is repeated until the ear is clean. A current of compressed air at moderate pressure is passed into and through the middle ear, usually through the eustachian catheter. If any secretion is forced out it is removed with dry cotton and the air current is again used. Iodin or any desired medication may be combined with the air current. It is important to get the entire aural tract dry and to remove all purulent secretion. Any medication may then come in contact with the diseased membrane, undiluted by retained secretion or water left after syringing. Small perforations must be sufficiently enlarged to secure good drainage. Granulations or polyps must be removed or destroyed, necrosed ossicles must be removed and denuded or necrosed bone must be carefully curetted. A strictured eustachian tube should be dilated, if possible, for free drainage is as necessary within as without. In the way of drugs, silver nitrate is an old reliable antiseptic, astringent and stimulant. A solution, 30 grains to the ounce, is instilled, comfortably warm, into the external auditory meatus. After a minute or two the excess is removed with dry cotton and a dry cotton plug is inserted. The treatment is repeated triweekly. If no improvement is noted in two weeks the solution is increased to a dram to the ounce, and if necessary, later to 2 drams to the ounce, the strongest that has been employed. Occasionally the ear, after several instil-

lations of the silver solution, becomes sore and sensitive. The solution may then be substituted by insufflations of bismuth formic iodid powder.

Section of Materia Medica, Pharmacy, and Therapeutics. FIRST SESSION.

The Address of the Chairman.—G. F. BUTLER (Alma, Mich.) considered the trend of therapeutics to be in the same direction as that of experimental medicine. While there was a certain amount of obscurity about the ion principle it threw light on the therapeutic nerve action; the organic metals and metalloids, as also the alternative action of certain drugs, helped to explain tonic action. The tonic and alternative action of arsenic in cases in which iron was contraindicated was explained by discovery of an organic arsenic in thyroid gland. The adaptation of ointments to therapeutic rather than cosmetic pharmacy showed that the line of thought in the pharmacopoeia tended to experimental medicine, vegetable substitutes for venesection lately showing greater depressive action on the heart; study of untoward effects of drugs, shown in action of borax in epilepsy, indicated that the range of cumulative effects among drugs was greater than at first believed; cumulative effect of drugs, such as borax, trional, sulfonal, and the bromids pointed to a condition of disturbed metabolism shown by presence in urine of substances such as were found in hematuria; referred to use of organic principles, other than those of ductless glands, as extended; comparative failure of many newly introduced agents to combat impotence and sterility; therapeutics of the future involved closer study of disease, physiology, experimental and comparative medicine.

The Place and Importance in the College Curriculum of Materia Medica.—WARREN B. HILL (Milwaukee) pointed out that the tendency in modern medicine was away from therapeutics based on materia medica; pathology is studied from the anatomic rather than from the physiologic point of view, and surgical rather than medical therapeutics are in ascendancy in consequence. There is lack of systematic training in physiology, functional pathology and pharmacodynamics, and this is the cause of medical scepticism. The importance of materia medica demands it should have place in the college curriculum equal to physiology or pathology; materia medica cannot be studied apart from pharmacy and therapeutics; together their study should extend over four years of college course. We should have a small but carefully selected list of drugs, those deemed most important. The necessity of classification is insisted on. We should teach physiologic action, do away with class books to large extent, have plenty of laboratory work. If these suggestions were carried out, materia medica would be studied for love of it and not in order to pass examination. The speaker then gave a detailed system of the course of study in materia medica and therapeutics to be followed in four years.

The Place and Importance in the College Curriculum of Pharmacy.—J. A. PATTON (Chicago). Read by title.

The Place and Importance in the College Curriculum of Therapeutics.—H. A. HARE (Philadelphia) opened with definition of materia medica and therapeutics. The terms pharmacy and therapeutics are often used as interchangeable, often used with altogether different meanings. The period in which this branch should be taught should extend over whole college courses. Too much attention is frequently paid to botany; during second year his students are drilled in physiology and drugs, and the third year they are given a thorough grounding in therapeutics and drugs, based on physiologic action. It is not possible to give the medical student thorough training in pharmacology for two reasons, he has no time and the branch is too abstruse. In the fourth year his lectures are on pharmacy and therapeutics, with conferences with students on different subjects. He has a clinic largely devoted to therapeutics, and makes a feature of the use of the stereopticon to illustrate pathologic conditions of subjects, and to point out the limitations of therapeutics to students. Incidentally referred to previous speaker's paper, disagreeing as to classification of drugs, which in his experience had many disadvantages; pointed out fearful abuse of remedies by physicians, because of the wrong impressions received while students—sedatives used as stimulants and vice versa. Action of different State Boards of Medical Examiners prevented their paying attention to small number of remedies; owing to questions put as to minor drugs they had to lecture on more drugs than there was any need for; he lectured on double the number he would like to.

Discussion.—LEFEVRE gave information as to his style of teaching; believed in four-years' course and emphasized what Hare had said as to the attitude taken by State Boards; agreed with Hill as to classification. He prophesied that the time was coming when therapeutics would occupy a higher position than to-day. A. W. BAER (Chicago) strongly advocated the idea of the young student spending his summer vacation in some drug store where he would learn more of that part of his profession than he could acquire by one or two sessions at college and the study of books. FRANCES NICHOLSON (Chicago) thought they should certainly limit the number of drugs to be studied, and suggested some ways of doing. Wm. J. ROBINSON (New York) said that therapeutics is too much neglected; a good many not at all well up in pathology could treat their

patients as well as college professors, who were now paying the penalty for their neglect of therapeutics. He agreed with Hare as to classification being almost impossible; endorsed Baer as to the asking of minor questions. ELI H. LONG (Buffalo) thought it a hopeful sign that those who had given the subject so much thought agreed so well in the main. Therapeutics occupied too small a place, but the remedy lay in their own hands and the time was coming when physicians and surgeons would recognize the place of remedial agents. He thought it most important in the third year that students who, during the previous years, had gathered groups of facts, should deduce for themselves with the aid of the professor in conferences. The lessons to be learned should lead student to think and reason out. In fourth year they should be made to write out prescriptions. H. C. WOOD, JR. (Philadelphia) thought classification important and if they could not get it exact they should get as near to it as possible. H. R. SLACK (La Grange, Ga.) agreed with Dr. Hill. He had made a tour of the colleges five years ago, and found them then drifting toward therapeutic nihilism. On another tour two months ago he found improvement; more care was required about prescriptions. S. SOLIS COHEN (Philadelphia) said that no doubt the reason why patent medicines flourished so largely was that the average physician had not learned how to prescribe intelligently. The remedy was to make the medical student think out his prescriptions before granting him a diploma. The teacher should show why these were right and why wrong. Therapeutics is the keystone of the practice of medicine. Having made accurate diagnosis (clinical and pathologic) make a therapeutic diagnosis. Having determined to interfere, determine object and direction, then decide what particular remedy would fulfil object in view. Hill closed, arguing for classification.

Section on Physiology and Pathology.

FIRST SESSION.

Chairman's Address.—FRANK B. WYNN (Indianapolis) suggested for the consideration of the members that it be proposed to the House of Delegates to have an appropriation of \$300 for the exhibition of pathologic specimens, and that a director should be appointed to care for them and see that they are put to proper use. He dwelt upon the relation of the pathologist to the general practitioner and said that errors in pathology are made just the same as errors in diagnosis; that their condemnation should be the same, and not to condemn the study as a whole. In regard to papers he suggested that they should be short and on some original subject and not long and tiresome.

Pathology of Asthma, with Special Reference to Its Vicious Circles.—GEORGE N. JACK (Depew, N. Y.) believed that the pathology of asthma was explained in the blood, the lungs and nerves taking no part in the phenomena contrary to the neurotic theory. Vicious circles diagrammatically illustrate its progression in life. The chief distinguishing pathologic feature in the blood is its unstableness. This unstable blood divides itself into three parts which are: 1. The asthmatic lymphocytosis, found usually in nurslings, and characterized by the abundant outpouring of lymph and mucus into the air tubes. 2. The toxic leukocytosis—its pronounced intestinal toxemia—the enlarged laryngotracheal gland, etc. 3. The asthmatic anemiasis. Its withered deficient and nonbiomagnetic corpuscle, observed most characteristically in old asthmatics. All these blood dyscrasias most frequently originate from a faulty digestion and perverted metabolism.

Discussion.—REILLY spoke of the inherited disposition of this disease, and did not agree that all the trouble was caused as described. He believed that, first, there was a disordered blood; secondly, a susceptibility, and thirdly, an irritating cause, as for instance when enlarged follicles have been removed from the throat it often relieves the symptoms. MCCLINTOCK thought that the changes observed in the blood could easily be the changes from the cause, and not the cause. JACK referred to asthma often being stopped by doses of quinin, by checking leukocytosis, in support of his theories.

The Respiratory Quotient as Influenced by Tuberculosis.—T. M. ALDERHOLD and W. S. HALL described an apparatus which they had designed for this purpose, it was so constructed that an analysis of the air being breathed, and the air breathed could be made, both being derived from the same original source. They determined both the oxygen consumed and the carbon dioxide eliminated under varying conditions as influenced by diet and by disease. The variations in diet caused the greatest variation of the respiratory quotient. The tuberculous animals observed were in the wasting stages of the disease, in this stage there was decreased consumption of oxygen and an increased exhalation of carbon dioxide. Therefore tuberculosis raises the respiratory quotient.

Discussion.—MCCLINTOCK asked if there was any record of the weather in these cases. LOEB inquired if a difference was noticed in regard to the effects of fever. WESBROOK (St. Paul) asked what was the difference in the elimination of nitrogen, and if infection of other germs had been taken into consideration. HALL replied that he had the record of the meteorologic changes, but not with him. Fever had existed in all cases as process was acute, and that in cases where other infection beside the tuberculous had taken place the animal was not used in

the experiment. He could not answer why the respiratory quotient was lower than in the normal.

Preliminary Report on the Contents of Smallpox Vesicles and Pustules.—JAY F. SCHAMBERG (Philadelphia) concluded that the pustulation in smallpox is not due to secondary infection with any of the ordinary pyogenic germs, but is the result in all probability of the action of the microorganism which produces the disease. Streptococci and other adventitious bacteria may be present in the late pustules, but occur only exceptionally in the early lesions. It is probable that the streptococcus plays an important part in the development of impetigo, boils, abscesses, erysipelas and gangrene, which so commonly complicate smallpox.

Postmortem Examinations.—W. D. HAINES dwelt upon the care to be used in making them as well as the deduced evidence, as they have an important bearing from a medico-legal standpoint.

An informal talk followed upon the best methods of teaching pathology, in which F. F. WESBROOK, FRANK B. WYNN, JOSEPH MCFARLAND, DICKERSON, LE CONTE, BECKER, and BLUMMER took part.

[To be concluded.]

AMERICAN SURGICAL ASSOCIATION.

Twenty-third Annual Meeting, Held at Albany, N. Y., June 3-5, 1902.

[Specially Reported for American Medicine.]

[Concluded from page 945.]

THIRD SESSION.

Supravaginal Hysterectomy from a Technical Standpoint.—W. G. MACDONALD (Albany) reviewed the pelvic conditions indicating abdominal hysterectomy, and described the technic employed by him in chronic inflammatory cases, incarcerated fibroids, etc. Four things are of interest in supravaginal hysterectomy—the uterine artery, ovarian artery, round ligament and ureter. Kelly's side-to-side method is a good one under certain conditions, but in the class of cases mentioned bisection of the uterus is of greater value, and wonderfully simplifies the operation. Forceful traction on the uterus prevents hemorrhage, and there are but three points on each side to ligate. In a case of fibroid uterus the mesial division may not be best. The incision is then made to pass through some of the fibroids which are enucleated at once.

Myomectomy vs. Hysterectomy.—A. J. MCCOSH (New York) referred particularly to fibroids in women under 40 years of age. McCOSH stated that the present general tendency toward preservation of the pelvic organs was less marked in the cases of uterine fibroids than in other conditions. Myomectomy is performed in only 1 of 10 or 20 cases. Hysterectomy for fibroids should be performed only when there is danger to life from hemorrhage, pain, or exhaustion. In his practice he is constantly increasing the number of cases of myomectomy. Six years ago the proportion was 1 myomectomy to 23 hysterectomies; in 1900 it was 5 of the former to 27 of the latter; last year it was 22 to 17. He is not much influenced by the size or number of the fibroids or by their position. Hemorrhage is slight if the work be rapidly done, and no extra precautions should be taken beforehand to control it. Enucleate rapidly and do not try to stop all the hemorrhage. In some cases the uterus is necessarily split and the interior exposed to view. When the enucleation is finished in such cases, the uterus presents a very ragged appearance. The rough edges should be trimmed before they are united by sutures. Such a uterus will contract and assume a shape very nearly that of a normal organ. In some instances where the wall is thick, three rows of catgut sutures may be necessary to close the uterus. If there has been much tearing of tissue, a gauze drain extending through the cervix into the vagina should be introduced. The dangers of this operation are hemorrhage, shock, and sepsis, but in 47 cases McCOSH has had no serious case of hemorrhage, no fatality from shock (although shock was severe in 10 cases) and no formation of pus. For four or five days after operation the patient's temperature is apt to be about one degree higher than after hysterectomy. In 32 cases traced after operation, menstruation was normal in 27, in 3 it was excessive, in 2 there was pain for a few days. A certain proportion of married women became pregnant. Conclusions are that in young women myomectomy is the operation of choice. It is possible and advisable in a majority of cases. The ultimate results as to menstruation, pain, and pregnancy are satisfactory.

The Choice Between the Suprapubic and Infrapubic Methods of Reaching Tumors and Other Surgical Lesions of the Pelvic Organs.—MAURICE H. RICHARDSON (Boston), in strongly expressing his preference for the suprapubic method, considered the subject from four points of view: 1. *Pathologic.*—In every condition except the simplest questions of uterine treatment or pelvic drainage, the suprapubic incision is necessary to determine the exact condition by observation and palpation. 2. *Feasibility.*—The suprapubic method is needed for tumors too large or too high up to be delivered through the vagina and for dissections near the ureters. Under this head infrapubic incision may be used for drainage when the pus is pointing in the vagina. Even this is often unsatis-

factory and requires an after-suprapubic operation. 3. *Anatomic*.—The suprapubic route is the one by which few blunders are made, the vaginal route is dark and may be one of disaster. It is only allowable in cases which permit dissection near to the cervix. 4. *Experience*.—This is the basis of Richardson's preference and points almost wholly to the suprapubic method. In his experience the vaginal route is allowable in cases of uncontrollable hemorrhage from an unenlarged uterus, when there is pus in the vagina, and for lesions which require hysterectomy without dissection into pericervical tissues. When vaginal hysterectomy is indicated it is one of the most beautiful operations in surgery. Its indications must arise from experience more than from the three other points considered.

Abdominal Route for Approaching Rectal Tumors.—ROBERT ABBE (New York) said that the question of the removal of cancer of the rectum must be approached with great discrimination, the principles involved being (1) the advisability of lessening irritation by diverting the channel of intestinal discharges to the groin; (2) the diminishing of vascularity by ligation to prevent recurrence; and (3) the very widest possible removal of the cancer. ABBE makes the term rectum include that portion of the colon lying in the hollow of the sacrum as well as that part reached by the finger through the anus. Growths near the anus are best removed through the perineum. In the case of others higher up, reaching the limit of the peritoneum or involving the rectum entirely above the lower cul-de-sac, Abbe is convinced that the best method is the use of the abdominal, or the abdominal and perineal or sacral route combined. Objections to the Kraske operation are: (a) There is difficulty in removing the rectum from the sacral hollow; (b) there is a universal tendency to cut the healthy bowel too near the disease limit; (c) soiling of the wound is apt to occur from handling the end of the rectum in the grasp of forceps. In the abdominal operation, ABBE does not ligate the internal iliacs as a preliminary. With the patient in the high Trendelenberg position and the intestines well retracted, manipulation of the rectum and control of hemorrhage are comparatively easy. In one case the ends of the intestine after resection were united by the Murphy button, in another by suture. Working from above, after closing the sigmoid by a pursestring suture, the ligation of hemorrhoidal vessels is made easy, and is an important aid to the after steps of the operation. After the hollow of the sacrum is cleared gauze is packed in, the patient placed in the lithotomy position, and the enucleation finished from below. Before this is done the upper stump is disposed of by an inguinal colostomy. This is done for several reasons: (1) The stump is best disposed of at this time so the operator can give his whole attention to the enucleation of the rectum; (2) it prevents soiling of the wound, and after irritation of any remaining cells of the disease; (3) if the base of the bladder is involved there is no mixed contamination later of urine and feces; (4) an artificial anus is ultimately required in the majority of cases; (5) the operation as a whole is simplified abbreviated and made more thorough. Summary: The perineal route is best for the removal of growths low down in the rectum. The Kraske operation is best for some growths higher up. Others are best removed by the abdominal or combined route. An artificial inguinal anus should be made at the time of the operation, not before. When section of the rectum is made well up to the sigmoid the end of the severed gut should be inverted by a stout silk pursestring suture.

Discussion on the foregoing papers was opened by HOMANS (Boston), who said in regard to myomectomy that the possibility of removing fibroids and not the uterus was an argument in favor of the abdominal route. The merits of abdominal and vaginal hysterectomy were compared. Mention was made of two cases of fibroids which pathologic examinations showed to have become carcinomatous. This is an argument for hysterectomy rather than myomectomy. ELLIOT (Boston) spoke of the mortality of hysterectomy as done by general surgeons. Of 74 cases he did 12 by the combined method with 1 death, and 62 by the abdominal method with 1 death. Bisection of the uterus is open to one criticism—it opens a septic cavity. To see the results of vaginal hysterectomy he followed it in several cases by laparotomy, and found that in different instances he had left portions of the tubes, pockets of pus, and bleeding points. ALLEN (Cleveland) believes that a vast amount of pelvic surgery can be done by the vagina, many of the dangers of that method being theoretical. Cases of malignant growth of the cervix with extension into the vault of the vagina can be seen better from the vagina than from the abdomen, and some apparently hopeless cases have recovered after vaginal hysterectomy. Splitting of the uterus and removal of small fibroids can be done by the vagina. In cases of uterine hemorrhage due to anemia, patients will bear vaginal much better than abdominal hysterectomy. Surgeons should know both methods, using the expedients of gynecologists when necessary. VANDERVEER (Albany) said that in the success of the various methods much depended on the operator himself. He is depending more and more on the pathologic examination of curettage in obscure cases of hemorrhage, etc. WEEKS (Portland) prefers abdominal hysterectomy, stating that these patients are longer exempt from return of malignant disease. It also gives a chance to inspect the region of the appendix for abscesses, etc., and ensures a more rapid recovery. MAYO (Rochester, Minn.) considers vaginal hysterectomy unsatisfactory for malignant disease. However, he has done vaginal hysterectomy entirely by

the cautery and some cases recovered. His experience with the Kraske operation has not been satisfactory, and he endorses Abbe's views. He cuts the bowel as low as possible and pushes the sigmoid up to form a large pouch for feces. MCGRAW (Detroit) four months ago did the Kraske operation for epithelioma of the rectum and bladder, there being immediate recurrence. Lately he did a colostomy and found nodules in the peritoneum. He considers this a very important fact, as he believes this infection came from the first operation by transplantation. BEVAN (Chicago) made a plea for the Kraske operation. No ligatures should be applied during its performance, very powerful clamp forceps being applied and left on for some time. He thinks the term rectum should mean that portion of the lower bowel which is not completely covered by peritoneum. ELLIOTT (New York) said that vaginal hysterectomy should be the operation of choice in cases of ulcers of the cervix appearing malignant clinically, but not proved such by pathologic examination. In closing the discussion MACDONALD said that it would have done credit to a gynecologic society, and he took it as an indication that the general surgeon was again coming to his heritage and was again to do the work for some time relegated to the gynecologist. MCCOSH said that he considered vaginal more difficult but safer than abdominal hysterectomy and, on the whole, more successful in malignant disease. He is not sure that the uterine cavity is septic. Cultures were made from 29 cavities opened during myomectomy, and 28 proved to be absolutely sterile. If septic the condition must be one of very mild grade.

A demonstration of a method of intestinal anastomosis was made by OSCAR H. ALLIS (Philadelphia). This is a very ingenious operation, performed by the aid of a few simple instruments, which are also valuable as hemostats, etc.

FOURTH SESSION.

The teaching of surgery was the topic of this session, two admirable papers being read. The first was by JOSEPH D. BRYANT (New York) on the teaching of surgery with special reference to the didactic method. BRYANT spoke first of the necessity of communication and then of the universal existence of some kind of language. Everything can be expressed by language. Disease has a language by which it makes itself known and by which it is interpreted. This language we know as symptoms and signs. In the same way health has a language. Through these surgery and medicine are closely linked and the surgeon should not operate for a surgical condition unless he has the full history of the case and studies the condition in all its relations to the organism. Applying this principle to the student the didactic lecture is of great importance and lays a broad foundation for a structure to be finished by pseudoclinical and clinical instruction. A synopsis of his method of presenting subjects in didactic lectures was given. It consists of 11 component parts: (1) definition, (2) anatomy, (3) pathology, (4) classification, (5) causation, (6) symptoms and signs, (7) diagnosis, (8) complications, (9) treatment, (10) prognosis, (11) sequels. This gives an intelligent, orderly, and thorough foundation in surgical principles. Indeed, a student with retentive memory might from this obtain his degree without any clinical instruction. But the student is afterward brought face to face with patients for clinical instruction. Throughout it must be remembered that not all who lecture impart information and not all who listen acquire knowledge. This must be applied to both didactic and clinical teaching and neither should be used to the exclusion of the other. Conclusions: (1) A thorough didactic course of instruction is an absolute necessity; (2) clinical teaching fits the student for the intelligent use of didactic facts; (3) didactic teaching with limited clinical opportunity begets ponderous theorizing with a minimum of fertile practicability; (4) clinical teaching with limited didactic opportunity begets much of unreasoning imitation with limited logical deductions.

The teaching of surgery, the second paper, was read by H. L. BURRELL (Boston), who stated, regarding methods of teaching, that the method adopted by the individual teacher was, to him, the most effective. Methods are incidental. Instructors should not be held to methods but to results. What should be required and given to pupils in surgery are: (1) The minimum required fundamental knowledge; (2) the maximum opportunity to acquire knowledge by personal contact with cases; (3) atmosphere and enthusiasm—which mean environment and men. BURRELL then considered in detail 18 methods in more or less common use in the teaching of surgery. [These had been assigned to various members of the Association and were spoken of by them in the discussion.] Lectures are of value if illustrated by lantern slides, charts, diagrams, specimens and clinics, and if you have a good lecturer. Recitations are valuable. The modern laboratory anatomist is not competent to teach surgical anatomy, which should be presented by one familiar with surgery. Operative surgery should be conducted first upon animals, then upon cadavers. It is of vital importance to a medical school to have a hospital under its control instead of having the hospital control the school. Surgery will never advance as its sister subjects in laboratories have advanced until a sufficient amount of money is paid to surgeons to teach surgery and to make it the principal object of their lives. In a thoroughly well-grounded department of surgery there should be three types of surgeons: (1) The teaching sur-

geon; (2) the research surgeon; and (3) the practising surgeon. The first two may be found combined, but the three very rarely. The future means a far more competent knowledge of medicine by surgeons than heretofore. It is obvious that a new order of things in the teaching of surgery is imminent in this country. If we wisely foster our laboratory and clinical resources and devote our attention to the teaching of surgery, and not simply to the practice of surgery, a new era is before us. American surgery stands to-day sorely in need of men who are equipped and fitted by scientific methods to advance surgery. Students should be taught along scientific lines by instructors who are competently equipped. When this defect of the lack of scientific training is remedied, American surgery can challenge the world, for to-day its care of the individual, its aseptics, and operative technic are not excelled.

Discussion was opened by RUDOLPH MATAS (New Orleans), who spoke on **didactic lectures**. These cannot be dispensed with. In Tulane University the first year is devoted to the laboratory of minor surgery. The second year to advanced minor surgery—on patients, the effects of anesthetics and antiseptics on animals, etc. The third year didactic lectures are given. The fourth year regional surgery and specialties. ELLIOTT (New York) spoke on **recitations**. These are of great value in presenting points not touched upon by the head of the department, and in presenting new points. But students think recitations are dry, and the greatest enthusiasm must be put into this work. RICHARDSON (Boston) said that **surgical anatomy** should be taught by surgeons of experience who know what anatomy is needed. This subject is optional at Harvard, but should be compulsory. ALLEN (Cleveland), in speaking of **surgical physiology and pathology**, said that to teach the former well a man must know a great deal about it, which is not always the case. A great deal of the laboratory work of today is attractive but will prove useless. DACOSTA (Philadelphia), speaking on **surgical technic** (bandaging, etc.), said there had been some decadence in the art of bandaging since the introduction of the gauze bandage. It is impossible to learn bandaging on the model alone. MOORE (Minneapolis), under **physical diagnosis**, emphasized the importance of teaching the normal differences in the opposite sides of the body. WEIR (New York) said that they had diminished the didactic lectures as clinical instruction had increased until at present only one lecture weekly was given. But this was not doing the teacher full justice, and the student body desired more. The faculty was now ready to change to two lectures a week. NANCY (Ann Arbor) said that after hearing the discussion he was convinced that all teachers and schools were doing practically the same things, in perhaps different ways, at different times, and under different circumstances, but still essentially the same.

Following this session the members of the Association made an inspection of the new Albany hospital, through the courtesy of Drs. VanderVeer and Macdonald. Dr. VanderVeer gave a brief description of the hospital, which is thoroughly modern in all its construction and workings. It was built on the pavilion plan, the dominating idea being the separation of the various classes of cases. A detention building for the temporary accommodation of mentally deranged patients was erected by the city. Interesting cases were exhibited by Drs. VanderVeer and Macdonald, the former showing a case of gastrectomy, now practically through an uneventful recovery from operation, and the latter showing two patients. One of these had had a floating spleen removed, and at the same time was operated on for gallstones. The other was a case of Glenard's disease on whom a gastroenterostomy and enteroenterostomy were performed and a floating right kidney securely anchored, this being accomplished from the front through the one anterior median incision.

Wednesday evening the annual dinner of the Association was held at Hotel Ten Eyck.

FIFTH SESSION.

Complications Following Gastroenterostomy.—W. J. MAYO (Rochester, Minn.) In St. Mary's Hospital during the past 10 years 107 gastroenterostomies have been performed with 10 deaths. Mortality: Malignant cases, 20%; benign series, 6%; average, 9 plus. Cause of death: Exhaustion, 3 cases; exhaustion in which pernicious vomiting was a feature, 2 cases; progressive pneumonia, 3 cases; separation of anastomosed intestine from stomach wall, 2 cases. To prevent pernicious vomiting the site of the anastomosis should be at the bottom of the stomach, whether anterior or posterior makes little difference. Enteroanastomosis is more often necessary with suture than with button, but the latter has the disadvantage of sometimes dropping into the stomach. If the pylorus is permanently obstructed the anastomotic orifice does not contract. If pylorus is not obstructed it probably will contract. For the anterior operation 14 to 16 inches of jejunum must be left above the anastomosis. For the posterior 10 inches. Five cases were reoperated upon—one for secondary ulceration involving the anastomosis, three for secondary contraction of anastomosis in cases in which the pylorus was not obstructed. One of these cases of posterior operation died because the intestine left above was too short to permit of perfect drainage through a secondary enteroanastomosis. In one anterior case the small bowel prolapsed through the loop, causing chronic obstruction.

Pyloroplasty, With Report of a New Method.—J. M. T. FINNEY (Baltimore) said that the great desideratum in pyloro-

plasty was to prevent the regurgitation of bile and other material. The operation devised by him is free from practically all the objections to other methods and has been performed on five cases with entire satisfaction, three cases now being more than a year in duration. There were dense adhesions in two cases but they were divided until the pylorus and first part of the duodenum were free—a most important point in the beginning of the operation. By means of three sutures used as retractors the parts are lifted from the abdomen and kept taut while the first part of the duodenum is fastened to the stomach by a running suture, posteriorly and then by interrupted sutures anteriorly. Then an incision is made between the two, opening the duodenum and stomach for a distance of 2 $\frac{1}{2}$ or 3 inches. The anterior sutures are then tied and a new pylorus with a diameter of 2 $\frac{1}{2}$ inches has been constructed. After-contraction of this is hardly possible.

Discussion on these papers was opened by BEVAN (Chicago), who mentioned the complications of gastroenterostomy in his experience. He prefers sutures to the button in that operation, one reason being that 3 or 4 inches of the jejunum should be sutured to the stomach to prevent spur formation. He thinks Kocher's pylorotomy is superior to the operation devised by Finney. He also criticized the interrupted suture, saying that it should never be used in intestinal or stomach surgery. The continuous suture more surely prevents leakage and bleeding, is inserted more rapidly and more evenly distributes tension. (This criticism was not endorsed by other speakers.) MEYER (New York) in 30 gastroenterostomies has used both anterior and posterior walls of the stomach and has employed sutures, the button, and the elastic ligature. He considers the latter expedient a distinct step forward in the art of anastomosis. The posterior method is more anatomic and physiologic than the anterior. He has had no case of vicious circle, but has seen persistent vomiting overcome only by lavage. Because it does occur, however, an enteroanastomosis should be added, perhaps, in every case. HARRIS (Chicago) favors the posterior operation because dilation of the stomach is mostly at the expense of the posterior wall. In the case of a boy shot through the stomach just after a full meal, two perforations were made, both being on the posterior wall, though the path of the bullet was horizontal. VANDERVEER (Albany) favors posterior operation by suture. KEMMERER (New York) finds the posterior operation with the Murphy button the most satisfactory. The vicious circle follows anterior, but not posterior, operations. He thinks the use of the button renders contraction less liable. WEIR (New York) has done more than 30 cases, 4 of the first 8 or 10 dying from the vicious circle. Since that he has used the posterior operation, combined with enteroanastomosis, no case of vicious circle occurring. RICHARDSON (Boston) stated that nearly all his cases had been those of advanced carcinoma or pyloric obstruction whose general condition was bad. As a consequence his results were not at all encouraging. He endeavors to reestablish the pylorus whenever that is possible. MCGRAW (Detroit) stated his experience was similar to Richardson's, his cases being bad ones which died of exhaustion. He strongly urged the use of the elastic ligature. Surgeons fear that it will not cut through, but it will. OCHSNER (Chicago) said that his patients formerly died. Seeing Mayo operate, he found that he had not been doing the operation correctly, and has had better results since. RODMAN (Philadelphia) said that reading had caused him to fear the vicious circle more than he should. It was very gratifying to hear from Mayo that the anterior operation could be done with good results. He believes gastroenterostomy has come to stay, and that pyloroplasty will be done less and less. Perhaps the better way to put it is that the tendency will be toward more partial gastrectomies and fewer gastroenterostomies and pyloroplasties, especially the latter. RANSOHOFF (Cincinnati) asked if Dr. Finney's operation was practicable in every case on purely anatomic grounds; that is, would it not cause undue traction on the second portion of the duodenum, bile passages, etc.? In closing MAYO said that until one year ago he did the anterior operation. Now he thinks the posterior is in some respects the better of the two in cases of choice. The operator seems unconsciously to get the opening lower in the posterior than in the anterior operation—a point in favor of the former. In bad malignant cases and in very fat people with thick omentum, he does the anterior. Primary enteroanastomosis is unnecessary to prevent recurrence of the vicious circle. FINNEY, in answer to the question regarding traction, said that it was perfectly possible to work without undue traction in all the cases he had tried. The possibility of future adhesions is an objection yet to be tested.

The Surgical Treatment of Tuberculous Peritonitis.—

A. J. OCHSNER (Chicago) fears there is danger of a revulsion of the feeling in favor of surgical intervention in that condition. A summary of available statistics shows that under surgical treatment about 50% recover and medical treatment gives equally good results. This apparently argues in favor of medical treatment, as it is preferable to surgical if results are as good. This showing is only apparent, however, as the medical results are obtained in early cases and the surgical in late, severe cases, many of them hopeless under medical treatment. The surgical results should really be added to the medical recoveries instead of being compared with them. Personal experience shows that simple laparotomy often gives good results in cases which are hopeless medically and apparently

hopeless surgically when the peritoneum is opened. Some of the conclusions reached by OCHSNER from a study of 32 personal cases and the literature of the subject are: (1) Patients suffering from tubercular peritonitis should first receive careful medical treatment, recurrence being most apt in cases operated upon early; (2) treatment should be continued as long as the patient is improving; (3) if there be no improvement under medical treatment or the patient grows worse, perform abdominal section; (4) if tubercular foci can be safely removed without disturbing the peritoneum greatly this should be done; (5) if the peritoneum be much involved do not remove tissue; (6) if there be diffuse involvement, avoid manipulation of all organs; (7) if there are adhesions between the coils of intestine, never disturb them; (8) during recovery and afterward medical treatment should be kept up; (9) if there be reaccumulation of fluid, repeated operations are indicated.

Discussion.—BEVAN (Chicago) thinks that abdominal section is of no value whatever in these cases except to establish a diagnosis. In the Presbyterian Hospital all cases are turned over to the medical side. In two cases under the care of Dr. Billings good results have been apparently obtained from the use of the x-ray. Patients being kept in bed during this treatment may have had much to do with the good results obtained. BURRELL (Boston) said the difficulty lay in establishing the diagnosis. When there was pus with high temperature and leukocyte count the abdomen should be opened. In other cases where there is an exudate with everything glued tightly together, medical treatment is the proper course to try. MAYO (Rochester, Minn.) said that encapsulated fluid must be evacuated. In cases of chronic collection of fluid in the abdomen he can see no reason for advising medical treatment, perhaps for months, instead of opening the abdomen at once. This is a simple operation, often possible under local anesthesia. RICHARDSON (Boston) has seen good results follow abdominal section in many of these cases whether the operation was the cause of improvement or not. WEIR (New York) emphasized the uselessness of operation in cases where the intestines are matted together. ALLEN (Cleveland) has seen the success of operation so frequently that he would hesitate to abandon it. COLEY (New York) can not agree with the pessimistic views of some observers.

Extirpation of a Leukocythemic Spleen.—T. A. MCGRAW (Detroit). The patient was a child of 8, ill for two years, with enormous liver and spleen. Blood count showed hemoglobin 46%, reds 2,070,000, leukocytes 336,000. Splenectomy was accomplished easily, practically no blood being lost. The child died the same night from exhaustion. Guinea pigs were inoculated with portions of the spleen and with blood from that organ immediately after its removal. One killed four months later showed no changes. The other two killed nine months after inoculation were perfectly normal. MCGRAW concludes that the spleen should be removed early in these cases if its influence in leukemia is to be determined. Adhesions, which are at times formidable, will also thus be avoided.

Discussion.—MEYER (New York) said that as the medical treatment of leukemia appears valueless it is a proper subject for the surgeon to consider. If operation is proper, it should be done early. RICHARDSON (Boston) spoke of a case in which he did a splenectomy rather early. The patient is still living after two years and her last blood count was normal. However, he thinks the case did harm, as it probably led to other operations. He would not have removed the spleen had he known the true condition before operation. The spleen weighed five pounds.

SIXTH SESSION.

On Cancer of the Appendix.—R. H. HARTE (Philadelphia) reported two cases, one in a woman of 24, the other a man of 25. Both gave the history of chronic recurrent appendicitis, the former of five years' duration, with no hint of the actual condition. In one case no growth was evident macroscopically. Nearly all the cases of cancer have been reported during the last few years which HARTE explains by the fact that more systematic examination of all removed appendices are being made. The diagnosis can be made only by exploratory incision and perhaps not then. HARTE inclines to the view of the inflammatory origin of these growths. Their occurrence may be considered an additional reason for prompt interference in every case of appendicitis.

Discussion.—ELTING, of the Albany Hospital, reported two cases. One was a colloid carcinoma in the appendix of a man 80 years old, the tumor being the size of an egg and found at autopsy. The other was a pea-sized endothelioma in the appendix of a woman of 40, the appendix having been removed secondarily during an operation for chronic pelvic inflammation. WEIR (New York) reported one case of adenocarcinoma in chronic appendicitis. GASTER said that in 1,200 or more appendices examined at the Mt. Sinai Hospital two cases of carcinoma had been found, both during the past six months. MATAS (New Orleans) said that in 1,000 appendices examined carefully during his service as demonstrator of anatomy from 1885 to 1895, no neoplasm was found.

A Modified Radical Operation for the Cure of Peripheral Aneurysms, with Reports of Cases Operated Upon.—RUDOLPH MATAS (New Orleans) referred to the revival of interest in the suture of arterial wounds, a procedure which had been demonstrated to be perfectly feasible in practice by the researches in clinical experiences of the many surgeons.

It is to a particular phase of the subject, viz., the intraaneurysmal or intrasaccular suture of the arterial orifices in aneurysmal tumors that he directs particular attention, as it constitutes the basis of the radical operation which he has had occasion to apply, with other modifications, most satisfactorily in his surgical practice. The operation proposed is applicable to all aneurysms in which there is a distinct sac and the cardiac end of the main artery of supply can be controlled. The operation performed by Matas can be briefly described as follows: 1. Control of the circulation in the sac by means of the Esmarch bandage and constrictor or by a tourniquet. Prophylactic hemostasis may also be obtained, but less satisfactorily by temporary compression of the parent trunk at a point close to the cardiac pole of the tumor; this temporary compression may be effectively applied by a provisional traction loop passed under the artery or by the finger of an assistant, or by properly adjusted clamps which will not exercise an injurious pressure upon the tunics of the artery. 2. Free incision into the sac extending from one extremity of the tumor to the other, and evacuation of all clots, so as to expose all the openings or arterial orifices which open into the sac. 3. Obliteration of these orifices by continued or interrupted sutures with chromicized catgut or fine kangaroo tendon introduced with a curved round needle on the Lembert plan. 4. Reinforcement of the first plane of sutures by an additional row of stitches; preferably continued and applied on the Lembert plan, so as to protect against leakage and also to reduce the capacity of the sac. 5. Inversion or infolding of the walls of the sac together with the overlying skin so as to completely obliterate the cavity by bringing the walls in perfect apposition with the floor of the aneurysmal space. The skin which is usually relaxed after the evacuation of the aneurysm forms two flaps which are adherent to the sac and are readily sutured to the bottom of the cavity by interrupted catgut sutures. In large aneurysms, the obliteration of the cavity is further affected, and the formation of dead spaces between the inverted sac walls is prevented by deep chromicized catgut or silkworm sutures, which are passed through all the walls of the sac including the skin, and are tied over small rollers or pads of aseptic gauze. When the operation is completed the aneurysmal cavity is entirely obliterated without disturbing, in any manner, the sac from its bed or interfering with its relations, or with the collateral circulation. At the site of the bulging tumor which previously existed there is a depression varying in depth according to the size of the original sac and presenting the appearance of an inverted hollow cone or ovoid. As no exposed or raw surfaces are left in view, and the apposition of the skin is complete there is no need for drainage, and union *per primam* can be confidently expected, thus greatly abbreviating the duration of the after treatment. A simple sterile dressing is applied and the limb is immobilized with plaster-of-paris, if the wound is at the flexure of a joint, or by a suitable splint after a sufficient padding had been applied to protect the parts from undue pressure or exposure to cold. In applying this modified procedure two distinct varieties of aneurysmal sacs must be kept in mind. In one type, the most frequent, the sac is elongated, fusiform or ovoidal in shape and shows when opened two main orifices which correspond to the inlet and outlet of the main artery; these openings are usually separated by a short interspace of variable length which is frequently grooved and represents the continuation or floor of the parent vessel. In this variety of aneurysm the suture entirely obliterates the openings, together with the floor of the sac, as the continuity of the artery has been lost by merging with the walls of the aneurysm. In the second type, the true saccular aneurysms, the sac is simply grafted upon a nearly complete artery. In this type the main artery communicates with the sac by a single opening which is either saccular or ovoidal in shape. In this class of cases it is quite possible, in dealing with the larger vessels, such as the iliac, femoral or popliteal, axillary, brachial, subclavian or carotid, to obliterate the orifice of communication by suturing its edges, leaving the lumen of the vessel still open and pervious. This is an ideal mode of restoring the artery to a comparatively normal state, because the aneurysmal lesion is simply eliminated by obliteration without interfering with the circulation of the arterial trunks which supply it. The larger the caliber of the diseased or injured vessel, the greater the chances of obtaining this ideal restitution, which should always be borne in mind in applying this method. The author's experience with this operation is limited to four cases, which illustrates the most common types of peripheral aneurysms. Two cases of traumatic aneurysm of the brachial, one femoral and one popliteal; all successful and all terminating in uneventful recoveries. The advantages claimed for this operation over the classical procedure are: (1) It greatly simplifies the technic and by confining the intervention to the interior of the aneurysmal sac reduces the risk of traumatism to a minimum; (2) it eliminates the ligature altogether and does not endanger the nerves and veins and other structures in intimate relation with the aneurysmal sac; (3) it does not disturb the collateral circulation and thus reduces the danger of gangrene to a minimum; (4) it is capable in favorable cases of obliterating and curing the aneurysm without obstructing the circulation of the main artery with which it is connected by simply suturing the orifice of communication; (5) as it simply obliterates the aneurysm by lining the cavity with the over-

lying skin it favors prompt healing *per primam* and thus greatly abbreviates the period of convalescence.

The Influence of the Röntgen Ray Upon the Different Varieties of Sarcoma.—W. B. COLEY (New York) reported 14 cases of his own and others, in whom more or less improvement followed the use of the Röntgen ray. One particularly interesting and undoubted case of small round cell sarcoma of the neck in a man of 70 was detailed. This man had six relapses after operations, in each instance the specimen proving to be a typical round-cell sarcoma. The toxins were used for three weeks with no effect on the last large recurrence. The use of the x-ray was then begun with almost immediate improvement, the final result being the entire disappearance of the growth. Two similar cases now undergoing the same improvement were detailed at some length. While no extravagant claims are made for this treatment, it being too early to assert positive values, Coley is satisfied of the efficacy of the x-ray, alone or combined with the toxins, in the treatment of sarcomas, especially, perhaps, sarcoma of the neck, a condition which he states has never been cured by operation. The effect of the x-ray upon these growths possibly supports to some extent the micro-parasitic theory of their origin.

Cysts in Connection with the Teeth.—J. C. OLIVER (Cincinnati) illustrated his remarks with lantern slides, and reported briefly three cases. The slides, showing the various stages in the development of the teeth, were used to illustrate the possible origin of cysts, the various theories of which were reviewed. Theoretically, cysts containing both epithelial and connective tissue should be found. In some cases, tissue resembling giant cell sarcoma is found, but is really embryonic tissue. Diagnosis is based on absence of permanent tooth, presence of cystic growth, crackling as of thin bone upon pressure and incision. The practical point is that the mass should be incised before the jaw is removed, as any interference with the bone in these cases is unnecessary. Prognosis is good, treatment consisting in opening the cyst, removing the tooth and curetting the cavity.

Implantation of Silver Filigree for the Closure of Large Hernial Apertures.—WILLY MEYER (New York) reported three cases. This method is advocated only for the closure of enormous hernial openings which cannot be closed by any manipulation of the tissues at command. It gave entire satisfaction in the three cases in which it was used, two of them being ventral hernias. In these the omentum was first pulled down over the opening. The filigree may be placed just beneath the fascia or beneath the muscles. An important point is that it retains its place, even though suppuration occurs. MEYER presents this method as a possible means of curing enormous hernias heretofore considered inoperable.

The report of two cases of exophthalmic goiter treated by operation was made by EMMET RIXFORD (San Francisco). The first case was that of a woman who had had an ordinary goiter since 12 years of age and in whom symptoms of Graves' disease appeared in 1895, operation finally being performed when there was partial stenosis of the trachea. Under local anesthesia half of the thyroid, including the isthmus, was removed. The patient was worse for a short time, then rapidly improved. A month later symptoms again appeared synchronously with enlargement of the opposite side. Enucleation of a cyst relieved the condition. The patient now, after two years, is entirely well. Case 2 was a woman in whom a goiter of ten years' standing increased rapidly in size during pregnancy, tachycardia, exophthalmos, tremor, sweating and marked edema following. The case seemed hopeless, but the woman demanded an operation, insisting on getting well or dying. Accordingly a thyroid adenoma was removed. Improvement began and finally ended in entire recovery.

S. H. WEEKS (Portland) exhibited an **improved instrument**. This consisted of an ordinary silver male catheter, into the beak of which could be screwed a filiform attached to a metal tip. Its use was commended as tending to lessen lacerations of the urethra.

The Present Status of the X-Ray as a Means of Diagnosis and as a Therapeutic Agent.—ARTHUR DEAN BEVAN (Chicago) exhibited numerous photographs of cases under his own charge or coming under his observation in Chicago where extended researches into the subject are being made, notably by Pusey and Hyde. Bevan stated that it was as important that every modern hospital should develop an expert with the x-ray as it was for them to develop an expert pathologist. Such a man must be paid, and perhaps well paid, but there is enough of value in this agent to make such action imperative. A year ago he was skeptical regarding the therapeutic value of the x-ray. Investigation and observation of actual cases has since made him an earnest advocate of the method, *because it produces results*. He considers the investigation of the effect of the x-ray upon pathologic conditions to be the most important question now before the American Surgical Association. Numerous cases of sarcoma, epithelioma, lupus, and carcinoma of the breast were reported as cured or greatly improved. One case was especially interesting pathologically. A section of a superficial growth was examined and found to be an epithelioma. A series of exposures to the x-ray were then made. Again a piece of the tissue was examined showing broken down cells, with granular changes and loss of nuclei. Exposures were continued until healing ensued. A third examination of

the site showed scar tissue and no growth. Deep carcinomas of the stomach, larynx, etc., have shown no change, unless there be a diminution in pain, which is perhaps a mental effect in many cases. In a majority of the cases some burn has occurred, many of them being exposed until a reaction took place. No serious burns have resulted. But it should be distinctly understood that x-ray burns can and do occur in the practice of experts. Bevan thinks it a good plan to expose every patient after operation for carcinoma to the x-ray for six weeks or two months.

Discussion.—MEYER (New York) said that superficial cancers of the face belonged to the x-ray therapist and not to the surgeon. In plainly operable carcinoma elsewhere the surgeon should operate at once and not waste time by using the x-ray. After-treatment by the x-ray is advisable. VANDERVEER (Albany) said that intelligent people were beginning to understand the value of the x-ray and to believe that it instead of the knife should be used for cancer. This idea may result in great harm. OCHSNER (Chicago) said that the attitude of the Association should be that of encouragement toward all careful, conscientious investigators in x-ray therapeutics. This sentiment was also expressed by MCARTHUR, POWERS, MOORE, RODMAN, and others. The subject was considered of such importance that a motion was passed authorizing the committee on program for the meeting of 1903 to arrange a symposium on the uses and value of the x-ray.

Election of officers for the ensuing year resulted as follows: President, Maurice H. Richardson, Boston; Vice-Presidents, N. B. Carson, St. Louis, W. J. Mayo, Rochester; Secretary, Dudley P. Allen, Cleveland; Treasurer, Geo. R. Fowler, Brooklyn; Recorder, Richard H. Harte, Philadelphia, the last three being reelections.

This report of the meeting of 1902 would be incomplete without recording the sentiment voiced by every member of the Association regarding the most courteous and hospitable treatment by the local members. The Albany meeting will be remembered because of the altogether admirable place for holding its sessions, the Senate chamber of the Capitol. But of still greater value, because it touches a deeper chord, will be the memory of the kindness, the thoughtfulness, the open-hearted entertainment extended by Drs. VanderVeer and Macdonald.

AMERICAN ACADEMY OF MEDICINE.

Twenty-seventh Annual Meeting, Held at Saratoga Springs, N. Y., June 7 and 9, 1902.

[Specially Reported for *American Medicine*.]

FIRST SESSION.

The Academy was called to order by the President, V. C. VAUGHAN, of Ann Arbor. After an executive session and the reports of committees the reading of papers was begun, the first on the program being by CHARLES MCINTIRE (Easton) on the "personal equation" in marking examination papers. The investigations detailed in this paper were prompted by the fact that one of the reasons urged against reciprocity in medical licensure is the various standards of examiners. Hence the endeavor to determine if facts made valid this objection. A list of questions from various State Boards, with answers from bona fide candidates for license, with suppression of names, States, etc., were sent to the members of various State Examining Boards. To determine the relative value of college and State Board examinations, these questions and answers were also sent to various medical colleges. A circular letter explaining the entire plan accompanied each list. The paper presented was a tabulated report of the answers received. The percentages given by different examiners varied, but the result, with hardly a single exception, was that of the three candidates whose papers were sent, Nos. 1 and 3 would have failed before all and No. 2 would have passed, thus showing a uniformity that was exceedingly gratifying. The markings also showed that the State Boards were perhaps a trifle more lenient than were the college faculties. An interesting point was that many comments on the vagueness of the questions were made by the examiners. DAVIS (Pittsburg) said that the results of this investigation rather refuted the charges that State Boards were trying to cut down the number of practitioners from selfish motives, inasmuch as they were shown to be more liberal than the colleges.

SECOND SESSION.

The Family Physician of the Past, Present and Future.—S. A. KNOPF (New York) stated that but few of the old type of family physician were left and that there was absolutely fewer compared with the number of physicians and the population than there was 50 years ago. This he attributes to the scientific events occurring during that time and to the changed social conditions now existing. As things are now, the young physician cannot be blamed for disliking the idea of becoming and remaining a general practitioner. A great point is the small compensation received in comparison with that of the specialist, especially the great operating surgeons. Their positions could be changed to some extent, benefiting the general practitioner and not being greatly to the detriment

of the surgeon if the former would attend to the after-treatment of cases referred to him by the surgeon. KNORR finally described his conception of the family physician of the future. His studies in tuberculosis have convinced him that without the aid of the family physician the solution of the tuberculosis problem is an utter impossibility. He it is who must make the early diagnosis and must also enforce sanitary regulations, which, especially among the poor, cannot be done by any Board of Health. The questions of malnutrition of the poor (often due to ignorance in the preparation rather than the scantiness of food), the question of alcoholism often due to the cause just mentioned, the regulation of vice—all these are within the province of the true family physician. The community which pays enough competent practitioners to look after the health of all the indigent families will be the financial gainer in the end, and will improve its sanitary and moral condition beyond expectation. The family physician of the future will be a cultured and refined gentleman, fitted for his work by a college course, a five-years' medical course, an obligatory general hospital training, and by some experience as a general surgeon. He will do a greater work than did the family physician of the past, and will be one of the most important helpers in the betterment of the sanitary, social and economic condition of the human race. In discussing this paper, CONNOR (Detroit) said that the family physician, both formerly and now corresponded very closely to the remainder of the people. Then most things were guessed at; now many things are exact and the physician must know them. He believes that if physicians are fully abreast of the times they can impress themselves upon people just as much as in former days. Doctors are first, last, and all the time teachers, and if the young men of the profession are teachers and have medical knowledge to impart, they need not fear results. The profession is advancing, but it must cling to scientific methods and teach people scientific methods of living.

The Physician as an Accountant.—CHARLES M. CULVER (Albany) emphasized the value of bookkeeping to the physician, although he is not an advocate of commercialism. No method of bookkeeping was advocated—any method that tells the truth will do. Accounts should have due attention, even though it be necessary to employ a clerk. If they are well kept the real aims of the physician can be better prosecuted. The idea was not to foster selfishness, but to show that any detail of the dignity of the profession is worthy of maintenance.

Pure Science vs. Applied Science in Medicine.—WINFIELD S. HALL (Chicago) discussed the difference between pure science and applied science and defined the pedagogic value of each. Pure science has a pedagogic value in two ways: (1) It stimulates and develops the reasoning power; (2) it results in conclusions and principles which are capable of application to the practical problems of everyday life. Applied science is based on observation, and keeps the observer constantly on the alert to prevent disaster by failure to recognize conditions met with. In the medical curriculum scientific courses are of value, though there is no pure science in medicine, all cases being individuals and laws unto themselves. The physician is therefore best fitted for his work by long study in the applied sciences. This does not mean a plea for less pure science in the literary college, which is preeminently its place. But every student while in college should have at least a small course in applied science of whatever variety may be chosen. There is no time in the medical school for the pursuit of pure science. However, physiologic chemistry and other allied branches can very easily be made by the teacher problems of applied science.

The report of the committee on time allowance in the combined collegiate and medical course was made by the chairman, A. L. BENEDICT (Buffalo), and gave rise to an animated discussion. BENEDICT distributed copies of a circular which had been sent to 445 medical schools and literary colleges, asking a number of questions bearing on the above topic. Replies had been received from 49 medical colleges and 98 literary colleges, the report being made up mainly of these replies. In answer to the question whether a person with a bachelor's degree should have time allowance in his favor when he enters a medical school, 28 of the medical colleges and 65 of the literary were unequivocally in the affirmative. The replies indicated that the question is one of vital importance to all educational institutions, and that they, as well as the medical profession, are seeking a satisfactory solution to the problem.

Discussion.—LOBINGER (Denver) said that there appeared to be in the high schools and colleges an accumulation of curricula that was not of value. Carrying the problem back there may be help derived from cutting out some of this excess and getting pupils to the high school say at the age of 12. He does not see how the medical curriculum can be abbreviated. DAVIS (Pittsburg) said there should be reciprocity between educational institutions and a definite understanding as to what each was to teach. For instance, public schools may have some chemistry; it is taught the student in the high school, again in college, and finally when he enters the medical school. This is a repetition that should not be and hence is a waste of time. However, he thinks that very few men take a full college course and graduate in medicine before they are 26, a danger mentioned by some. TAYLOR, of the State Board of Regents, New York, spoke of the new registra-

tion of medical colleges made necessary by the recent legislation in New York and of their efforts to find out just what is being done by each college in the United States. He propounded three questions to the Academy, debate on which was not closed at time of adjournment: (1) What length should the combined collegiate and medical course be made; (2) can the medical course be curtailed; (3) should medical studies be begun before the senior year in college. BULKLEY (New York) said he would oppose getting young men into the profession any earlier than is now done. One way to prevent overcrowding in the profession is to make the preparation harder and longer. From seeing many young physicians in hospitals he would not like to trust them if much under 25 to 28 years of age. ROBERTS (Philadelphia) thinks seven years long enough for the combined course. He believes that some branches now taught in medical schools should be taught in literary colleges, as chemistry, biology, bacteriology, etc., or at least their earlier portions. Another thing needed in medical schools is some one holding the same position as president of a college to coordinate the branches and see that certain things are not taught by two or three of the professors, as they often are when each does as he pleases in his own branch. HARVEY, president of the Registration Board of Massachusetts, agreed with Roberts and thinks there should be four years of medical study. He thinks there should be an understanding between all the institutions, literary and medical, in each State as to what should be taught in each. CONNOR (Detroit) thinks there is not the proper correlation of branches in medical schools. Biology, chemistry, German, and French should be taught before the student enters a medical school. Much of what is taught in literary institutions is not scientific. MARCY (Boston) would demand fewer and better colleges. It is not so much a question of the time limit that each one has as it is of how they use that time. All schools should combine to form a proper subdivision of labor. VAUGHAN (Ann Arbor) gave a history of the evolution of the plan now in force at the University of Michigan, where the first combined course was inaugurated in 1890. They now require 120 hours in the branches for a literary degree, 60 of these must be taken in the literary college. The other 60 may be taken in the first two years of the medical course, thus making a combined course of six years. This is obligatory since 1901. It is considered better to have all the students of medicine take this six years' course than to have only a small percentage take a seven or eight years' course and others only four. An obligatory seven years' course would be better and they are working for that. He considers bacteriology a medical science and not to be taught at the present time in literary colleges. All the concessions necessary to establish the above six years' combined course have been made by the literary department.

THIRD SESSION.

The Religion of Science.—VICTOR C. VAUGHAN, President of the Academy. This address was the personal opinion of one trained in scientific methods (and who believes the average scientific man to be a religious being) concerning the relation between religion and science, offered with the desire to bring about a better understanding between the theologian and scientist, both of whom are working honestly for the betterment of the race. The term materialist, often applied, is especially inapplicable to scientists who have learned that there are things beside matter in the universe. The study of energy with its manifestations even in lifeless matter prevents materialistic doctrine. Further, the scientist teaches that man is more than matter and more even than a combination of energy and matter. It was a philosopher and a scientist, not a theologian, who said *Cogito, ergo sum*. The scientist recognizes the influence of injury of the brain, stimulants, narcotics, the condition of the circulation, the stomach, etc., on the mind, yet this does not say that mind is matter. The law of the conservation of energy is not true if mind is either matter or energy. The man of science has been denounced as an atheist. Probably the only difference between the atheist and the theist is that while both believe in an absolute being, or God, the former says he cannot predicate anything concerning the nature of that being, while the latter says he has some knowledge, though imperfect, on that subject. According to this there are, among educated people, no atheists. The speaker then detailed the two conceptions of God. Perhaps the majority of people believe in a personal God, who made the universe and rules it, but is no part of it; whose will is law, who can be propitiated by prayer, rites and ceremonies, and hence will set aside laws of nature for the protection of the individual. The other conception is that God is the great soul of the universe, that the world has not been made, but is the product of life and growth. To the scientist God is law, the law of growth and development, and does not change the laws of nature to punish or favor any individual. The most effective way in which we can study God is by endeavoring to ascertain the laws which govern the world and the best service we can render him is to obey these laws. It appears that the purpose in the existence of this world is the development of its inhabitants which have slowly developed from crude, savage ancestors. Civilized man has now reached a point where he is an important factor in his own development, the creature has become an active agent in the process of creation. Moral responsibility began in man when by voluntary acts he became a factor in creation. He thus becomes a coworker

with God in the betterment of the race. And all discoveries in science have brought with them at least the potentiality of this betterment. Comparison was then made between the Dark Ages, when but few scientists were working, and the brilliant periods like the present, when science is popular. The benefit of various scientific discoveries in working out this gradual improvement of the race was then detailed. Science teaches that man must, by his own exertions, break the bonds of ignorance and superstition, and bear himself and his race to the heights of the great mountain of effort, beyond which lies the promised land of human perfection. The relation of the individual to the race has been explained in large part by science, and this explanation furnishes the strongest incentive to righteousness in word and deed ever put before intelligent men. It would be narrow to suppose that science has been the only means of uplifting mankind and improving the race. But the scientist is ever a seeker after the truth, and what higher purpose is given to any man?

FOURTH SESSION.

The Medical Profession and Social Reform.—EDWARD L. DEVINE, editor of *Charities*, and General Secretary of the Charity Organization Society of New York City. Those who direct the work of organized charity in the greater communities are brought face to face with many problems which require for their elucidation the skill of the trained physician and hygienist. The social reformer finds that it is not enough to administer immediate and temporary relief, but that existing conditions must be met by raising the ideals of the people concerning matter of physical health and by the establishment of suitable facilities for the maintenance of health and the prevention of disease. In all attempts to reduce the deathrate the public looks first to the physician, and in the hands of the medical profession primarily rests the responsibility for the health and lives of the people. Medical education and laboratory research in preventive medicine are properly charges upon the community as a whole. While the guidance in such matters must properly remain in the hands of medical men, it will be found that that part of the general public which has shown an interest in social reform, if taken into the confidence of medical men, will afford a larger and more enthusiastic support than might be supposed. Physicians should seek and welcome the cooperation of the public press, of charitable agents and public officials, of clergymen and employees of labor, of labor leaders, and of others who though not usually held to be interested in the problems of medical science are yet the very ones upon whose aid the community must rely, if the conclusions of the investigators and of those who practise medicine are to be made the basis of public policy. There are many groups of workers whose social aims are similar to those of public-spirited physicians who wish to reduce the deathrate and lessen the amount of suffering. There are many things which might be done by others than by physicians if those others could be confident that in doing them they are moving in the right direction. The medical profession, especially through its organizations, should take steps looking to the establishment of closer relations with those workers; it should offer, then, the necessary direction, encouragement and support. County and State organizations afford in part the machinery through which increased cooperation may be secured. Among the cases of undeserved destitution sickness is most conspicuous, and the charity workers are being constantly led to the consideration of preventive measures. They realize fully that forces are at work and conditions are present which are undermining the health of others than those whose immediate needs they are called upon to relieve. They look to physicians for cooperation in securing essential changes in the adverse environment affecting the lower social strata. The medical profession should establish means by which it may put itself in harmony with the wonderful social forces which have already developed in professional and volunteer charitable visitors, trade-unionists, and social reformers. The lines upon which cooperation appears to be possible at the present time between the medical profession and general agencies for social betterment are at least four: (1) The promulgation through personal interviews, through public lectures, through leaflets, through newspapers, and the periodical press, through clubs and classes, through schools and colleges, and through every other practicable channel of public education of the idea that the tuberculous must properly care for his sputum, that tuberculosis should be recognized and treated at the earliest possible moment, that nutritious and suitable food is essential, and that the physical presence of a tuberculous, who is intelligent and conscientious, is not necessarily or even probably dangerous to others; (2) the erection of numerous, but not too populous houses of rest for advanced cases; (3) well-equipped hospitals for the treatment of lung diseases, favorably situated as to climate and as to altitude, as to remoteness to congested populations; (4) there is need of investigation of certain social aspects of the disease in which there is fully as much opportunity for cooperation between the medical profession and lay societies and individuals interested in the social welfare as in other lines that have been indicated. Devine then proceeded to discuss the problems connected with the licensing of midwives. Statistics point toward the conclusion that regulation of midwifery and the licensing of such as have shown their competence would probably lessen or eliminate the existing evils resulting from their practice.

Discussion.—BROWER (Chicago) said that the physician could aid materially in social reform by instructing the families he visits. He was rather surprised at Devine's statements concerning midwives, since in Chicago they are helping midwives by training them in the necessary principles of medicine. He is an advocate of public lectures by physicians on sanitary and kindred topics. He would have lecturers detailed by the national societies to lecture to the public at each meeting place and thus leave the imprint of the meeting upon the citizens of each place. SEARCY (Tuscaloosa, Ala.) advocates the most cordial relations between physicians and charitable organizations. In speaking of Cuba he mentioned the fact that Finlay should be known as the father of the mosquito theory of yellow fever propagation. TOMLINSON (St. Paul, Minn.) regretted the necessity of pointing out some of the difficulties of sanitary reform, as he personally has encountered them. An important point to remember is that nothing in the way of social reform can be accomplished except as public sentiment is molded. This is a slow process and must be expected. Where lay and medical men are associated in governing boards the lay members always wish to carry out plans from their standpoint, and if the physician is to be successful in enforcing his views he must put them on the basis of the layman and argue from their viewpoint, economic or otherwise. Tomlinson has no confidence in newspaper exploitation, but says some good can be accomplished by the use of tracts. In the question of tuberculosis he finds a deplorable ignorance of the disease and a still more deplorable unwillingness to learn, most people looking on the disease as a stigma. The line along which to approach all questions is that of a careful attempt to prove to the community the economic value of the point under discussion. The personal equation must be eliminated from all efforts. The physician can do his best work by enlightening the people with whom he comes in contact. No real good can come by his taking the rostrum. PYLE (Philadelphia) said that the best way to disseminate knowledge by the newspaper, which is a valuable method, is to have a medical censor who supervises all such matter printed. He could also pass judgment on the vile advertising which appears in even the best newspapers. He emphasized the importance of dwelling upon the economic standpoint of sanitary improvements. BENEDICT (Buffalo) was glad to learn from the address that laymen were seeking the cooperation of medical men instead of thinking them officious in considering social problems. Public speaking by physicians he thinks of little value. The weekly and monthly journals are the papers to use for reaching the people, the daily papers being too hurried with supplying current events. The physician can do much by conversation with his patients. FOSHAY (Cleveland) thinks it undignified for the individual physician to exploit matters in newspapers, but for the organization it is eminently proper. He advises the appointment of a committee on public health by medical societies. This committee can meet questions of epidemics, sanitation, etc., as they arise and, over the signature of the society, reach the people through the medium of newspapers. ENGELMANN (Chicago) said that much in the way of teaching sanitation, prevention of contagion, etc., could be done by introducing these topics in the public schools. Children can be taught some things and they can perhaps interest their parents in the subjects taught. HALL (Chicago) believes that physicians have many opportunities to address gatherings, mostly on invitation, as mothers' clubs, etc., on the subjects under discussion. In this way there could not possibly be the charge of self-advertising. CONNOR (Detroit) emphasized the importance of teachers living what they teach. Physicians should be no exception to this rule. KNOPF (New York) said it was the physician's mission to teach as well as to heal, and he should teach at large as well as privately. Legislators and other governing men need teaching. He is not ashamed (and thinks he does not violate the code of ethics thereby) to speak in public. With all his enthusiasm for sanatoria and hospitals he thinks they will not accomplish any great good so long as the poor tenement houses exist as a breeding place for tuberculosis. The charity organization is settling the tenement-house problem in New York and merits the aid of physicians. He states that newspapers always distort his addresses. Devine, in closing, said he was in hearty sympathy with the suggestion made regarding the teaching in public schools. Physicians should serve increasingly on school boards

[To be concluded.]

AMERICAN ORTHOPEDIC ASSOCIATION.

Sixteenth Annual Meeting, Held at Philadelphia, June 5, 6, 7, 1902.

[Specially Reported for *American Medicine*.]

H. AUGUSTUS WILSON delivered his address upon the advancement of orthopedic surgery. This will appear in a future number of *American Medicine*.

The General Management and Constitutional Treatment of Tuberculosis of the Bones and Joints: Special Reference to Life in the Open Air and in Tents.—H. P. H. GALLOWAY (Toronto) was surprised to find so little room given in textbooks to this important subject, and for this reason

the general idea of the general practitioner that all that is necessary in the treatment of these cases is a suitable splint. Fresh air, sunshine, proper food and clothing are important adjuncts to any form of treatment. Tonics in small doses are sometimes of service, but cod-liver oil when well digested is more beneficial, as also is cream and butter. Sanatorium methods are as useful in treating bone tuberculosis as it is in pulmonary tuberculosis. The ideal method of treating these cases is in tents, as in this method they receive a constant change of air even during the winter months, when they can be heated. He treated 49 cases by this method, and distinct improvement in their general condition always followed; in many instances they promptly lost the sallowness usually observed in these cases.

Malignancy of Bone Tuberculosis.—GOLDTHWAIT and PAINTER (Boston) pointed out the frequent recurrence of this trouble in the soft parts at some future time; it more often occurred in males than females, and trauma was the usual cause.

Discussion.—J. K. YOUNG (Philadelphia) pointed out that several monographs had been written upon this subject, although it was given little space in textbooks. McKENSIE (Toronto) believes that fresh air and food will do a great deal in these cases and he is placing less confidence in braces. TOWNSEND believes there is little hope of eliminating tuberculous foci by surgical means, and these cases are very important in life insurance, as it usually crops out in the thirties. SHAFFER (New York) thinks the study of the recurrence of tuberculosis is interesting and needs consideration. He has used the tent in a number of his cases, and in one as early as 1787. RIDLON (Chicago) has seen scars break down five and ten years after the primary wound had healed, and is convinced that tuberculous foci cannot be removed by surgical means. LOVETT (Boston) studied the growth of children suffering from this trouble, and found that it had in nearly all cases been impaired; he compared these children with children of their own families as well as the general class. Upon this idea it has been adopted in Boston to measure all school children and follow their growth. During the acute stages of bone tuberculosis, rest must be taken, as no splint can furnish it properly. THOMPSON cited a case in which tuberculosis in the form of Pott's disease followed a thorough operation upon tuberculous glands. SHERMAN (San Francisco) does not think that textbooks devote enough room to the consideration of outdoor treatment of these cases. He has been unable to find if seashore or country air is best, but the French think that all these cases should go to the seashore. Although operative treatment does not eradicate the disease, it usually gives the individual some years of useful life, at the same time it is best to postpone operation as long as possible. G. G. DAVIS (Philadelphia) thought that the recurrence was observed in a small percentage of cases and thought it was due to constitutional and not local causes. GALLOWAY admitted that Dr. Young's book contained more than usual upon this subject, but he thought that the subject might be more fully treated. PAINTER (Boston) believes the time is coming when these cases will be earlier diagnosed, and methods of treatment will be more perfected.

Elevated Scapulas.—A. J. STEELE (St. Louis) reported two cases. SHAFFER (New York) reported a case in which the scapula was so high it interfered with the neck motion. He tried to replace it by operation but failed; he finally removed the upper end. FREIBERG (Cincinnati) divides these cases into three classes: (1) With considerable deformity of the thorax; (2) with an elevation, and (3) with union of the scapula to the spine or rib. STEELE thought the cause of this deformity was *sub judice*.

Congenital Deficiency of the Clavicles, with Protoprogram and Radiogram.—H. M. SHERMAN (San Francisco). This paper will appear in a future issue of *American Medicine*.

Discussion.—HOFFMAN said that the condition was very rare and he believed that the only anatomic specimen of the deformity was in their possession. DAVIS asked if there was a loss of power in these cases, although abduction should be greater. Birds are possessed of two while cats have one. SHERMAN agreed with Davis and referred to the same weakness in a case of ununited fracture of this bone, which is also rare.

DAVIS exhibited an apparatus for correction of paralysis of the extensors of the hand and fingers.

Intrauterine Injury of Spine Simulating Pott's Disease.—JOHN DANE (Boston). To appear in a future number of *American Medicine*.

Discussion.—McKENISIE does not think the time has yet come to decide upon any certain operation. DAVIS thinks that there is great danger of wounding the epiphysis and causing a shortened limb, at the same time cartilage does not heal as bone and the operation is likely to fail. In these cases of infantile paralysis there is also an involvement of the subastragaloid joints as well as the ankle, which the operation, does not cover. DANE can not answer fully upon the shortening caused by this operation, but will report these cases later, although up to the present time this objection has not been noticed. In Germany certain authors have applied iodine, etc., to the epiphysis and have noticed that the stimulation caused increased growth, in some cases as much as 3 cc. If he thought the subastragaloid joints were involved there is no reason why they should not be included in the operation. In all his cases he always obtained good union.

Epidemic of 38 Cases of Infantile Paralysis.—CHARLES F. PAINTER (Boston) read this report, the cases occurring in

the city of Gloucester. It could not be traced to any cause and every clue was thoroughly investigated; they all were within a radius of four miles.

True Spondylitis Following Typhoid Fever.—A. H. FREIBERG (Cincinnati). This paper will appear in a future number of *American Medicine*.

Final Results After Mechanic Treatment in Pott's Disease.—HENRY LING TAYLOR analyzed 39 of his cases out of nearly 500, showing the benefit of treatment. A number extended back for over 26 years and were all treated by the Taylor brace. He thought the greatest danger in treating these cases was to remove the brace too soon, which is often followed by a recurrence of the disease.

Discussion.—WEIGEL (Rochester, N. Y.) reported a case of spondylitis following typhoid, and skiagraph showed change in the bone structure; he regards it as an infective osteitis. SHAFFER said he expected to see bad deformities when the disease was low in the spine, and expected good results when it was higher. PECKHAM said that the persistence of the disease was the hardest point to define, and one should be constantly on his guard in removing supports. GALLOWAY thinks that cases of spondylitis following typhoid are mistaken cases of acute Pott's disease, and reports two cases in evidence. SHERMAN believes there are border-line cases between the two—the Widal test on one hand, while the lack of subsequent development of tuberculosis should differentiate them. PAINTER reported another case of double Pott's disease, and holds that the Widal test should be made in those cases where spondylitis of typhoid origin is suspected. TAYLOR thinks that many cases described as double Pott's disease is merely the compensatory curve of the single disease.

Mechanic Treatment of Internal Derangements of the Kneejoint.—FRANK PECKHAM (Providence, R. I.) has found Shaffer's apparatus valuable. He mentions a number of cases in which there was a decided inability to walk, but when this apparatus was properly adjusted, walking was easily accomplished. In three cases this was especially marked. In those cases where the leg would lock from slight causes, and sometimes stay so for a number of hours (longest 31 hours), this splint was a great help, and in a case where both knees were affected, walking was accomplished with help.

Loose Bodies in Kneejoint.—R. T. TAYLOR (Baltimore) reported a case that was treated some time as a dislocation of the semilunar cartilage, when a skiagraph proved it to be a small osteoma, which he removed and restored the function of the joint.

Discussion.—RIDLON reported two cases of locked kneejoints, one in which he removed the posterior part of the semilunar cartilage, under cocaine. SHAFFER mentioned cases and believes that the splints check locking by preventing knee from being bent within 5% of the position where this trouble usually occurs, at the same time prevents rotation. GALLOWAY thought that some of these cases must be treated surgically, and in one case under his observation he found that the semilunar cartilage was displaced to an anteroposterior position and necessitated removal.

The evening was spent at the Jefferson College Hospital, where different forms of plaster-of-paris bandages, dressing and apparatus were exhibited by the members.

R. H. SAYRE demonstrated the method of upright suspension in the application of spinal jackets and also a rotary plaster saw. RIDLON exhibited a knife for the same purpose. REED exhibited his plaster cutter. STEELE suggested that with all the improvements, a "jack-knife" still held the honor of being the best.

R. T. TAYLOR demonstrated his upright and small recumbent kyphotones. SHERMAN exhibited a saw and separator for plaster dressings and demonstrated a method of anchorage for plaster splints for club-feet. In cases where the dressings are liable to slip, as in children, he simply applies a piece of adhesive plaster to the skin, leaving some of it project from the bottom of the dressing, and after the dressing has been put in place this plaster is simply doubled over and incorporated in it. LOVETT exhibited a frame for the application of plaster jackets with description of a method of application. ROBINSON exhibited a plaster bandage roller. WEIGEL exhibited materials for making removable plaster jackets; GALLOWAY a simple machine for making plaster bandages; STEELE, wire gauze for making splints; WILSON his portable door-extension apparatus, and also a bandage roller. YOUNG demonstrated a method of applying plaster jackets in recumbency. RUE applied a dressing of plaster to the leg, with a rod in the base under the foot projecting from one side or the other or both, for the correction of club-feet.

The Diagnosis of Hip Disease.—R. W. LOVETT (Boston) analyzed 95 cases occurring in years of 1897 and 1898, and of these he found, in a large number of cases, that they had not been correctly diagnosed. Nearly all the original cases were found. He does not believe that a correct diagnosis or prognosis can be made at the first examination, as many cases that are apparently mild become the most rapid and malignant, while others that seem very acute often turn out to be very mild. Two-thirds of these cases proved to have been real destructive tuberculous bone disease, pursuing a characteristic course. Some 23 recovered rapidly without much treatment, and are all entirely well. A group of some 15 miscellaneous cases proved to be infantile paralysis, arthritis deformans, coxa vara, etc., not pursuing a

course characteristic of tuberculous disease. Of the tuberculous patients, five died of subsequent meningitis. He thought that better signs and symptoms of this disease should be mapped out, as no one sign at present is entirely characteristic of the disease. The symptoms present in different groups were all analyzed and the conclusion reached that the diagnosis cannot, as a rule, be made offhand from certain symptoms generally considered characteristic, but with great care and often only after observation.

Preliminary Report Upon the Rational or Combined Treatment of Coxalgia.—R. T. TAYLOR (Baltimore) hopes to give this in detail next year. The skiagraphs of these cases have been of great assistance in localizing the disease foci, and when well located and extent determined he incises the joint and performs erosion. The only objection to this procedure is infection, but by the modern antiseptic methods this should not occur. Miliary tuberculosis and meningitis have been said to occur often in these cases, but this has not been observed in his cases. The disinfection of the joint he now accomplishes with a solution of formalin; he formerly used carbolic acid, followed by alcohol to neutralize it, but in one of his cases carbolic acid poisoning resulted in death before it could be neutralized, and since then he has abandoned its use; he supposes that it was too quickly absorbed by the open vessels of the joints. When the disease has been extensive, with sinus, etc., nothing is to be accomplished by erosion; he prefers the anterior incision in this operation.

Remittent Limp of the First Stage of Hip-joint Disease.—NEWTON M. SHAFFER (New York) believes that when a child limps careful examination and observation should be made, and these cases often are neglected until they go on to advanced disease.

Operative Treatment of Hip-joint Disease.—J. K. YOUNG (Philadelphia). This paper will appear in a future number of *American Medicine*.

Discussion.—HOUSTON, in comment on Lovett's paper, said that the mistakes were more often made because the surgeon had to give some diagnosis for the patient's sake, yet in his own mind it was not fully decided. Rheumatism is rarely observed under 5 years, although it does occur. In some slight traumas he has found severe crushing of the shaft by x-ray examination, although these cases usually recover promptly. Infantile paralysis should not be mistaken for hip disease. TAYLOR (Baltimore) agrees with Shaffer that these cases of intermittent limp are of great significance and should be properly treated. BRADFORD (Boston) believes that we are approaching better methods of diagnosis in these cases, but does not think that radiographs are always accurate. He believes in conservative treatment, but thinks that the disease point cannot always be reached by the method described by Taylor, as localization is extremely difficult. TOWNSEND thinks that statistics are misleading, as the diagnosis in dispensary cases is tentative. Two mistakes that might occur, not mentioned by Lovett, are sarcoma of the thigh and lumbar Pott's disease. H. L. TAYLOR (New York) described hip cases as benign and malignant cases and does not think that infantile paralysis should be mistaken for this disease. McKENSIE mentioned a case where slight hip disease was followed three years later by a very severe form. He believes that hip cases get well just the same as some lung cases do. SHAFFER (New York) mentioned a case of neuroma mistaken for hip disease. SAYRE (New York) endorses McKensie's view that some of these hip cases do get well, and also Bradford upon his view of the conservative treatment. As for skiagraphs of this condition he relies very little upon their evidence, as he has seen different conditions represented by two pictures of the same subject. L. A. WEIGEL (Rochester) believes that the skiagraph will show diseased condition correctly if correctly studied from good plates and especially by the x-ray stereoscope. G. G. DAVIS (Philadelphia) thinks that the operation of erosion is not justified and questions if the members would be likely to do it upon their own children if similarly affected. SHERMAN (San Francisco) thought that in these doubtful cases if there was evidence in time of a shortened limb the case was tuberculous. In cases where he suspected syphilis he used a mixture of tr. cinch. comp. and hydrarg. chlor. corros. Erosion has been a disappointing operation in his observations. In remittent limp he thought there was usually some bone destruction. HOFFMAN mentioned inflammatory conditions in the abdomen causing a contraction of the psoas and periarticular inflammation of the hip as to condition that might be confounded with hip diseases, but he regarded night cries as typical of the latter. RIDLON (Chicago) places very little weight upon radiographs and mentioned a confusing case that came under his observation. At first he could not define the exact point of irritation. He finally decided that the disease was in the hip, and so treated it. Later she developed a lumbar Pott's, then a cervical spondylitis and afterward the right hip became involved. He does not believe that all these malignant cases are tuberculous. LOVETT (Boston) said that his paper did not cover all diseases that might be mistaken for hip diseases, but simply those mistakes that had been seen by him.

The Functional Conformation of Bones, the Functional Pathogenesis of Deformity: Concerning Wolff's Law of Transformation.—W. H. FREIBERG (Cincinnati) spoke of the Volkmann-Heuter theory of deformity, which he did not think offered a full explanation in all cases. He exhibited the bones and sections of them from ox, sheep, llama, leopard, baboon and

gibbon, and explained how these bones were constructed depending upon their work in sustaining the animal. In all cases the requirements have not been truly mathematical proof, but the law and its corollaries should not be rejected on this account. He emphasized the fact that Wolff's law had considerable therapeutic significance in treating diseases of the hip.

Discussion.—TAYLOR (New York) thought it was an open question as to whether it was weight or function that did harm in hip disease. WEIGEL (Rochester) suggested the x-ray for the study of the internal structure of the bones. FREIBERG (Cincinnati) replied that his photograph had been made by the x-rays and believes that it is a particularly good method for the study of bones especially when they contain some animal matter.

Treatment of Congenital Dislocation of the Hip.—ROYAL WHITMAN (New York) believes, if properly corrected, such dislocations will remain in place. Toward this means he advises operation. The reasons why these cases are not successful are that at times some of the capsule is between the head of the femur and the acetabulum, while in others the head of the femur is often misplaced; in this condition it is best to perform an osteotomy of the femur. In other instances the acetabulum is not large enough to receive the head of femur, while in others it may only be the capsular ligament; in these instances the cavity should be enlarged. He does not find that manipulation will result in curing this condition and advises the operative procedure. After replacing the femur, the patient should wear a plaster spica in the position favoring its retention in its new position, the time depending upon the age of the patient, and none, so far as he knew, had relapsed.

The Causes of Relapse after Reduction of Congenital Dislocation of the Hip.—E. H. BRADFORD (Boston) ascribed this to three causes: (1) Being imperfect fixation after reduction; (2) malformation of the head of the femur; and (3) a malformation of the acetabulum, which is very rare; and this last year he observed a case of this character, which he reported. The author made a difference between a physiologic and anatomic cure.

Discussion.—RIDLON (Chicago) has seen over 40 operations and he believes that over one-half were failures, and thinks that as much can be accomplished by the bloodless operation as by the bloody one. He has observed cases that had both hips displaced and yet could run and jump with considerable ability. SHERMAN (San Francisco) thinks that many cases where the head of the femur has been supposed to be placed in the socket is simply placed on it, which easily slips off. He was glad to hear that Dr. Whitman had been so successful. GEORGE R. ELLIOTT (Toronto) referred to the production of anterior transposition of the head of the femur following successful reduction in two instances of his practice, due he believed to too great pressure of the plaster spica posteriorly, which had been unduly pressed upon. When the patients began to walk the leg and thigh acting as a powerful long arm of a lever upon this as a fulcrum threw the head anteriorly. This was proved by removal of bandage, reduction of the head of femur and its subsequent retention in the acetabulum. BRADFORD (Boston) thinks that a certain number of these cases demand operation.

The Simplification of the Treatment of Lateral Curvature.—E. H. BRADFORD (Boston) advanced the idea that it could be carried out by a careful mother or nurse, or even under the care of the family physician. Each case must be studied carefully and its needs supplied, but flexibility of the trunk is the one thing that is distinctly necessary.

Discussion.—SAYRE (New York) emphasized the importance of supporting the head in cases of scoliosis, situated in the upper dorsal region.

Faulty Attitudes and Round Shoulders, with Description of the Apparatus for Measuring It.—R. W. LOVETT (Boston). The points taken as guides were the mastoid seventh cervical, seventh dorsal, fourth lumbar vertebrae, middle of the trochanter, head of the fibula, and external malleolus. In these in the healthy subject there was very little variation. In girls, however, the fourth lumbar is more forward than boys. Pathologically he has found four distinct forms. First, where there is a general rounding of the subject. Second, where there is a sharp rounding. Third, where the back is too straight. Fourth, where the back is straight, but head projects forward. The body should be bent so as to bring the weight upon a center, and when round shoulders are corrected, it is the body position that is modified and not the spine. He then presented a small model to prove the rotation of the vertebral bodies in lateral deviation in scoliosis.

Discussion.—WEIGEL (New York) presented radiographs of subjects of scoliosis, and thinks this is the correct method to study such cases, and from these pictures he thinks that rotation of the vertebral bodies does not exist. The method of marking the spinous process to study the cases he believes is the source of error in many cases. H. P. H. GALLOWAY (Toronto) thinks when a patient learns that scoliosis is a deformity and not a disease they would wear Dr. Sayre's head apparatus with some reluctance. He did not believe that Dr. Bradford's method of hanging by the arms fulfilled the necessity, on account of the latissimus dorsi muscle reaching down the back into the lumbar region. He has found that exercise is lacking for its correction, and in one case where the subject became quite an athlete, the scoliosis still persisted. The simplest and best method, he thinks, is to educate the person to stand so as

to correct the deformity so that in time it will become a habit. SAYRE (New York) said that patients would not object to the headpiece when they knew the consequences that follow.

GALLOWAY described an operation for the treatment of claw-hand, resulting from a fracture of the forearm.

Fashioning Apparatus for Flat Feet and Deformities of the Toes.—A. H. FREIBURG (Cincinnati) dwelt upon the apparatus and their modes of making and adjusting. He condemned celluloid, as it was too brittle, being easily broken, except in some cases of hammer-toe and splints in children. His method of making impressions in flat-foot was to smear the foot with a solution of the chlorid of iron, glycerin and alcohol, and allow the person to put the foot on a piece of paper moistened with a solution of tannic acid. It was quickly done and left no stain upon the foot.

Discussion.—SHERMAN (San Francisco) prefers the simple method of blackening the foot with printers' ink.

Types of Bone Disease Affecting the Spinal Column that Stimulated Caries.—G. R. ELLIOTT (Toronto). The first specimen was from a case of syphilis of the spine, beginning near the eighth cervical with a sinus into the lung. The second was a case of a crush of the tenth and eleventh dorsal vertebrae. In this case the man slowly developed pressure symptoms and died in about a year; but the injury and history for the first few months was so slight that it was thought to be caries. Subsequently a laminectomy was performed, but without success. The third case was a young man of 20, who three and one-half years previously had injured his back. Kyphosis developed; case was thought to be one of caries, but later examination and postmortem evidence proved it to be a myeloid sarcoma. In another instance it was an osteo-sarcoma, and two others were syphilis and syphilitic tumor. He thinks upon this evidence that more positive signs of spinal caries should be required than those known at present before the diagnosis of this disease can be made more certain. One sign that has proved useful to him is, when he has given a case proper support and the pain and pressure symptoms do not subside, then he believes that it is not caries, but some other disease.

G. R. ELLIOTT also presented a brace for spasmodic wry-neck, intended for those cases of a neurotic origin, where the unsupported head causes pain from the spasm.

The Passive Carrying Function of the Arm: Its Importance: Its Destruction, and an Operation for its Restoration.—PHILIP HOFFMANN (St. Louis) described the normal arm, its two segments joined at the elbow at an angle of 170°, determined by the direction of the lower articular surface of the humerus, which faces downward and slightly outward. Consequently the forearms diverge from the body, when the upper arms are held parallel to it. This divergence enables one to carry weights without touching the thighs and interfering with locomotion. The only expenditure of muscular energy is that required in grasping. The upper arm acts as a passive agent only. Anything that changes the direction of the articular surface to one facing downward and slightly inward will, by reversing the elbow angle to an inward one, destroy the ability of the arm to passively hold weights away from the thigh. This must now be done by muscular activity. The muscles mainly concerned in accomplishing this are the deltoid and trapezius, which raise the shoulder and carry the arm from the side. The deltoid acts at a great disadvantage. Its mechanism is that of a lever of the third class in which the power is placed between the fulcrum and the weight. The power is represented by the attachment of the deltoid into the humerus, and the weight by the hand and its contents. As the distance of the weight from the fulcrum is about four times that of the power, every pound held in the hand will exert about a four-pound pull upon the deltoid. Also, in walking without weight carrying, the hand will cross in front of the moving thigh unless held away by muscle action. This leads to discomfort, as the weight of the limb alone when held away from the side for several minutes is tiring. This is a comparatively common disability and caused by various elbow injuries. Regardless of the cause of its destruction, or of specific change in anatomic relation, the passive carrying function of the arm can be restored by reversing the plane of the lower articular surface of the humerus to its normal direction. This the writer did, without disturbing the joint, by dividing the humerus above the condyles and bending the lower fragments with the attached forearm outward. Both the functional and cosmetic results were good. He operated from inside of the arm, thereby not necessitating the complete division of the bone.

Discussion.—PAINTER (Boston) mentioned the record of seven other cases, collected by Dr. Cotton, and thought Belstock's deformity of the arm was often the cause of scoliosis, and reported several observations, and one where this operation described by Dr. Hoffmann gave relief of the back symptoms. G. G. DAVIS (Philadelphia) had performed this operation and he, too, preferred operation from the inside of the arm, as it leaves some attached periosteum and less likelihood of injuring the musculospinal nerve, the ulna being out of consideration, as the bone is not cut through. HOFFMANN thought that he had been the first to operate for this deformity, and although several had been performed since he was not aware that Dr. Davis and several others had preceded him.

J. C. PINKHAM, JR., presented a brace for hyperextension of the spine.

STEELE reported a case of congenital absence of the tibia.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-fourth Annual Congress, Held at Boston, Mass., May 26, 27 and 28, 1902.

[Specially Reported for *American Medicine*.]

[Concluded from page 949.]

On the So-called Immunizing Treatment of Hay Fever.—E. Fletcher Ingals (Chicago). His associate, John Edwin Rhodes and himself, he said, had been encouraged by the favorable reports of H. Holbrook Curtis to make an investigation with the view of ascertaining the value of ragweed in the treatment of this disease. As certain patients were affected by the pollen from goldenrod it appeared to them best to use preparations from both this and the ragweed instead of relying upon either one alone. The two extracts were combined in equal proportions in all cases. Twenty patients had been put on the treatment, and replies to specific questions had been received from 18 of these. In addition to the internal medicine they were given adrenalin made up in a prescription to use as a spray. The results obtained were inconclusive.

Some Clinical Features of Hay-Fever.—G. B. Hope (New York). The speaker advised the rational treatment of the disease. Hypertrophy of the middle turbinate was usually found associated with it, and a radical removal of the affected part was generally followed by good results. John O. Roe (Rochester) said he had not materially changed his mind that hay-fever was due to a local disease in the nose caused by a local irritant and with systemic manifestations rather of a reflex character. The systemic manifestations varied according to the nervous susceptibility of the patient, and this led some to think the disease was a pure neurosis. The great object was to remove the local irritant. He agreed with Hope that the middle turbinate might also be frequently involved. He thought it a misnomer to talk about immunizing by the process described even if it were possible. Mackenzie believed that all the patients who believed they had been cured or benefited by this treatment must have been very susceptible to suggestion, and that they would have done just as well if they had been given an extract of *aurora borealis* or any other preparation. He was sorry this subject had come up. Such treatment as this opened the door to a good deal of irregular practice. Traveling quacks, he was informed, had already heard of this so-called remedy and were working it for all it was worth. The value of the report submitted by Ingals was destroyed by the fact that he had used adrenalin in conjunction with the remedy, as no one could tell to what extent the adrenalin and to what extent the internal remedy was responsible for the improvement. The fatal objection to the whole thing was the theory that hay-fever was due to pollen. He believed that "the flowers which bloom in the spring have nothing to do with the case." This was the first time that he had heard of this remedy being seriously regarded by any one in high authority. Swain said that the treatment of hay-fever had generally been so unsuccessful that when a gentleman made a report on a series of experiments it should be received with a certain amount of dignity. At the same time he must say that he had absolutely no faith in *Liquor ambrosiae*. Knight thought it unfortunate that they should retain the term hay-fever. Autumnal catarrh was, no doubt, a distinct variety of disease, due to a combination of causes. One of the factors was evidently something that existed in the atmosphere, and the extermination of ragweed at Bethlehem was said to have been followed by a disappearance of the disease. Generally he thought removal from the region of infection was necessary; his impression was that very few were cured by local operations. Casselberry agreed with Swain as to the justifiability of experimenting with new remedies, and admitted that he had been less ethical than Ingals inasmuch as he had experimented with Fraser's *Liquor ambrosiae*, the proprietary remedy used by Curtis. He thought he had discovered that there was nothing in it. He did not believe in the theory that one of the factors in the production of hay-fever was a structural change in the nose. The removal of a hypertrophied middle turbinate gives relief, but the patients have their hay-fever just the same. They simply get relief from better breathing. He wished, too, to utter a word of warning as to the supposed harmlessness of that operation. In his hands it was neither a painless nor a bloodless one. Rice (New York) agreed with a previous speaker that the use of adrenalin seemed rather to invalidate the experiments. Ingals said it was not used in all cases, and it was discontinued in others. He regretted that he had had to use the names of certain commercial houses, but he could not get the facts out any other way. He had no bias in the matter one way or another, but he was satisfied that a preparation is now to be had that can be relied upon, and he would like to see a committee appointed with the view of receiving reports from different members as to the success they obtain with this method of treatment, thus settling the question of whether it is of any value. The president said he had studied all the statistics of the Bethlehem Association in regard to ragweed and read all the literature on hay-fever. If the association desired the appointment of a committee, he would be glad to nominate one, but personally he did not think any good would result from it. The matter was allowed to drop.

The Cure of Stammering.—G. Hudson Makuen (Phila-

delphia). A patient was presented who had been cured of stammering by two weeks' treatment. The patient, who was 30 years of age, had stammered all his life, his speech being rapid, rambling and disconnected. His father and elder sister also stammered. The treatment consisted simply in educating the patient in "time sense."

Changes Caused by Vocal Strain.—Clarence C. Rice. The paper described the characteristic changes in the shape of the arytenoid cartilages that are occasionally to be seen in professional singers and actors and of the compensatory increase that takes place in the size and function of the false vocal bands in cases of impaired action of the true cords. The cartilages occasionally become changed by the violent concussion of one cartilage against another when these concussions are frequently repeated. These changes, as a rule, are not associated with general catarrhal processes and therefore should not be classified with catarrhal adenitis. When a lesion of the larynx exists alone it is right to look for the changes referred to, which only occur in persons who use their voices in some more trying way than ordinary conversation. When in a normal condition the cartilages come together like two soft rubber bodies; in patients who have been straining their voices the soft material is rubbed away and thus the cartilages were brought into direct contact. The reasonable treatment is to show the patient how to avoid violent strain. Singers who habitually sing above or below their natural register are apt to be subject to these changes, as are actors who have emotional parts to perform. The changes involve the impairment of some muscles and the greater activity of others, and to bring about a normal condition it is necessary that all the muscles should work in a harmonious way. The paper was favorably commented on by S. W. Langmaid (Boston), who advocated the adoption of better methods of instruction by vocal teachers.

Cervical Adenitis.—S. W. Langmaid (Boston). A series of cases showing the existence of an epidemic of nonsuppurative cervical adenitis was reported. In all the cases the attack commenced with a chill, the temperature was high but became normal in three or four days, and the enlargement of the glands disappeared without suppuration. In none of the cases was the larynx involved. Similar cases were reported by a number of the members.

The Chemic Pathology of the Saliva and Pharyngeal Secretions (Sialo-Semilogy) as a Means of Diagnosis.—D. Braden Kyle (Philadelphia). Very little is known about the chemistry of the ordinary saliva or secretions. The body is largely a chemic laboratory, in which changes are continually going on that may be harmless, beneficial, or productive of disease. An enormous field for speculation is opened up by a study of the saliva and secretions and the chemic changes they are capable of producing.

F. E. Hopkins (Springfield) reported two cases—one a case of incised wound of the larynx in which an hospital-patient was being starved to death by the neglect of the surgeons to close a small wound in the front of the larynx, and the other a case of a foreign body in the bronchus. In the first case the wound was opened and redressed, and the patient recovered. In the other, a girl of 13 while skating swallowed a small toy balloon. It was successfully removed from the bronchus after the performance of a tracheotomy, the belief being that it was in the trachea.

Treatment of Empyema of the Sphenoidal Sinus.—F. Whitehill Hinkel (Buffalo). Reference was made to the obscure character of the region dealt with, and while these diseases can no longer be considered rare, diagnosis is difficult and treatment not free from danger. Reporting twenty cases of which he had had experience, and analyzing the symptoms, the speaker showed the difficulty there is in localizing any one pain and saying that it is indicative of the disease. While the dangers of operation are considerable, they are much less than the dangers that may result from the neglect of sphenoidal empyema, which frequently leads to meningitis. Joseph H. Bryan (Washington) commented on the irregularities presented by the sphenoidal sinuses. No two sphenoids that he had examined had proved alike. Sphenoidal inflammation may be primary or secondary, but the former are certainly very rare. Emil Mayer (New York), speaking of the etiology of the disease, said cases of this kind have become much more common of late, and he believed that a causal factor of this is the automobile, rapid driving through the air forcing bacteria into the inner sinuses. Casselberry called attention to the frequent association of syphilis with suppuration in the sinuses, and the consequent desirableness of using anti-syphilitic treatment, at all events experimentally. The president reported a case in which a lady came regularly to him to have her sinuses washed out. She was not cured, but the washing out always gave her relief. Delavan (New York) said he had found iodid of potassium useful in treating such cases. Hinkel said that relief of distressing symptoms was all that he had been able to obtain.

Adenoma of the Nose.—Emil Mayer (New York). A case was described of a man who, as the result of a kick from a horse, had an enormous tumor, which was successfully removed and the man's face restored to very nearly its normal condition.

The Use of Rubber Splints in the Treatment of Curvature of the Triangular Cartilage.—J. Price-Brown (Toronto). The speaker advocated and explained the use of these appliances.

Leukoplakia.—Frederic C. Cobb (Boston). Tobacco is the

most common cause of the disease, other causes being alcohol, hot coffee, stomach trouble in rheumatic persons, etc. A large proportion of the patients who have the disease give a history of syphilis, though in all the fatal cases of his experience the patients denied syphilis but admitted being smokers.

A New Operation for Restoring the Columna and Adjacent Parts of the Nasal Septum.—John O. Roe (Rochester, N. Y.). The technic of the operation and the advantages offered by it were explained.

The following papers were read by title: **Perforating Ulcer of the Faucial Pillars Observed in Scarlet Fever**, Thomas Hubbard (Toledo), with report of cases. **Traumatic Abscesses and Necrosis of the Nasal Triangular Cartilage**, R. C. Myles (New York), with report of cases and special treatment for the prevention of external deformity. **Perichondritis of the Larynx**, M. R. Ward (Pittsburg). **Congenital Cleft of the Palate**, J. F. McKernon (New York), a further report on the operative technic and its results. **Some Precautions to be Observed in the Use of Suprarenal Extract**, John O. Roe (Rochester, N. Y.). **Improper Breast-Nursing as a Factor in the Production of Nasal Deformities: Adult Adenoids**, J. E. Logan (Kansas City).

Officers were elected as follows: President, J. H. Bryan (Washington); Vice-presidents, George A. Leland (Boston), Melville Hardie (Chicago); Secretary and Treasurer, James E. Newcomb (New York), reelected; Member of Council, J. W. Farlow (Boston). The following specialists were elected to active membership: Cornelius G. Coakley (New York), Charles W. Richardson (Washington).

THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Eighth Annual Meeting, Held at Washington, D. C., June 2, 3 and 4, 1902.

[Specially Reported for *American Medicine*.]

Surgeon-General GEORGE M. STERNBERG, in welcoming the Society to Washington, described the city as the center of scientific research where physicians are properly received as men of science. In his opening address the President, N. RICHARDSON (Washington), said that the medical profession is the actual scientific element, forming the foundation of Washington's culture. The scientific bureaus under the charge of experienced men attract scientists from the entire country. There are other attractions, among them four well-equipped medical schools. The speaker then referred to the different methods of studying medicine at the present time and deprecated the multiplicity of subjects which attract or distract the student's attention. They should see special medicine through general medicine, rather than general medicine through special. The growth of the Society during the past year had been very gratifying, there being now 233 names on the roll. He exhibited a number of oil bougies which had proved efficacious in earache, the formula being especially adapted to the early stage, either for infant or adult. He was prepared to furnish the formula to any apothecary who wanted to make them.

Points of Necessary Prominence in the Treatment of Catarrhal Deafness.—SARGENT F. SNOW (Syracuse, N. Y.). Deaf patients needed help; they need careful consideration; a good prognosis should be more frequent. After touching upon treatment by vapor and other methods, the author insisted that more care should be given to hygiene. There is too much coddling. Cold bathing should be more frequently indulged in; and when that cannot be done, patients can at least have the sponge bath and hard rubbing afterward. The feet also require special attention, and many of the organs, such as the liver and kidneys, have much to do with catarrhal deafness. Overindulgence in the good things of life should be guarded against, and the stomach and bowels should be attended to. Deafness in subacute cases may respond to crude treatment, but cases of 10 and 20 years' standing require special study of the habits and environments. The use of woolen underclothing is advisable, as is care in the use of instruments. C. R. HOLMES (Portland, Me.) agreed largely with Snow, except as to the use of underclothing. He pointed out the difficulty of changing warm underclothing and thought it was more judicious for catarrhal patients to wear heavier outer clothing, which they could easily remove on entering superheated rooms. C. DUNBAR ROY (Atlanta, Ga.) was also against woolen underclothing; he called attention to his method of using a solid silver catheter, which he could bend as he pleased without danger to the patient. S. MACCUEN SMITH (Philadelphia) also expressed himself as against woolen underwear, and thought highly of the benefits of the bath. He favored flushing the colon daily for a time and then perhaps once a week. GOLDSTEIN (St. Louis), E. B. DENCH (New York), WM. L. BALLENGER (Chicago), D. G. WISHART (Toronto), JOHN THOMPSON (Cincinnati), J. O. McREYNOLDS (Dallas), L. A. COFFIN (New York) and the author took part in the discussion, all being against the use of woolen underclothing with the exception of RICHARDSON.

[To be concluded.]

ORIGINAL ARTICLES

THE PRESIDENT'S ADDRESS.¹

BY

JOHN ALLAN WYETH, M.D., LL.D.,
of New York City.

Since the session held at St. Paul a year ago, a former president of this Association, paying the last great debt to nature, has passed

"To where beyond these voices there is peace."

Full of years and beyond the limit allotted by the Psalmist, Professor Edward Mott Moore, born in Rahway, N. J., July 15, 1814, died in Rochester, N. Y., March 3, 1902. He was one of the founders of the New York State Medical Association, a consistent and loyal friend of our national body and of an organized medical profession. Although his achievements in science were of a high order, his life was not circumscribed within the narrow limits of professional work. He was not only a skilful surgeon, bold and original, but more than this, he was a citizen of the highest type. The welfare of his neighbors, of his adopted city, State, and the nation were his. May his noble example be emulated, for it is just as much our duty to be true to the obligations of citizenship as to our profession.

Before dealing with the more urgent matters of this meeting, your attention is called to the Fourteenth International Congress of Medicine which will be held at Madrid from April 23 to 30, 1903. As your presiding officer I had the honor to receive an appointment from the Secretary of State as a delegate to represent this Association at the Congress, and was requested by him to appoint five additional delegates from this body. In conforming to this request the following gentlemen have accepted commissions, and have received certificates from the State Department to the Congress: Dr. Nicholas Senn, of Illinois; Dr. Maurice H. Richardson, of Massachusetts; Dr. George Crile, of Ohio; Dr. Richard Douglas, of Tennessee, and Dr. Edward B. Dench, of New York. It should be the duty and pride of the separate State associations to send at least one delegate to this important meeting, and in doing this to correspond with Dr. Angel Fernandez-Caro, Secretary-General, Fourteenth International Congress of Medicine, Madrid, Spain.

This session marks an era in the history of the American Medical Association, for we meet under changed conditions, and in this our trial year, while we are adjusting ourselves to the new order, we confidently ask and expect to receive not only the consideration and forbearance, but the generous help which should be accorded to this experiment in government by which we earnestly hope to avoid the embarrassments and failures that under the old regime characterized the meetings of a body so large and unwieldy as the general session.

These changes involve not only the government of the Association proper, but also a changed relationship of the State association to the national body, as well as the relationship of the county to the State organization. Under the old organization our business was transacted by delegates from State, district and local affiliated societies in the proportion of one delegate for each ten members, while now only affiliated State organizations have the right to send delegates, and these are only entitled to one delegate for each 500 active members, or fraction of this number. These form the House of Delegates, which is further reinforced by two members from each of the scientific sections of the Association, and one each from the Army, the Navy, and the Marine-Hospital Service. Under the old regime the State association bore the same relationship to the national body as did the city, county and district organizations. Now only the State association is represented, and they create the legislative body of the American Medical Association. In other words, the House of Delegates is a federation of all the State associations.

The reorganization at St. Paul, having taken away from the county organization its right to send delegates, also deprived the city, district branches, and other minor associations of the same privilege, requiring membership in the county society

when such exists as a prerequisite to membership in the State and the American Medical Association. This ruling dropped, at least temporarily, from the rolls of the Association a considerable number of physicians who had long been on the roster from State or local bodies which, by the laws then existing, were in affiliation with the National Association. While this action may have seemed unnecessary and unjust to these members (among whom were many of the most loyal and faithful supporters of the national body) for the common good, they should yield to the opinion of the majority, since calm reflection must convince any reasonable mind that one of the wisest steps the Association ever took was when it made the county medical organizations the basis of membership in the national body. There will hereafter be excluded from membership that fortunately small, but none the less existing group of unworthy members of our profession who, on account of the clumsy rules which formerly prevailed, obtained a place on the roster of the American Medical Association.

To the date of the reorganization in June, 1901, the roster of this Association was so inaccurate and unsatisfactory that the secretary and president-elect undertook the difficult task of obtaining a correct list of members. While one might infer that each organized State and territorial association could, from its records, furnish at short notice the names of all eligible to membership in the American Medical Association, in only a very small proportion of these subordinate bodies was a reliable list available. It then became necessary to direct a circular letter, State by State, to every name on the roster then existing, asking for the necessary information. Since, for final confirmation, these names must be referred back to the subordinate organizations in which membership is claimed, it will be seen that some time must elapse before the completion of a perfectly reliable list. The lack of business-like methods with which our profession is charged is in a manner sustained by this admission, and it emphasizes the necessity of a thorough reorganization of all the societies in affiliation with the national body upon practically a uniform plan.

Scarcely second in importance to a uniform scheme of reorganization is that of a uniform standard of requirements for the practice of medicine in the various States. It is of vital interest to the welfare of the profession that the question of reciprocity or interstate comity should be settled so that without any sacrifice of the very highest requirements a physician in practice in one State, having gone before a competent board, upon change of residence might be permitted to practise without being subjected to a second State examination in the place of his adoption. The House of Delegates will, without doubt, act upon this matter at this session.

Referring to the subdivisions of the scientific work of the Association, Article V of the constitution empowers the House of Delegates "to authorize new sections which may from time to time be organized, as the necessity for their existence arises." With increasing membership and the consequent larger attendance it may be imperative in the future to create new sections, but this should be done only after careful consideration and not until it is demonstrated that the material of high scientific value offered to the 12 sections now existing is more than can be utilized in the time allotted for the meetings.

The by-laws require every member to register in one of the sections, and it would be well to limit each reader to a single paper before the section chosen. The Association should insist that the officers of sections exercise a most rigid scrutiny of the papers referred to them. If we are to achieve our high purpose, if we wish to attract to our organization the great bulk of the better element of the medical profession, we must present through our sections papers which demonstrate not only the high scientific attainment of the author, but the undoubted value of the material presented. We are judged by our works, and if at our meetings, and the publication of our papers in *The Journal of the American Medical Association*, which carries them to all parts of the earth, any unworthy material finds a place, it can but reflect discredit upon the Association.

Article VI of the new constitution says: "The House of Delegates shall have authority to provide for and to create such branch organizations as may be deemed essential to the promotion of the welfare of the medical profession."

¹ Delivered at the Fifty-third Annual Session of the American Medical Association, held at Saratoga Springs, June 10-13, 1902.

For the present I would not advise the establishment of these subdivisions, but ultimately it may be found necessary to divide the States and territories according to population and geographic position into district branches where meetings may be held at the convenience of the States represented and without interference with the annual session of the National Association.

Let us hope that the various tri-State societies and the sectional organizations, such as the Southern Surgical and Gynecologic Association and the equally successful Mississippi Valley Medical Association and others of like character, attracted by the high and unselfish aims of this organization, may appreciate the vital necessity of a united profession and vote themselves into district branches of the American Medical Association. Truly, in such a union there would be strength so potent and influence so far reaching that we could safeguard, without doubt, the material interests of the profession, elevate still higher the standard of medical education, secure the enactment and enforcement of just and rigid medical laws, enlighten and direct public opinion in regard to the broad problems of State medicine and demonstrate to the world the practical accomplishment of our science.

Article VII of the new constitution, which deals with "Sessions and Meetings," refers the place and time for holding each annual session to the House of Delegates. They are also, under Article IX, empowered to appropriate funds for defraying the expenses of the annual meeting, as well as for enabling the standing committees to fulfil their respective duties. I would recommend to the consideration of the Association the propriety of selecting in each of the geographical subdivisions of the United States, in which the sessions are successively held, some suitable location which has been found to be well adapted to the work of the organization, and to which we could return when the meeting is again to be held in that section of the country. As a scientific body intent upon fostering the growth and diffusion of medical knowledge, it is of vital importance to avoid in the selection of our place of meeting everything that could detract from the closest attention to the scientific program. The smaller cities with ample hotel accommodations and halls conveniently located, have always yielded a larger attendance before the sections, and consequently a greater benefit to our members than the cities of larger size with their multitude of distractions. Moreover, it seems scarcely in accord with the dignity of this great body to require through its committee of arrangements that the physicians of the State and place selected for the convention should be held responsible for the expenses of that meeting. Every suggestion of commercialism should be avoided, and this prosperous organization should assume the entire responsibility and management of these annual sessions.

One of the most important duties imposed upon the House of Delegates is the selection of those who conduct its business affairs. In the past, the Association has shown a keen discernment in securing for its trustees and standing committees men not only of executive ability, but held in high esteem as representatives of a profession which, according to the Code of Ethics, "should be temperate in all things, and which requires greater purity of character and a higher standard of moral excellence than any other calling."

You will in the regular order of business hear the reports of your five standing committees, and I am called upon to speak of but one, viz.: The Committee on Medical Legislation, which the by-laws adopted in June of 1901 directs to be appointed by the president, and to consist of one delegate from each State. In accordance with this requirement I mailed to the president of each State and territorial organization in affiliation with the American Medical Association a letter asking him to nominate one member for this committee. To all replies to this letter the name of the delegate was sent to the chairman of the National Committee on Medical Legislation, Dr. H. L. E. Johnson, Washington, D. C. It will be remembered that at the session in St. Paul in 1901, the Association ruled that the National Committee on Medical Legislation, consisting of Dr. H. L. E. Johnson, Washington City; Dr. William H. Welch, Baltimore, and Dr. W. L. Rodman, Philadelphia, should be continued until the meeting in June, 1903, and should have the same power to

act in the interest of the Association that they had previously enjoyed. All the legislative affairs of the Association, I have referred to this committee at Washington, and have authorized them to call the full committee on medical legislation for consultation, advice or aid whenever their services might be required.

In his message to Congress, December, 1901, the President recommended the establishment of a Department of Commerce and Industries. In its passage through the Senate the name was changed to that of Commerce and Labor. Before the national legislature at the same time was a bill known as the Perkins-Hepburn bill to increase the efficiency and to change the name of the United States Marine-Hospital Service to that of the United States Health Service, transferring this from the Treasury to the new department.

The American Medical Association has on several occasions expressed its desire for the establishment of a Department of Public Health, either as a separate department of the government, or as one of the important bureaus of a department. Probably on account of a lack of thorough organization and cooperation it has not been able to obtain this important recognition for the medical profession. In view of these repeated failures it would seem advantageous to the scheme of establishing ultimately a Department of Public Health that the Perkins bill should become a law, because the United States Marine-Hospital Service could then with more propriety be removed from the new Department of Commerce and Labor into a separate and independent department. This department should be in charge of a medical officer to direct our foreign and insular quarantine, interstate quarantine, the medical supervision of epidemics, and in fact all matters pertaining to the general health of any group of States or of the entire country.

The work of this officer and bureau can only be carried out with success by the earnest cooperation of the health officers of the various localities and States, and of the advisory board for the hygienic laboratory provided for in the Perkins-Hepburn bill, for the national and local authorities acting in harmony would be better able to prevent the importation of disease and to stamp out epidemics which may occur despite the greatest vigilance, and this with the minimum disturbance of the resident public, and of the commercial interests of more remote sections.

As the representative organization of the medical profession of the United States it is our duty to cooperate with the medical corps of the Army in the effort to procure legislation which will not only uphold the rights and dignity of the medical officers in the public service, but will give better protection to the health and lives of our troops.

The status of the Medical Department of the United States Army is fairly stated in a circular issued by the medical officers stationed in the Philippines, in which they claim that the present condition of affairs "is regarded as a menace to the efficiency of the medical department, as it is felt to be unfair and unjust." In no other staff department is promotion so slow as in the medical department. It is graded for rank, promotion and pay below every other staff department of the Army, and, with the exception of second lieutenant, is graded below the line. A medical officer, under the provisions of the present law, to obtain a colonelcy must pass through three times as many files as an officer of the Quartermaster's, Subsistence, or Pay departments; through more than twice as many files as an officer of the Engineers' or Ordnance departments, and more than 1½ times as many as an officer of the Signal Corps. Officers of the line, having attained the rank of major, have to pass through but four files to attain the rank of colonel, while the medical officers have to pass through nine files. All these facts are fully appreciated by the younger physicians of our country, and by the volunteer and contract medical officers, hundreds of whom are now serving with troops and are declining to become candidates for a position offering such an unpromising career and so little in the line of promotion and emolument.

The Secretary of War has been officially informed by the Surgeon-General that the number of available medical officers is being rapidly diminished, and he anticipates he will soon be unable to supply the demand for medical officers to replace

those constantly returning from the Philippines, unless the prohibition placed by the Secretary of War upon the appointment of additional contract surgeons is removed. He says: "The service would no doubt be more attractive to well-educated physicians if the prospects for promotion were better, and I respectfully commend that Congress be asked at the present session to add to the medical corps of the Army, 2 colonels, 6 lieutenant-colonels and 25 majors. This would give 33 additional vacancies and would furnish an incentive to volunteer medical officers and contract surgeons now in service to seek admission to the regular Army. I would also recommend that the age limit for volunteer surgeons and contract surgeons who have rendered satisfactory service for two years or more be raised to 36 years."

Those who have carefully studied the subject can but conclude that under the statutes now in force many lives have been sacrificed and much suffering has resulted from lack of thorough cooperation between the officer in command and his chief surgeon, and without doubt it would be to the interest of the service if medical officers were always consulted with regard to the location of camps and military posts for the purpose of getting expert opinion upon sanitary questions. In order to impress upon commanding officers the importance of military hygiene, and the greater necessity for this cooperation with the medical corps of the Army, the Surgeon-General has insisted that there should be established at the Military Academy at West Point a course of instruction in military hygiene.

It is the duty of this Association to lend its best efforts to the Surgeon-General, a former president of the American Medical Association, and one not only in a position to suggest the legislation which would best serve the interests of the Army, but one whom we know to be zealous of the interests, rights and dignity of the medical officers of the War Department.

The committee to whom was entrusted the question of vivisection has been diligent, and it would seem successful, in its efforts to prevent unwise and injurious restrictions upon this important method of research.

The wide dissemination of the contagion of smallpox in the United States within the last few years demands the most earnest attention of the medical profession. Such ignorance or indifference to the immunizing power of vaccination is a matter of surprise in an advanced stage of civilization and, while laws for compulsory vaccination would, without doubt, be to the best interests of the whole people, it seems so contrary to the spirit of our institutions as to be impolitic as well as impracticable. It falls upon us as physicians to labor unceasingly to impress upon the communities in which we reside the necessity and safety of this immunizing process.

We will be wise if, from time to time, we make a critical analysis of our past, realize exactly what we are doing, and upon this base such conduct as will assure to our successors a more satisfactory condition of our profession and a higher achievement of this Association. Being human we are too apt to shut our eyes to unpleasant truths, to exaggerate the value and the importance of our own performances, and to think that what we have been taught to believe, or what we wish to believe, is right and unchangeable. Let us ask ourselves plainly: Is the medical profession of the United States what it should be? Has it won the influential position to which it should aspire? Has it gained the power to secure just and proper legislation? Has it lived up to its obligations, and has the American Medical Association, which claims to represent 120,000 regular practitioners of medicine in the United States, fulfilled its mission? How many of us after due reflection can consistently answer these questions other than by saying plainly and regretfully—No. And wherein lies our weakness? To say we are part of a young and scarcely organized country; that our profession is widely dispersed over vast regions so remote from each other that contact and cooperation are difficult, will not entirely satisfy the fairly critical mind. Such excuses might have been sufficient at an earlier date, but not now. To say that, despite these and other embarrassments, we of the United States have given to mankind the unequalled boon of ether-anesthesia; that, through the achievements of members of our profession and of this Association, medical and surgical science has been

greatly enriched; that great specialties, recognized the world over, have been developed; that operations bold and original have been established beyond controversy; and that by reason of these various contributions to the science and art of surgery and of medicine millions of lives have already been saved, together with the merciful mitigation of suffering which all this implies. While a repetition of this may flatter our vanity, it will not wholly satisfy us when in honest purpose we realize how great are our shortcomings.

It is a fact painful to acknowledge that of the three so-called learned professions, the ministry, law, and medicine, ours is accorded the inferior position, and we who day in and out, in every home of the land, are close in the personal friendship of our patients, respected and loved as individuals, are incapable of wielding by organization and discipline the powerful influence of a united profession aiming at a high and honorable purpose. And what have been the results of this house divided against itself? Witness the snail-like progress which marked the various steps in securing our laws for elevating the standard of requirements in medical education and for medical practice; witness the opposition to our efforts in securing better sanitary regulations, and in the struggle to protect the public from the horde of uneducated or misguided persons who, under the guise of Eddyism, osteopathy, and other schisms, insist upon being permitted to take charge of and treat human beings suffering from disease without submitting themselves to the State examination legally required of us.

There are, in my opinion, two principal causes of this evident weakness of the profession. First, the insufficient methods of medical education which have prevailed for the greater part of the first century of our national existence; second, the lack of organization.

The code of this Association says: "Those admitted into our ranks should found their expectations of practice upon the extent of their qualifications." We stand committed as the champion of higher medical education and the elevation of the standard of requirements applicable not only to the entrance examination, but to a rigid examination before the degree is received, as well as by the State before permission to practise is granted. To this rigid examination this Association, by its rules of conduct, demands another important essential. The highest order of learning, the greatest amount of skill may not make an honor to our calling, for "there is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical, and to attain such eminence is a duty every physician owes alike to his patients and his profession."

The American Medical Association is the sponsor for organized medicine in the United States, and failure to accomplish this end implies the failure of this Association. We must not fail, nor will we, unless we falter in carrying out the plan of reorganization in the liberal and progressive spirit which characterized the session of 1901. It is our plain duty to endeavor to bring about the adoption by the various constituent bodies of a practically uniform constitution and by-laws for each county, and for each State, modified only as the local conditions may require, and all governed by the same rules of conduct. These rules, as at present given in the Code of Ethics, adopted many years ago by this Association, should be also a subject of serious consideration at this time, for we can not claim consistency or be logical in argument until there is but one code for the National Association and for all of the State organizations represented in the national body. This, as you well know, does not now prevail. Some years ago there lived and labored among us for the good of mankind and the honor of the profession a man whose genius was of the highest order, and whose fame carried the name of American surgery throughout the civilized world. He was one of those fearless pioneers in science who found his place ever on the frontier clearing the way for those who were to follow. In 1876, at the meeting of the American Medical Association in Philadelphia, Dr. J. Marion Sims, in his presidential address, referring to the Code of Ethics, says: "The time will come when your organic laws, like the Constitution of our country, will require modifications and amendments to suit a higher intelligence, a broader education and a greater destiny." In my

opinion, the time has come when we can not absolve ourselves from the responsibility of doing away with the inconsistencies for which we may now be properly criticised.

Such have been the changes in the statutes of a majority of the States since the code was adopted by the respected founders of this Association that we find it insisting upon conduct on the part of our members which is contrary to the laws of the States in which they reside. For instance, one section forbids a member of the regular profession to act upon a board of examiners which has to pass upon the legal qualifications of persons not graduates of regular medical colleges, while in 38 of the States represented here the civil statutes require these boards which are composed in great part of members of the Association to examine, pass upon and sign certificates or licenses to practise of homeopaths, eclectics and other subdivisions of medical practice. In six of the States, including the District of Columbia, the law requires three separate examining boards. In Mississippi, North Carolina and South Carolina the examining boards are entirely composed of regular physicians, and in one of these States (Mississippi) while none but regulars are allowed on the board, the law explicitly says: "Distinction shall not be made between applicants because of the different systems or schools of practice that may be chosen." In almost all the States and territories regular physicians are compelled by the laws of the State in which they reside to disobey the injunctions of this section of the Code of Ethics. A modification of this and other sections of the code must be a part of the liberal plan of reorganization which we have essayed.

In conclusion, I ask this Association to stand for more than the healing art. To labor for the alleviation of suffering and for the restoration of health is a noble avocation, but to teach our fellows how to avoid disaster is a prouder privilege and a higher duty. We should be teachers of men. How better can we protect the public from disease in all its various forms and insidious processes than by perfecting in every county and in every community an organization which shall be ever watchful and insistent upon obedience to the laws relating to the public health!

THE RELATION OF MEDICAL SCIENCE TO COMMERCE.¹

BY

FRANK BILLINGS, M.S., MD.,
of Chicago.

I have been informed that there is no rule of the Association which fixes the subject of this address. I hope I may be pardoned when I depart from the custom which my predecessors have usually followed when they confined the subject of the address to the progress of medicine during the year just past.

We live in a period of the greatest activity of the history of the world. Modern inventions annihilate time and distance. Electricity and steam approximate the most distant parts of the civilized globe. Vast amounts of capital are invested in electric, steam and other related interests.

Large commercial enterprises are carried on or launched into new fields, which require money, the employment of the brightest intellects and skilled and common labor.

Competition is great in all the affairs of men. The struggle for supremacy between nations and between men was never so fiercely contended as now. The world is richer than ever before. Great individual fortunes, the result of the efforts of the few years of a single span of life, are seen everywhere. The wage of the laborer in our country is larger than ever before and he may command the necessities as well as many of the comforts of life.

This modern restless activity, with its nerve-racking; the evil results of a luxurious life; the moral obliquity which it may breed, as well as many other conditions which affect the health of individuals, while of interest to medicine, do not

concern us in the consideration of the broader subject of this paper.

THE BROADER APPLICATION OF MEDICAL SCIENCE.

Medical science is interested in and is of greater importance to the world than ever before, in protecting individuals, States and nations from infectious diseases, which are rendered more dangerous than formerly because of a denser population, increased facilities of communication between the peoples of the earth, by travel and by national and international interchange of food and other commercial products.

Medical science, too, is closely identified with the vast monied interests of the merchant marine and of national and international commerce. Quarantine against the spread of infectious disease is applied wisely or foolishly in direct ratio to our knowledge or ignorance of the cause, the means of transmission and the evolution of disease. So, too, medicine has to do with the knowledge which will enable man to escape from and finally remove the conditions which cause infection and which render a country uninhabitable to civilized man.

Medical science must safeguard man against infection and intoxication from parasitic diseases of animals used for food and from contaminated and adulterated food and drink. Not only from a humanitarian standpoint is medical science related to commercial pursuits, but the sciences related to medicine have done much to preserve animals used for food and to protect agricultural interests of many kinds from disease and destruction.

One may say, I think, that in no other pursuit which engages the serious attention of men are there as many earnest, unselfish and philanthropic workers as there are today in the broad field of medicine.

In the various departments of science related to medicine one finds educated, skilled, energetic, earnest workers after truth, willing to sacrifice home, friends, health and life for the advancement of the science which has for its primary object the conservation and prolongation of human life. Pecuniary reward for them is never large and never commensurate with the character of the work.

Furthermore, great and astounding as are the modern commercial inventions, the progress made in medical science during the last 20 years is equally great.

Is modern medicine prepared to meet the demands of modern progress concerning the questions which interest humanity and commerce? Let us answer the question by a brief retrospect of the progress of medicine and by a statement of the present status of medical science.

FIRST APPLICATION OF PHYSICAL SCIENCES TO MEDICINE.

From the latter part of the eighteenth to the beginning of the last quarter of the nineteenth century the science of medicine developed steadily upon a rational physical basis. Jenner's discovery of the protection of the human race against variola by vaccination with cowpox illuminates with noonday splendor an era otherwise gloomy with its hypotheses, theories and superstitions concerning disease.

This single brilliant achievement of the end of the eighteenth century was the beginning of the evolution in medical science which made the nineteenth century notable. The application early in the nineteenth century of physics, of physiology, of pathologic anatomy and of chemistry to the study of disease, developed a more exact knowledge than before existed. To Auenbrugger that early period owes much through the discovery of methods of physical examination which were slowly developed and perfected by Corvisart, Laennec, Piorry, Skoda, Wintrich, Traube, Louis, Cheyne Stokes, Graves, Corrigan, Flint, Seudamore, and others. Pathologic anatomy made wonderful strides under the labors of Virchow, Rokitansky, Arnold, Stilling, and their students. Physiology was developed by the labors of Johannes Müller, Brücke, Helmholtz, Trousseau, Vierordt, Foster, Carpenter, Magendie, and their disciples; and the fuller knowledge embraced in physiologic chemistry was added to the rapidly-broadening field of medicine by Hoppe-Seyler, Schwann, Stricker, Prout, Liebig, and others.

BACTERIOLOGY.

The development of the microscope during the second and third quarters of the past century added a mighty weapon to

¹ Address in medicine, delivered at the Fifty-third Annual Meeting of the American Medical Association, held at Saratoga Springs, N. Y., June 10-13, 1902. Published by the courtesy of the editor of the *Journal of the American Medical Association*.

the armamentarium of the physicist. The microscope was an aid to the investigators of pathologic anatomy, of physiology, of chemic physiology and of other subjects, and it was the one necessary means by which the teeming world of bacteria was made visible. This discovery and the knowledge which has come from a study of these infinite and yet often mighty beings has revolutionized medicine.

It was Pasteur's brilliant studies of the infective microbes of air which led to the discovery of the source of contamination of wounds and which made it possible for Lister to evolve a method of protection of wounds from air infection. The aseptic surgery of today is but the evolution of Listerism which had its basis of existence in the discoveries of Pasteur. With the microscope Pasteur rid the world of the superstition of spontaneous generation. He proved the infectiousness of dust-borne air through the microbes it carried. He blazed the way for others in the study of bacteria as agents of putrefaction, fermentation and of pathologic infection in animals.

Bacteriology became an exact science with the discovery of Robert Koch of cultural methods which made differentiation of bacteria possible. The causative relation of bacteria to all infective processes was practically proved by the laws promulgated by Koch. In 20 years the bacterial cause of tuberculosis, typhoid fever, cholera, diphtheria, pneumonia, pyogenic processes, erysipelas, gonorrhea, epidemic meningitis, epidemic dysentery, the plague, charbon, glanders, tetanus, influenza, and lepra has been proved.

PARASITES.

The discovery of the hematozoön of malaria by Laveran; the recognition of the ameba of dysentery by Loesch; of the ray fungi and especially the actinomyces as infective agents in the lower animals and in man, and the more exact knowledge of other animal parasites infecting man and animals, which the microscope has made clear, have been as epoch-making in parasitology as the discoveries of Pasteur and Koch in bacteriology.

The recognition of the relation of bacteria, protozoa and animal parasites to infective disease has been the means of a more exact knowledge of the clinical phenomena of disease, of morbid anatomy, of physiology and of physiologic chemistry than would have been possible without it.

TRANSMISSION OF INFECTION.

The knowledge of the cause has led to a study of the life-history of infective organisms outside of as well as in the animal body. The mode of propagation, the means of transmission of infective microorganism, by fomites and other agents, has become known. The role which insects which infest animals play as definitive or intermediate hosts has been studied and proved. The discovery of Manson of the transmission of *Filaria sanguinis hominis* by the mosquito was of vast importance as a suggestion of the mosquito as a definitive host in malaria. The investigations of Manson, Ross, Celli, Grassi, Dionise, Marchiafava, Bignami, Koch, and others have made our knowledge of malaria exact. With the microscope we may now not only recognize malaria and differentiate it from the other infective fevers, but we may also at the same time recognize by an examination of the blood the type of malarial infection and foretell its course. Not only may we recognize the disease definitely and apply the drug treatment more rationally, but the knowledge of the means of its transmission from man to man enables us to apply preventive measures which, as we shall see later, are of the greatest importance from a commercial as well as from a humanitarian point of view. The recognition of the role of the mosquito in malaria has been, furthermore, a stimulus to the study of the same insect in relation to other infections.

The brilliant research work of our own Reed and Carroll in 1900 in Cuba, by which they proved that the mosquito of the genus *stegomyia* is the sole means of the transmission of yellow fever from man to man is of great importance as a scientific fact. The influence of this discovery upon mankind as a prophylactic against a disease which has killed multitudes and also from a monetary point of view, in reference to commercial pursuits, is not appreciated at this time as it should be.

Hardly less important is the fact that the *Bacillus pestis*

may infect fleas and these in turn infect rats, mice and man. It is important, too, to know that pests like the housefly may be carriers of infective bacteria from refuse filth to our kitchens and tables and contaminate food and thus infect us with typhoid fever, cholera and perhaps other diseases which are propagated by filth.

The study of bacteria in the laboratory and in the blood tissues of infected animals has led to the discovery of the means by which bacteria disturb the animal economy and produce phenomena expressive of disease. The fact that the blood and tissues of infected animals contained a toxin which could also be isolated from pure bacterial cultures in the laboratory and that this toxin when introduced into an animal was capable of exciting the same phenomena of disease as the bacteria themselves, was positive proof that bacteria excite disease phenomena by means of a toxin which they form. The elaboration of antitoxins in the body of the infected animal was also promptly recognized and served to explain not only the self-limitation of many of the infective diseases, but it also helped us to understand the immunity which one attack of some of the bacterial diseases affords.

PROTECTIVE INOCULATION.

Long before bacterial toxins were recognized as the cause of disease phenomena, Pasteur established the principle of protective inoculation with bacteria of lessened virulence, which was brought about by attenuation of the bacteria by a modification of cultural methods and also by serial inoculation of certain lower animals. This he successfully applied to charbon in sheep and cattle and to chicken cholera. In both of these diseases the bacteria were known and the problems of attenuation could be carried on in the laboratory by direct study of the bacteria before inoculation and afterward when they were recovered from the bodies of the animals experimented on.

His final life's work was no less important, in firmly fixing the immunizing influence of attenuated bacterial inoculation in rabies. Here the discovery of the infecting bacterium escaped every known means of recognition by examination of the tissues and blood of the infected animals microscopically and culturally. Apparently there are no pathogenic bacteria which we do not know because we have not yet recognized the proper culture material for the successful artificial cultivation of them, nor have we discovered the tinctorial reaction which they may possess and, finally, it is not improbable that they may be infinitely smaller than other bacteria and, therefore, more difficult to recognize.

Pasteur recognized the fact that in hydrophobia the brain and other nervous tissue of an infected animal are capable, when inoculated into another animal's brain, of producing the disease. That the infected brain, used for inoculating animals, contained the bacteria which caused the disease, was proved by the fact that a stage of incubation occurred in the inoculated animal and that a series of animals were successfully inoculated consecutively from the first. Pasteur then successfully attenuated the unknown bacterium of hydrophobia present in the nervous tissues of an inoculated animal by desiccation of the nervous tissue in a sterile apparatus by methods too well known to repeat. Nor is it necessary to occupy time in repeating the well-known methods pursued by Pasteur and his pupils in the use of the graduated doses of attenuated bacteria contained in the nerve tissues in the prophylactic treatment of rabies. To Pasteur, therefore, do we owe the scientific recognition of the principle of protective inoculation.

It is now a well-known fact, however, that inoculation against disease was practised by the Chinese 1,000 years ago. They inoculated the healthy with smallpox as a protection against the disease. Variolization was also practised in Europe in the seventeenth and eighteenth centuries. We read that in 1718 Lady Montague caused a son to be inoculated with variola in Italy and that two years later her daughter was inoculated in England. The practice was followed in Ireland long after the successful establishment of vaccine as a protection against variola. Inoculation against syphilis, or syphilization, was also practised in Europe during the nineteenth century.

To Jenner, however, do we owe the first example of the protective inoculation by means of an attenuated virus. This

attenuation we now know was established by the accidental inoculation of milch cows with smallpox, producing a modified disease, vaccinia. That vaccinia, produced in man by inoculation direct from the cow, would protect against smallpox was proved when in 1798 Jenner successfully vaccinated, direct from the cow, the five-year-old lad William Summers.¹

The thousands of successful vaccinations which have since been performed and the thousands of lives which have been saved by vaccination are proof of its validity and utility. The immunity established by protective inoculation is apparently the same as that induced by an unmodified attack of variola.

SERUM THERAPY.

When chemistry had revealed the nature of bacterial poisons and experiments established their relation to the phenomena of disease, it was proved that substances were formed in artificial culture media and in the blood and tissues of infected animals which had the power to neutralize the effect of the bacterial poison in other animals infected with the same organism. Further investigation showed that an animal inoculated with the laboratory preparation of antitoxin was protected against the disease.

Furthermore, it was found that the blood serum of an animal inoculated with bacteria in a non-fatal and repeated dose contained an antitoxin. When the blood-serum of the infected animal was injected into a healthy animal, the latter was protected against the original disease.

Antitoxin was, therefore, proved to be formed in artificial media of bacterial cultures and in the bodies of infected animals. When the antitoxin thus formed was injected into an animal it had the power to protect it against the particular bacterial infection, or, if given subsequent to the infection of the animal to mitigate the severity of the disease or to entirely check it.

Thus, by Koch and his students, was serum therapy established as a principle. Upon this principle there has been established and given to the world the antidiphtheric serum of Behring and of Roux.

A curative or immunizing serum has been developed for Asiatic cholera, tetanus, erysipelas, plague, epidemic dysentery, streptococcus infection and other diseases. While the serum treatment has not proved successful in all the diseases in which it has been used, it has been so successful in some—diphtheria for instance—as to firmly establish the principle of serum therapy.

INFLUENCE OF BACTERIOLOGY UPON PRACTICAL MEDICINE AND SURGERY.

These practical results in specific prophylactic and curative therapy is but a part, however, of the influence which bacteriology has had upon medicine. The stimulus given by bacteriology to the study of pathologic anatomy, physiologic chemistry, clinical phenomena and of physical and chemic changes of the fluids and tissues of the body, has resulted in a knowledge so comprehensive that medical science has been revolutionized within the last 20 years. Speculative theories and hypotheses have given place to facts based upon sound principles proved by experiment and clinical observation.

Bacteriology made possible the comprehension of perfect cleanliness and enables the surgeon to invade every part of the body without fear of infection and has saved thousands of lives which 25 years ago perished miserably as the result of disease at that time inoperable, or the result of infection from contact with the surgeon. By means of cleanliness and skill, induced by a broader experience, the surgeon has been able to add to our knowledge information of great value which could have been obtained probably in no other way. He has been able to study disease in the living body and show the relation of a disease process to infection. He has thus been able to clear away many of the misconceptions of symptomatology and diagnosis, especially in disease of the abdominal organs.

Bacteriology has stimulated laboratory clinical diagnosis. Bacterial reaction to sera and blood cultural tests are of the greatest aid to diagnosis. Clinical research work has command of an armamentarium consisting of a knowledge of pathologic

anatomy, of physiology, of bacteriology, of chemic physiology and of physics, which allows of a precision in diagnosis never before at the command of the physician.

From the foregoing it seems sufficiently demonstrated that today medical science possesses a knowledge so exact that we may answer definitely the question of our relation to the commercial affairs of the world. Infectious diseases which affect agricultural interests, like swine plague, rind pest, fowl cholera, glanders, tuberculosis, actinomycosis, trichinosis and many of the parasitic diseases of plants and of animals, have been studied by scientists with most definite results.

PREVENTION OF INFECTION.

Today no sane man believes in spontaneous generation. The presence of an infective disease, either bacterial, protozoic, parasitic or fungous, means the recognition of progenitors in the near environment of the infected organism. In practically every one of the diseases of animals above named the scientific investigator has already discovered the nature of the infecting agent, knows its life history, what conditions are most necessary for its propagation and multiplication and what will remove and annihilate so dangerous an enemy.

Our Department of Agriculture, and especially the Department of Animal Industries, has done much to place comparative medicine on a scientific basis. Briefly stated, there is not a fungous-parasitic, animal-parasitic, protozoic or bacterial disease of the lower animals which cannot, with our present knowledge, be stamped out for all time.

Why do the acute epidemic infections attack the swine, fowl, and cattle of the agriculturist? Because the causative germ is allowed to live and multiply after a former epidemic, or it is transplanted from place to place by infected animals or by fomites. All of these acute diseases of the lower animals are preventable. One has but to read of the labors and investigations of Pasteur in relation to charbon, to the silkworm disease and to fowl cholera to know what indifferent, careless methods may do to prolong and propagate an infection. On the other hand, proper precautions as to the destruction by fire of the infected bodies of animals and plants, the application of cleanliness through the use of abundant pure water, pure food, air and sunlight would extinguish an epidemic.

This may imply the loss of infected property by the individual, the municipality, the State or the National Government, but fall the loss where it may, it is often necessary to destroy absolutely the infected organism that the greater commercial interests as well as the health of the people may be preserved. For example, actinomycosis of cattle, trichinosis of swine, tuberculosis of cattle, may be absolutely controlled and finally obliterated by proper sanitary measures. The expense of such an undertaking would be relatively great, but under the direction of scientists it can be done. Pasteur, with the aid of the government of France, abolished swine plague, charbon, silkworm disease and other conditions harmful to the agricultural interests, with the result that millions of francs were saved to individuals, to corporations and to the government.

The same happy result would occur here and in addition the health of our people would be protected against the possible infection with tuberculosis, actinomycosis, trichinosis and intoxication from other infected animal foods.

SMALLPOX.

But what of the epidemic scourges of the earth, smallpox, yellow fever, cholera and the plague? No rational individual can for a moment doubt the protective influence of bovine vaccination against smallpox. Let one but look up the statistics of the mortality of this disease in the antivaccination period and he will become convinced of the utility of protective vaccination. In London the annual mortality from smallpox from 1660 to 1810 per million of the population was 2,040 to 5,020, while with vaccination, not adequate, however, the death rate per million was from

1831 to 1835.....	830
1838 to 1855.....	513
1854 to 1871.....	388
1872 to 1882.....	262
1883 to 1892, only.....	73

In Germany where variola had decimated the population in the prevaccination period, thorough vaccination has practically

¹ The Summers lad was the first to receive the vaccine direct from the cow. James Phipps, aged 8 years, was vaccinated from a milkmaid, May 14, 1796.

stamped out the disease. Compulsory vaccination properly enforced would effectually eradicate the disease and would free commerce of the losses due to quarantine regulations. The question of individual rights, especially under a republican form of government, is debatable when one considers that science has proved the efficacy and utility of protective vaccination against variola; that with modern methods the process is free from the danger of inoculation with any other disease; that vaccinia is practically a harmless disease and, finally, that an individual right may become an evil when the practice of it subjects others to unnecessary risk of health, life and property.

Medical science, therefore, possesses the knowledge to rid the earth of variola. From a humanitarian point of view, this knowledge is priceless. Still, let one but compute the sum saved to the nations of the earth by vaccination, estimating each life saved at \$5,000, the usual valuation placed upon human life by statute. Great as would be this sum, it is many times less than that saved to the commercial interests of the world by the control of the disease which even inadequate vaccination has afforded. Think for a moment of the loss to commercial interests by quarantine and other restrictive measures, in the event of an epidemic of variola, without protection from vaccination.

THE PLAGUE.

The plague, the Black Death, which was first recognized in Europe in the year 543 as the *Peste Justinienne*,¹ became pandemic in the fourteenth century, and 24,000,000 people are said to have died of it. In 1655 London alone lost 70,000 people from the plague. It disappeared from Europe about 1720. It continued, however, in Egypt, Asia and other Eastern countries in small foci, occasionally occurring as severe local epidemics. In 1830, 60,000 people died of the pest in Bagdad. During the remainder of the nineteenth century it appeared sporadically in Asia, Turkey, Tripoli, Persia and other Asiatic countries. In 1891 it reappeared in epidemic form in middle China. From that date to the present time it spread over China, reaching Canton in 1894, Hong Kong in epidemic form in 1896, and in Bombay the same year. It appeared in Oporto, Spain, in 1899; in Glasgow in 1900 and in San Francisco in 1901, not to mention sporadic cases elsewhere in seaports of Europe and Central and South America.

In 1894 Dr. Yersin, Director of the Pasteur Institute at Hong Kong, discovered the *Bacillus pestis*. He elaborated a serum which has since been used with success as a prophylactic and curative agent. Haffkine prepared a protective vaccine which has also proved successful as a protective inoculation. It has been used in hundreds of thousands of cases in India with no harmful results and is said to reduce the susceptibility at least 75% and the mortality about 90%.²

The plague, the Black Death of the fourteenth century, still exists and rages with fearful mortality in communities which have no regard for hygienic surroundings. It is communicated to people through the abraided skin, or by flea bites, through the respiratory tract apparently by bacteria in dust-laden air and also through the alimentary tract by contaminated ingesta. Modern hygienic measures, which consist of perfect cleanliness, isolation, the destruction of vermin and the use of Haffkine's vaccine as a prophylactic and Yersin's curative serum, serve to control the disease. There can be no doubt that if sanitary authorities will take proper precautions to recognize the disease, proclaim its presence and then control it by the means which science has discovered, that the terrible scourge may be safely held in check and finally abolished from every civilized community.

The value to commerce of the discoveries of science in relation to the plague can not be computed. While the knowledge of its cause and prevention is exact, the impossibility of controlling the unsanitary conditions of the countries of the East and even of our own western world, makes it necessary to continue the quarantine regulations which so often restrict commercial ends.

YELLOW FEVER.

The mortality from yellow fever in the United States during the last 100 years, 1798-1897, has been about 80,665.³ This

¹ Ph. Hauser: *La Peste dans les temps anciens*, etc. Paris, 1900.

² *Pacific Medical Journal*, January, 1901.

³ Obtained from the records through the kindness of Surgeon-General Walter Wyman, U. S. M.-H. S.

gives an average annual mortality of 807. Several severe epidemics have occurred and it has prevailed extensively in smaller towns where the mortality records have not been kept. Hence the above figures do not represent the full annual death-rate from the disease. Yellow fever has been the scourge of the West Indies, Central and South America, Mexico and of our Gulf States.

Recognized as an infective disease, indefatigable search has been made for the bacterial cause by many earnest workers. Apparently up to the present time the specific infective germ has not been found. Indeed, from a recent paper¹ by Reed and Carroll, it would seem that the bacterium must be infinitesimally small.

Although we do not know the specific bacterium of yellow fever, a most brilliant discovery has been made of the means of transmission of yellow fever by means of the mosquito (*Stegomyia fasciata*) by two of our countrymen,² Walter Reed, Surgeon U. S. A., and James Carroll, Contract Surgeon U. S. A. Twenty years ago Finley associated the transmission of yellow fever with the mosquito, but no proof of this was given until the epoch-making and decisive experiments of Reed and Carroll. Furthermore, these experiments proved that fomites contaminated with the vomitus and discharges of yellow fever patients do not transmit the disease to man.

In Havana, Cuba, the sanitary authorities of the United States have attempted during the last year or more to test the fact of yellow fever transmission by the mosquito. To this end the city was made clean; the breeding places of mosquitos in and about Havana were destroyed as far as possible and persons suffering from yellow fever were isolated and protected from the mosquito. Thus the number of mosquitos were much diminished and care was taken that remaining mosquitos did not become infected by biting yellow fever patients. As a result yellow fever disappeared from Havana and, for the first time in years, no case had occurred up to May 1 of this year. The usual marine quarantine regulations of the United States restricting the nonimmune travel from Cuba was postponed. Furthermore, the Congress of the United States will probably modify the quarantine regulations in reference to yellow fever to meet the more hopeful conditions which the researches of Reed and Carroll have established in relation to the definite transmission and control of the disease.

There can be no doubt of the practical value of this important discovery to mankind. Proper sanitary measures in reference to cleanliness, the destruction of mosquitos and their breeding-places and proper precautions against the infection of the few undestroyed mosquitos by isolation of every imported case of yellow fever will eradicate the disease from every civilized country.

MALARIA.

Malaria has not borne as important a relation to commercial communications between peoples as yellow fever and the plague. Nevertheless, it has had an enormous influence upon the health and prosperity of the inhabitants of certain regions where it is endemic and at times epidemic in its prevalence. The principles which prevail to induce malaria in a certain region is the existence of human malaria and of the mosquito of the genus *Anopheles*.

The mosquito is annoying but harmless until she becomes infected with malaria by biting a human being infected with the disease. Such an infected mosquito may inoculate all the people she subsequently stings. In this manner a region ordinarily free from malaria may become infected by the importation of a case of malaria from a distant point. It is also possible that a mosquito infected with malaria could be transported by railroad or ship in the luggage or clothing a considerable distance and then sting and infect individuals in its new environment.

We have many examples of infections of people in localities usually free from malaria, through its introduction by means of imported laborers employed in the construction of railroads, canals, etc. Malaria was rarely found in Chicago until 1891, when the construction of the World's Fair buildings was

¹ The Etiology of Yellow Fever, *Am. Med.*, Feb. 22, 1902.

² Experimental Yellow Fever, *Trans. Assoc. Am. Phys.*, Vol. xvi, 1901.

commenced. Then it was attributed to the excavations and the turning of virgin soil. The construction of the Chicago Drainage Canal began at the same time and continued until 1900. During that period malaria was constantly present in Chicago and in 1898-9 was augmented by importation of infected soldiers from Cuba and other malarious regions. No one can doubt that malaria was imported in the persons of some of the foreign laborers employed in the above-named enterprises and that the previously innocent anopheles became infected and afterward inoculated many people who suffered from malaria at the period named.

The mortality of malaria in malarious districts with a considerable population is large. Thus Professor Celli¹ says that the mean mortality from malaria in Italy is about 15,000 victims annually, and that about 2,000,000 cases occur in Italy each year. As the mean duration of malaria is generally long, sometimes infecting the individual for years, the loss of labor and production and the expense entailed in dealing with the disease amounts to several millions of francs. Furthermore, Celli says that owing to malaria about 5,000,000 acres of land remain uncultivated with a resulting large economic loss. According to the very accurate calculations of Ricchi, the Adriatic Railway Company, with 1,400 kilometers of road and employing 6,416 men, spend on account of malaria alone 1,050,000 francs a year. In the Italian army in the twenty years from 1877 to 1897 there occurred more than 300,000 cases of malaria. Finally Celli¹ says malaria annually costs Italy incalculable treasure.

Malaria is so widely disseminated over the world and the opportunity for continued infection of the mosquito so great that it seems almost hopeless to try to eradicate the disease. The principle upon which malaria may be fought has been suggested by science and has proved of value. This consists of the destruction of the mosquito and its breeding places, the prevention of the infection of the remaining mosquitos by isolation of the malarious individual from the mosquito, and the diminution of malarial material in man by an attempt to cure him with quinin and other antimalarial remedies.

Experiment has already demonstrated that nonimmune individuals may live safely in the most malarious districts, with adequate yet simple protection from the sting of the mosquito infected with malaria. Man thus protected against malaria may now explore, settle in and develop regions of the earth hitherto inaccessible because of the danger from the deadly tropical malaria.

This address would become too long were one to take up other infectious diseases, although in some of them the science of medicine has made such successful investigations that the knowledge of the cause, means of propagation and dissemination is exact.

TYPHOID FEVER.

I cannot close without saying that if in typhoid fever we could employ, unembarrassed by the great cost of the necessary measures, the precautions which science affords to prevent water and food contamination, that the disease would be effectually abolished. The great cost of the measures necessary to stamp out typhoid fever would, however, be an economic measure, inasmuch as the immense value to the State of the conservation of the labor of the thousands sick and the lives saved each year would more than compensate for the treasure spent.

VALUE OF MEDICAL SCIENCE NOT RECOGNIZED.

However much medical science has done for humanity and great as the value of the knowledge of infectious disease is to the commercial interest of the world, scientists have not, especially in our own country, received the recognition and financial aid from the State, from corporations or from wealthy individuals which they deserved.

MEDICAL SCIENCE SHOULD RECEIVE FINANCIAL SUPPORT.

Medical science should receive the moral and financial support of States and municipalities in the employment of the measures which science has proved to be efficacious in modifying, restricting and abolishing infectious disease. Wealthy corporations and individuals should establish institutes of original research in properly-constructed and equipped hospi-

tals and laboratories. There the many earnest, indefatigable and conscientious medical investigators could make more perfect the knowledge we already possess of many of the infectious diseases and, unembarrassed by financial needs, could search for the cause, the means of transmission and the prevention and cure of the diseases of which we know but little.

Funds, too, should be created to support the cost of committees of scientific investigators in regions now dangerous to the white man. By such means the many plagues of the tropics would be investigated and conquered. Regions uninhabitable or dangerous to the Caucasian would become accessible to settlement and commercial intercourse. Civilization, humanity and commerce would be advanced and multiplied.

It is right, therefore, that medical science should demand of the monied interests of the world the recognition which, though long withheld, is her just due. This she asks, not that individuals may profit in either fame or fortune, but that she may the more readily rid the world of infectious diseases for the sake of humanity.

SUTURE OF HEART WOUNDS.¹

BY

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THE RECORDED SUTURES OF THE HEART.

In 1896 three operations for the suture of wounds of the heart muscle were done. Two are recorded as having been done in 1897. Four are credited to 1898. In 1899 the heart was sutured eleven times, in 1900 three times, and in 1901 nine times, three of this last set being done in this country. This year two operations have thus far been reported. This makes a total of 34 operations in the six years following the first attempt to treat, by a simple surgical procedure, an organ usually supposed to be particularly vulnerable, in fact, so vulnerable that any interference, even for surgical purposes, might be followed by immediate fatal results.

There is more than enough material here for our consideration at this time, and I beg you to follow me in the necessarily brief discussion which I offer you.

In order to start with some knowledge of the results of these operations, before any discussion, in general or in detail, is attempted, a short review of them will be necessary.

REVIEW OF THESE CASES.

As regards the manner of wounding, all these cases, except two, were due to punctured or incised wounds, the two exceptions being bullet wounds. The particular injury to the heart was inflicted on the ventricles 32 times, the left ventricle being implicated 17 times and the right 13 times. In two cases only were auricles opened, once the right and once the left, and there are three cases in which my information is incomplete. In most of the cases in which details are given the pleura is reported wounded, and usually there was a hemothorax, the collection representing, in large part, the overflow from the pericardium.

The practical questions which usually come to the mind of a surgeon in planning an operation to meet these conditions, relate to the method of exposure of the heart, the detail of the treatment of its particular condition, and the method of closing and dressing the wound of the operation.

In the cases reported the heart was reached variously, depending on the location of the original wound in the skin and the choice of the operator, but either a flap of all of the tissues of the thoracic wall was turned up, or a resection of two or more ribs was practised. The particular detail is of no great moment provided that the heart is properly exposed. The special method of treating the heart wound is of interest for it involves the choice of suture material for a novel situation, the time at which the suture is introduced and tied with reference to the

¹ Oration on Surgery delivered before the Fifty-third Annual Meeting of the American Medical Association at Saratoga Springs, N. Y., June 10-13, 1902. From advance sheets by the courtesy of the editor of the *Journal of the American Medical Association*.

¹ Malaria According to New Researches, 1900.

heart beat, and the depth of the stitch in the heart muscle. In our cases three operators are recorded as having used catgut, Fontan, of Paris, Marion and Launay; in all other instances where the suture material was specified silk was used, and in most cases the sutures were interrupted, though in a small number a continuous suture was practised. It is of interest to note that these operators particularly avoided including the endocardium in the suture. One of them definitely reports introducing and tying the suture during diastole.

As regards the closure of the wounds—the tissues involved in the flaps or incisions were, of course, replaced; in seven instances drainage of the pericardium and pleura was practised, and in four the pleura alone was drained. The other cases are said plainly to have been closed without drainage, or nothing is said of the matter at all.

RESULTS OF THESE CASES.

Now, of the total number of these patients five died on the operating table, of hemorrhage, and ten died very soon afterward of the effects of hemorrhage or the shock of the operation; so that nearly half of the patients that survived the injury long enough to be subjected to operation died during or very shortly after that operation. The other group, 19 in number, had various fortunes, but 13 of them recovered and only 6 died. I think it is fair to stop a moment and consider these facts. Surely the 15 who died of hemorrhage or shock with operation would probably have died of hemorrhage exactly the same without operation. No fatal traumatism is inflicted by exposing the heart; and stopping the hemorrhage from an incised or punctured wound in the ventricles is a simple matter when the heart is once exposed; indeed, pressure with the finger or a tampon will stop it temporarily. At all events the operation and suture did not add materially to the amount of blood lost and so can not be counted as having hastened the death from hemorrhage, and the average amount of shock I can not estimate. But I believe that it is fair to say that these patients had, from the first, practically no chance to recover, and that, if this had been known, the operations need not have been done—but I say this with full appreciation of the fact that the inevitable fatality could not have been definitely predicated in any case. Of the other 19, the comment is, plainly, that they had a chance to recover. In each of them the suture of the heart was a successful procedure; in not one instance was the fatal outcome due to a secondary hemorrhage. The 6 who died succumbed to the common matter of an infection, sequent to wound and operation. Of the 13 who recovered 4 did so in spite of a concurrent infection. But the point is that of these 34 patients, 15 had, really, but very slight expectation of benefit from the operation and died probably neither in spite of it nor because of it—19 had expectation of recovery from operation, and in 13 that expectation was realized.

I do not wish you to think that I am trying to make these cases give a better percentage of recoveries than they really do. That percentage, as the whole list stands now, is about one-third. But if we wish to consider only the final success or failure of the suture of the heart muscle we must limit our inquiry to the cases in which this procedure was really tested, and then we see that the percentage of recoveries may be considered a little more than two-thirds.

SLOW ADVANCE IN HEART SURGERY.

The road to the heart is only 2 or 3 cm. in a direct line, but it has taken surgery nearly 2,400 years to travel it, for I take it that the operation of opening the chest for an empyema, which was known to Hippocrates, was a direct predecessor of the attempt to treat other thoracic viscera. It does not need to be said that during most of this time surgery stood still and that the advances were little by little. We all know that before the antiseptic and aseptic eras pleurotomy for empyema gave very terrible results, and there could be but scant encouragement to draw surgeons to fresh fields. However, more than a century ago (1798) Desault, with the logic and precision which still characterizes the French school, laid down the rules for opening the pericardium for an empyema situated in that sac, and anticipated much of the technic of today, and it took surgery 98 years to pass from the pericardium to the epicardium, across a space that is such only potentially.

It is a little odd that surgeons have hesitated so long to go to the aid of the wounded heart in man. Physiologists for years have experimented on the hearts of animals selected from nearly all the species of the animal kingdom. The special references to this matter are not needed here, but it is germane to the subject to note that the tolerance of the mammalian heart for manipulation, and its persistence of action in spite of wounds and obstacles, have long been known.

The experience of the various operators has been, as might therefore have been expected, that the heart of man was no more resentful of intervention than were the hearts of other mammals, and that it not only could be handled and even partially lifted from the pericardium, but that its muscle could be sutured so as to close a wound, just as can be done with the skeletal muscles. However, in the case of the systemic muscles, rest can usually be enforced, either completely or partially, during the process of healing, but this cannot be done with the heart. Here comes the great difference between the heart muscle and the skeletal muscles, both as regards suture and the reparative process, the heart must continue to act for the whole of the time.

The question now centers first on the possibility of properly suturing; that is, placing a practical suture in the moving heart, and second, on the result of the healing process. The first question is one of only technical moment, for the work on animals has shown that it can be done, and the experience of those who have sutured the human heart has not disclosed any special difficulty in the procedure, but the matter and manner of the sutures are debatable. The general advice is that the sutures of muscles should be of silk and it has been most frequently used in the heart muscle, but three of the successful cases, the two of Fontan's and the one of Launay's, were sutured with catgut. Elsberg has advised, as the result of his experiments on rabbits and dogs, that the suture material should be silk and that the suture be an interrupted one and very superficially placed, believing that deep sutures will tear out while superficial ones will hold. He also advises that the suture be placed and tied during the diastole of the heart.

EXPERIMENTAL RESEARCH.

To discover, if I might, the exact value of these somewhat confused matters, I have exposed the hearts of 11 dogs and made wounds of various sizes and in different directions in the left ventricle, limiting myself to that particular cavity, as it was the one most frequently wounded. In each instance, except perhaps one, I verified the opening of the cavity of the ventricle by passing an instrument into it so as to get a free spurt of blood during one or two systoles. It was found that this verification was a practical necessity, for the nonpenetrating wound of the myocardium will give forth during systole a spurt so large that it could easily be confused with one from the cavity of the ventricle. These wounds were then sewed with ordinary commercial cumolized catgut; in some deep and superficial stitches were combined; in some very deep, so as to surely penetrate the endocardium, were used, and in others very superficial stitches; and the variations of interrupted, continuous and recurrent continuous were practised.

In the earliest operations toothed thumbed forceps were used to pick up a few muscular fibers to steady the organ for the making of the incision and placing the sutures. At the first pinch the heart of course delayed a systole and then began to beat rapidly and violently and continued this as long as the forceps were in place. It was exactly as if the heart were surprised and at first checked by the intrusion of the forceps' teeth and then recovered to make violent and strenuous efforts to escape from the grip, and if the forceps' hold was continued it usually succeeded in this by the tearing of the fibers. One of my dogs died on the table from hemorrhage, due to the tearing of the muscles in the bite of the forceps and my inability to at first catch the edge of the open wound in the bottom of a pericardium overflowing with blood, and although I did finally succeed in getting in two sutures they were placed too late.

A METHOD TO HOLD THE HEART DURING SUTURES.

To overcome this difficulty with the forceps I put into the heart, before incising it, two long suspension loops of silk, dipping the needle carrying them deep into the ventricular

wall. These gave complete control of the organ, for they did not tear out, and even though the heart was hanging from them its function continued, and much less tumultuously than it did in the bite of the forceps; and with them the heart could be lifted quite half-way out of the pericardial incision, or it could be swung to one side or the other, or rolled over in either direction, its range of motion being limited only by the great vessels at the base.

I placed these loops side by side and about a centimeter apart, and could then incise between them, hold the wound open, by traction on the loops, to verify penetration and then, crossing the loops, could absolutely stop bleeding and steady the heart, for under this control the point of the incision seemed to be the starting point of the systolic waves.

DIASTOLIC SUTURE UNNECESSARY.

Now, even with the incision coapted and held relatively motionless by the crossed and taut suspension loops—so that the placing of a suture was no more difficult than in an indifferent tissue—I found it impracticable, yes, impossible, to make a diastolic thrust of the needle, to pull the suture into place in the succeeding diastole, and to tie the knots in the ones following. To do this would require a man to work with accuracy, and yet with perfectly-timed breaks in his work, in various fractions of successive seconds—for these hearts are always beating more than one hundred times to the minute. And the impossibility which I encountered has made it very difficult for me to believe that anyone, even if he has attempted, has ever really done it. Nor can I see what is gained by it.

The heart does not bleed in diastole, it bleeds in systole, and the suture must be tied to be efficient at that time, and the way to do it is to tie quietly and firmly during the rapid beating of the heart, and to take no account of split second diastoles, but watch the knots as one should watch the knots of the ligature in a major vessel. And the same judgment which controls the tension of the suture should control the depth to which it reaches. I can not agree, from what I have seen of the actual working of the matter, that a superficial suture will hold where a deep one will tear out. One is suturing the myocardium, not the epicardium. Of course, it is inadvisable to penetrate the endocardium, but it is, at the same time, and fortunately, a difficult thing to do. I did it once because I intended to do it, and I had to take a larger needle than I had ordinarily worked with, and definitely carry it through the heart wall and return; and from this I learned that, with the medium-sized, full-curved needle which one would commonly use, the penetration of the left ventricle is not to be feared.

On this point it only remains to be said that, in the case in which the endocardium was included in the stitch, the strand of suture stretched across the cavity of the ventricle was the occasion of the formation of a little globular clot, which was found at the autopsy to be firm and white, and surrounded by a large postmortem clot.

Elsberg's very complete studies of the healing process showed that the muscular fibers in the bight of the suture atrophy and are replaced by fibrous tissue, and he points out that, very evidently, there would be less of this lower grade tissue in the case of an interrupted suture; but so far as I have been able to judge, the difference amounts to very little practically, and the saving of time in the continuous over the interrupted suture is manifest, and it is the method finally advised by Terrier and Raymond a year ago. I had thought that the lessening of the number of knots on the epicardial surface by the use of the continuous suture might be a special point in its favor, but the matter seems to be unimportant, for all knots quickly sink into the tissues, leaving a flush surface which is covered with fibrin.

CAUSES OF DEATH.

For my experiments I have used dogs—primarily because of the size of the heart in the larger dog—and I had the same difficulty that other experimenters have had with the animal, for there is no mediastinum, the whole thorax being lined by one continuous membrane, and as soon as this is opened both lungs collapse, so that artificial respiration by bellows is needed. There are two important points in connection with this fact: a very large serous surface is exposed to the air and

to infection, and it is practically impossible to avoid leaving a certain degree of pneumothorax when the chest is closed. Collateral traumatism and infection, then, led to the early death of most of the dogs; indeed, only two lived ten days and then both died of empyema and pyopericardium. This makes it impossible for me to speak as confidently regarding the catgut suture as I should like, for *a priori* I should prefer in this place the absorbable suture, because a stitch once in is there to stay, and the opportunity of going back and removing it, if its presence is resented by the tissues, can not be looked for. Still it is to be noted that one operator, Fontan, of Paris, has the distinction of having twice sutured the heart with the recovery of both patients, and Launay has successfully closed two wounds in one heart, the suture material in all three cases having been catgut, and on the other hand, Nietert, of St. Louis, has also two successful heart sutures to his credit, his suture material being silk. Still, if it can be shown that the healing process takes place to a practical extent during the persistence of the catgut it will be reasonable to argue that no great objection can lie against the absorbable suture. In Elsberg's paper he asserts that reparative processes are in train in twenty-four hours, in forty-eight hours there is a dense round cell infiltration, by the fourth day spindle cells appear, by the seventh day they replace the degenerated muscle fiber, and by the tenth day the granulation tissue is becoming fibrous tissue. He reports several rabbits killed on the fourteenth day with the wound in the heart firmly healed, and in one instance a rabbit dead of sepsis had a firmly-closed heart wound on the eighth day. In two of my dogs, both dead of sepsis on the tenth day, the heart wounds were firmly closed, with no evidence of leakage or hemorrhage, although in one the infective process had attacked the epicardium and penetrated the myocardium. It does not need to be said that these dogs count for very little; but the inference is simple, from the whole evidence, that wounds of the heart muscle heal very rapidly and that the process may be practically completed quite within the life of a catgut suture. And the evidence of Fontan's two patients, one of whom was infected, and Launay's case of two wounds in one heart, is on the same side, and I shall, therefore, assume that catgut is, at least, a permissible suture material.

SUCCESS OF THE CLOSURE OF HEART WOUND.

Finally it has to be said that in my dogs these sutures, however placed or tied, always controlled the hemorrhage and closed the opening, and that the healing processes, as they were studied, followed a course practically similar to that in Elsberg's experiments on rabbits, up to the death of my animals. They show that the repair in heart muscle is in no way different from the repair in skeletal muscles, and that it is no more interfered with by the action of the heart than are the nutritive processes of the organ.

I do not know of any of the successful cases of heart suture having resulted in death later, but there is reference to a case of Izzi's in which the heart was wounded but not sutured, and the man recovered; but on the twenty-eighth day, having left the hospital, he made considerable effort to lift a weight and had rupture of the cicatrix in the heart wall with sudden death. Of course, the wound in this heart had been filled by a coagulum, and in the process of healing this was organized or replaced by cicatricial tissue, and there never had been the proper coaptation of the heart muscle in the edges of the cut.

So far as the heart itself is concerned the proposition for its suture, in case of wound, is properly established; and if it were a superficial organ and easy of access, and if the path by which it is reached could easily be closed again, the whole matter would be eminently simple. The operation would be more frequently done for the occasions demanding it would more frequently arise, and the whole technic would be quickly worked out in detail. But the heart, while it is close to the surface of the body at one point, is not a superficial organ, and to reach it the bony and muscular chest wall has to be traversed—a matter of no special import—and two serous sacs have to be invaded. Herein lies the great difficulty.

INTERFERENCE OF THE PLEURA.

It is true that in a dissection the pericardium can usually be reached without a wound of the left pleura, but it can only be

done by taking the pleura definitely into account. The anterior limits of the sac are very various, and in the dissecting room it has been found to extend across behind the sternum almost to the right border of the bone. Commonly, it overlaps and lies just internal to the left border of the sternum as far down as the fourth cartilage, and from this point gradually passes downward and outward crossing the sternal end of the fifth cartilage and just internal to the middle at the sixth. A wound, therefore, to reach the pericardium and heart without injuring the pleura would have to be placed in the sixth interspace and close to the sternal edge, and be directed almost exactly backward. This place is so small that practically it is never found, and it is necessary to consider that all wounds which penetrate the pericardium have traversed the pleura, and it is across the same tissue and sac that the surgeon must pass who attempts to repair the wound. There is another point to be considered here. The opening of a serous sack, either accidentally or surgically, exposes it to infection, and the serous membrane, by a power inherent in it, deals with such infection as occurs unless the latter overwhelms it. The question has been thoroughly studied by all, in its relation to the peritoneum, but I wish merely to refer to the fact that the peritoneum offers opportunities for the localization of an infection which can not otherwise be disposed of, and that intestinal rest may contribute greatly to this localization. Both the pleura and pericardium differ from the peritoneum in this respect—the surfaces of neither offer pockets or recesses in which an infection may be confined, and constant motion incident to breathing and the heartbeat tends to disseminate pathogens and to quickly distribute them over the whole surface of the sac.

So far as the arrangement of the lymphatics of the pleura is concerned, its power of absorption should be greater than that of the peritoneum, and in certain cases of infection, as in the empyema of pneumonia, it does show considerable ability to deal with the condition; but in view of the great frequency of infection of the left pleura in connection with heart wounds, I am obliged to believe that the inability to obtain surgical rest for the tissue is a prominent factor in producing and perpetuating the condition.

In writing on wounds of the pleura and lung, Terrier and Raymond claim that infection of the pleura is not likely to occur unless there is a coincident wound of the lung. They argue that the infection probably comes from a bronchus, and base the treatment necessary for a traumatic hemothorax on the presence or absence of hemoptysis. In no one of the clinical histories of these heart wounds which I have seen is there mention of hemoptysis, but they nearly all had hemothorax, large quantities of blood being in the pleura, and a large percentage had a subsequent infection.

SEPSIS AND DRAINAGE.

Of the 34 patients, 19 lived long enough for the development of an infection, and in 10 it developed, and of these 6 died, showing that infection so affects prognosis in these cases that a man infected has not so much as half a chance to recover; or, to put it differently, more than half of the cases were infected, and of these more than half of the patients died. It is of particular interest to know the time of the implantation of the infection, and I have found records of nine other cases of wounds of the pericardium and heart which were not submitted to any primary operation, and of these, three had local infection, and one had primary local healing, but died of a peritonitis. The number of cases is very small, but so far as they go they show that about one-third of them are infected by the wounding instrument, and that primary operation increases the chance of an infection to more than half; this, however, must not be taken as counting against the doing of the operation, for its object is to control conditions which lead to certain death, and even with an infection recovery is not impossible. The knowledge of the great likelihood of an infection at the time of the receipt of the wound must be made use of, and one must consider if such a wound is not to be treated as one already infected. If this is done, some method of drainage will be employed, and the detail of its arrangement is complicated by this fact, that one serous sac, the pericardium, must be drained across or through another, the pleura. The advice is given, probably in view of this difficulty, that both

pericardium and pleura be closed without drainage, but some operators have drained, and their results merit consideration. So far as I can learn, in 11 of the 34 cases primary drainage was arranged, 4 for the pleura alone, and 7 for the pleura and pericardium. Of the 11 patients, 7 recovered, though 2 had infection. Of the 4 who died, 2 died of sepsis, and 2 of collapse before the possibility of knowing if sepsis was to develop or not, and if we exclude these last 2 we have 9 drained, and 7 recovering.

Now, on the other side, there were 9 patients that had no primary drain, and did have infection, and of these, 5 recovered. The number of cases is small, 7 out of 9 and 5 out of 9, but in these cases, as in many, many others, a hair, perhaps, divides the chances of success from those of failure, and when we have only small statistics at hand, it is with those that we must work, and on them base our future actions.

In the drainage of the pericardium there is a point worth mentioning. The material should, of course, be gauze, it may be put in a small space left unclosed at the lowest point of the wound (Mignon et Sieur) and it does not need to go deeply into the sac, for with the patient supine or reclining, the heart will sink in any effused fluid toward the dorsal side of the sac displacing the fluid toward the ventral side, where a drain may easily reach it; but the fluid must pass upward from the pericardium toward the skin opening, and this is, of course, a disadvantage. For the pleura, a drain may be arranged to make its exit by the same opening as that for the pericardium or, and this seems the wiser plan, it may have an independent opening near the posterior axillary line, where it will be of most service if empyema does develop, and may, in such a case, obviate the need of a secondary thoracotomy. Of course, if no sepsis supervenes all drains should be very shortly removed.

OTHER POINTS TO CONSIDER.

In the time allotted this paper on the program of the Association it has been possible to discuss only the two technical points of suture and drainage, and the matter of the symptoms and the anatomic details of the wounds which have been put on record have, in spite of their importance, been passed by. Very briefly, the symptoms may be listed as consisting of the external wound in the precordial region, the general evidences of hemorrhage, the disturbance of the heart function sequent to the trauma and the acute anemia, and the local signs of the filling of the pericardium and, secondarily and in most cases, the pleura. As regards the wound itself, I believe, from examining the hearts which I have punctured and incised, that the endocardial wound is always smaller than the epicardial wound, excepting, I should imagine, in the bullet wound cases. This difference in the size of the wound at its two limits will explain the living of some with apparently large wounds, but from which the amount of bleeding has not been commensurate with the size of the visible wound. It is necessary only to revert to the fact that the different parts of the heart behave somewhat differently when wounded. The thicker wall of the left ventricle offers a greater obstacle to hemorrhage and a better opportunity for suture than any other part; wounds of the right ventricle bleed more and are more difficult to suture, and the thin walled auricles are saved from a lethal hemorrhage, when they are wounded, by the comparatively low pressure of the blood in them, while in their loose structure a practical suture is a difficult thing.

CONCLUSIONS.

The operations which have been recorded mark only the beginning; the heart is now destined to be submitted to many manipulations provided they may be done without stopping its action at once. It is a very unsafe thing to prophesy, but that more will be attempted can easily be inferred, for interference with the mitral orifice has already been suggested, and the immediate neighborhood of the heart has been invaded and a sacculated aneurysm of the aorta has been tied off, the success of this well-executed maneuver being prevented only by the failure of the atheromatous vessel walls to heal. Possibly, the next step may be delayed as long as the application to the heart of common surgical methods was delayed after Desault had taught us to open the pericardium. Perhaps it may come soon. It is not impossible that a new surgical technic may have to be created, but it is most probable that the next step will be based

on the new application of the very old matters of the suture and drainage.

MEMORANDUM OF EXPERIMENTS.

CASE I.—Mongrel Newfoundland dog, ether, thorax opened to left of the sternum by turning up a flap of bone, muscle and skin. Triangularis sterni was carefully incised, but the pleura was opened and both lungs immediately collapsed. Pericardium was quickly opened and heart was massaged, as its action failed, to keep it going until the trachea could be opened and the bellows apparatus attached. Manipulations were not quick enough and the dog died on the table. A

lar. Heart wall caught with toothed forceps; systole postponed, and then rapid and tumultuous heart action, tugging forcibly on the forceps. Punctured wound into left ventricle, parallel with the superficial fibers. Spurt of blood, dark in color (because of collapse of one lung), systolic in time. The action of the heart was so rapid that it was impossible to estimate the amount of diastolic hemorrhage. Two interrupted cumolized catgut sutures, passed deeply but not intended to penetrate the endocardium. Hemorrhage controlled absolutely. Pericardium sponged out and closed by a continuous catgut suture. Chest wall sutured, the sutures drawing together the sides of the split sternum, and

CASES OF SUTURES OF WOUNDS OF THE HEART.*

Operator and Year.	Location of External Wound.	Chamber Wounded and Size of Wound.	Time of Operation After Injury.	Anesthetic.	Results and Remarks.
1. Farina 1896.....	Just above the margin of the left sixth rib, near the sternum.	R. V., $\frac{1}{4}$ inch; 3 stitches.	.....	.....	Death on sixth day, from broncho-pneumonia.
2. Cappelen. 1896.....	Fourth left intercostal space in mid-axillary line.	L. V.; $\frac{1}{2}$ inch.	1 hour.	.....	Death after several days; pericarditis; branch coronary artery cut.
3. Rehn. 1896.....	Fourth left intercostal space near sternum.	R. V.; 3 stitches.	Following evening.	.....	Recovery; empyema.
4. Parozani. 1897....	Seventh left intercostal space in mid-axillary line.	L. V.; $\frac{3}{4}$ inch.	5 hours.	None	Recovery.
5. Parozani.....	Third left intercostal space.	L. V.; $\frac{1}{2}$ inch.	$\frac{1}{2}$ hour.	None	Death on second day from anemia (?). Interventricular septum had been cut.
6. Fummi. 1898.....	Under left nipple.	Apex; cavity not opened; 1 stitch.	Several hours.	.....	Recovery; empyema.
7. Ninni. 1898.....	Fifth left intercostal space.	L. V.; 3 stitches.	Quickly.	None	Death on table.
8. Parlavecchio. 1898	Fifth left intercostal space.	L. V.; $1\frac{1}{2}$ inch; apex.	8 hours.	Chloroform	Recovery.
9. Giordano. 1898....	Second left intercostal space.	L. A.; $\frac{1}{2}$ inch; 4 stitches.	$\frac{1}{2}$ hour.	None	Death on nineteenth day from empyema; abscesses of right lung.
10. Nicholai. 1899....	Fourth left intercostal space, midway between margin of sternum and nipple.	R. V.	$1\frac{1}{2}$ hours.	Yes	Death after twelve hours.
11. Tuzzi.....	Fourth left intercostal space.	Two wounds; non-penetrating.	.....	None	Death on twenty-second day from empyema; pericarditis.
12. Longo.....	Fifth left intercostal space; $\frac{3}{4}$ inch internal to nipple.	L. V.; 3 stitches.	At once.	None	Death in fifteen minutes.
13. Ramoni.....	At third left cartilage; $\frac{1}{4}$ inch from sternum.	R. V.; 2 wounds; 1 non-penetrating; 4 stitches.	.....	None	Recovery.
14. Marion. 1899.....	Shot through breast.	R. V.; catgut suture.	.....	.....	Death.
15. Rosa. 1899.....	Fifth intercostal space.	L. V.; $\frac{3}{4}$ inch; not certain it penetrated ventricle.	.....	None	Recovery.
16. Horodyski. 1899.	.....	R. V.; $1\frac{1}{2}$ cm. long.	.....	.....	Death.
17. Maliszewski. 1899.	.....	.....	.....	.....	Death.
18. Maliszewski. 1899.	.....	.....	.....	.....	Death.
19. Bufnoir. 1899....	Sixth left intercostal space.	R. V.; gunshot; 22-caliber.	.....	.....	Death; necropsy showed perforation of ventricle and the anterior opening only had been sutured.
20. Pagenstecher. 1899	Fourth left intercostal space beneath the nipple.	L. V.; near apex; 2 stitches.	16 hours.	None	Recovery.
21. Nanu. 1900.....	Third intercostal space, 4 cm. from edge of sternum.	R. V.; 2 cm. long; 2 interrupted sutures.	.....	.....	Death on fifth day from infection of pericardium and pleura.
22. Maselli. 1900.....	Below and internal to left nipple, cutting sixth rib.	L. V.; near apex; 2 stitches.	$1\frac{1}{2}$ hours.	.....	Death in twelve hours.
23. Fontan. 1900.....	Six wounds with scissors between third and seventh ribs in cardiac region.	L. V.; 12 mm. long; continuous catgut sutures; 3 stitches.	6 hours.	Chloroform	Recovery.
24. Nietert. 1901.....	.....	R. V. penetrated; 3 silk sutures.	.....	.....	Death after thirty-six hours.
25. Vaughan. 1901....	Fifth left costal cartilage divided.	L. V.; $2\frac{1}{2}$ cm. long; continuous silk sutures; 7 stitches.	$\frac{3}{4}$ hour.	Ether	Death on table from hemorrhage, about completion of operation.
26. Nietert. 1901.....	Left of sternum.	L. V.; not sure cavity was penetrated; 2 sutures.	.....	.....	Recovery.
27. Ninni 1901.....	Left of sternum.	R. A.	.....	.....	Death in four days; sepsis.
28. Mignon et Sleur. 1901.	.....	R. V.	.....	.....	Death.
29. Fontan. 1901.....	.....	L. V.; catgut sutures.	.....	.....	Recovered; had empyema.
30. Brenner. ¹ 1901....	Left of sternum, near sixth cartilage.	R. V.; 7 cm.	Following day	Yes	Death on table; degenerate heart muscle.
31. Watten. ² 1901.....	Fourth right intercostal space.	R. V.; 3.5 to 4 cm.	.....	.....	Recovery; right pleura wounded; pneumothorax.
32. Lastaria. 1901.....	.....	L. V.	.....	.....	Died soon.
33. Launay. ³ 1902.....	.....	L. V.; ant. and post. walls; pistol shot; catgut sut. in each.	.....	.....	Recovery; no complications.
34. Nietert. ⁴ 1902.....	Left sixth interspace, to right of papillary line.	L. V.; far back, 2 cm.; penetration uncertain; 2 interrupted silk sutures.	$14\frac{1}{2}$ hours.	.....	Recovery; purulo-sanguinolent effusion and thoracotomy.

* Cases 1 to 28 inclusive from table of Geo. T. Vaughan, M.D., Medical News, Dec. 7, 1901.

¹ Wiener klin. Woch., 1901, No. 11. ² Deutsche med. Woch., 1901, No. 37. ³ La Presse Médicale, March 29, 1902. ⁴ Phil. Med. Jour., May 3, 1902.

dissection showed that there was but one pleural sac for both sides of the chest, and that the lungs surrounded the heart much more completely than they do in man.

CASE II.—Mongrel Newfoundland, hypodermic of morphin 0.1; ether. Tube in trachea and connection made with a bellows apparatus which permitted the use of air alone, or of air and ether vapor. Sternum exposed and then split by a costatome. In doing this the left lung was wounded, but the right was not and its inflation proved sufficient for respiratory purposes. Thorax widely opened, pericardium picked up and opened and then, by seizing the edges of the opening with hemostats and lifting, the heart was brought up into the opening in the chest wall. The heart's action was strong and regu-

lar. Heart wall caught with toothed forceps; systole postponed, and then rapid and tumultuous heart action, tugging forcibly on the forceps. Punctured wound into left ventricle, parallel with the superficial fibers. Spurt of blood, dark in color (because of collapse of one lung), systolic in time. The action of the heart was so rapid that it was impossible to estimate the amount of diastolic hemorrhage. Two interrupted cumolized catgut sutures, passed deeply but not intended to penetrate the endocardium. Hemorrhage controlled absolutely. Pericardium sponged out and closed by a continuous catgut suture. Chest wall sutured, the sutures drawing together the sides of the split sternum, and

respiration was good. Twenty-four hours later the dog was in a bad state—he would not stand, nor eat nor drink. Respiration was deep and labored. Dog found dead on the morning of the second day. Heart only examined. The two sutures were easily seen.

Microscopic examination of the wound area. Exudate on pericardium is comparatively thin and consists chiefly of coagulated fibrin in which are polymorphonuclear leukocytes and a large number of small round cells. The pericardium had lost its typical glistening appearance. It is taking part in the inflammatory process on its surface. Considerable amount of altered blood pigment is found in the pericardial exudate. Sutures surrounded by a mass of leukocytes can be seen in this section and the incision extends direct from the pericardium to the endocardium. It is characterized by extensive extravasations of blood, coagulated fibrin, and platelets in which are numerous polymorphonuclear leukocytes. The heart muscle cells on either side of the incision are undergoing either hyaline degeneration or coagulation necrosis. Karyolysis is marked in these cells. In the intermuscular septa between the different fasciculi of muscle fibers are found extensive accumulations of leukocytes, many of which contain pigment granules derived from the blood. No definite evidence is obtained from the section that the repair is advanced to an extent marked by the new formation of blood-vessels. The endocardium is somewhat thickened and is covered with an exudate composed of fibrin leukocytes, red blood corpuscles and blood platelets. The wound in the endocardium is not closed.

CASE III.—Big short-haired mongrel, hypodermic morphin, 0.1; ether. Tube in trachea. Sternum split with a strong knife and lungs not wounded. Bellows at work and thorax opened widely. Pericardium split open and heart lifted to surface as in Case II. Punctured wound as before, heart steadied by tooth forceps grasping fibers. Strong systolic jets of blood. One suture, cumolized catgut, controlled it, though it was not passed deeply. A second suture, more superficial, was put in. The pericardium was cleared of blood and sutured and all the other tissues closed as in Case II. Chromicized catgut, thick and strong, was used for the sternum. As the final stitches which closed the subcutaneous tissues over the sternum were placed and tied, the lungs were fully inflated to expel all the air possible from the thorax. The dog came out of the ether quickly and whined and struggled. Pulse 156, respiration 18. Two days later the dog was up and about and ate and drank and was friendly. At the end of the week the wound was open somewhat and the dog was weak and sick. He was found dead on the tenth day.

Postmortem.—Tracheal wound healed throughout and without suppuration. Sternum healed in part per primam, and in part per secundum except that from the upper and lower ends were open sinuses leading in, and from them came seropurulent fluid. The lower sinus communicated by a tortuous narrow (2 mm.) path with the pleural cavities. Muscles and cellular tissues of the thoracic wall show intense inflammatory reaction. Both sides of chest cavity full of serosanguineous exudate, with purulent flocculi. Entire pleura covered with a fibrinopurulent exudate, and lungs adherent at places by fresh adhesions. Lungs atelectatic, free borders and surfaces shriveled and puckered. Cut surface of lung shows congestion, but is otherwise normal. Pericardium adherent to inner surface of sternum, the incision in it opened and cavity communicating directly with the incision. Pericardial cavity contains small quantity purulent exudate and same is on epicardium and pericardium, and an adhesion between these exists along the line of incision in the myocardium. Incision may not have opened ventricular cavity. Diaphragm and liver pushed down by the amount of pleural exudate. No changes in abdominal viscera.

Note.—In the laboratory where this dog was operated upon other dogs had been used for experimental abdominal work, and some bone work had also been done. This dog had had an intestinal suture a month before the heart operation. The intestinal and other abdominal work had been followed by clean aseptic healing. The incisions for the bone filling which were over the trochanters, had in two instances been torn open by the dogs. The heart operation was done with the utmost care to secure aseptic conditions, and in spite of it a massive infection occurred.

Microscopic Examination of Wound Area.—The epicardium over the incision in the heart muscle is covered by a thick partially-organized exudate which consists chiefly of coagulated fibrin with numerous polymorphonuclear leukocytes embedded in the meshwork formed by its filaments. A considerable number of newformed bloodvessels and fibroblasts can be seen making their way from the pericardium into the mass of the exudate. This also contains numerous fat globules. The catgut sutures can be distinctly seen in the myocardium, and are surrounded by an intense zone of reaction, the chief part of which consists of polymorphonuclear leukocytes and numerous round cells. Evidence of the formation of a few new bloodvessels seen at the periphery of the zone. Specimen not stained for microorganisms, but the tissues at these points had the appearance of being infected and look like early abscess formation. For a considerable distance beneath the epicardium over the whole area covered by the exudate there is a marked degeneration of the heart muscle cells. They stain poorly, the outlines are not clearly marked, the nuclei show bizarre

arrangement of the chromatin and occasional instances of karyolysis. No evidence of fibrillation can be seen in the degenerated cells. In the interspaces between are numerous polymorphonuclear leukocytes and small round cells. Along the line of incision in the heart muscle there is some evidence of healing, the extravasated blood is mostly absorbed and the adjacent walls of the wound bound together by coagulated fibrin. Here and there are occasional spots suggestive of the formation of new bloodvessels. Either the incision does not extend to the endocardium or the section of the heart muscle has taken an oblique plane so that in this section at least the endocardium remains unaltered and intact.

CASE IV.—Big shepherd dog, hypodermic of morphin 0.1; ether. Tracheal tube and bellows. Thorax and pericardium opened as in Case III and without wounding lungs. Transverse punctured wound in left ventricle, close to apex, violent systolic hemorrhage, the heart beating very rapidly. Muscle in bite of forceps tore out and heart escaped, beating rapidly and bleeding profusely. Finger in apex partly controlled bleeding but position difficult to maintain because of the action of the heart and a little force tore the opening, making it a 2 cm. rent, and finger passed into ventricle. Dog began to make respiratory efforts in spite of bellows. Edge of wound finally caught with forceps and two sutures hurriedly passed, and apparently closed opening and checked bleeding. Heart action getting weaker, but suture of pericardium begun. Heart stopped before completion of pericardial suture.

Heart Removed.—Wound found to be larger than had been thought, and only half of it sutured. Pericardium and thorax full of blood clots. Heart muscle had been torn by the forceps and the finger, and apparently was more than ordinarily friable.

CASE V.—Big mongrel Newfoundland, hypodermic of morphin 0.1; ether. Tube in trachea and bellows attached. Usual technic to expose heart. Two loops of silk, medium size, each loop about 15 cm. long put transversely into wall of left ventricle 2.5-3 cm. from apex and about 1.5 cm. apart. The needle carrying the upper loop punctured the coronary vein and it was tied by a catgut suture carried around it by a small needle. The heart could be easily lifted by the loops and swung to right or left, or rolled over in either direction, and the complete control was very satisfactory. A transverse puncture was made between the loops and the wound held open by them. The jet of blood, systolic, was very forcible. The loops were then crossed and the opening closed. The taut loops now steadied the immediate field of operation and made the placing and tying of the sutures a simple matter. Three interrupted catgut sutures were put in, penetrating only 2-4 mm. into the myocardium, and controlled the hemorrhage. Silk loops were removed and there was no particular bleeding from their track.

Early in the operation the left internal mammary had been wounded near the upper part of the incision. As more dissection would have been needed to tie it, pressure was tried and seemed to be enough. Bleeding recurred as the chest was being closed, but pressure again seemed efficient. Usual method of closing all cut tissues. In spite of efforts to avoid it considerable air was apparently left in the chest. Usual dressings. Half hour after chest was closed, respiration 26, somewhat labored. Death in less than 24 hours.

Postmortem.—Dressings bloodstained. Superficial and deep tissues on both sides of wound infiltrated with blood and a large clot under the right pectoral. The catgut sutures around the sternum had yielded. Pleural cavities full of whipped blood, and large clot in left side—lungs deeply congested, with fibrinous exudate at places on pleura. No healing in pericardial incision, pericardial sac filled with fluid, epicardium injected, but smooth and with no adhesions. Left ventricle in systole, right in diastole. Incision in wall 2 cm. long, closed by three sutures. Slight fibrinous exudate over wound. Internally, wound 6 mm. long and covered by small fibrinous flake or globular thrombus.

CASE VI.—Boston terrier. Morphin 0.1; ether. Tube in trachea and bellows attached. Usual method of access to the heart; two silk loops in the left ventricle, transversely, near apex. Incision, transverse to superficial fibers, 1 cm. long, between the loops. Systolic spurts of blood, and hemostat introduced into the heart to verify penetration. Three catgut sutures—the middle one superficial, the two outer ones deeply placed to penetrate endocardium—the sutures turned in the edges of the incision somewhat. Usual method of closing incised tissues, except that the halves of the sternum were fastened with heavy black silk. Fifteen minutes after the removal of the tracheal tube, respiration 66 per minute, easily, as a dog breathes when running a little. Death in about 48 hours.

Postmortem.—Extensive submuscular emphysema, and a hemorrhage under the left pectoralis major. Silk sutures on sternum held perfectly. Pneumothorax, with emphysema of the connective tissue in the mediastinum. The air had followed along all structures that traversed the chest, especially the phrenic nerve, the lymph glands and the larger vessels and it worked along the sheath of the vena transversa from the first rib outward into the left axilla with the subclavian vein and so produced the submuscular emphysema, and on the right side, too, it had followed the subclavian vein through the costocoracoid membrane. The left pleura contains about 10 cc. of bloody serum. Pleural surface covered with fibrinous exudate. Pericardial wound healing. Sac contains about 10 cc. bloody serum. Pericardium slightly adherent to epicardium by thick

fibrino-serous exudate and when the two membranes are pulled apart the "battered bread" appearance of the surface is presented. Heart, left ventricle in systole, right in diastole. Wound in myocardium extends 1 cm. upward and medianward from apex, through septum into left ventricle. Closed by three interrupted catgut sutures. Wound covered by fibrinous exudate. Endocardium smooth except just about wound where there is red subserous hemorrhage. A white thrombus hangs from the strand of catgut in the ventricle, with postmortem clot about it.

Note.—The emphysema in this case had an interior source and can only be accounted for by some wound of the lung which could not be located. Perhaps there was a rupture or a wound when the lungs were distended to fill the chest at the time of the last suture.

CASE VII.—Mongrel Newfoundland, morphin 0.1; ether. Tracheal tube and bellows. Usual approach to heart. Two loops, longitudinal, in left ventricle. A long incision, 2.5 cm. between the loops, opening the ventricle widely. Furious systolic hemorrhage. Loops crossed and opening closed and hemorrhage stopped. Rapid, continuous catgut suture from top to bottom of wound and return. One knot. Usual method of closing wounds. Very little air left in thorax. Six days later, dog alive. Later failure of strength and death on the tenth day.

Postmortem.—Body emaciated. Tracheal incision partly healed. Wound in thorax healed except at lower part, where it is somewhat open with serosanguineous discharge. Thorax deformed and looks like the pigeon breast of rachitic children. Pericardium adherent to chest wall; two halves of sternum not united but held by the sutures. Pleura everywhere injected and covered by fibrinopurulent exudate. Some adhesions. Some bloodstained fluid in right pleura and more in left. Lungs congested, but no consolidation. Pericardium thickened and injected, and incision only partially healed. Contains a little seropurulent exudate. Numerous adhesions between epicardium and pericardium, especially on the dorsal aspect, and when separated gave the "battered bread" appearance. Incision in myocardium covered by fibrinous exudate, and purulent necrotic mass underneath it. Endocardium not examined. Peritoneum injected and with occasional areas of fibrinous exudate. In small intestine, about 30 cm. from the iliocecal junction, an area of gangrene, 4 cm. long on the lateral aspect of the gut, and in the middle of this a perforation. In the gut the mucosa was discolored, and covered by a soft brownish necrotic mass. Nothing else of moment in the abdomen.

Microscopic Examination of Wound Area.—The exudate of the pericardium is even thicker than that of dog No. 2. It has the same constituents except that it is richer in fibrin and platelets and in R.B.C. Exquisite examples of new bloodvessels can be followed from the pericardium into the exudate, but these vessels do not appear to be quite as old as those in dog No. 3. The reaction in the endocardium is extensive but does not penetrate deeply into the heart muscle, as in the case of the first section described. The heart muscle cells show just under the pericardium some evidences of degeneration, namely, in the pallor of the sarcoplasm marked karyolysis and in vacuolization. The line of incision in the heart shows an extensive area of coagulation necrosis which corresponds to the cheesy area described in the gross specimen. Sutures surrounded by a mass of polymorphonuclear leukocytes and small round cells showing all the stages of nuclear fragmentation or karyorrhexis. The area around the stitches has almost reached the stage of abscess formation. In many places the degeneration of the heart muscle has extended so far that the karyolysis is complete in the muscle cells and they appear as a pale pink staining mass of cytoplasm which do not even show the characteristic striations of the heart muscle cells. Neither the large nor the small disc of MacCallum are visible, nor are Krause's membranes made out. Under the immersion lens even with hematoxylin stain small masses of bacilli and cocci are visible. These are gathered in the spaces between the dead muscle cells and are also found along the line of incision and in the exudate on the surface as well as about the stitches.

CASE VIII.—Big water spaniel, morphin 0.1; ether. The incision in the sternum, made with a costatome, failed to hold to the middle line and the lung was nipped. In opening the pericardium the coronary artery was cut and bled freely, but was easily ligated. In placing the silk suspension loop the rapid motions of the heart prevented accuracy, and the artery was wounded again, and again ligated. The left ventricle was opened by a punctured wound close to the apex, and then a closed hemostat was put in and opened so as to make the endocardial side of the wound the larger. A continuous very superficial suture controlled the hemorrhage. About 5 cc. normal salt solution (NaCl 6, KCl 2.5, CaCl 0.5, aqua 1,000) with some carmin in it was put into the pericardium and the incision sutured. About 500 cc. of the same salt solution was poured into the pleura to displace any residual air. The punctured point on the lung was ligated and cut off. The usual method of closing the thorax. The dog lived about 48 hours, and the autopsy appearances were like those in Case VI. The use of the salt solution made no particular difference in the result.

CASE IX.—Big mongrel, morphin 0.1; ether. Tube in trachea. Usual approach to heart. Lung nipped by costatome. Heart punctured with needle—as point entered myocardium a

postponed systole, which, when it came, was violent and followed by rapid action, gradually slowing to the usual rhythm. The needle was withdrawn after the postponement. This was done to see if the acts of placing a suture could have been done in successive diastoles, and the experiment was repeated, but no diastole long enough for a definite act, like pulling through a suture or tying a knot, occurred. The bleeding from the needle wounds stopped spontaneously and quickly. The right coronary artery was cut and bled by spurts during systole, and was then tied. Transverse incision, 1½ cm. near apex. Two interrupted stitches stopped all hemorrhage. Two cc. salt solution with carmin in pericardium just before last suture. Pericardium and chest closed in the usual way. Heart beating rapidly and not very forcibly. Dog died in about 48 hours.

Autopsy showed conditions similar to those in Case VI.

CASE X.—Mongrel fox terrier, morphin 0.1; ether. Tube in trachea. Heart approached in usual way with no collateral injury. No incision in heart. Usual closure of pericardium and thorax. At this point the heart stopped and the chest was reopened and the heart massaged, exciting only feeble fibrillary arrhythmic contractions. Strychnin in the femoral vein and in the heart muscle produced no effect.

Death was ascribed to overdose of ether, as the apparatus was set for the administration of ether with the air.

CASE XI.—Small mongrel. Same operation as in Case X. Again symptoms of heart failure and some delay in the resumption of active respiration, but 4 mgr. of strychnia stimulated both functions. This dog lived two weeks and then had an open wound over the sternum with the loose ends of the costal cartilages projecting from the surface of the wound. He was in good condition and begged for a dead rabbit which was in the laboratory. He was given morphin 0.1 and ether. Tube in trachea through new incision. An attempt to dissect into the pericardium past the lungs, which were assumed to be adherent to the deep side of the cicatrix, failed, and the pleura was again opened. Pericardium was adherent to the cicatrix, was opened, the line of suture had healed perfectly and the visceral side was smooth. Very little fluid in endocardium. No adhesions to heart. As it was out of the question to again close the thorax the dog was permitted to die.

CASE XII.—Small mongrel, morphin 0.1; ether. Tube in trachea. Usual approach to heart. Suspension loops. Punctured wound, longitudinal 1 to 1.5 cm. Three moderately deep interrupted sutures. Usual closure of pericardium. A change in the method of closing the thorax was a failure and the dog died in a few hours.

Two Belgian hares and two rabbits were also used, because of their having two pleuras separated by a mediastinum, but we failed to be able to open the pericardium without opening the left and sometimes also the right pleura in this quartet and there was no time for further trials.

CLOSING REMARKS.

The early death of these dogs was a disappointment, for I had especially desired to see if the cicatrix in the heart muscle would stretch with the lapse of time, or would yield under the strain of rapid and forcible action. As it was, in no instance was death due to the rupture of the wound or to hemorrhage from the failure of a stitch, and in the two dogs which lived long enough to permit a satisfactory observation, the wound in the heart was rapidly healing. The supervention of sepsis and its usually rapidly fatal effect was apparently unavoidable, for all the technic of the operating room, even to having the preparation of the dog and the instruments and the operating table in the charge of a male trained nurse, was practised. As I have said in the body of the paper, the pleura lacks the mechanical arrangements which favor the localization of infection in the peritoneum, and an originally minor infection has opportunity to become a general and extensive one. Drainage of the pericardium and pleura in the dog is not to be thought of, because the pericardium is in the middle of the one pleural sac, and could only be drained through it; and drainage of the pleura would inevitably result in the collapse of both lungs. Therefore, the dogs were permitted to die and no effort was made to help them out of their septic state.

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STATE MEDICINE, PAST, PRESENT AND FUTURE.¹

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State medicine had its origin with Moses, the great legislator. The bloodthirsty Egyptians of the dark ages, who in superstitious ignorance destroyed the lives of those among them who differed from their belief or creed, left nothing which the human race could follow for the preservation of health and life. Thirty odd centuries ago the great lawgiver, Moses, laid down sanitary rules, regulations and exercises which are followed at the present day by all civilized and semicivilized nations.

THE SANITARY CODE OF MOSES.

Some 1300 years before the Christian era the code contained in the Mosaic Exodus laid down restrictions on every possible act that mankind may perform to impair or impede existence. Such as they are, it is hardly possible to improve upon them at this enlightened day. Moses instructed his people that those sanitary commands were inspired by a Supreme Being; that the only health officer in existence was the Almighty, who could watch over their trespasses against the law. No matter where they might be, or what they might do, the Supreme Overseer would bring them to justice for the violation of the code of health.

It was handed down to the Israelites in an oral way for about one thousand years, when it became corrupt and neglected, like other laws of long standing when there is no one to enforce them.

About six centuries before the Christian era the great Sanhedrin was formed; it consisted of seventy-two men, who compiled the oral law to a written law, adding to it besides the moral, every possible sanitary regulation that may benefit human health and life. This tribunal enacted laws to improve every possible means of securing healthy food, clothing and shelter, and established minor judiciary courts in every possible community, and gave these courts the right to bring before themselves anyone who violated the sanitary measures. The laws of the Sanhedrin were enforced and well kept for hundreds of years, during the time that Judea could establish and enforce its own laws, but when it fell under the sovereignty of the Romans, they were unable to enforce the laws with Roman influence; consequently, they were kept only by the pious Jews.

THE JUSTINIAN LAW.

The infidels could not be compelled to keep the commands under the Roman law. Hence the pious Jews of the sixth century appealed to the Roman Emperor Justinian, under whose reign a code was compiled by sixteen eminent jurists, establishing laws for all Roman States, and quoting decisions mostly from the Jewish Talmud, including many moral and sanitary measures, which is now termed the Justinian law. Besides adopting many of the Talmudic laws, which did not differ from the Mosaic, they added many practical and sanitary regulations. It is to the Justinian law that our present civilization is indebted for the abolishment of polygamy. It is to the laws of Justinian that we are indebted for the prohibition of the marriage of consanguinity. The combination of the Mosaic,

Talmudic and Justinian laws form a fair code for the preservation of human life. The Bible itself is one of the very best textbooks on hygiene that has ever been written. He who strictly follows its teachings will be a perfect sanitarian. "We must learn," says a distinguished writer, "to regard physical as well as moral sins as greatly displeasing in the sight of God."

FEATURES OF THE MOSAIC LAW.

Jewish hygiene and diet are well known for their regulation to healthy food, for the Jews are restricted to certain fish of the waters and certain beasts of the field. It is from the Mosaic law that we have learned to legislate against unwholesome food, especially of animal food. Every one of us knows with what care the Jews killed their cattle and their fowl, and with what care the autopsies are made on the animals before they are declared fit for use.

The sanitary laws of Moses provided for the segregation of lepers and the fumigation and destruction of infected clothing. These had great influence on Christian nations when contagion was recognized in epidemics, and probably most of them were, from the standpoint of today, either directly or indirectly infectious, and a grand advance in preservative methods became possible. All European nations enforced laws for limiting the spread of leprosy, and these, which have been handed down from ancient times, had merely to be modified in their application in order to exercise a controlling influence on the spread of fulminant febrile diseases.

PESTILENCE AND SUPERSTITION.

Before and after the beginning of the Christian era plagues, pestilences and famines were classed together as of divine origin. The Greeks and Romans, from the evidence of their authors, resorted to forms and ceremonies to avert epidemics. Statues were erected to Æsculapius and Apollo; Sibylline books were consulted, nails were driven into the walls of the Temple of Jupiter Capitolinus, and the Lectisterne ceremonies were among the remedies applied to epidemics before the time of Christ. Later, festivals, mournings, and founding of religious structures were resorted to in order to appease the divine anger, to which the epidemics were attributed. For hundreds of years thousands and thousands of human lives were sacrificed from various causes and infectious epidemics of which we now seldom hear. The so-called sweating plague of the latter part of the fifteenth and the fore part of the sixteenth centuries has not been heard of since 1551. Black death and epidemics of cholera, with its ravages as late as 1848 and 1849, and the last epidemic of the tropical countries, yellow fever, to say nothing about the various other zymotic epidemics and infectious diseases, such as typhus, diphtheria, scarlatina, etc., have become a rarity among civilized nations. Livy tells us that during epidemics the Roman citizens shut themselves up in their houses and paid attention to nothing except how to preserve themselves from the pestilence. Boccaccio refers in his tales to the attempts made by Florence to preserve her citizens from the plague which overspread Europe in 1336 by denying access to all sick persons.

THE FIRST QUARANTINE.

The first arrangements for the isolation of the sick, and quarantine establishment against infectious diseases, reach back to the tenth century. Charles IV, in 1347, made a statute for German States, including certain measures for the isolation of the sick and quarantine establishment against certain diseases.

In 1348 a "Board of Supervision," a sort of council of hygiene which in the end served as a model for all Italy, was first established in Venice. At Majorca, in 1374, a committee of officials presided over by a physician, Lucien Colomines, was appointed with extensive powers, to whom the local magistrates at the outbreak of the plagues were directed to report.

This committee was also allowed a hospital, and it was directed that no ship should discharge passengers nor unload freight without their knowledge, nor should any port sales be held without preceding notice to the sanitary council. Suspected ships were required to keep quarantine for forty days, hence the name quarantine.

In 1348, the year of the extension of the black death, it was noted by many observers, and especially recorded by Gabriel

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de Mussis, who fled from the Crimea to Plaisance in France, that ships and passengers from the East conveyed the disease. That same year Venice, then the center of maritime commerce, appointed three proveditors of health to take measures for the prevention of the plague. Count Barnabo, in 1374, issued a decree at Reggio, in Italy, that any person attacked by the disease should instantly leave the city, fortress or castle for tents in the open country, until recovered or dead; that persons attending the sick should not consort with others until after the lapse of ten days; that the priests should examine and notify the infected sick to the inquisitors, and that all goods and property of persons infected, or who conveyed infection, should be confiscated to the use of the church, and none but those appointed should, under penalty of death and confiscation, attend upon the plague-stricken.

In 1382, Chalin de Vinario demonstrated that contagion was the cause of the spread of the plague. The following year Count Barnabo prohibited entrance of persons from infected localities under penalty of death; and his successor, Viscount John, in 1399, ordered the city gates to be guarded against admission of strangers from infected places, infected houses to be fumigated and thoroughly ventilated for a long period, clothes and bedding to be washed and dried in the open air, bedsteads to be exposed for days in the open air, and all refuse matter and rubbish to be burnt.

In 1400 the Berlin butchers were compelled under the law to take the following oath: "I will sell no suckling sow, no consumptive or one-eyed cattle, and no cattle purchased from poor people out of the hospitals."

EXTENSION OF QUARANTINE.

During the fifteenth century, severe measures were employed in times of pestilence. Boards of health were frequently convoked and strict health ordinances issued. "It is forbidden to attend foreign markets and fairs. Whosoever, however, did attend fairs must undergo quarantine, the guard of the gates were strengthened, suspected persons were not admitted and strangers must bring evidence that they had not sojourned in places afflicted by the pestilence. 'Blotterhauser' were built, the attendants were forcibly pressed into service as nurses, the sick were shut up in their houses, suitable directions as to mode of life, even as to purification of the washings of the body and bed, on interment, etc., were published. The council sought to suppress the use of secret remedies, sorcery and necromancy; amulets were interdicted and burned."

The first quarantine port was established at Marseilles in 1526, and during this century the system of quarantine extended to most of the maritime cities of the Mediterranean, and many inland cities adopted similar precautions.

In 1846 the work on contagions and contagious diseases, by Fracastor, of Venice, declaring contagion to be exhaled by the body, infecting those at hand directly through the air, and those at a distance through the medium of fomites, induced greater measures of exclusion. By degrees, the practice of quarantine extended over the whole civilized world, and the penalty measures were increased in severity. Torture and death awaited alike those who remained in the city, when ordered out, and those who entered when forbidden access. In the sixteenth century not only were ships with their passengers and cargo detained in prolonged quarantine, but towns also were surrounded by sanitary cordons and completely blockaded for long periods, and even individual houses in the towns were closed against exit and entrance. Food and necessaries were obtained with difficulty and by the most circuitous methods of exchange, while politics, commerce and social intercourse stagnated.

QUARANTINE IN THE UNITED STATES.

The first quarantine act adopted in the United States under the colonial system was passed by the General Assembly of Pennsylvania in 1700, and was entitled, "An act to prevent sick vessels coming into this government." It imposed a penalty of £100 on any infected vessel which landed in the province. Other quarantine acts of greater or less severity were adopted by Massachusetts in 1701, Virginia in 1722, Delaware in 1726, North Carolina in 1775, New York in 1758, Maryland in 1760, etc. The first general quarantine act adopted by Congress was passed February 23, 1799, and was designed to be supplement-

tary to the various State acts. It was entitled, "An act respecting quarantine and health laws."

During the eighteenth century maritime quarantine and lazarets extended, especially on the Mediterranean coast, and increased in importance when inland pandemics subsided in severity. The quarantine services under boards of health, with their stations, lazarets, detentions, disinfections, numerous attendants and complicated ordinances, became large organizations. Europe was less frequently invaded by plague, against which maritime quarantine was almost entirely directed; therefore the lazarets were neglected and the administration became lax. At the end of the century John Howard made strong protests, and in the beginning of the nineteenth century cholera and yellow fever made their advent. This revived the interest in the prevention of pandemics and shook the confidence placed in quarantine, as it was practised at that time.

INTERNATIONAL SANITARY CONFERENCES.

The severe measures designed for plague in the seventeenth and eighteenth centuries were adopted for cholera and yellow fever in the nineteenth century, and they were embodied with modifications in a lengthy convention, accompanied by an elaborate international sanitary code. At the International Sanitary Conference held in Paris, in 1851, and represented by 12 European powers, this convention did much to spread ideas of municipal hygiene in place of useless quarantine. Inspection of dwellings and destruction of sources of infection were strongly advocated. In the United States various yellow fever and other epidemics called attention to the subject. In the city of New York, in 1866, a Metropolitan Health Board was established, organized on the same lines as the English sanitary acts. Later, in 1869, Massachusetts established a State Board and other States and cities rapidly followed. Ten years later, in 1879, Congress created a National Board of Health, and today municipal hygiene is receiving a great deal of attention.

Municipal hygiene in Europe has been carried to a much further degree than in the United States. At the International Sanitary Conference held in Vienna, in 1874, much modification with regard to quarantine was commenced. Inland quarantine was rejected as inadmissible. The Conference of Constantinople recommended the establishment of a strict quarantine in the Red Sea for the purpose of preventing importation of cholera into Europe and was met with approval. This was regarded as the strategic point in the line of defense and therefore tended to weaken reliance upon quarantine in western ports, and medical inspection was considered as a possible substitute in conjunction with local sanitary measures. Sir John Simon, medical officer of the Privy Council, in his memorandum, expressed the views of the local government board upon the prevention of cholera which greatly influenced the opinions of the delegates. The precautions recommended in detail the various means applicable for the removal of filth and the protection of water supplies, combined with careful disinfection of the discharges of any person who might be attacked.

In 1881 an International Sanitary Conference was held in Washington and was attended by the representatives of 27 States, including all the governments of Europe, except Switzerland. They discussed measures desirable to prevent the spread of yellow fever and cholera. No uniform agreement was arrived at on all points, but some of the recommendations were adopted by many of the foreign governments. After the invasion of Egypt by cholera, in 1883, and of Europe in 1884, an International Sanitary Conference was held in Rome in 1885. The interested powers were represented by their ambassadors or other diplomats, assisted by technical medical delegates. They traced the course of shipping from its point of departure from ports and cities where cholera is endemic, for instance, Bombay, Calcutta, etc., and followed it through the Red Sea, the Suez Canal, the Mediterranean, to the open ocean. Later they considered the indications for inland precautions, and recommended the security of correct statements of sanitary conditions by the presence on big vessels of government medical officers independent of shipping companies, the disinfection on board, by means of steam chambers, of all soiled or dirty articles, the enforcement of strict precautions against the

spread of cholera by the pilgrims to and from Mecca. Respecting the detention of ships, the powers represented expressed opinions that were arranged in the three following groups: Turkey, Spain, Mexico, Brazil, etc., favored the continuance of long quarantines; France, Germany, Austria, Hungary, Switzerland, Russia, Sweden, Norway, Italy and Portugal yielded to the data of modern science; while desiring short periods of quarantine they favored such detention as deemed necessary upon travelers and commerce; England and India advocated free passage without detention. Regarding quarantine, however, the opinions of Continental nations have been undergoing modification. At the International Congress of Hygiene, at Paris, during the exhibition of 1889, Dr. Proust, Inspector-General of the sanitary service of France, concluded a report on sanitation in seaport towns with the following propositions: "That it is the duty of the governments and municipalities to render ports healthy; that sanitary works for seaport towns are more necessary than for other towns; that it is only after such works that any notable reduction in zymotic diseases and general death rates takes place, and that it is only when ports present a refractory soil for the penetration upon shipping can be suppressed." In spite of the dubious signification of the last resolution, there was ample indication that quarantine was slowly but surely being whittled down to small proportions.

Most of the microphytic diseases are found to prevail more or less in all parts of the civilized world. Certain are more prevalent in temperate zones; others are peculiar to the tropics, and are exotic in relation to this country. There are many diseases indigenous to certain tropical areas, but which are not naturalized in this country, such as Oriental plague, Asiatic cholera, yellow fever, dengue, yaws, elephantiasis, endemic hematuria, and chyluria; Oriental sore, and Madura foot. Besides these, some diseases, such as malaria and dysentery, appear in more severe form in tropical than in temperate zones. On the contrary, scarlatina, erysipelas, whooping-cough, cerebrospinal fever, and what is known as cholera nostras, are more common in temperate zones.

EPIDEMICS IN THE UNITED STATES.

According to the late Dr. Toner, the most important epidemics which prevailed in the United States during the eighteenth century were as follows:

Smallpox.—In Boston in 1701, 1702, 1721, 1730, 1752, 1764, 1776 and 1792; in New York in 1721, 1731 and 1752; in Philadelphia in 1730-32, 1736 and 1756; in Charleston, S. C., in 1700, 1717, 1732, 1738 and 1760.

Yellow Fever.—In Boston in 1796 and 1798; in New York in 1702, 1732, 1741, 1743, 1791, 1795, 1798 and 1799; in Philadelphia in 1741, 1762, 1793, 1797-99; in Charleston, S. C., in 1700, 1703, 1728, 1732, 1739, 1745, 1748, 1749, 1753, 1755, 1758, 1792, 1794, 1795, 1796, 1797 and 1799; in New Orleans in 1769, 1791, 1793-95, 1797, 1799 and 1800.

Scarlatina.—(According to J. Lewis Smith, first imported into the United States in 1735.) In Boston in 1702, 1735 and 1795; in New York in 1792-94.

Measles.—In Massachusetts in 1713, 1739, 1769 and 1773; in New York in 1788 and 1795; in Philadelphia in 1771, 1773, 1778 and 1796; in Charleston, S. C., in 1747, 1759, 1772 and 1775.

Angina (Diphtheria).—In Kingston, N. H., in 1733-35; in Boston in 1735 and 1769; in New England in 1737, 1742, 1787, etc.

GROWTH OF THE HOSPITAL.

The first hospital, or rather pest-house, was established in 1403 by the proveditors of Venice, on an island near that city, but only those actually attacked by plague were at first admitted. Later several other maritime cities in the Mediterranean founded similar institutions.

Hospitals especially for the insane were established first at Feltre, in Italy, then at Seville in 1409, then at Padua, 1410; Saragossa, 1425; Toledo, 1483, and Fez in 1492.

These hospitals may be regarded, however, rather as houses of correction, or penitentiaries—in Lubeck these houses of detention were called "Tollkisten" (insane boxes), and were under the charge of the jailer—than as institutions for the care and treatment of the inmates.

In 1460, in Frankfort-on-the-Main, there existed nine so-called insane asylums, each nine feet long, broad and high, one

of which contained a crazy woman, another a priest, a third a crazy apothecary. Of medical treatment there was not the least thought. The insane wallowed about in chains and without clothing in these horrible dens, covered with filth and their own excrement, as long as they were able to endure. Toward the close of the Middle Ages, the treatment of the insane became a little better, especially in free cities, where compassionate citizens assumed their care instead of police jailers. This practice first started in Lubeck, in 1478. Proper houses for the guardianship of the insane were also called into existence, gradually, by the example, donations, etc., of others.

MEDICOLEGAL BEGINNINGS.

We find that in the twelfth century there were State physicians and surgeons as advisers in forensic medicine. In 1249, Hugo of Lucca received from the burgomaster a commission to draw up a legal opinion, and as early as 1209 Pope Innocent III recommended the appointment of such physicians in canon law. In France and in the kingdom of Jerusalem sworn surgeons were employed by cities and courts, as medical experts, as early as the thirteenth century. Physicians and surgeons were employed as public witnesses, each in his own department.

In the fourteenth century, city physicians were required to take an oath to conform to certain instructions, the transgression of which involved a penalty. In this same century there existed at Strasburg the so-called "Libenzuchter," who exercised supervision over the moral and sanitary relations of the inhabitants. Strasburg had its first city physician in 1328.

GROWTH OF PHARMACOLOGY.

Arabians first started apothecaries in Europe, in Italy, about 1135, and in Spain in 1140, at Cordova and Toledo. Frederick II, in 1224, enacted a pharmaceutic ordinance differentiating the druggist from the apothecary. The former was dealer in spices, essential oils and raw drugs, the latter compounded medicines.

In the thirteenth century there existed in France an "instruction" for apothecaries. The latter formed a guild, about fifth in rank. In the early part of the fourteenth century they were raised to the second rank, their "masters" being allowed to wear long, black gowns and wide sleeves and velvet facings, like the judges. They, with the merchants, preserved the standard weights of Paris. The physicians were their overseers. Many compound remedies were prepared by them in the presence of medical magistrates, chief among these compounds being theriaca, which was thus prepared even in the eighteenth century, so as to escape adulteration.

Germany boasts of its first pharmacy in 1233. London was the seat of the first apothecary shop in 1345. In France, in 1330, a law was enacted for the inspection of pharmacies.

The first law under State medicine regulating apothecaries was enacted at Strasburg in 1400, and at Stuttgart in 1486, which ordinance is still in force and reads as follows: "That drugs must always be well selected and not decayed; that nothing except what is prescribed shall be put into a medicine, especially nothing dangerous by way of substitution; that the apothecary shall be responsible for his clerks, and shall not give any pernicious drug or any abortive; that the price-list of the apothecary shall be correct; that in doubtful cases he shall apply to the physician," etc.

Since the time of Frederick, inspection of pharmacies has been added as a regular public function of physicians. It was practised at Ulm in 1426, in Frankfort-on-the-Main in 1461 and in Berlin in 1499.

THE FIRST PURE FOOD LAWS.

Spain in 1283 passed an ordinance relating to adulteration of food and delicacies, the sale of poisons and love potions, infection of the air by putrefying animal matters, etc. Strict imperial ordinances against the "improvement" of wine by sugar of lead, etc., were promulgated by an imperial diet in 1475, by the Emperor Frederick III in 1487, and by Maximilian in 1497.

The penal ordinance of the criminal court directed its attention to the falsification of goods in a special section on "Falscher mit Mass. Wag. und Kaufmannschaft," and their example has been followed in the modern German Empire. Beer, too, was

kept under supervision, though this and other industrial productions were mainly controlled by the guilds.

Ordinances of medical police were issued in a few cities; one in Nuremburg in 1518 regarded the sale of food, popular amusements and adulteration of wine, a thing often done even by the ancients.

EARLY RULES GOVERNING AUTOPSIES.

Ordinances that came within the sphere of State medicine existed even in the Middle Ages, Germany being among the first promoters. Autopsies were everywhere made in cases of poisoning. Charles V enacted a criminal ordinance in the year 1530 that definitely determined the cases in which the judge should summon expert medical assistance. These were all cases of infanticide, mortal wounds, apoplexy, poisoning, concealed pregnancy and childbirth, abortion, the practice of medicine by incompetent persons, etc. However, in this ordinance judicial autopsies were not directed. They were opposed by every superstition, and it was not until 1562 that Pare made a judicial autopsy, after which postmortems frequently took place. It was from this time on that reciprocal action upon each other of medicine and jurisprudence became permanent.

THE FOUNDERS OF MEDICAL JURISPRUDENCE.

State medicine in the seventeenth century occupied considerable attention of the physicians at that time. Many contributed works on this subject; others devoted special time and study to anatomy. In the early part of the century the Pope's physician, Paolo Zacchias, wrote an independent work, renowned not only for its medical information, but especially for the legal knowledge it contained. Zacchias, I believe, is looked upon as the founder of legal medicine. Later, N. Blegny, Gendried'Angers and others in France wrote on State medicine.

But to the Germans, during the seventeenth century, are we indebted for active cultivation of this department. Ludwig von Hoernigk, in 1638, published a work on the duties of the medical profession as a whole; Paul Ammann and Hieronymus Welsch wrote works on the mortality of wounds; Melchior Sebiz, in 1641, likewise wrote on this subject, and on the signs of virginity. John Friedrich Zittmann, Bernard Suerus and John Bohn, the latter the scientific founder of State medicine in Germany, wrote on these subjects. Conrad Berth Behrens, ordinary physician to the Court of Brunswick, and J. W. Pfeizer wrote on the duties of the forensic physician. The Hollander, Feltmann, expatiated on the examination of corpses, and John Brown on the mortality of wounds.

ACTIVE GROWTH OF LEGAL MEDICINE.

During the seventeenth century numerous ordinances of medical police, or hygienic ordinances, were enacted. This period may be styled the natal era of State police, and the law included ordinances relative to plague, clothing, food, the inspection of provisions, etc.

In the eighteenth century State medicine was in high state of cultivation, especially in Germany. Those who are acquainted with the works of Fabricius, Buttner, Plouquet, Valentin, Ludwig, Tropeneger, Buchholz, Schlegel, Daniel, Platner, Teichmeyer, Alberti, Eschenbach, Metzger, Pyl, Uden, Delius, Baumer, Frank, etc., know to what extent forensic medicine advanced in that country.

In France, the learned Bellocque, Prevost, Verdier, etc.; in Spain, del Valle, and in England, Farr—all are standard authors on State medicine.

In the beginning of the nineteenth century, Pater Frank introduced the official distinction of medical police and forensic medicine. He became the champion of hygiene and was followed by Hebenstreit, von Huszty, von Nassyna, Scherf, and others.

The part of State medicine which deals with practical instruction in sanitary science has, in Europe, been prosecuted in varying degrees in different countries. To such work as that carried on by Parkes, Klein, Creighton, Sanderson, Baxter, Smith and others in England; to the investigations of Pasteur, Chauveau, Duclaux, Chamberland, and others in France, and to the bacteriologic investigations of Koch, and the chemical studies of Pettenkofer, in Germany, are we to attribute the present position of practical knowledge of hygiene.

In some countries the instruction of public hygiene is limited, being usually confined to a course of hygiene in some medical school. In others there are institutes of hygiene on the most extended scale, as, for instance, those at Munich, Leipzig, and Copenhagen. In Hungary the province of instruction in State medicine is of an extended character.

KNOWLEDGE OF ANATOMY BY THE ANCIENTS.

Autopsies and dissections are said to have been made hundreds of years before Christ. The Talmud thoroughly describes the anatomy, pathology and physiology of man, speaks of the dissection of animals, and also of the human being, teaches how to skeletonize, and cites the case of a prostitute whose body was boiled and afterward skeletonized. We also know of the two great anatomists, Erasistratus and Herophilus, in 300 B. C.

EARLY DISSECTIONS.

Dissections have been made in every century; always with opposition by the laity. There was no regular law by which a medical student could obtain material to study the elementary of medicine. However, we find that in the fifteenth century Italy turned over her condemned criminals to medical colleges. It is related by writers that all condemned criminals of Italy were sent to Pisa for execution, and were frequently turned over to the anatomists of the university, who poisoned and then dissected them.

HUMAN VIVISECTION.

It is claimed, in the History of Louis XI, that a human being was vivisected in France. It states that in 1474 a condemned robber was vivisected for the purpose of finding out where certain maladies were concreted, from which he and numerous other persons were suffering at that time. Opening and incision were accordingly done, the maladies searched for and examined, after which the bowels were replaced and the body was sewn up again. The patient's wound is said to have healed within 15 days, and he was pardoned and given some money.

In the sixteenth century vivisection of human beings was charged against three men, viz., Berengar, of Carpi, Vesallus and Fallopius in particular, and against the anatomists of the University of Pisa in general.

Berengar, of Carpi, is believed to have actually vivisected two Spaniards; Vesallus is accused of dissecting a Spanish nobleman, believing that he was dead, and Fallopius is said to have been his accuser. The following paragraph is found in the fourteenth chapter of his work, "De Tumoribus": "Fever resists 'cole' poisons, as I found at Pisa while anatomizing a man. For the prince commands them to give us a man, whom we kill in our own fashion, and anatomize. To whom we gave two drams of opium, and an attack of ague coming on (for he suffered from quartan) prevented its action. He, delighted, requested a second dose, and that we should intercede for his pardon if he survived it. We gave him another two drams, when he had no attack, and he died." Such history sounds possible, but not probable; however, it is from this sort of history that the ignorant public, both European and American, have become prejudiced against medical colleges and believe that human beings are dissected alive.

The regular legal inquest of autopsies and postmortems was first established in Austria, in the early part of the eighteenth century. It was soon followed in France through the influence of Garganne, and in Germany through that of Hufeland.

The first judicially authorized dissection in the United States was made by Dr. Shippen, of Philadelphia, in November, 1762. The case was that of a negro who had cut his throat with a glass bottle, from the effect of which he died; after the coroner's jury had pronounced him guilty of self murder, his body was immediately ordered, by judicial authority, to "Dr. Shippen's Anatomic Theater."

The first American anatomy law is the New York Act of 1789; since that time 34 States allow dissection; 19 States have liberal anatomy acts, while 15 have illiberal ones; the laws of 11 States are silent regarding anatomy, excepting their laws on malpractice; 31 States forbid the desecration of graves, while the laws of 11 States are silent regarding either dissection and disinterment; none of the three Territories allowed dissection.

Ignorant and preposterous opposition of pretenders has always been a snare to the study of pathology. The county commissioners in charge of the Chicago Asylum in 1884 raised religious prejudices against postmortems, and were found to be selling the bodies to medical colleges for \$30 each for private profit.

OPPOSITION TO VIVISECTION.

The progress of medical science, especially of physiology, biology, hygiene, etc., has called increasing attention to a higher degree of research in anatomy and physiology; to that end, vivisection of the lower animals is necessary.

At every session of legislative bodies of the various States in the Union, and of every country in Europe, an attempt is made, by a set of so-called "antivivisectionists" to influence legislators to enact laws against vivisection.

The fact of the matter is that vivisection is unfortunately a most misleading term to the laity. They seem to have the idea that animals are cut up alive by medical men, and compelled to suffer great pain for unjustifiable objects. A small proportion of the public know that anesthetics are administered beforehand, and that the animal is killed before sensation returns, and that such experiments must be carefully made and free from pain, otherwise they would be useless.

VALUE OF VIVISECTION.

The question as to the value and character of scientific research, when carried out on living animals, has in late years been aroused by an attempt on the part of the enemies of science to entrap the influence of those who profess better things.

No physiology can advance without vivisection; experiments on living animals are as essential to its progress as is dissection for the study of anatomy. The law of sacrifice is the law of life: therefore, the law of nature, that one thing should be sacrificed for another. It is a common thing for a man to endanger his own life to save that of another. How many physicians, nurses, etc., have lost their lives while attending to the sick and wounded in infectious diseases and in war on the battlefields.

I maintain that any person who would deny the saving of a human life at the cost of a mere dog, cat or rabbit, is a pretended humanitarian. For instance, a professor showed his students how he had saved the lives of several men by a certain operation on the brain. In order to demonstrate the operation, he performed a *fac simile* operation on a monkey, which also recovered. The professor, in his lecture, informed his pupils that before he ventured the first operation he performed it on a living monkey. Now, according to the opponents of vivisection, it would have been a lesser crime to have let several men die than to have risked the life of a monkey.

VIVISECTION DEVELOPS SYMPATHY.

Regarding the false idea that a physiologist takes pleasure in making animals suffer, I will say that instead of developing cruelty, the practice of physiology tends to increase in us the feeling of humanity and pity. The physician who has closely observed human suffering, instead of being hardened by it becomes more compassionate. So the physiologists who are acquainted with pain are full of pity for suffering beings, and I do not hesitate to state that not one of them would be guilty of brutality toward an animal.

OUR DEBT TO VIVISECTION.

Take away from the science of medicine and the art of surgery all that with which physiology has enriched it, and the physician and surgeon of today would be no better than a mystery-man or a quack vendor of chance-gotten drugs. Discard the present system of physiology and all that has been gained by experiments on living animals, and the whole structure would collapse, leaving nothing but a few isolated facts of human experience.

The physiologic knowledge that we have and that we will gain in the future, if properly legislated in its favor, will benefit suffering humanity. The opponents do not stop to think that vivisection is as justifiable as the killing of animals for food. Physiology demands it for the good of all living creatures, and medical men should carry it out.

Moreover, I doubt if there is a single "antivivisectionist"

who would miss a beefsteak for the sake of saving the life of a magnificent steer, or who would deny himself of either a veal or lamb chop in order to spare the life of a calf or that of an innocent lamb. Hundreds of millions of living creatures have already been sacrificed by epidemics, contagious and occult diseases, largely through the want of knowledge. It is unnecessary, therefore, to prove the utility and morality of vivisection. Nearly all physicians and all physiologists approve of it.

VACCINATION.

As a prophylactic against dangerous variola, compulsory vaccination was established early in the nineteenth century. It was first made compulsory in Germany in 1807.

Austria, Prussia, and even Russia recognized the value of the vaccine prophylactic, and made the practice general and compulsory throughout its territories in the early part of the nineteenth century.

In 1853, in England, an Act of Parliament was passed making it a penal offence for any British subject to fail to protect himself by vaccination. In 1864, the American Medical Association, at its fourteenth annual session, held at Chicago, appointed a committee to inquire into the expediency of a national law compelling every individual in the United States to be vaccinated. The committee reported at the fifteenth annual session, at New York, in favor of such a law, but came to the conclusion that general compulsory vaccination in this country at that time was impracticable owing to the unpleasant condition of our nation at that period.

TUBERCULOSIS.

But the time has now come when the medical profession should show the national supremacy, by its united action in demanding enforced national legislation for the protection of its inhabitants from infectious diseases, by compelling every man, woman and child not only to be vaccinated, but also to take precaution against infectious tuberculosis.

Koch's first investigations revealed tubercle bacilli in the dust that had been contaminated by the sputa of tuberculous patients, and the comma bacilli of cholera in the mudbanks of Indian watertanks. Kitasto, of Japan, and other observers have found tetanus bacilli in the soil.

These and numerous other experiments have proved the presence of pathogenic microbes in the soil. Those investigations endured a great amount of experimental work under the auspices of various governments, such as France, Germany, Austria, England, Russia and the United States. The field of contagious animal diseases is in a much more advanced state, controlled, as it is, by the Bureau of Animal Industries, under the Department of Agriculture.

TUBERCULOSIS MORTALITY.

According to statistics tuberculosis kills one-seventh of all the population of the world, and one-third of all deaths occurring between the ages of fifteen and sixty years are due to tuberculosis. Furthermore, it destroys four and a half times more people than do smallpox, scarlet fever, typhoid fever and diphtheria combined; that in America 1,200,000 people have the disease at all times, or one in fifty persons.

Dr. Mullins, of Sydney, Australia, reports for a period of twelve years 17,114 deaths from tubercular disease in New South Wales. Of these 12,430 were from pulmonary tuberculosis, 2,241 from *tabes mesenterica*, 1,325 from tubercular meningitis, and 1,018 from other forms of tuberculosis. During the year 1898, in the State of New York alone, there were 12,979 deaths due to pulmonary tuberculosis; of this number, 7,825 were in the city of New York.

BOVINE TUBERCULOSIS TRANSMISSIBLE.

Dr. Charles Creighton emphatically says: "I cannot escape from the conviction that the peculiar errors of nutrition in the domesticated bovine species all over the world are the real fountain and source of human tubercle."

A strong confirmation of the view that bovine tuberculosis is transmissible, at least to young children, is contained in the fact that the mortality of children under five years of age from primary tubercular ulceration of the intestines, and from tuberculosis of the peritoneum and mesenteric glands (*tabes mesenterica*) is very high.

According to bacteriologic investigation, the bacilli of bovine tuberculosis have been found to be identical with those found in tubercular formations in the human organs, although the disease is anatomically different in man from that in cattle. These differences are considered due to differences of soil in the human and bovine tissues, the bacilli engrafting themselves in those tissues which present conditions most favorable to their growth and development.

It has been found that the milk of tuberculous cows containing tubercle bacilli, when administered as food, produced tuberculosis in dogs, guineapigs and rabbits.

WHAT STATISTICS PROVE.

Woodhead states that in 127 cases of tuberculosis in children examined by him he found tubercular ulceration of the intestine in 43; while in 100 cases, or nearly 79% of the whole, the glands connected with the intestinal tract were in some stage or other of tubercular degeneration. Woodhead contends that tuberculosis connected with the intestine is of frequent occurrence in children, infection frequently taking place by the alimentary canal.

It is a curious fact that wise men occasionally fall into errors, strange and unaccountable. I trust that the error recently made by Dr. Koch, at the British Congress of Tuberculosis, that bovine tuberculosis is not infectious to man will not retard the action and movements of scientists against the dangerous infection from bovine tuberculosis. If Koch does not believe in the identity of human and bovine tuberculosis, we will simply refer him to the observations of Tscherming, of Copenhagen; Pfeiffer, of Weimar; Law, of Cornell University; Williams, of the Brompton Hospital; Cozette, of Noyon, France, and many others who report infectious cases of bovine tubercular infection.

ILLUSTRATIVE CASES.

Tscherming relates the case of a veterinary surgeon, who cut his hand while making a postmortem examination on a tuberculous cow. Although the wound healed, a swelling remained which became ulcerated and refused to heal. Eventually the whole mass was removed, and microscopic examination revealed the presence of tubercle bacilli. Pfeiffer relates a similar case of a veterinarian, aged 34, of good constitution and free from hereditary taint, who wounded himself deeply in the left thumb. The wound healed, but about six months afterward a cutaneous tuberculosis was diagnosed at the site of the scar. A year later the patient manifested undoubted signs of pulmonary tuberculosis; the sputum was found to contain tubercle bacilli, and the patient died 2½ years after receiving the wound. Postmortem examination revealed tubercular arthritis of the wounded thumb, and extensive tubercle and cavities in the lungs.

Law reports another case of a veterinary surgeon, who was wounded in the hand while operating on a tuberculous cow, and suffered from a tumefaction of the resulting cicatrix, with distinct tubercle bacilli. The tumefaction was surgically removed, and was evidently the means of saving the patient from a generalized tuberculosis.

Cozette, a French veterinarian, relates an instance in which a tuberculous attendant had infected two cows, which, when handed over for slaughter, were condemned because of their markedly tuberculous condition; however, those two had infected seven others, who became ill, and were killed. Autopsies demonstrated clear cases of tuberculosis.

Law cites the case of a healthy child, aged 1½ years; while at a relative's house for one week it drank the milk of a cow which soon afterward was condemned and killed. Autopsy revealed generalized tuberculosis. The child gradually emaciated, death occurring three months later from abdominal tuberculosis.

Professor Gosse, of Geneva, cites the case of his own daughter, who died from intestinal and mesenteric tuberculosis, which he attributed to the milk the girl drank daily, fresh from five cows on his estate. They were all slaughtered, and two of them showed tuberculous disease of the udder.

Demine, of Berne, reports the case of four infants in the Hospital Jenner, whose parents were all healthy, with no tuberculous history, dying of intestinal and mesenteric tubercu-

losis as the result of drinking the unsterilized milk of tuberculous cows.

Brouardel likewise records a case in which 5 out of 14 young girls living together in a boarding school became tuberculous subsequent to the daily use of milk from a tuberculous cow. We could cite hundreds of similar cases to convince our friend Dr. Koch of his mistaken ideas of bovine tubercular infection.

Now, if the lactile secretion is infectious, there can be no doubt that the meat from animals which suffer from even a localized tuberculosis is not fit for human consumption; furthermore, we have ample proof that a localized tuberculosis will naturally find its way into the muscular structure or other parts of the carcass used as a food; therefore, such meat should and must be condemned.

IMPORTATION OF DISEASED ANIMALS.

Most all civilized countries have and should have some laws for the prevention of importation of epizootics by foreign live animals. Limited space and other considerations naturally prevent long periods of quarantine or observation and detention of those animals intended for exhibition or reshipment, or for other special purposes. Many infected animals are slaughtered at the port of arrival and suspected live animals are frequently excluded.

In 1848 the English legislature employed numerous means to prevent the importation of sheep, cattle and other animals suffering from contagious or infectious disorders, and gradually further powers were granted until their consolidation and perpetuation in the Contagious Diseases (animals) Act of 1869. Great devastations continued as the result of epizootics, and serious legislative efforts were made until again codified in the existing Act of 1876, to which amendments were added in 1884, 1886 and 1890; so that, as in certain human communicable diseases, the contagious diseases of animals are also subject to compulsory declaration, isolation and disinfection, with the additional powers of prohibited importance, quarantine and slaughter.

GOVERNMENTAL CONTROL.

In July, 1891, a congress for the study of tuberculosis in man and animals was held at Paris and the following resolutions were passed:

"It is necessary that all governments should decree the most efficacious prophylactic measures for preventing the extension of bovine tuberculosis. It is urgently necessary to establish a special inspection of meat in all towns, without exception, provided with a public abattoir. It is equally necessary to suppress all private slaughter-houses in towns containing more than 5,000 inhabitants, and to replace them, as soon as possible, by public abattoirs; effectual inspection is impossible without this measure.

"Tuberculous subjects, man and beast alike, should be subject to quarantine restrictions, and its control should be part of the duties of either a National, State or Municipal Board of Health."

The expectoration of sputum of tubercular patients should be prohibited in public places, public vehicles and even on the highways. If the oral secretion is infected with tubercular deposits and dries on the floor it is likely to pulverize and float about as dust; thus inhaled it is a means of spreading tuberculosis. It may be difficult at first to enforce such an ordinance, but a law of this sort will certainly have a moral effect and eventually an educative action on the public, who will consider it indecent and disreputable to spit in public places. It will likewise educate the public to look upon public spitters with contempt.

The National Board of Health, which was established in 1878, was appointed and supplied with grants by the Federal Government which enabled the board to institute investigations of great importance regarding the causation of disease, etc., has unfortunately, through political prejudice, withheld its influence, so that very little practical work has been done and was finally abolished. But the Marine-Hospital Service, with the late Dr. John B. Hamilton and the present Dr. Walter Wyman at the head of that department, protected the country against foreign importation of infectious and contagious diseases.

TUBERCULOSIS SANATORIA.

S. A. Knopf, of New York, before the Conference of the State and Provincial Boards of Health of the United States, delivered an address upon the State and municipal care of consumptives. He believes that a commission should be provided for the examination and care of tuberculous subjects; to determine their physical condition; to investigate their surroundings and the dangers to their families; to render their homes sanitary, if possible, and, if necessary, to endeavor to remove the patients to an institution. Anyone should have the privilege of being examined, and all physicians should have the privilege of recommending patients for examination. The institutions for the care of these individuals should comprise a reception hospital and dispensary, located in the city; a suburban sanatorium, in an elevated region, if possible, this to be used as a temporary hospital for patients subsequently to be sent to a mountain sanatorium, which should, if possible, be elevated from 1,000 to 2,000 feet above sea level. There should also be seaside sanatoriums for the treatment of children with tubercular disease of the joints and glands, and a maternity sanatorium.

Knopf also quotes the greatest authorities of the world who are in favor of such a movement—Detweiler, Leyden and Liebe, of Germany; von Schrotter, of Austria; Grancher, Letulle and Petit, of France; Weber, Lindsey and Sangmann, of Denmark and Sweden; and in the United States, Bowditch, Hamilton, Biggs and Prudden, Lee, Trudeau, Flick, Hinsdale, Otis, Shradly and others, all strong advocates for the establishment of State and municipal sanatoriums for the care and treatment of the tuberculous poor.

The crowned heads of Europe, such as the Czar of Russia, the Empress of Austria, the King of Saxony, the King of Sweden, and the young Queen of Holland, have placed the sanatoriums for the tuberculous poor under their high protection, and have opened their private purses for their support. The nobility and the leaders in finance, art, and literature have been eager to imitate the noble example set by their sovereigns, and the latter, too, have given freely toward the erection and maintenance of such institutions.

Thus, in the countries just mentioned, a number of establishments now flourish which are doing a world of good by curing the curable tuberculous cases, and taking care of the hopeless ones, thus diminishing countless centers of infection.

Dr. Knopf justly says: "Let me further advise the statesman, physician or philanthropist who doubts the need of such institutions in the United States to visit the tuberculous poor in the tenement districts of our large cities, and study the hygienic and social conditions of these sufferers in their surroundings."

NATIONAL BOARD OF HEALTH AND EXAMINERS.

It is the duty of every citizen, as well as of the physician, to insist that our National Congress establish a medical bureau of the Department of the Interior, for the purpose of regulating the various professions that battle for the welfare of suffering humanity.

First, to establish a federal board of medical examiners, under the auspices of a medical bureau of the Department of the Interior, so that any physician, dentist or pharmacist may follow his profession in any part of the United States, or in any of its territories, thus granting the privilege to its citizens to invite a physician or dentist from any part of this country to ameliorate their sufferings.

Second, under the auspices of the same bureau there shall exist a National Board of Health, consisting of men of learning and ability, competent to make bacteriologic and chemic examinations, for the purpose of preventing the spread of the various contagious and infectious diseases, the adulteration of food, and the sale of infected cattle, and to restrict the sale of the so-called patent medicines.

Third, the bureau shall have jurisdiction over the registration of births and deaths, census and vital statistics in general.

REGULATION OF MARRIAGE.

It is also desirable to have a national law pertaining to marriage and divorce. The unfortunate conditions of either, each

State having its own laws, demand immediate action of Congress for the regulation of this evil.

Marriage should be prohibited to blood relations up to the second degree, and to all persons of either sex affected with either congenital or acquired specific or infectious disease, such as venereal or pulmonary affections, confirmed drunkards, criminals, anarchists and degenerate classes.

Each applicant for a marriage license should present a certificate from a medical examiner, appointed for that purpose, stating that the applicant is not affected with any disease or habit that would be derogatory to procreation or offspring. When parents are tainted with specific disease, it is almost invariably looked for and expected with the children. A taint of hereditary drunkenness, insanity, suicide, epilepsy, idiocy, deaf-mutism, cancer, syphilis, gout, rheumatism, tuberculosis or scrofulous diathesis in the blood, are all symptoms of degeneration, likely to be intensified by propagation in succeeding generations until the tainted family becomes extinct. Intermarriage with those tainted diffuses weakness, deformity, and abnormality through the social structure, deteriorates and contaminates all who issue from such unions.

Intermarriage of distinct diseases are as dangerous as the union of two consumptives. A typical case, cited by Richardson, will corroborate this statement: "A young man, of marked cancerous proclivity, married a woman whose parents had both died of pulmonary tuberculosis. This married couple had a family of five children, all of whom grew up to adolescence, sustaining at their best but delicate and feeble existences. The first of these children died of lupus, the second of simple pulmonary tuberculosis, the third, owing to tubercular deposit in the brain, succumbed from epileptiform convulsions; the fourth, with symptoms of tubercular brain disease, sank from diabetes, the result of the nervous injury; and the last, living longer than any of the rest, namely, to 36 years, died of cancer. The parents in this instance survived three of the children, but they both died comparatively early in life; the father from cancerous disease of the liver, the mother from heart disease and bronchitis."

While we have some States prohibiting consanguineous unions, there are others that have not kept abreast with modern civilization, and allow the marriage of near kin. There is not a physician who is entitled to that name who does not know the physiologic reason for prohibiting consanguineous marriages, but for the benefit of those who do not know, I will state that besides degenerations a marriage between persons closely allied in blood is apt to produce an offspring feeble in body and a tendency to insanity in mind.

As to confirmed drunkards, I can only repeat what Plutarch says—"One drunkard begets another"; and Aristotle adds: "Drunk men bring forth children like unto themselves." Dr. Howe, in a report to the Legislature of Massachusetts, says: "The habits of the parents of 300 of the idiots were learned, and 145, or nearly one-half, are reported to be known as habitual drunkards." Howe cited a case in which the parents were drunkards, and had seven idiotic children.

PROPHYLAXIS AGAINST ANARCHY.

Another dangerous disease with which the world has to contend, and which has lately shocked our nation, and in fact the whole world, is anarchy. The murderous assault upon the President, aimed as it was at the life of the government, imperiled the security of the whole country. The right of self-preservation is as vital to the State as to the individual.

The entrance of foreign anarchists must be strictly prohibited as well as other infectious matter. Their teachings are as poisonous as the bite of a snake, and as dangerous as the swords and bayonets of a hostile nation. The pestilence of the teachings of the anarchists who dwell amongst us can not but have influence upon their offspring; therefore there must be a law preventing their marriage. The characters possessed by an individual are mainly congenital, peculiar to each individual in type and variation; therefore, the offspring bear a typical likeness and character to the parents.

Criminals and murderers may regret and repent their crimes, confess and receive absolution, and, after their execu-

tion, may go direct to heaven; but society is better off with such individuals in heaven than on earth.

A great deal can be said in favor of a national law of divorce. But what mainly interests us is the medical portion. According to medical jurisprudence, impotence in man and sterility in woman, or any impediment to procreation of children, is absolute ground for divorce; however, what we desire to add is that specific and infectious disease endangering offspring shall likewise constitute grounds for divorce.

PUBLIC BATHS.

The public bath is another necessity to municipal hygiene. The ruins of the caracalla of Rome speak clearly of the glorious bathing establishments of the fifth century; though in a state of decay, yet they show the inclinations and habits of the people who prevented municipal filth. It is said that Rome had at one time 856 public baths. In the Middle Ages nearly every village and town is said to have had its bathroom with wooden tubs. Russia, Turkey and Japan are renowned for their public baths, which are accessible to the poorest classes upon the payment of a very slight fee.

France, Belgium and Austria have kept apace with other countries. The United States, unfortunately, has done very little toward this hygienic problem. The only baths provided in this country by municipalities are a few floating or swimming baths in New York and in Chicago. The New York baths were authorized by the Legislature of that State. About twenty such establishments exist in that city today. Another Act in the Empire State, in 1892, authorized any city, village or town in the State to establish public baths, and to loan, credit or make appropriations for that purpose. I trust that the great State of New York will continue its good work, and that other States will follow. It is admitted that if you deprive a man of his bath you lower his moral tone; "soapology" and "scrubology" as well as "theology" are recognized by General Booth of the Salvation Army as potent Christianizing agencies.

RESTRICTION OF VENEREAL DISEASES.

Compulsory examination of prostitutes is another necessity for the purpose of preventing the spread of venereal diseases. It is said that either the city of New York or Chicago contains at the present day venereal infection sufficient to contaminate the male population of the United States in a very short space of time.

We do not want legalized prostitution as it exists in European countries. I do not believe in authorizing houses of debauchery and making of prostitution a regular profession. The State has no right to regulate prostitution. I am proud of my country, which is fortunately free from the incubus of State regulated vice.

All that is desired is a State law for municipal governments, to keep a register of all women known or suspected of prostitution, and that such women shall be liable at any time to be called in for examination. But no certificates should be issued to them, as to their healthy or unhealthy conditions, for such a certificate would simply encourage the vice. However, if found affected with a venereal disease, they should be sent to a detention hospital or sanatorium, and should be detained there until cured.

DETENTION OF SYPHILITICS.

I firmly believe in the law of Massachusetts, for the detention of certain persons affected with syphilis, in which it is enacted that persons suffering from syphilis, and being inmates of any correctional or administrative institution, such as a house of correction, a penitentiary, or a work-house, shall be placed under medical treatment and be isolated until the medical attendant shall consider further isolation unnecessary; and if, at the date of discharge of a person, syphilitic symptoms are still present, likely to prove a public danger, compulsory detention may be put in force to retain the infected person until such a time as dangerous symptoms have been pronounced to be no longer present.

A suitable hospital or sanatorium devoted to diseases peculiar to prostitutes should be established in each and every city, with the power to place and keep there all women so diseased until cured. The amount of accommodation required

should depend upon the size of the population, and there should be at least one bed to every thousand inhabitants. Payment could and should be required from all who possess the means of expense actually incurred, and this would contribute a considerable sum toward the expenditures of such an institution.

It should not be intended as a prison, for such is directly contrary to reformation. Liberal arrangements as a hospital would afford no encouragement to vice, and certainly help wonderfully to eradicate the evil.

ABOLISH THE CORONER.

There is one law, a relic of barbarism, that I should like to see abolished, and I know that the profession would heartily approve of it; that is, the office of county coroner; and in its stead a medical examiner should be created. Such a law was established in Massachusetts about 15 years ago, and gives great satisfaction from both a scientific and financial point of view.

CONCLUSIONS.

All foregoing regulations, if established, will, I am sure, tend to improve the moral and physical welfare of our nation.

State medicine is a creation of necessity in times of public danger, but its future development will be in proportion to the scientific character of its work, and to the appreciation on the part of the public of the economic and beneficent results of such work.

The world's rapid transit and intercommunication brought on the high state of civilization and made the whole human race one family, so that people of every color, clime, language, government and creed have become one brotherhood, with a law of love and care for one another which fulfils the golden rule—"love your neighbor as you do yourself."

Medical College of Ohio.—A number of changes and additions have been made. The department of surgery will be conducted didactically and clinically, by Professors Conner and Ransohoff. Professor C. A. L. Reed has been appointed to the chair of clinical gynecology, and Dr. A. H. Frieberg to that of orthopedic surgery; Professor A. V. Phelps will have full control of the anatomic teaching of all classes, and bedside instruction is to be systematically given in both the Good Samaritan and Cincinnati Hospitals.

Marine-Hospital Service.—A board of officers will convene at the Marine-Hospital Bureau, Washington, D. C., June 16, 1902, for the examination of candidates for admission to the grade of assistant surgeon in the U. S. Marine-Hospital Service. The candidates must be between 21 and 30 years of age; must furnish testimonials as to character and graduation from a reputable medical college. The successful candidates will be numbered according to their attainments on examination, and will receive commissions in the same order as vacancies occur. The young officers, when appointed, are first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans or San Francisco. After serving five years, assistant surgeons may take examination for the grade of passed assistant surgeons. The grade of surgeon is reached according to seniority and after proper examination as vacancies occur. Assistant surgeons receive \$1,600; passed assistant surgeons \$2,000 and surgeons \$2,500 per year. Commutation at the rate of \$30, \$40 and \$50 a month is allowed according to grade if quarters are not provided. All grades above that of assistant surgeon receive longevity pay, 10%, in addition to the regular salary, for every five years' service up to 40% after 20 years' service. The Senate passed, without debate, May 18 the bill to increase the efficiency and change the name of the U. S. Marine-Hospital Service to the Public Health and Marine-Hospital Service of the United States, which is very appropriate, as it enforces quarantine regulations, domestic, insular and in foreign ports; manages epidemics, inspects immigrants and publishes sanitary reports and statistics from all parts of the world, and conducts scientific investigations and has imposed upon it, by law, the enforcement of quarantine regulations and the scientific investigation of all matters relating to the public health. Its hospitals and relief stations treat about 56,000 seamen year by year and afford the best possible opportunity for maintaining the excellence of the corps. The bill authorizes the President to utilize in war this service, which has 106 commissioned medical officers in it. It provides for bringing the laboratory, now provided for by law, into relations with the scientific work of the Army and Navy and the Department of Agriculture and with other scientific laboratories in different parts of the country. Provision is made also for cooperation between the National and State health authorities and for securing uniformity in the registration of vital statistics of the country.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

June 7, 1902. [Vol. xxxviii, No. 23.]

1. Notes on Aneurysm. WILLIAM OSLER.
2. A Brief Summary of the Clinical, Pathologic and Bacteriologic Features of Cutaneous Blastomycosis (Blastomycetic Dermatitis of Gilchrist). FRANK HUGH MONTGOMERY.
3. A Case of Systemic Infection by a Paracolon Bacillus Probably Secondary to Typhoid Fever, with the Clinical Picture of Acute Cholecystitis. A. A. BERG and E. LIBMAN.
4. Clinical Manifestations of the Early Stages of Cirrhosis of the Liver. FRANK BILLINGS.
5. Hemostasis of the Broad Ligament. HENRY P. NEWMAN.

1.—Notes on Aneurysm.—Osler reports a case of marked arteriovenous aneurysm of the subclavian vessels which is growing smaller, the patient suffering little inconvenience. The subsequent history of a case reported in 1893 is given. The lesion is so rare that experienced surgeons are often perplexed as to the best course to follow. He quotes the conclusions of Matas favoring noninterference. He also reports in detail a case of thoracic aneurysm with the characteristic humming-top murmur, indicating communication between the larger vessels or chambers of the heart, in this instance apparently between the arch of the aorta and pulmonary artery. He illustrates the value of the fluoroscope by a case diagnosed as mediastinal sarcoma, and calls attention to the value of routine inspection of the back as well as the entire front of the chest when the diagnosis is obscure. [H.M.]

2.—See *American Medicine*, Vol. I, No. II, p. 496.

4.—See *American Medicine*, Vol. III, No. 20, p. 808.

5.—Hemostasis of the Broad Ligament.—The Newman pressure clamp, which is illustrated, is applied in the usual manner in excision of the appendages, and the ovarian artery encircled by a small catgut ligature just beneath the clamp. The main artery is thus secured before it emerges from its moorings in the tissues, thus preventing all slipping from the grasp of the ligature. The clamp is removed and the neat linear stump receives no further treatment except in the case of pus-tubes, when carbolic acid is applied, or the interstitial portion of the tube resected, closing the wound in the usual manner with catgut. In hysterectomy both arteries are tied. The advantages are permanent hemostasis, inability of the artery to draw away from the ligature, and from hematoma or hematocoele; the combined use of angiotribe and ligature causes plugging of the vessels by multiple thrombuses, there is no puckering with displacement of other organs, no strangulated, sloughing stump to form adhesions; foreign matter left in the wound is reduced to a minimum; the rapidity and bloodlessness of the method induces shock, and convalescence is hastened. [H.M.]

6.—Methylene Blue in Fistulous Tracts.—Davis reports a case illustrating the value of outlining by methylene blue a fistulous tract before operation. The deeply stained tissue can be easily distinguished and removed with a sharp curet. In no other way is there certainty of complete removal. [H.M.]

Boston Medical and Surgical Journal.

June 5, 1902. [Vol. cXLVI, No. 23.]

1. Cystoscopic Appearances in Nontubercular Cystitis and Pyelonephritis in Women. EDGAR GARCEAU. (Continued.)
2. Some Problems Concerning Venereal Diseases. MARSHALL H. BAILEY.

2.—Problems Concerning Venereal Diseases.—The statistics have never yet been accurately computed but there is no need to detail the horror and injustice of hereditary syphilis. Gonorrhea is the most widespread of all diseases except measles and 10% to 20% of women are infected after marriage, and 26% to 30% of adult blindness is due to gonorrhea infection of the infant. The history of attempts to suppress prostitution show its futility. As to regulation opinion is divided. Practically it results, as in attempted suppression, in clandestine prostitution with increase of disease, except in the case of armies. Professional prostitutes constitute only a small minority of the source of contagion. Regulation cannot reach clandestine prostitutes or masculine spreaders of disease. Facilities for treatment are ridiculously inadequate, though most important in decreasing

dissemination. Treatment is not sufficiently prolonged. Force detention keeps patients away. The majority of girls are driven to prostitution through want. The education of the young of the laws of life, of more importance than anything else, is conspicuous by its absence from all classes of society. It is inexplicable how parents can abandon their children to gather such knowledge from erratic and prurient sources. Legal penalty for conveying disease and examination in order to obtain marriage permits should be considered more generally. [H.M.]

Medical Record.

June 7, 1902. [Vol. 61, No. 23.]

1. The Role of Inhibition in the Normal and in Some of the Pathologic Phenomena of Life. S. J. MELTZER.
2. The Merits of the Various Incisions for Appendicitis. JOHN A. WYETH.
3. Report of a Case of Cesarean Section Followed by Hysterectomy for Impacted Cervical Fibroid and Prolapse of Gangrenous Umbilical Cord in a Septic Woman; Recovery. ABRAHAM BROTHERS.
4. External Speech-Physiology, or So-called Lip-Reading. CORA D. GORTON.
5. A New Method of Operating for Obstinate Cases of Rectovaginal Fistulas. HIRSH N. VINEBERG.

1.—Inhibition in Normal and Pathologic Phenomena.—Meltzer discusses the role of the vagus, the vasodilators, the splanchnics and the superior laryngeal nerve, and the suggestion of inhibitory action in the skeletal muscles. Reflexes may be inhibited by stimulation of other parts of the body. Electrical phenomena suggest that inhibition in the nerves is accomplished by positive currents. Though secretion depends on blood supply, there are reliable proofs of purely inhibitory fibers to the glands. Sensation in one part may be diminished by stimulus in another. All irritable tissues can respond also with an inhibition of an existing vital activity. Inhibition predominates during rest, but is not directly implicated in anabolism. Excitation and inhibition concern themselves only with the conversion of potential into kinetic energy. This does not preclude the possibility of trophic nerves. Biology does not indicate absolute specific stimulation of either force. The predominance of the effect of one force during stimulation, the long after-effect or latent period, the resistance to fatigue, etc., are not peculiarities of either inhibition or excitation. The activity of an organ is the resultant of excitation in one part and inhibition in another part; the activity of a tissue is the resultant of excitation and inhibition in the same part. Deviations from the normal resultant bring about such pathologic conditions as cardiospasm disturbances in the biliary passages, family periodic paralysis, myasthenia gravis, myotonia, myxedema and Graves' disease. The length of the article prevents any outline of the mechanism of inhibition resulting in these morbid states. [H.M.]

2.—The Merits of Various Incisions for Appendicitis.—Wyeth employs but two incisions, viz., the "gridiron" incision of McBurney and the "clean cut" or "through and through" incision. The former is made parallel to the linea semilunaris, but nearer the iliac spine, so as to encounter the muscular fibers of the internal oblique and transversalis, and is employed in all clean cases and those operated upon in the internal; also in septic cases if there is only a local peritonitis confined to or about the appendix. When such a condition of sepsis prevails as to require a careful operation to prevent widespread infection he prefers the clean cut incision. It should be made over and parallel to the linea semilunaris in order to avoid cutting the internal oblique and transversalis muscles through their fibers. Walled-off abscesses are merely opened by a short incision and drained. Patients are required to remain in bed for six weeks after the "through and through" incision, and not even allowed to sit up. In approximating the separated fibers of the internal oblique and transversalis in the gridiron incision it should be done by loose sutures. [A.B.C.]

3.—Cesarean Section Followed by Hysterectomy.—Brothers reports the case of an Italian woman of 40, who when first seen by him, after being in labor three days, had a temperature of 103° and a pulse of 130, and was evidently suffering from sepsis, as the funis was found in a gangrenous condition, and protruding a distance of six or eight inches from the vulva.

The lumen of the pelvis was practically filled up with a round, hard mass attached to the posterior cervical lip. High up the fetal head could just be reached. As delivery by the natural passages was out of the question, even with the aid of craniotomy, although the child was dead, and the mother's chances slim, he had her transferred to a hospital and performed cesarean section, removing the decomposing fetus and gangrenous cord, placenta and adherent membranes; removal of the septic uterus was also deemed best, and this was accordingly done, the thin abdominal wall being sutured in one layer. The chief points of interest were the following: (1) The fact that the woman had spontaneously given birth to three living children, although the tumor must have been of some years' growth; (2) the recovery of the mother after cord and uterine contents had undergone decomposition with resulting maternal sepsis; (3) the mental derangement which showed itself about the ninth day, and was evidently the direct result of the operation; (4) the escape of the intestines for several hours after the spontaneous reopening of the wound, without fatally influencing the progress of the case; (5) the desirability in sepsis preceding delivery (in cases requiring cesarean section) of immediately combining abdominal hysterectomy with cesarean section. The risk of additional shock is fully met by the advantage of removing from the system the infected uterus. As women have been known to die from subsequent septicemia in similar cases, sepsis preceding delivery seems a strong indication for the removal of the uterus either at the time of delivery or shortly afterward, if the septicemia does not rapidly abate. [W.K.]

4.—External Speech-Physiology.—Cora Gorton says that during the elementary drill upon the named letters or sounds, the consonants are mastered also, as it is impossible to present the one in practice without the other. Conversation is made use of from the beginning, simple sentences slowly given at first, but leading gradually to more difficult and complex, with rapidly-pronounced words and profile views. In the formal drilling upon important sounds repetition is the surest aid to remembrance. Every sound that becomes familiar to the eye of the speech-reader becomes a key to every other word in which the same occurs; hence much attention is given to systematic drills upon prefixes and suffixes, and all terminals which occur frequently in language. Experience proves that age makes but little difference in the acquirement of a knowledge of lip-reading. [A.B.C.]

5.—The Cure of Rectovaginal Fistula by Excision.—Vineberg failed to close a rectovaginal fistula by operation in the usual way. The rectal opening of the fistula was an inch above the anus. In May, 1900, he operated a second time, practically doing the same operation which Whitehead devised for removal of internal hemorrhoids. He was careful to dissect free the rectal mucosa for fully one inch above the fistular opening before bringing it down by sutures to the cutaneous border. The fistula was thus closed and the operation a success. Paul Ségond had done the operation in 1895, though this was unknown to Vineberg. Dudley likewise devised it independently in July, 1901. In Ségond's case the rectal opening of the fistula was more than three inches above the anal outlet. [A.B.C.]

New York Medical Journal.

May 31, 1902. [Vol. LXXV, No. 22.]

1. The Surgical Treatment of Prostatic Hypertrophy. CHARLES H. CHETWOOD.
2. How to Conduct a Normal Labor. JAMES MORAN.
3. Conservatism in Abdominal and Pelvic Surgery. EDWIN RICKETTS.
4. Colon Bacillus Infection. J. HOLCOMB BURCH.
5. Fractures of the Upper Third of the Femur. W. BURT.

1.—See *American Medicine*, Vol. III, No. 19, p. 766.

2.—**Normal Labor.**—When the pains are severe and the os is rigid Moran gives 20 grains of chloral every half hour until three or four doses are taken. He believes that quinin and strychnin sulfate act better than ergot in producing uterine contractions and keeping up the tone of the uterus, and that there is not so much danger in their use. Morphine in $\frac{1}{2}$ -grain doses is used in almost all cases. If there is severe suffering and labor progresses slowly it is administered every hour and

sometimes every half hour. It acts similarly to chloral in relaxing the cervix and perineal muscles, it does not prolong labor and it allows the woman to bear down with more force and very much less suffering. [C.A.O.]

4.—Colon Bacillus Infection.—Burch discusses a number of cases in which the whole clinical picture was that of typhoid fever. In every case there was diminished leukocytosis. The urine in many cases contained traces of albumin and sometimes a few granular casts. Its reaction was always acid, it was many times turbid and swarmed with peculiar motile organisms resembling *Bacillus typhi abdominalis*. Indican was present in every case, and the Ehrlich diazo-reaction was, as a rule, well marked. The Widal-Johnson reaction was absent in every case throughout its entire duration; but, by employing a broth culture of the bacillus found in the urine, following the technic of the Widal-Johnson reaction, agglutination was manifested in every case. A typical case is reported in which the culture tests proved beyond doubt the presence of *Bacillus coli communis*. The fever was of a mild type in each case, varying from 7 to 10 days in duration. Burch considers the possibility of a mixed infection in these cases. [C.A.O.]

5.—Fractures of the Upper Third of the Femur.—Burt reports a case in a boy of 16 of fracture of the upper third of the femur in which there was shortening to the extent of 2½ inches, the proximal fragment projecting markedly forward and outward. The limb was put up in the flexed position, but the upper fragment still remained displaced. The flexed apparatus was then removed and Buck's extension applied. The forward projection disappeared in great measure almost immediately, and in a few days was in the best possible condition. The results were entirely satisfactory. The author maintains that all, or nearly all, fractures of the femur may be treated by the straight position with Buck's apparatus. It completely overcomes the tendency of the upper fragment to tilt outward, both fragments are brought into a straight line, and the pelvis does the tilting, which often makes the fractured limb appear the longer. This is why he takes exception to abducting the limb when applying the apparatus. [C.A.O.]

Medical News.

June 7, 1902. [Vol. 80, No. 23.]

1. The Advantages of Early Surgical Intervention in Border-Land Cases. ROSWELL PARK.
2. A Review of the Progress of Therapeutics for the Last 12 Months. REYNOLD WEEB WILCOX.
3. The Renal Complications of the Acute Diarrheas of Infancy. JOHN LOVETT MORSE.
4. The Use and Abuse of Digestive Ferments. JOHN C. HEMMETER.
5. A New Method of Treating the Morphine and Alcohol Habits. H. A. HARE.
6. The Comparative Physiology of Faith Cures. PEARCE BAILEY.

1.—**Surgery in Border-Land Cases.**—Roswell Park's article is virtually a reply to an article by Fitz published in the *Medical News* of December 28, 1901. The author seeks to establish the fact that surgery has not passed its legitimate bounds when it deals with "border-land" cases, but rather it is an art which will be more extensively resorted to when we come to diagnose certain conditions earlier. Much of the burden of failure in certain classes of cases in surgery must rest upon the internists who refuse to call a surgeon until the case is practically hopeless. In certain diseases which were at one time treated almost wholly by internal medication, surgery has come to play an increasingly important part. Among these may be mentioned: Epilepsy, meningitis, tetanus, disease of the ductless glands, disease of the lymphnodes, pulmonary abscess and gangrene, empyema, tumors of the duct, disease of the biliary passages, the spleen, and of the kidneys, ascites, certain gastric diseases, various diseases of the bowels, etc. [A.B.C.]

2.—See *American Medicine*, Vol. III, No. 21, p. 854.

3.—**Renal Complications of Acute Diarrheas of Infancy.**—Acute degenerative changes may occur in the kidneys as in other acute infections and febrile diseases. There is nothing characteristic about these changes. In rare instances proliferative and interstitial changes may develop. The etiology is complex, including not only microorganisms and their products, but also the products of intestinal fermentation and alimentary poisons. The urine shows the usual changes. It is

doubtful if the symptoms are distinguishable from those due to general toxemia. Except in rare instances they are of little prognostic importance. Recovery is usually complete. It is possible, however, that in rare instances they may lead to chronic nephritis in later years. Pyelitis, pyelonephritis and cystitis may also develop as complications. They are usually mild and their symptoms masked by those of the primary disease. The treatment of the usual complications is that of such conditions in general. [H.M.]

4.—Use and Abuse of Digestive Ferments.—Instead of making the stomach indolent by pouring in pepsin and HCl, it ought to be trained physiologically to improved secretion by physical methods and the application of physiologic dietetics. In hyperchlorhydria the alimentation of ferments is irrational because too much is already secreted. When HCl is present pepsin must be present also. One case, however, in which it was reduced is reported. Certain preparations should be condemned, as all wines of pepsin and those containing pepsin and pancreatin in one solution. Alcohol takes up very little pepsin, and pepsin requires an acid and pancreatin an alkaline medium. Even when HCl is absent pepsin or pepsinogen may be present, and when entirely absent the introduction of the ferment requires a larger quantity of HCl for its proper action than will be tolerated by any diseased stomach. The one distinct indication for pancreatin is permanent deficiency or absence of HCl and enzyme formation in the stomach. There is in these cases more exhaustive utilization of the proteids and carbohydrates when pancreatic digestion is begun in the stomach by the aid of sodium bicarbonate, as shown by analyzing the stools. Pepsin and HCl naturally suggest themselves in atrophic gastritis, but pancreatin is preferable. The advantage of pankreon over pancreatin lies in its resistance to HCl. In the majority of cases any ferment cannot appreciably affect the amount of food digested. It is only in the rare combination of intestinal with gastric atrophy that the use of pankreon seems rational. [H.M.]

5.—Hyoscin in the Morphin and Alcohol Habit.—Hare reports several cases treated by Lott's method with massive doses for days at a time with no evil effects on any vital function. As much as $\frac{1}{2}$ grain in divided doses was given daily and continued in spite of the characteristic symptoms produced by the belladonna series, which gradually passed off. One is impressed with the ease with which morphin can be withdrawn from patients who are receiving hyoscin. All the patients have expressed themselves as feeling well and had no serious disorder of heart or other organs. [H.M.]

6.—Comparative Physiology of Faith Cures.—The study of vital phenomena is a study of reflexes. Evidence is accumulating that the complicated acts of the lower animals and man are merely combinations of movements resulting from mechanic and chemic changes in protoplasm brought about by peripheral stimulations. What the psychologist calls subconscious action is for the biologist a tropism; both terms indicate automatism unguided by intellectual control. No man is so perfected as to be free from it, but when it becomes the dominant expression of nervous activity it represents the mental state we suppose man to have had when the gate between him and the animals was still narrow. He shows that in the process of brain elaboration he has been passed over. If the followers of the various faith-cure cults are defectives to argue with them is worse than useless. Denunciation and opposition is easily transformed into oppression upon which all organized movements flourish. Common sense dictates that the greatest latitude be given them and they be allowed to work out their annihilation by themselves. [H.M.]

Philadelphia Medical Journal.

June 7, 1902. [Vol. ix, No. 23.]

1. The Proposed National Examining Board. A Second Paper. WILLIAM L. RODMAN.
2. Operations Upon the "Green Groin." JOSEPH PRICE.
3. A Case of Severed Spinal Cord, in Which Myelorrhaphy was Followed by Partial Return of Function. FRANCIS T. STEWART and RICHARD H. HARTE.
4. Avulsion of the Scalp, with Report of a Case. W. TROY BIVINGS.
5. Two Cases of Progressive Muscular Dystrophy in Brother and Sister. AUGUSTUS A. ESHNER.

6. Directions to Patients Suffering from Venereal Diseases. Used in Dr. Guitteras' Genitourinary Clinic at the Post-Graduate Medical School, New York. COLIN LUKE BEGG.

2.—Operations Upon the "Green Groin."—Price discusses a class of cases under the title of "green groin," for which he thinks gangrenous appendix would be a better name than appendicitis. He urges the earliest possible surgical interference in appendicitis, and is impressed with the absolute hopelessness of delay and therapeutics. He makes the startling statement that if we can only impress the chairs of medicine and surgery with the absolute worthlessness of anything but surgical interference, and make them realize the unfortunate results of therapeutic measures, the mortality will be reduced to nothing, and it should be nothing. [F.C.H.]

3.—See American Medicine, Vol. III, No. 23, p. 941.

4.—Avulsion of the Scalp.—Bivings reports the case of a girl of 14 who, while working in a cotton mill, had her hair caught in a pair of revolving steel rollers, resulting in a complete avulsion of the scalp, together with the periosteum covering both the parietal and a part of the occipital bones. She was unconscious when first seen, suffered from marked concussion, and there was hemorrhage from branches of the temporal, posterior auricular and occipital arteries. The scalp was recovered after having passed through several sets of steel rollers, but was in such a pulaceous condition that it was thought inadvisable to replace it. The wound surface was covered with cotton-waste and a dirty black grease from the rollers. A few days subsequent to the accident whoopingcough developed, which was followed by a bronchopneumonia. In about two weeks from the time of the accident the outer table of the bones, denuded of periosteum, began to necrose, eventually requiring complete removal. It was necessary to do three skin-grafting operations, finally covering with skin the entire granulating surface. The writer emphasizes the following points: The benefit of shaving, thoroughly scrubbing and rendering scalp wounds as aseptic as possible at the first dressing, thereby securing freedom from virulent bacteria and preventing meningitis, cerebritis, etc., by extension through the diploic veins; the superiority of the Thiersch method of skin-grafting over all other tried methods; the fact that skin-grafts taken from the body of the patient grow far better than grafts from the skin of other people; and the error of always attributing in surgical work a rise of temperature to wound infection, and to suggest a thorough physical examination for some complication. [F.C.H.]

5.—See American Medicine, Vol. II, No. 13, p. 480.

Long Island College Hospital.—Mr. J. Rogers Maxwell has announced his intention of giving \$400,000 for the erection of a new hospital which will be situated at Henry and Amity streets, Brooklyn. The plan includes a main building five stories in height, with four pavilions connected with glass-enclosed corridors. On completion the name will be changed to the Maxwell Long Island College Hospital, in memory of his brother, Mr. Henry W. Maxwell, formerly president of the Board of Regents of the hospital, who gave during his life \$100,000 toward the establishment and maintenance of a training school for nurses.

Army Nurse Corps.—The duties and status of the Army Nurse Corps has been prescribed in an order recently issued by the War Department. It is ordered that army nurses shall be assigned to duty at military hospitals and at hospitals where more than one nurse is serving one will be assigned to duty as chief. Nurses are appointed for three years, and after appointment at least three months will be spent in the United States, during which period special instruction in army nursing will be given. The tour of duty outside the United States will usually be at least two years. The pay on active service is \$40 a month. Chief nurses get \$5 extra, but when they have five or more nurses under them they receive \$10 extra, and \$25 extra when they have 10 or more subordinates. The uniform of the Army Nurse Corps will consist of a waist and skirt of suitable white material, adjustable white cuffs, bishop collar, white apron, and cap. The badge of the corps is the cross of the Medical Department, in green enamel, with gilt edge, pinned on the left side of the collar of the uniform or on a corresponding part of her dress when she is not in uniform. A nurse who has served faithfully and satisfactorily for at least six months and received an honorable discharge will be placed on the reserve list. A nurse will be dropped from the reserve list upon reaching the age of 45, or if she ceases for five years to practice her profession, or if she becomes permanently incapacitated from illness or other good or sufficient reason.

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The Working of the New Organization of the

A. M. A.—The trial trip of the House of Delegates was successful! The elimination of all friction during the first hour or two was, of course, not entirely possible in such new machinery, but "good speed was developed," as important in parliamentary bodies as engines, and the doing away with the great cause of all friction, the self-seeking medical politician, gives promise of many successful and profitable annual voyages. The labor thrown upon a few noble workers was most arduous, but no better reward can come to men than the satisfaction these now feel at the accomplishment of their great work for the benefit of the profession. The determination upon the part of all to renounce the individual, sectional, or selfish interest, and to create an organization which could and would be used only for the benefit of all concerned, finally conquered all difficulties, and the conviction is clear that a new epoch of union, power, and usefulness has been opened in the life of the Association and hence of the entire American medical profession.

The Committee on Sections and Section Work

of the House of Delegates of the American Medical Association was a timely recognition of the need of greater efficiency in the work of the Sections. Each year there is an entire change in the officers of all the Sections, and the new men, sometimes without exceptional organizing and administrative ability, have to take upon themselves duties to which they are unused. The result is that without concert and experience the invitations to members, the planning of the programs, the entire laying out of the work for the next meeting has not that unity and thoroughness that is necessary for the best results. To frame general methods of action, to help each of the Section officers to arrange for the coming meeting, as well as for all after-coming meetings, and to harmonize the methods of each section with that of others, are some of the aims of the committee appointed by President Wyeth. Dr. McMurtry is the chairman, and he and the other members have already undertaken their duties in such a way as to indicate their recognition of the full significance of their function of bringing about a much better unity and efficiency in what is at last the chief reason for the existence of the Association—the scientific work of the Sections.

Motives and Methods of Society Reform.—

Because the example may incite others not only not to despair, but to undertake reform, we wish to note the case of the recent reorganization of the American Medical Association. For a number of years it had been evident that the organization of the Association was such that the best results could not be obtained, and that pretty thorough-going changes were needed to give the Society that unity and power desired. Disaster and failure had been prophesied from proposals of changes and methods of reorganization, and it was especially emphasized that the New York State schism was not to be healed either by first or by second intention. A few earnest and unselfish men determined at the Atlantic City meeting that the reorganization should be undertaken. The committee then appointed at once attacked the big problem, and the success of their long labors has, in part, been made apparent by the outworking of the reorganized Society at Saratoga. Some mistakes, some "friction" were inevitable, but a spirit of leniency and good-will, even on the part of those with the best reason for ill-will, has helped to realize what is in truth a revolution, and the inauguration of a new era in the history of the Society. The House of Delegates did their duty with admirable unity and despatch, the malign influence of bad political methods has been almost extinguished, good men have been placed in power, reforming committees actuated by good motives have been appointed, and the conditions of certain unity in New York State have been established. For these results the profession owes and is giving its grateful appreciation to Drs. Reed, McCormack, Foshay, Simmons, and their coworkers in every State.

Harmony and unity in the New York profession

will soon, we are sure, be happily realized, and it is as gratifying as the fact itself that this result will have been reached without any "victory." Nobody will have been "defeated" and there will have been no "lying down of the lamb within the lion." When sensible men get together in a spirit of amity and unselfishness it is usually found that their differences have been exaggerated, and that their agreements are much greater and more numerous than had been supposed. Changed conditions, social as well as professional progress, dictate a change of old points of view and demand solu-

tions of difficulties by slightly different methods. When looked at in the light of modern professional education and progress, it is found that while the eternal principles of morality abide unchanged, evolution compels us to modify their interpretations and applications to meet developing conditions and duties. Guided by this fundamental law of evolution and the need for professional unity, a way has been found whereby all that was essential and obligatory in the differences of the New York State Society and of the Association has been preserved, and that before the next meeting of the American Medical Association the unfortunate schism will no longer exist, and a united New York State profession shall be well represented in the national body.

The House of Delegates of the American Medical Association was created to be the legislative assembly of the medical profession of the United States. Its first meeting at Saratoga brought out prominently the possibilities for effective work that are inherent in its method of organization. That the work of this body at its first meeting was not perfect need hardly be said, as no new machine ever made its trial trip without developing some friction. However, it can truthfully be said that the House of Delegates at Saratoga so performed its duties as to encourage its friends and as to quiet its critics. One criticism somewhat frequently passed upon it was that its work was not deliberative. Matters were referred to various committees whose report was adopted or rejected with but scant discussion. The reason for this is not far to seek. The men composing the House of Delegates were the same men who for years have been endeavoring to get the old general session to legislate intelligently upon various topics that demanded elucidation at the hands of the representative gathering of American physicians. Their experience with that method had taught every one of them that prolonged discussion meant always defeat or postponement. This lesson could not be readily unlearned, and so they were moved by a somewhat feverish haste to have important matters passed upon before they were killed by tiresome discussion. Because of the large membership of the House it is clear that much of its work must be done through committees, just as the work of Congress and of our State legislatures is accomplished. Yet we must have ample provision for free debate upon important topics before they are finally passed upon. We are gratified to learn that the new Business Committee which will arrange a program for the next meeting of the House already has under consideration a plan to bring out full discussion in such a way as to ensure no interference with the decisiveness of final action. With this provided for the House of Delegates will be fully entitled to the respect, confidence and support of all American physicians.

Surgeon-General Forwood.—The position of Surgeon-General of the United States Army, left vacant on June 8 by the retirement of General George M. Sternberg, has been filled by the appointment of General William H. Forwood, whose tenure of office will be

confined to the brief term of three months, owing to his approaching retirement on September 7 next, on account of age. General Forwood has seen over forty years of active service, having entered the army from Pennsylvania as an Assistant Surgeon in 1861. He was born in Brandywine Hundred, Delaware, September 7, 1838. His preliminary education was received in the schools of Chester, Pa., and his medical training at the University of Pennsylvania. Dr. Forwood's service throughout the war of the Rebellion and subsequently has been marked by its efficiency and good judgment. His record for duty while under fire is a brilliant one, as is that of his service in the cholera epidemic at Fort Riley, Kan., in 1866, and at the quarantine station near Philadelphia, in 1870, when he volunteered his services to care for the yellow fever patients. Dr. Forwood is the author of a work on Military Surgery and the Care of the Wounded on the Battlefield, and he was for a time editor of *The Military Surgeon*.

Dangers from Gas Leakage.—An interesting discussion on gas leakage and its possible effect upon health was held at a recent meeting of the New York County Medical Society. Annually in the large cities the gas companies expect to have a leakage of over 1,000 millions of cubic feet of gas. In recent years this has become much more dangerous in its possible effects than in the early days of gas-lighting, when ordinary coal gas was employed. The gas produced in closed retorts by the destructive distillation of coal contained only a very small amount of the most poisonous ingredients, the carbon monoxid or blue gas. Since water gas has come to be used almost exclusively for illuminating purposes, the percentage of carbon monoxid present in illuminating gas is over 30%. There has been a suggestion in recent years that pure water gas should be employed in cities for heating purposes. In order to be useful for illumination, water gas must be carburetted; that is, saturated with certain naphtha derivatives. It is these substances which give the water gas as made at present its characteristic penetrating odor. They also somewhat dilute the more poisonous gases which are present. The gas expert who discussed the subject at the meeting referred to said that "if pure water gas was to be supplied for heating purposes, the only safe place to live in New York City would be outside of it."

Present conditions in our large cities add to the dangers of gas leakage. Our pavements, especially in quiet residence streets, are usually asphalt, and are thoroughly impermeable. Gas that escapes from the mains is confined beneath the streets until it finds its way into the houses or into the sewers. There is no doubt that severe anemias are becoming more frequent in city life. Dr. Lloyd pointed out at this same meeting that some of these anemic conditions, associated with febrile temperature, malaise and headache, are traceable almost directly to sewer gas. As it is well known that ordinary sewer gas does not affect the health of workmen who are many hours each day engaged in the sewers, it would seem that only when large amounts of carbon monoxid find their way into the sewers and thence into the houses, for the gas is highly diffusible,

that so-called sewer gas takes on such pathogenetic influences. In a word, it seems clear that we have here one of the special risks to health in large cities of which not much account is taken, but which is constantly growing in importance. Our city boards of health have, as a rule, occupied themselves very little with this dangerous condition, and only the voice of the insurance companies has been heard in protest. Their protest has been ineffectual. We hope that when the medical profession is aroused to a sense of the danger, reform of the present serious abuses will follow.

Multiple Synchronous Attention.—Attention or consciousness has been aptly likened to the thin stream of sand passing through the narrow constriction of the hour-glass. Such undoubtedly was and remains the chief characteristic of the more primitive consciousness, illustrated by those minds which can only do one thing at a time and are oblivious of anything else said or required until the first has been completed. The pathologic aspect of these hour-glass minds is illustrated in almost every patient of an insane asylum, the single object of attention being so absorbing and so exclusive that the monopoly is at once and of itself recognized as morbid. But psychologists have failed to recognize the demand of civilization for multiple synchronous attention, and that, better than anything else, this ability or form of mental activity characterizes and differentiates the modern from the ancient mind. In today's work it classifies the successful or masterful minds over against those who are compelled to persist in the singleness of consciousness or attention. The dictator of a simple business letter, for instance, has, while doing so, to mould every sentence and decision in reference to a hundred lines of attention and influences leading to far and varied interests and motives. The amanuensis then and all day at any one instant thinks of only one duty. In none is this faculty of attention to many things at the same time so beautifully developed as in the musician and the physician. The organist, for instance, reads in the same instant several lines of polyphonic music, attends to signs of many kinds, has several banks of keys besides his pedals to play upon, is constantly pulling out or shutting off any of the half-hundred stops, watching the well or ill-participating choir or congregation, etc. And all of this is only technic, not music until the musical expression or emotion is given the sounds. In the clinical physician likewise how many contributing lines of influences go to make up his diagnosis; how many more subtle reasons and objects must be synchronously weighed before the attention when prescribing. And this with only a single case. How much more complex the mental action when, as in an epidemic, or in a great public emergency, the health and interests of an entire community must be considered, with possible influences upon the future, upon the profession, and upon science itself. Suggestive, also, is the noteworthy fact that music as we know it, and medical science as it is now practised, are intensely modern. The hour-glass minds could not and still cannot be great musicians or physicians. But the large number capable of this splendid faculty shows the great possibilities

and quick responsiveness of the mind to new functions and demands.

Physicians and Metaphysicians.—When the long-needed historian of medical crankery in America shall begin to gather data for his great work we would have him note that all the antis are not "antis forever and ever, amen." There is the "metaphysician," for instance, who knows nothing whatever of metaphysics; knowing as little or less of pathology or therapeutics she (it is almost always *she*) will unhesitatingly offer to teach you "how to not merely cure disease in yourself, but how to find and remove the exciting cause of all forms of disease and suffering." This, together with the "Science of Being" will be taught by the editor of *The Exodus* the official organ of The Exodus Society of Chicago. For a time the Science-of-Beingists will kindly allow us benighted laggards to have medicines and medical institutions. With admirable benevolence and brilliant perspicuity the learned editor explains:

"Hospitals, sanitariums, and retreats are blotches upon the fair face of a God-created humanity, but they must be thrown off from within through a change that destroys what nourishes them. An outcry against them, an effort to topple them in ruins, is misdirected energy. Were this accomplished, it would be a positive loss, for there are those that still need them. Viewed impersonally, man's fundamental endowments are sufficient to carry him triumphantly through all the complexities of existence. Complete and perfect in the beginning, he cannot be made more so by aught that pertains to matter and its phenomena."

Is Mental Diversion Mental Rest?—That physical rest may be obtained by bringing into play a different set of muscles from those previously in use is illustrated in the old story of the pugmill mule that was found to step off briskly in the afternoon if allowed to reverse the motion of the mill. The child who produces incipient giddiness by twisting up a swing, brings the unequal congestion of the centers of equilibrium to a balance by a rapid untwisting motion. Absolute rest of mind or body scarcely exists, relative rest or modification of the mode of activity gives a sensation of rest at any rate. After a long day of close visual application, when the hands press the tired eyes (although this particular mode of stimulating visual sensation may be harmful), how delightful to many persons are the subjective sensations of color—the kaleidoscopic effects that come and go with slight variations in pressure. The brain finds rest in an objectless play of color; so the tired mind seeks rest from the stress of routine duties, not in the unconsciousness of sleep, but in the frolicsome vaudeville, or the perusal of light literature or the newspaper. Perhaps this explains to some extent the wonderful demand for books of fiction and magazines, as well as for the plotless stage performance so characteristic of these days of strenuous intellectual life.

Glycerinated Calf-vaccine Lymph.—The special commission of the London *Lancet* appointed two years ago, has presented a second report on the results of its investigations into the purity and activity of vaccine lymphs. The conclusions reached after a very thorough test of all the vaccines sold in England are very favorable

to glycerinated lymph. A marked improvement in the quality of the lymphs supplied is manifest as is the fact that the glycerination of lymph is not attended by any special interference with its activity. When glycerination is well carried out, and the number of microorganisms present is consequently small, typical vaccine vesicles are produced with far less local and constitutional disturbance than occurs with the use of imperfectly glycerinated lymph which allows the persistence of a large number of microbes. To the abundance of organisms, especially *Staphylococcus*, is to be attributed the severity of the local lesion and of the constitutional symptoms, and over-glycerinated rather than under-glycerinated lymph is to be recommended.

Mirrors for Hospital Patients.—A lay contemporary says that in some hospitals the use of mirrors by the patients is forbidden, and it urges that instead of this, their use should be encouraged as health improves. The rule against them, it is said, was enacted because it was supposed that the observation by patients of their own sunken cheeks, paleness, etc., would cause depression of spirits, and thus prevent the cheerfulness that aids convalescence. We had never suspected the existence of a silly antimirror law, and if it still exists in any hospital we trust the management will hasten to rescind it. There is far more than the satisfaction of vanity in the use of mirrors, and they certainly contribute to cheerfulness, instead of to melancholy.

EDITORIAL ECHOES

The Cost of Food.—In order to give practical demonstration in home-keeping, and to develop the sense of responsibility in the work, a four-room house has this year been set aside, in which the Senior young women "keep house." Four girls at a time live in this house and have the entire care of it. Two dollars and a half are allowed for the weekly expenditure for food. In view of the low prices which obtain for provisions here, four girls can live comfortably on this small allowance and have variety and plenty, and at the same time, very wholesome food.—[Booker T. Washington in his paper, *The Southern Letter*.]

Resolutions adopted by the American Congress of Tuberculosis, session of 1902:

WHEREAS, Tuberculosis is an infectious disease, ordinarily communicated from person to person by means of the dried sputum of a consumptive patient, and

WHEREAS, The spread of tuberculosis could be largely controlled by the proper care of such sputum and the enforcement of comparatively simple measures; therefore be it

Resolved, By the American Congress of Tuberculosis that the health authorities be urged to disseminate to the widest extent possible, through the public press and otherwise, correct information as to the manner in which this disease is produced, and the means employed for its prevention.

Resolved, That we believe it to be the duty of the national, State and municipal governments to enact rational methods for the prevention of tuberculosis, and we recommend the establishment of institutions for the care of indigent consumptives.

Resolved, That there should be State and municipal supervision of all public conveyances used for the transportation of passengers; and in view of the fact that spitting on the floors of public conveyances favors the spread of tuberculosis and is injurious to the public health, it is recommended that transportation companies be induced to pass and enforce rules against this act.

Resolved, That appropriations should be requested from State and municipal governments for the publication and distribution of literature as a means of education in the prevention of the spread of tuberculosis.

Resolved, That all cases of tuberculosis should be reported by the attending physician to the health boards for the purpose of disinfection of houses occupied by consumptives.

AMERICAN NEWS AND NOTES.

GENERAL.

Cholera in the Philippines.—A rather alarming situation regarding the epidemic of cholera in the Philippines is reported. In Manila alone a total of 275 cases with 215 deaths has occurred up to April 15, with 453 cases and 308 deaths outside the city. In the provinces the disease attacked 22 different places. Vigorous measures of prevention have been instituted. Manila has been quarantined against all other points, a cholera hospital established, and 28 Army medical officers detailed to duty with the Manila Board of Health.

EASTERN STATES.

Dr. Rotch Honored.—At the close of the last annual meeting of the American Pediatric Society a loving cup was presented to Dr. J. M. Rotch, of Boston.

NEW YORK.

Rockefeller Fellowship.—Dr. A. N. Richards, assistant in the Department of Physiologic Chemistry at the College of Physicians and Surgeons, New York, has been appointed to a research fellowship in the Rockefeller Institute.

The New York State Nurses' Association which has been organized recently has under consideration the question of registration which will finally place training schools for nurses under the supervision of the Board of Regents. This will protect the public against impostors and tend to raise the standard of the various training schools.

Consumptives in New York.—The Charity Organization Society has formed a committee of representative physicians and others to investigate the social aspects of tuberculosis and to promulgate the doctrine that the disease is communicable, preventable, and curable. Methods of prevention are to be outlined and movements for improved hospital and dispensary facilities are to be aided. The methods of work will be similar to those employed by the committee on tenement reform.

PHILADELPHIA, PENNSYLVANIA, ETC.

St. Joseph's Hospital.—The late Allen Hulshizer bequeathed his library to St. Joseph's Hospital and \$500 upon the death of his widow.

Reception to Dr. Rixey.—A reception to Surgeon-General Rixey of the U. S. Navy was tendered by the Medical Club of Philadelphia on the evening of June 14. Preceding the reception was a dinner to Dr. Rixey, this being attended by a few prominent physicians and naval officers stationed in the city.

Compulsory Vaccination in Pittsburg.—Every person in Pittsburg that cannot show a certificate of vaccination within the period of immunity from smallpox has been ordered by the Board of Health to be vaccinated. A house-to-house canvass will be made after July 16 and delinquents vaccinated, forcibly if necessary. It is reported that nearly every physician in the city has refused to assist in the work, and students from the West Penn Medical College have been selected to aid the health authorities.

SOUTHERN STATES.

Danger in Manicuring.—Mr. W. G. Harrison, of Baltimore, died June 13 of blood poisoning, said to have resulted from a manicuring operation done in Philadelphia.

Dr. Welch to Lecture in England.—The Huxley lecture at Charing Cross Hospital will be delivered this year by Dr. William H. Welch, of Johns Hopkins University.

WESTERN STATES.

Bubonic Plague at San Francisco.—Three fatal cases among the Chinese population have recently occurred.

Milwaukee Medical College has had charges preferred against it recently by the County Medical Society to the effect that the college has admitted students without sufficient preliminary training and has given credits to advanced standings without any adequate credentials being offered; that the college has not given the courses of study required by the laws of Wisconsin so far as the length of time devoted thereto is concerned, and has advertised courses of lectures by professors who were not connected with the institution; has allowed one man to fill practically four or five different chairs; and that the college has granted diplomas to persons who had failed to pass the proper examinations and who did not profess good moral character, and has authorized some of its students to practise before completing the course. The Milwaukee State Board of Medical Examiners is investigating the situation.

FOREIGN NEWS AND NOTES

GREAT BRITAIN.

Leprosy.—At a recent meeting in London of the Royal Medical and Chirurgical Society, when there was a discussion concerning Dr. Hutchinson's theory that leprosy was not contagious, but was communicated by the ingestion of badly cured fish, Dr. Hansen, of Bergen, contended that for corroboration it would be necessary to discover the bacillus of leprosy in the cured fish—that the people of Norway were now using fish in larger quantities than formerly, but because of strict segregation leprosy was disappearing. He cited instances of Norwegian lepers who had emigrated to the United States, and whose descendants were not leprosy, showing that the disease was not hereditary, but simply contagious.

CONTINENTAL EUROPE.

Italian Ophthalmological Association.—The Sixteenth Annual Congress will be held at Florence, October 12-16, 1902.

Lying-in Hospital for Moscow.—The sum of 100,000 rubles has been bequeathed by Madame Obrikosoff for the erection of a model lying-in hospital.

Chloroform in Heart Disease.—At the meeting of the Paris Academy of Medicine, held on May 20, M. Huchard summed up the important discussion which he has been so ably conducting. It has led to the conclusion that administration of chloroform is admissible in cases of senile heart and also when the heart is the subject of valvular lesions. Cardiac intermittence and syncope during the administration of chloroform are not, in most instances, the effect of cardiac disease; even aortic insufficiency is not a cause of syncope. Among 100 deaths under chloroform there are not ten in which the heart is at fault. Consequently cardiac disease, short of being in the stage of asystole, is not a contraindication to the use of chloroform.—[*Lancet*.]

OBITUARIES.

Selden H. Talcott, of Middletown, N. Y., June 15, aged 60. Graduated at the New York Homeopathic Medical College and Hospital, New York City, in 1872. At the time of his death Dr. Talcott was superintendent of the State Hospital in Middletown, a position he had held since 1877. He was a member of the faculty of the New York Homeopathic Medical College as professor of nervous and mental diseases, and for four years lectured on these diseases at Hahnemann Medical College, Philadelphia. He was considered one of the highest authorities on mental diseases, his writings on those subjects being numerous and valuable.

Edward N. Whittier, of Boston, June 14, aged 61. Dr. Whittier graduated from Harvard University Medical School, in 1860, in medicine, after having served through the Civil War. In 1873 he became a member of the staff of the Massachusetts General Hospital, a position which he held for 20 years. In 1877 he was appointed instructor in clinical medicine at Harvard, and in 1884 assistant in that branch, resigning in 1888.

Adolf Kussmaul, the eminent German clinician, at Heidelberg, May 27, aged 80, as the result of an attack of asthma. He was appointed professor of internal medicine at Heidelberg in 1857, at Erlangen in 1859, at Freiburg in 1863, and at Strasburg in 1876.

Hallock R. Maine, of Brooklyn, June 13, aged 37, of pneumonia. He was a graduate of the College of Physicians and Surgeons of the City of New York, class of 1888, and at the time of his death was visiting physician to the Kings County Hospital.

George Fowler Bodington, in Paris, aged 73. Dr. Bodington had practised mainly in Birmingham, where he took a great interest in social and political progress, especially in the care and control of inebriates.

Thomas J. Shreeve, of Uniontown, Carroll County, Maryland, June 13, from tetanus, the result of an operation performed on June 4. He graduated from the University of Maryland School of Medicine, in 1886.

John Sell Edmund Cotman, London, May 26, aged 54, from over-exertion while bicycle riding. He had been long widely known as an influential member of the Common Council of London.

William S. Leonard, of Hinsdale, N. H., June 13, aged 70. Dr. Leonard was a graduate of Dartmouth Medical College, Hanover, N. H., of the class of 1860.

Arthur Strange, of Shrewsbury, England, May 11. He had for many years been superintendent of the Galop and Montgomery County Lunatic Asylum.

George W. Woods, a retired medical director of the U. S. Navy, at San Francisco, June 9, aged 64, of apoplexy.

Frank Brooks, of Worcester, June 12, aged 63.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION.

Fifty-third Annual Meeting, Held at Saratoga Springs, New York, June 10 to 13, 1902.

[Specially Reported for *American Medicine*.]

Proceedings of the House of Delegates.

[Concluded from page 993.]

THIRD SESSION.

W. A. EVANS (Chicago) introduced a resolution that the name of the Pathologic Exhibit be changed to that of Scientific Exhibit, and be placed under the entire charge of a director, with the chairmen of the various sections as an advisory committee. The director shall be chosen by the Board of Trustees and shall be paid a reasonable compensation in addition to his expenses. This was referred to the Board of Trustees, who reported it back to the House of Delegates recommending that action upon it should be deferred this year.

The following resolution, which was adopted, was introduced by the chairman of the Committee on Sections and Section Work: No member of the American Medical Association shall read papers before more than two sections, and these papers shall be on different subjects.

Division of Fees.—**A. D. BEVAN** (Chicago) offered a resolution that any member of the American Medical Association who shall be proved guilty of a division of fees without the consent of the patient shall be held guilty of misconduct, for which he may be expelled from the Association. **E. ELIOT HARRIS** (New York) said that the point brought up by Dr. Bevan was covered in the code of ethics submitted by him, and for the revision of which a committee had been appointed by the Chair during the session on the previous day. **HAROLD N. MOYER** (Chicago) moved that Bevan's resolution be laid on the table. The question of the code of ethics, which had long stirred the Association, was now in the hands of a committee for revision and the action of that committee should not be hampered by the enactment of a penal statute. Moyer said he did not object to Bevan's resolution in its essence, but he did object to have it go into the code of ethics. A code of ethics should be an expression of what the highest duty of a physician should be, but it should not be penal.

Voluntary National Board of Medical Examiners.—**A. WALTER SUITER** (Herkimer, N. Y.) said that at a meeting of the National Confederation of State Medical Examining and Licensing Boards, held on the ninth of June, a committee was appointed to consider the proposed plan of William L. Rodman, of Philadelphia, for a voluntary national board of examiners, which was first advanced at the April meeting of the Committee on National Legislation of the American Medical Association. Suiter said that after a careful consideration of this proposed plan the committee came to the conclusion that it would not be feasible for various reasons, among them the following: (1) Such a voluntary board would have no legal right or power to exist; (2) no guarantee could be given of the permanence of such a board; (3) a license given by a voluntary board of examiners would have no legal value.

Investigation of Tuberculosis.—A resolution was introduced by the delegates from the Section on Hygiene and Sanitary Science, requesting the American Medical Association to petition the federal government to appoint a commission, similar to those appointed by European governments, for the purpose of studying and investigating the whole subject of bovine and human tuberculosis, with a view to discover the best means to prevent the spread of the disease in man and animals.

Venereal Diseases.—A resolution was introduced requesting that a joint committee, composed of the delegates from the Section on Hygiene and Sanitary Science and those from the Section on Cutaneous Medicine and Surgery be appointed by the President for the purpose of promoting and spreading knowledge regarding the prophylaxis of venereal diseases, and presenting to the Association a plan for a national meeting for the elaboration of the subject.

In addition to the officers mentioned in *American Medicine*, June 14, the following were chosen on the Judicial Council: For three years, Philip Marvel, New Jersey; Geo. Cook, New Hampshire; N. S. Davis, Jr., Illinois. For two years, T. C. Martin, Ohio; J. B. Roberts, Pennsylvania; Christopher Tomkins, Virginia. For one year, F. H. Wiggin, New York; G. B. Gillespie, Tennessee; D. C. Peyton, Indiana.

The next place of meeting was appointed at New Orleans, La. The time of the meeting will be between the first and fifteenth of May, 1903, the determination of the exact dates being left to the discretion of the President and Secretary.

National Licensure.—**WILLIAM H. WELCH** (Baltimore) offered a resolution that a committee of five be appointed by the President to consider the question of a National Examining Board for the licensing of physicians and interstate reciprocity and allied subjects. Many members of the Association

expected that this subject would be discussed before the House of Delegates. It is apparent, however, that it is hardly ripe for profitable discussion. Still, there is no subject of greater interest to the profession, and some remedy must be found to relieve the situation which under present conditions, is simply intolerable. The resolution was adopted and the following members were appointed by the Chair to serve on this committee: William L. Rodman, of Pennsylvania; William H. Welch, of Maryland; Henry Beates, Jr., of Pennsylvania; Joseph M. Mathews, of Kentucky, and Murray, of Montana.

Solicitation of Votes.—P. MAXWELL FOSHAY (Ohio) made the following motion, which was carried: *Resolved*, That it is the sense of the House of Delegates that the solicitation of votes for office in the American Medical Association is not in keeping with the dignity of the medical profession, and that such solicitation shall be considered a disqualification for any office in this Association.

Resolutions of Thanks.—A motion was also made and adopted, tendering the thanks of the Association to GEORGE F. COMSTOCK, of Saratoga Springs, the chairman of the Committee on Arrangements, together with his associates and to the citizens, for the entertainment given in the course of the meeting.

Before the House of Delegates finally adjourned, a vote of thanks was unanimously tendered to the President, for the ability and courtesy with which he had discharged his duties.

General Sessions.

The closing general session of the Association was held in Convention Hall on Friday, June 13.

The Secretary gave a brief review of the business transacted by the House of Delegates, after which Wyeth introduced his successor, Frank Billings (Chicago), who in taking the chair said: "I have had conferred upon me what I consider the greatest honor in the gift of the medical fraternity of America. There is no greater body of men and women than the members of the American Medical Association, and to be chosen the President of that organization should be, I think, the fulfillment of the ambition of any man. This position has been held by some of the most eminent men in this country. When one follows these eminent men it is naturally with a sense of pride, and it is to me. The reorganization of this Association, which occurred last year, has had its successful beginning in this meeting. The success of this meeting is due in great measure to the earnest work done by the gentleman who preceded me. He has set a pace—a mark for me to follow. If I can but attain what he has done I shall feel a pride next year greater than I feel today. Great, therefore, as is the honor you have done me, the responsibility is even greater. Without your help I can do nothing; with it I hope to successfully carry on the work of this great organization."

Section on Practice of Medicine.

SECOND SESSION.

Etiology of Chronic Nephritis.—ARTHUR R. ELLIOTT (Chicago) said that under this name are described slow inflammatory processes affecting both kidneys, due to a pathologic condition of the blood and leading to destruction of the parenchyma, with eventual shrinking of the organs. The most characteristic phenomenon of this affection is not its termination in atrophy, but its causal relationship with hematic dyscrasia. As the cleansing of the blood devolves mainly upon the kidneys, it seems evident that an abnormal condition of that fluid must be the source of renal affections. It seems plain that the morbid agents or combination of agents is not the same in all cases. In those comparatively rare instances where chronic nephritis develops as a result of acute nephritis, the chronic lesion must be due to the same common cause as its acute precursor. This is the case in chronic nephritis subsequent to scarlatinal and puerperal nephritis. It is possible that the remaining amount of healthy renal parenchyma is not sufficient for the purification of the blood, and the products of disintegration may be in such excess as to exert a deleterious effect upon the remaining structure. The issue of acute nephritis of infectious origin in chronic nephritis is comparatively rare. The form thus originated is usually chronic tubal nephritis. Interstitial nephritis, unlike tubal nephritis, is essentially a chronic malady from the start. The majority of cases of interstitial nephritis present no signs of dropsy, or other grave disturbance of health until the development of retention symptoms or evidence of cardiovascular embarrassment. It is possible that if acute nephritis lasted long enough it might lead secondarily to a form of interstitial nephritis, but whether the disease known as chronic interstitial nephritis could result, is another question. In cases of renal cirrhosis apparently related with scarlatina or pregnancy, it is possible that these factors determine the renal lesion only in conjunction with accessory causes of toxic character. Renal sclerosis subsequent to arteriosclerosis is exceptional in comparison to the cases in which the vascular changes are secondary to genuine chronic nephritis as their origin. It is probable that only in rare cases of chronic indurative nephritis associated with advanced senile arteriosclerosis are we warranted in attributing a purely etiologic

influence to the arterial changes, the association of arterial fibrosis with renal atrophy in other cases being incidental. In any true nephritis it is the gland that is primarily affected. The common cause of all nephritis is toxic irritation of the kidney; but in chronic forms it acts more slowly, or by successive attacks. Examined in the light of our present knowledge of the actions of organic poisons, the mode of action of various determining causes of nephritis seems to be satisfactorily defined. Among these causes may be enumerated the disturbances of nutrition, such as gout, chlorosis, diabetes, syphilis, the various cachexias, overwork, and diseases involving certain excretory organs, as chronic skin diseases, hepatic and intestinal affections. The uniformity of the action of these factors may be recognized at a glance. The urine abnormalities under such circumstances are but symptoms of an underlying toxemia produced by an antecedent malady. Primary interstitial nephritis is of extremely insidious development, as well as granular atrophy of the kidney; they seem to depend upon the operation of some cause very gradual and persistent in character. Certain alterations in the vascular system are an almost constant feature of the syndrome of this disease, and seem to be produced by the action of the same irritant. No cause is so frequent and important as autotoxemia of digestive origin. This idea is by no means a new one. While many authors have referred to autotoxemia as a possible source of renal damage, the full extent of the relationship has, perhaps, never been stated.

Malarial Nephritis, with Report of a Case.—W. BRITT BURNS (Memphis, Tenn.) discussed some of the findings of urinalysis, with special reference to nephritis occurring in malarial cases in which the urinary symptoms cleared up under large doses of quinine. He reported a necropsy where the gross pathology showed a large and small white kidney, a beginning hypertrophic cirrhosis of the liver, splenitis and fatty heart. The minute pathology showed pigmentation of cells and the blocking of vessels by pigment in the liver and spleen. He quoted the conclusions of Moore, of Galveston, Texas, in which it was stated that nephritis was not likely to occur in a single tertian infection for a short interval, say of five days; that a doubtful tertian infection will produce a nephritis in a large proportion of cases if it runs only for a short time. The more chronic the case becomes of any infection the more likely is it to produce nephritis. Malaria of long duration, or often repeated attacks, will produce chronic renal disease, as shown by the continuous presence of albumin and casts. Estivoautumnal malaria probably gives the greatest percentage of cases of nephritis, 68.7%. The age of the patient, height of the temperature, or specific gravity of the urine showed no relation to the presence of albumin and casts in the cases reported by Moore.

The Classification of Chronic Nephritis.—JAMES B. HERRICK (Chicago) said that the kidney of congestion is, by common consent, ruled out of the category of the nephritides and of Bright's disease. Virchow and others likewise exclude amyloid kidney, which is now rarely classed as a form of Bright's disease, or as an inflammation of the kidney, though it sometimes occurs as a complication of a true nephritis. There remain two distinct groups which present such striking contrasts that one feels warranted in making of the groups separate classes. While the names used to designate these two different kidneys should be as accurate as possible in describing actual pathologic conditions, it is of greater importance that the fact of the existence of these two types should be clearly recognized. The one form characterized by edema and abundant albuminuria and cylindruria the name chronic parenchymatous nephritis has been most often applied; to the other with marked cardiovascular changes, its relatively slight albuminuria and cylindruria, and with its abundant urine of low specific gravity, the term chronic interstitial nephritis is given. As synonym for the former may be mentioned large white kidney, large yellow kidney, chronic desquamative and chronic tubal nephritis; for the latter, contracted kidney, granular atrophy, gouty kidney, etc. The former is the large rather soft kidney, pale or darker depending on the amount of fatty degeneration, with easily stripping capsule, wide cortex and with changes chiefly in the parenchyma, the tubular and granular cells. The kidney of the second class is the small, rough, firm kidney, with adherent capsule, granular cut surface, thinned cortex, retention cysts, and with great increase in the connective tissue, the interstitium. While these are types frequently met with both at the bedside and on the autopsy table, great variations are frequently met with. This has led to the naming of subvarieties, tending more to complication than to simplification. Parenchymatous and interstitial are in reality misnomers for, with every parenchymatous nephritis, the interstitial tissue is also involved and parenchymatous changes are seen in every case of chronic interstitial nephritis. The process is in reality a chronic diffuse nephritis. In our case the parenchyma is chiefly involved and there is no induration, in the other the interstitial structure shows the primary change and there is contraction. Hence we have (1) chronic diffuse nephritis without induration, (2) chronic diffuse nephritis with induration. Clinically we find many hybrid forms and must be content with the diagnosis of chronic or chronic diffuse nephritis. It is well to have both student and practitioner realize that it is frequently impossible to make disease conform to the classical type. Different forms are combined with each other

in a variety of ways. As a subhead under chronic interstitial nephritis should be placed the arterio sclerotic kidney with its striking local vascular changes. The classification that seems best is practically that of Senator. It appeals to both the clinician and the morbid anatomist. The term parenchymatous can be used in place of "diffuse without induration," though not literally expressive of the true condition it recognizes that parenchymal changes predominate. The classification would be: 1. Chronic Parenchymatous Nephritis (Chronic Diffuse Nephritis without Induration). 2. Chronic Interstitial Nephritis (Chronic Diffuse Nephritis with Induration). (a) Primary Chronic Interstitial Nephritis. (b) Secondary Chronic Interstitial Nephritis. (c) Arteriosclerotic Kidney (Arteriosclerotic Interstitial Nephritis). 3. Mixed Type, i. e., Combination of 1 and 2.

The Diagnosis of Chronic Nephritis.—ALOYSIUS O. J. KELLY (Philadelphia) called attention to certain pathologic and clinical features of the disease, though he had nothing new to add, as we really know but little more on the subject than was known by Bright. For the differential diagnosis of albuminuria he distinguished the following forms: 1. Extrarenal, spurious, accidental, or factitious albuminuria. 2. So-called functional, physiologic, or cyclic albuminuria. 3. Albuminuria without noteworthy alterations in the kidney. 4. Albuminuria with noteworthy alterations in the kidneys. To the first class belong those cases in which the albumin in the urine is but a subsidiary factor, usually not exceeding more than $\frac{1}{10}$ by bulk and it is proportionate to the amount of blood and pus. A disproportionate amount of albumin should always excite a suspicion of nephritis. The presence of casts is of the greatest importance, their persistence being clear evidence of nephritis. 2. So-called functional albuminuria occurs usually in young subjects, and is usually detected accidentally. Great circumspection must be exercised in diagnosing this variety of albuminuria. The albumin should never exceed more than 0.1%; the urine should contain no other abnormal constituent; every bodily organ should be examined and found to be in perfect health. A diagnosis should not be made until the patient has been long under observation and many examinations of the urine voided both morning and evening have been made. Albumin may be temporarily absent, even for long periods, in certain cases and at certain stages of chronic interstitial nephritis. 3. Albuminuria without noteworthy alteration in the kidney. To this class belong cases of active and passive congestion of the kidneys, cases of toxic degeneration of the kidneys, the kidney of pregnancy, amyloid degeneration of the kidney, acute and chronic suppurative and non-suppurative inflammations of the kidneys, and the tumors of the kidneys. In these cases the albuminuria acquires its importance from the attendant phenomena. Hence we must make a diagnosis on this basis and not upon the amount of albumin.

The cardiovascular changes in chronic nephritis are of extreme interest and importance; they dominate the clinical picture of the disease and they assume the commanding position in the prognosis and in the treatment. The lesions are widespread, involving the heart, the large and small arteries, the capillaries and sometimes even the veins. In the majority of cases the left ventricle alone is affected; in the remainder of cases both ventricles are affected. Predominating dilation of either or both ventricles is an unusual event until toward the termination of life. This hypertrophy of the heart occurs in all forms of nephritis, but not in all cases. It dominates the picture in interstitial nephritis. The changes in the arteries are more complex than those in the heart. In many cases the larger arteries show a loss of elasticity, in other cases more or less arteriosclerosis and atheroma; but neither is a constant feature. The medium-sized and smaller arteries almost invariably have thickened walls. In some cases both muscular hypertrophy and fibroid alteration may be observed side by side. The changes in the arteries are not distributed uniformly throughout the body. It seems that the cardiovascular alterations result from obstructions to the flow of blood in the arterioles and capillaries, and that this obstruction is provoked by the presence of some irritative metabolic products in the blood which in health should be eliminated by the kidneys. As chronic interstitial nephritis reveals itself in different ways the diagnosis depends upon the results of examination of the urine and of the cardiovascular apparatus. The urine is increased in amount and specific gravity. The amount of albumin is usually slight; at times none may be found. The changes in the pulse are of great diagnostic value. In the early stages the arteries being contracted, the pulse is small; the internal pressure being increased the pulse is hard and resisting, the pulse waves are small, the artery remains persistently full between beats. Later there is added the evidence of arteriosclerosis, and later the changes of atheroma. A diagnosis based upon increased arterial tension, accentuated second aortic sound, and the physical signs of hypertrophy of the left ventricle will rarely be wrong. They may be detected even in the absence of positive signs of kidney disease in the urine.

The Early Circulatory Indications of Chronic Bright's Disease.—LOUIS FAUGERES BISHOP (New York) stated that chronic Bright's disease remains a good clinical term for a condition involving many organs. It is no longer to be regarded as a disease essentially pertaining to the kidneys. In fact the fatal factor is often found in the brain or the general nutrition. The kidneys and the brain act as end organs with relation to

the circulation, and earliest symptoms of disorder in the small bloodvessels. The earliest circulatory disturbances find their indication in the brain, which is highly sensitive to every irregularity in its blood supply. The most characteristic early circulatory symptom of chronic Bright's disease is the development of arterial tension and the first indication of the development of arterial irregularities in the circulation. Temporary unconsciousness, slight paralysis, or even evanescent aphasia may indicate the development of disease of bloodvessels that in its full development will be typical Bright's disease. The early recognition of these signs is important because a proper hygiene and a proper therapy will longer delay the development of the disease.

Uremic Aphasia.—DAVID RIESMAN (Philadelphia) offered the following conclusions: (1) That aphasia may occur in uremia, and is at times the sole expression of that state; (2) it is frequently associated with right-sided motor paralysis, hemiplegic or monoplegic in character; (3) it may be the precursor of uremic convulsions or coma; (4) the aphasia is usually of the motor type, but may be sensory. There may be word blindness and word deafness; (5) it may be associated with agraphia, even when there is no paralysis of the limbs; (6) it is comparatively frequent in children, particularly in cases of postscarlatinal nephritis. In adults it may occur in any form of Bright's disease; (7) it is generally transient, disappearing completely. In time it is intermittent and has a marked tendency to recur; (8) when paralysis is present the two may disappear simultaneously, usually the aphasia first; (9) the features of uremic aphasia are, *per se*, not characteristic of the causal condition; (10) the most important diagnostic features are the transitoriness of the aphasia and the presence of other uremic symptoms and of signs of nephritis; (11) in every case of sudden aphasia the possibility of its being renal in origin should be considered, and careful studies of the urine and of the system at large should be made with this thought in mind.

Endocarditis as a Complication of Pneumonia.—E. F. WELLS (Chicago) offered the following conclusions: (1) Endocarditis is an infrequent occurrence in pneumonia, and ulcerative endocarditis is a rare event; (2) when endocarditis occurs it does so comparatively early in the pneumonic attack, and ulceration may occur at any time within the period of, probably, several weeks, the time being possibly coincident with some unusual valvular strain; (3) the symptoms and signs, previous to ulceration, or in the cases in which this does not occur, are equivocal; (4) any of the valves may be affected, but the preference is for the aortic. The vegetations are quickly formed and massive, and they have a marked tendency to ulcerate. Pneumococci are present early, and should ulceration occur the blood becomes infected. Later the pneumococci die and embolic showerings are sterile; (5) in simple endocarditis the diagnosis is always difficult, and often impossible. The murmurs and embolic showerings of ulcerative endocarditis render the diagnosis of this condition easy; (6) the prognosis of simple endocarditis is not well established, but that of the ulcerative form is extremely grave, although not absolutely hopeless; (7) the treatment of pneumococcal endocarditis, both simple and ulcerative, should embrace as a cardinal and the most important principle absolute rest in the recumbent posture and throwing the least possible strain upon the heart; (8) there is but little tendency toward cicatricial contraction, and when recovery ensues, even in cases with ulceration, the integrity of the valve may be unimpaired and health completely restored.

Venesection.—H. B. FAVILL (Chicago) said that during the last few years there was a tendency to place a greater value upon bleeding. The indications for its use are vague and indefinite as now defined in literature. It is important that this procedure of recognized value be not indiscriminately employed. When the heart, for various reasons, seems incapable of disposing of the blood, which it is called upon to circulate, venesection may be of value in certain well-chosen cases. The point of importance is what conditions are in any degree amenable to correction by the withdrawal of blood? It seems from the mechanic side the condition of the heart muscle rather than the intensity of the provoking cause will determine the issue. He postulated that whenever we find great pulmonary embarrassment due to vascular engorgement, bleeding is indicated. There is a symptomatic relief in a variety of conditions, a radical relief in a very limited group. It has a distinctly life-saving power in a small per cent. of appropriate cases. It may be indicated in plethora. There is small damage even in abstracting considerable blood.

The Employment of Digitalis and Aconite in the Treatment of Cardiac Diseases.—H. A. HARE (Philadelphia) considered the importance of studying the state of the cardiac muscle in the various conditions in which evidences of circulatory failure were manifest. He emphasized the fact that, while physicians very frequently regarded the valvular lesion as the important factor in the case, the condition of the heart muscle after all was the most important matter to be studied by physicians, since valvular lesions in themselves were of little importance if compensatory hypertrophy existed. He also emphasized the fact that after many acute diseases the physician was wont to neglect the consideration of the heart as the important factor in the recovery of the patient. An examination of this organ might fail to reveal any signs of valvular difficulty, yet it might be so feeble in its action as to be incapable of supply-

ing all portions of the body. It also might be enfeebled by an impoverished condition of the blood, for the heart could not be strong when poor blood was circulating through its coronary arteries. Hare also advocated the administration of small, rather than large, doses of digitalis in the treatment of most cases in which this drug was indicated, and thought that the best results were usually obtained by the continued administration of these small doses, rather than by the use of the large ones which were commonly employed. He also spoke of conditions in which aconite could be employed, alone or in conjunction with digitalis, with very excellent results. He was quite sure that in a certain number of cases of valvular heart disease the patient did not require digitalis or any other cardiac stimulant; but, on the other hand, in addition to rest, will often be greatly benefited by the administration of aconite, which has the same steadying effect upon the heart through its influence upon the vagi as has digitalis, while by its sedative influence upon the heart muscle in cases of excessive compensation, and by its relaxing effect upon the bloodvessels, it diminished the over-action of hypertrophy which is sometimes confused with the tumultuous over-action of ruptured compensation.

Tuberculous Myocarditis.—J. M. ANDERS, (Philadelphia) made the following conclusions: 1. Tuberculosis of the myocardium is more common than has been supposed. 2. At present writing, not more than three pathologic varieties are justifiable. 3. It is practically always secondary to a lesion in some other situation, most commonly in the bronchial or mediastinal glands. 4. Transmission through the heart occurs most frequently by the lymph stream, less often by the blood current, and more rarely still as the result of extension by continuity. 5. Myocardial tuberculosis in a considerable proportion of cases is secondary to pericardial tuberculosis, and the latter to disease of the bronchial glands. 6. The symptomatology is extremely variable and indefinite. 7. Diagnosis is excessively difficult, but is probably possible with great care and under favorable circumstances. In addition to the suspicious features that may be present the existence of generalized tuberculosis and pericardial tuberculosis on one or both are essential to a diagnosis.

The Autogenous Diseases.—V. C. VAUGHAN (Ann Arbor, Mich.) said that we had not as yet had sufficient data to enable us to attempt even a provisional classification of the autogenous diseases. He pointed out certain facts connected with this subject: 1. The digestive organs may but imperfectly perform their function, and the products of their incomplete action may be absorbed, and may lead to more or less disturbance in certain organs of the body. Moreover every part of the body will suffer more or less from insufficient nutrition due to the fact that properly prepared pabulum is not brought within the reach of the cellular element. When peptones and albumoses are injected directly into the blood they act as powerful poisons. 2. That certain secretions and excretions of the human body are poisonous when brought into contact with tissues with which normally they have no relation is well known. 3. It is the function of certain organs of the body to prevent the passage of certain substances into the general circulation. 4. That the undue retention of excrementitious substances frequently lead to disturbances of health is well known. 5. That certain cells in the body fail to adjust themselves to general alterations taking place in other organs at certain periods of life is quite evident. 6. Under conditions but little understood at present, certain cells of the body fail to utilize certain foodstuffs. This is true in certain forms of diabetes. The cells which are accustomed to absorb and utilize the sugar find themselves unable to accomplish this duty, and the unused sugar acts as a poison to other tissues. 7. Active poisons are sometimes formed by certain cells in the body. In this way we account for the presence of certain of the more highly toxic leukomaines and some of the more poisonous acids, such as oxybutyric, and some of the poisonous gases, and some of the alkaloidal bodies.

Appendicitis from a Physician's Standpoint.—JAMES TYSON (Philadelphia) believed that the physician was too conservative in the treatment of this disease. After a thoroughly established diagnosis operation should be recommended, even though deferred, if it can be done without danger to the patient, until acute symptoms have subsided, if they show a disposition to subside. If, however, they should not subside operate promptly. The diagnosis is most important because operations, which have brought reproach upon the procedure, have been made upon insufficient foundation for the diagnosis.

A Case of Scurvy with Unusual Poverty of the Blood.—JAMES E. TALLEY (Philadelphia) offered the following conclusions: 1. There is no condition of the blood characteristic of scurvy. 2. Gingivitis is not a constant symptom of scurvy. 3. In certain scurvy cases there is a condition of the blood similar to that existing in pernicious anemia, though any definite connection between the two diseases is not demonstrable. 4. The most important element in the causation of scurvy appears to be a diet lacking in vegetables or their ingredients. Tainted food may produce it, and an exclusive diet of perfectly fresh meat and blood may prevent it. 5. The infectious theory is gaining a strong foothold among the authorities, although no definite microorganisms are acknowledged.

FOURTH SESSION.

The Occurrence of Gout in the United States, with an Analysis of 36 Cases.—THOMAS B. FUTCHER (Baltimore) sum-

marized as follows: 1. Gout in the United States is undoubtedly more common than is generally supposed. 2. Out of 13,400 medical cases admitted to Osler's medical wards in the Johns Hopkins Hospital during a period of 13 years there were 35 gout cases, or 0.24% of the total number of cases. For the same number of years at St. Bartholomew's Hospital there were 116 gout cases out of a total of 31,100 medical admissions, or 0.37% of the cases. Thus among hospital patients gout is only about one-third more frequent in London than in Baltimore. 3. All the 36 cases were in white males. The largest number of cases occurred in the fifth decade. Of the patients 27 were native-born Americans. 4. The majority of the cases appeared to have earned rather than have inherited their gout. Alcohol and lead seem to be the most potent predisposing etiological factor. 5. Of the 36 cases 33 had reached the chronic stage before they came under observation. In 17 of the cases tophi were present. 6. Among the more interesting complications may be mentioned 3 cases of gouty bursitis; 1 case of parotitis; 1 of pericarditis; 1 of retrocedent gout with symptoms simulating intestinal obstruction. 7. There was evidence of disease of the kidneys in the majority of the cases. Albuminuria occurred in 27 and hyaline and granular casts in 23 instances. 8. Arteriosclerosis was present in 23 cases and a mitral systolic murmur in 5 cases. 9. Many gout cases are mistaken for rheumatism. Four of the cases were diagnosed as such on early admissions. The appearance of tophi revealed their nature. 10. The series illustrates the great importance of examining the ears and the vicinity of the joints for the presence of tophi in all cases of multiple arthritis.

Syphilis of the Liver.—CHARLES G. STOCKTON (Buffalo) said that, although the chief pathologic changes induced by syphilis of the liver appeared to have been clearly studied and classified, the clinician occasionally meets with instances of undoubted syphilis in which there developed hepatic manifestations that so puzzled him as to the precise character of the morbid change that classification has to be abandoned. There is no fundamental difference between the pathology of congenital syphilis and that of the acquired disease. In either one we may have: First, the diffuse hepatitis or parenchymatous degeneration to be succeeded by the ingrowth of fibroid tissues; these changes are probably due to the local effect of the specific toxin rather than to local infection. Second, we may have gummas occurring in large tumors, in scattered masses, in miliary granulomas, or in a budding stage, as mere aggregations of lymphoid cells; these lesions appear to be the outcome of stimulation of tissue from the local action of microorganisms. In some cases the liver is apparently invaded through the lymphatic system, sometimes by the route of the peritoneal cavity, in other cases the disease manifests itself in the bloodvessels, or by obliteration of some of the portal branches, or distribution of the hepatic artery. He then cited illustrative cases showing the conditions under which hypertrophy or deformity of the liver may occur besides pain; ascites, jaundice, and other symptoms commonly associated with affection of the liver other than syphilitic. It is generally conceded that serious syphilitic lesions of the liver occur only in the last stages of the disease. With the exception of perihepatitis and lymphatic involvement he was sure that this was true. The last named lesion he had seen at a comparatively early period. Besides this he was satisfied that in the early stages of the affection we find the liver congested, moderately enlarged, somewhat tender, and functioning poorly. Very likely this is the immediate result of a constitutional disturbance, i. e., the systemic intoxication. In conclusion, he expressed the opinion that lymphatic complications are more common in syphilis than one is likely to infer from the literature on the subject. The subject has not received the fulness of consideration that its importance seems to warrant.

The Treatment of Croupous Pneumonia.—E. FLETCHER (Chicago) gave an analysis of the cases treated in Cook County Hospital for the 15 months preceding April 1, 1902. He reviewed the literature on the subject extensively. He said in substance that the frightful mortality in this disease had led our best pathologists to become therapeutic nihilists. Few physicians will admit that their efforts to mitigate the severity of pneumonia are of no avail. However, there are some remedial agents which deserve consideration. The patient should have abundant nourishment, but the stomach should not be overloaded; the oil silk jacket may be applied. Pain may be relieved by hot or cold applications, by cupping, or by drugs. He recommended ammonium bromid, or hyoseyamus for the cough. The temperature could be controlled by various means. He spoke of the action of various stimulants, and antipneumococcus serum. In those cases in which the consolidation did not speedily resolve, he thought that the process could be stimulated by the administration of the chlorid of calcium, the iodid of ammonium, and possibly by alkalin diuretics, such as acetate of potassium.

An Analyses of Seventy Cases of Gastropotosis.—J. DUTTON STEELE and ALBERT P. GRANCINE (Philadelphia) made the following conclusions: 1. Gastropotosis is much more common than might be inferred from the meagre reference made to it in a majority of the textbooks upon general medicine. In women showing symptoms of gastric motor insufficiency its presence is almost constant, and it is probably the most important factor in the causation of such symptoms. It is much less frequent in men. 2. The occurrence of gastrop-

tosis is not confined to any particular age or class of individuals. There are no causative factors common to all cases, and no explanation of its etiology heretofore given is broad enough to call it satisfactory, if we accept the theory of congenital predisposition, which is entirely hypothetical. 3. The position assumed by the stomach in all of their cases was vertical or subvertical. Total descent was not observed, and probably is extremely rare. Some dilation of the pyloric extremity was always present. When this dilation affects the pyloric end alone it may perhaps safely be assumed that the dilation is secondary to the descent of the pyloric. In general dilation and gastroptosis it is probable that the displacement is secondary to the dilation. The data in regard to the position of the stomach were obtained in every case by inflation with air through the stomach tube. The colon was inflated through the rectum. 4. The transverse colon invariably shared in the displacement, assumed the "M" or "V" shape, and when inflated by air was in close contact with the greater curvature of the stomach. The hepatic flexure may not be displaced or may sink to the level of the umbilicus. The splenic flexure lies behind the stomach and eludes demonstration. 5. The right kidney was movable in 60.9% of the cases. The left kidney but rarely showed abnormal movability, and the spleen in but one case. The fact that the liver was observed to be unduly movable and sagging downward in three of the six cases operated upon, suggests that ptosis of this organ may elude their method of physical examination, and be more frequent than is usually supposed. 6. There is no condition of the gastric contents peculiar to gastroptosis. Absence or diminution of the free hydrochloric acid is the rule. In a few cases the amount was normal. Hyperacidity was rare, and usually occurred in cases where general dilation existed, and when there was a strong neurotic taint. 7. There were no characteristic changes in the blood or urine. 8. The subjective symptoms were those of gastric motor insufficiency, and were of a mild grade in cases of primary ptosis, but more severe when general dilation existed. Pain was present in the upper abdominal region in about half, and in the lumbar region in a quarter of the cases. 9. The same causes that produce neurasthenia appeared to favor the development of ptosis of the abdominal viscera. When the two conditions are established, they probably react upon each other deleteriously, but clinical evidence tends to contradict the theory previously widespread, that they have a direct causative relation.

The Etiology of Acute Articular Rheumatism.—GEO. W. WEBSTER (Chicago) offered the following conclusions: 1. Many organisms produce arthritis. 2. Probably all cases of acute articular rheumatism are due to infection. 3. Probably all organisms known to cause either acute articular rheumatism or other forms of arthritis also give rise to other pathologic conditions as well. 4. It would thus seem to be not merely a local infection or inflammation, but a general infection, the commonest seat of the principal lesion being the joints, but also involving the heart, both endocardium, pericardium and muscle, occasionally the meninges and other structures, and caused by a diplococcus circulating freely in the blood. The diplococcus seems to be merely a germ capable of causing a widespread inflammation, and the joints are included in its sphere of action. Just as in pneumonia we may have a general infection with local manifestations or inflammatory reaction in the meninges, the pleura, the endocardium, pericardium, postnasal space, peritoneum, lymphatics and lungs, the latter being probably the usual site of the localizing inflammation. 5. It is quite possible that there is some hereditary diathetic or constitutional peculiarity, the nature of which is completely unknown to us, which may favor the infections in general, and possibly that of rheumatic infection in particular. 6. That there may be varying degrees of susceptibility depending upon exhaustion, depressing influences, as cold and the like, seems reasonable. These are the occasions and not causes. They favor, but do not cause. 7. That susceptibility varies greatly there can be no doubt. Whether this depends upon alkali tension has not yet been demonstrated, but seems plausible on the ground of variation in the bactericidal action of the blood. This may explain the value of alkalies in the treatment of rheumatic affections.

Etiology and Prophylaxis of Cardiac Manifestations of Articular Rheumatism.—JOSEPH M. PATTON (Chicago) said that it had been admitted that many of the so-called hereditary diseases of the heart were probably of rheumatic origin, while it was generally conceded that those cardiopathies of early life which obtain with the entire absence of clinical history, or at least an indefinite mention of "growing pains," were of rheumatic origin. In several hundred ambulatory cases of acute and chronic disease of the heart observed during the last 10 years fully 30% failed absolutely to give any history of rheumatic manifestation, though usually some such history could be traced in the parents or other members of the family. Sansom believed that all cases practically of heart disease in individuals under 35 years of age were rheumatic, and that practically all fetal endocarditis was rheumatic. In a certain proportion of cases there appears a degree of myocarditis which cannot be explained by extension of inflammation or by embolic or other direct infective processes, and we must assume with Hanot that toxins are able to produce acute inflammation of the heart. Pericarditis, according to Baumgarten, occurs in

about one-third of the cases of acute rheumatism. Of 150 cases of rheumatic heart disease reported by Lees, the pericardium was uninvolved in only nine instances, 20% of Sibson's cases of acute rheumatism were complicated by pericarditis. Latham gave 7.5% and Chambers and Ormrod gave 13% and 71.7% respectively. Acute rheumatism is generally conceded to be the most frequent cause of endocarditis. Of Sibson's cases, 325 in number, 107 had endocarditis alone, and 54 endopericarditis. The occurrence of acute myocarditis in connection with rheumatism is generally admitted. With the treatment of acute rheumatism he emphasized his belief in the importance, so far as avoiding heart complications was concerned, of early control of the condition as shown by mitigation of the joint symptoms and subsidence of the fever, and he expressed his conviction that this was best obtained by the temporary employment of pure salicylic acid in sufficient doses to produce relief of pain and fever, with sweating and more or less depression, to be followed by sodium salicylate combined with the alkaline diuretics. He believed the most effectual measure locally was the application of cold to the precordium. It should be applied continuously. Hot applications have an analgesic effect and are more readily allowed by children. Their effect on the inflammatory condition was decidedly less than cold. Aconite had a distinctly beneficial effect in quieting the heart and slowing its action. In the earlier excitable stages aconite, combined with sodium bromid, would act to advantage.

Review of the Cases of Acute Articular Rheumatism in the Medical Clinic of the Johns Hopkins Hospital.—THOMAS McCRAE (Baltimore) said that in a period of 13 years there were 270 cases of acute articular rheumatism. Of these 198 were males and 72 females; 223 were whites and 47 were colored; the largest increase was in the mid-decade, with the second decade coming next. The oldest patient was 66 years old. The largest number occurred in the first half of the year and 55% in the months of February, March, April and May. September was the month with the fewest cases. There was a family history of rheumatism in 25% and of tuberculosis in 14%. There was a previous history of rheumatism in 45%; of tonsillitis, however, only in 4% and of chorea in 3%. Nearly 40% gave a history of the more or less constant use of alcohol. In about 75% the age of the first attack was below 30, the largest number, 36%, being in the second and only 8% in the first decade. There was a history of exposure to cold, wet, etc., in 12% of all the cases. Arthritis was the most predominant symptom of onset in over 80%, but in 17 cases a chill occurred as the onset, in 10 tonsillitis and in single cases various conditions, among others trauma. The arthritis was, of course, an inevitable feature, more often in the legs than in the arms, the kneejoint being involved in over 50%; in all the joints of the lower extremities, both joints, *e.g.*, both knees, were affected more frequently than one only, while the contrary was true in all the joints of the upper extremities. The average duration of fever was 12 days. There were not any cases of hyperpyrexia. About 30% of the cases had a fever above 103°. The heart sounds were clear throughout in 38%; definite organic lesions were present in 32% and the remaining cases were more or less doubtful. Of these 78 doubtful cases, in 18 there were murmurs present during the attack which disappeared. In the remaining 60 there was in all a systolic murmur of varying distribution, in a large number at the apex only, of soft quality and not transmitted. The heart condition in other ways normal. In nine cases the murmur disappeared under observation, all at the apex. In five of these the murmur was apparently due to an organic lesion, the other four being doubtful. The age at the first attack in reference to the cardiac condition showed that of the patients who had the first attack below the age of 20 years, 45% had a definite lesion, while of those over the age of 20 at the first attack, only 21% had a lesion. This pericarditis occurred in 6%, and with the first attack in only three of the 16 patients. The time varied from the fifth to the sixty-first day. The rub persisted for a period of from five to 18 days. There was associated delirium in one instance only. The fever in the majority of the cases was not high, only three being above 103°. There was a leukocytosis of 15,000 to 25,000 in all of the seven cases in which counts were made. There was associated endocarditis in eight cases, doubtful in four cases, and no evidence of it in four. Effusion occurred in two cases, adherent pericardium in three, and death in three. The pulse rate of the series showed that only in 41% was the pulse raised over 100, only in 13 cases, or 6%, was it over 120. The urine was clear throughout in 48%. Albumin was found on admission only once in 34%, occasionally in 5%, and throughout in 11%. A positive diazo-reaction was given in three out of 91 cases. The average percentage of hemoglobin in 77 cases was 66, the red cells in 69 were 4,532,000, and the leukocytes in 83 were 11,700. In 35 cases the leukocytes were 10,000; the highest leukocyte count was 26,000. The average differential count showed nothing unusual. The average stay in the hospital was 26 days, and the average duration 38 days. Cultures from the blood, joints and urine were negative throughout. Death occurred in three of the series, all having pericarditis.

The Salicylates in Acute Rheumatism.—JAMES J. WALSH (New York) said that it was generally conceded that the salicylates constitute the most satisfactory remedy for acute rheumatism, though they are no longer considered a specific for rheumatism in the sense that quinin is a specific for malaria

The salicylates do not affect secondary infectious complications of joint structures due to pus cocci, influenza, bacillus or other infections, nor to the arthritis due to the gonococci. Rheumatic cases that are uninfluenced by the salicylates should be suspected to be dependent on some other etiology than that of simple acute rheumatism. In regard to the dosage of the salicylates he said that they were ineffective unless employed in large doses from 90 to 120 grains per day. Many patients cannot stand this amount of the drug; certain nervous individuals develop neurotic symptoms that may proceed to delirium. Again, some stomachs will not tolerate salicylates; a disturbance of the digestion further adds to the impoverished condition of the system. The salicylates are distinctly irritants to the kidneys and should not be given in cases of nephritis. It will react to increase the anemia and make heart complications more serious; in certain cases there is a development of salicylic dyspnea, and if breathing becomes very rapid it must lead to the substitution of some other remedy. The form of salicylates that are used is a matter of clinical observation that each physician must decide for himself; but the criticisms are sufficiently numerous and authoritative to make it clear beyond a doubt that the subject is well worthy of consideration. He said with regard to the time at which the salicylates should be administered, that there is some variance of opinion, but as the temperature of rheumatic patients is higher in the afternoon and evening, and they are almost sure to be more uncomfortable and to present more symptoms of the affection at this time, it may be better to administer them so that the daily dose is given before four o'clock in the afternoon. In heart complications it seems advisable that alkalies should always be used in conjunction with the salicylates. Sufficient of the alkalies must be employed to render the urine alkaline. They are not employed with any thought of the presence in the blood, either of uric acid or lactic acid, but entirely on clinical grounds. There is no doubt that the salicylates relieve the pain, lessen the fever, diminish the restlessness, and so made the patient very comfortable. There is considerable doubt, however, as to whether the remedy affects the rheumatic process itself. Hyperpyrexia is one of the complications that is undoubtedly much less frequent in acute rheumatism than before the introduction of the salicylates. As the salicylates are not specific for rheumatism, and the beneficial effects obtained from them may also be derived from cognate coal-tar products, antipyrin has been very extensively used in Germany as a substitute. Like the salicylates antipyrin must be used in large doses. From 60 to 90 grains per day are employed for three, four or more days until the painful symptoms of rheumatic conditions have subsided. No bad results have been noticed from these large doses unless there be an idiosyncrasy in the patient. Phenacetin in similar doses as those mentioned for antipyrin has been employed with good results. Either of these drugs may prove effective when the salicylates fail.

The Influence of Ozonation Upon the Blood.—G. LENOX CURTIS (New York) said that the profession at large has been slow to appreciate the importance of a thorough knowledge of the blood as an aid in diagnosis. He states that unmistakable indications of disease are often recognized in specimens of fresh blood, of which photographs can be made. These should be attempted only within a few seconds after the fluid has been drawn, as even a brief exposure of the specimen to the air promotes failure. The American method affords knowledge of obscure cases and enables the physician to institute treatment before ordinary symptoms are clearly established. Individuals who possess pure blood are immune to disease. Examinations of the blood of immune nurses showed that in all cases the fluid was practically normal. The cells of pure blood are robust, noticeably free, and vigorous in appearance. In a diseased state the individual cells cease to be independent and adhere to one another. Degeneration occurs with the formation of new products; changes, pathognomonic of certain diseases, appear in the blood. A knowledge of these facilitates early and accurate diagnosis of obscure conditions. He submits the proposition that good health is perpetual when normal conditions of blood, drink-supply and air-supply are conserved. When the microscope reveals the presence of morbid detritus, i. e., an abnormal state of the blood, the fluid must be restored by oxidation. Ozone, the "life-giving" principle of oxygen, can be produced by means of a high-tension electric machine, and forced into and through the body to such an extent as to destroy the *materies morbi* in the blood and other tissues. In the author's opinion this is essentially a process of oxygenating the blood, destroying pathogenic organisms and eliminating the products of retrograde metabolism through the combined influences of electricity, heat, light and ozone. His conclusions are that resolution is thereby hastened, the number of red blood-cells and the percentage of hemoglobin are increased, the leukocytes are diminished in number, and pathogenic bacteria are destroyed. In a large percentage of cases, most of which were of long standing, by the way, satisfactory results were obtained in a month. Histories of a number of cases were given which apparently bear out the writer's claims.

Officers Elected for the Ensuing Year.—Chairman, W. S. Thayer, of Baltimore; secretary, J. B. McIlroy, of Mississippi. For delegates, J. M. Anders, of Philadelphia, for one year, and C. G. Stockton, of Buffalo, for two years.

Section of Surgery and Anatomy.

SECOND SESSION.

Further Experiences with a Modified Method for the Cure of Relapsing Talipes Equino Varus.—A. F. JONAS (Omaha, Neb.). Attention was called to the frequency of recurrence with the usual operations for club-foot. Apparatus is soon outgrown, and is usually too expensive for the poor. The best guarantee against relapse in these cases is to divide the soft parts, and if necessary the bone, so that the foot can be retained in place with little force. Jonas has abandoned the Phelps operation, and has devised in place of this his method by raising a triangular flap which was described several years ago. The astragaloscaphoid ligament and capsule must be divided; in some cases the neck of the astragalus is divided with the osteotome; in worse cases a triangular section of the neck is excised, or in extreme cases the entire head of the bone is excised.

Prevention of Deformity.—WISNER R. TOWNSEND (New York City). One-half of the cases of deformity could be readily prevented if the proper measures were taken in time. Townsend called attention to the large number of deformities which follow such affections as anterior poliomyelitis and rheumatism, the deformity caused by incorrect positions, etc. Fully half the cases of club-foot are of the noncongenital variety. Very many deformities arise after operations upon bones or muscles. For example, in excision of the knee, unless the patient has a considerable amount of support for some months, a malposition is likely to result. Deformities frequently follow typhoid fever which might readily be avoided by stretching the muscles daily during the course of the disease. Very many deformities occur from the defective position of children at school, and toe-drop is a deformity very frequently following fractures of the leg.

Discussion.—H. L. TAYLOR (New York) said that frequently deformities are exaggerated because of the advice of the family physician to postpone treatment until the child is older and in better condition for operation. Even worse advice that is frequently given is telling the parents that children will outgrow deformities. Besides toe-drop, which frequently follows fractures of the leg, traumatic valgus very frequently follows Pott's fracture. Another form of fracture frequently followed by deformity is that just above the elbow joint. Taylor would not go so far as Jonas in recommending extensive operations, particularly in early cases, for he believes that these cases can usually be treated successfully by tenotomy. SHERMAN (San Francisco) said that he abandoned Phelps' operation many years ago. He considered the incision advised by Jonas a very ingenious one, but a curved incision with the base downward gives equally good exposure in these cases. Sherman agreed with Townsend as to the great importance of the prevention of deformity, and commended his paper highly. STEELE (St. Louis) did not entirely agree with Jonas as to the requirements in treatment of club-foot. Most cases he believed could be cured with tenotomy and properly adjusted apparatus. RUTH (Keokuk, Ia.) stated that he has entirely abandoned the V-shaped incision over the outer side of the foot. He thinks it wise not to divide the soft parts too extensively in these cases. WARNER (Columbus, Ohio) believes that the most important point to be observed is to divide the structures sufficiently so that the foot remains in corrected position without any force. JONAS, in closing, stated that evidently the purpose of his paper had been mistaken by many who had taken part in the discussion. He referred only to obstinate cases in which other measures had failed. If brisement force be sufficient to correct a deformity, there is no need of any cutting operation.

Gunshot Wounds of Cavities: Civil Side.—WILLIAM L. RODMAN (Philadelphia). In speaking of the penetrating wounds of the chest he called attention to severe shock, emphysema and hemoptysis as the cardinal symptoms. He specially emphasized the fact that a probe should never be used in diagnosis of these cases, for nearly all the varieties of infection which follow are due to this cause. He believes that the statements of most textbooks in regard to these injuries are incorrect, for in his experience, unless such wounds are rapidly fatal, recovery usually follows. Deaths are usually the result of meddlesome surgery. In speaking of wounds of the abdomen Rodman called attention to the fact that wounds penetrating the abdominal wall do not necessarily perforate the intestinal tract. He estimated that this is true in 3% of the cases. Wounds of the upper part of the abdomen are much less likely to give trouble from perforation, though dangerous because of the large vascular trunks which may be injured. The spleen, pancreas and liver are also frequently injured. Gunshot wounds penetrating the abdomen from flank to flank are much more dangerous than perforating wounds from the front. The prognosis in these cases is always grave. Rodman urged the importance not only of operation but of early operation in all these cases. The first treatment should be protection of the wound with gauze to avoid soiling the peritoneal cavity. Intravenous injections of salt solution are of great value in combating shock. Drainage is often unnecessary if operation is done promptly within the first 24 hours. If done after this it is practically always necessary. In certain cases posterior drainage is very necessary. It is best not to spend too much time in looking for the ball.

Discussion.—McGRAW (Detroit) finds experimentally that

the course of the ball in gunshot wounds of the abdomen is always direct. The prognosis in these cases is vastly better if the intestines are empty. He advises immediate operation, not waiting for extensive aseptic preparations in case of emergency. GRANT (Denver, Col.) believes that soiling of the peritoneum may be avoided to some extent and recovery aided by treating these cases in the same way that Ochsner has advised in treating appendicitis. Delay adds to the gravity and to the mortality in these cases. OLIVER (Cincinnati) believes with Rodman that if the patients do not die early, recovery is likely to follow. Statistics show that more recoveries follow non-operative than operative treatment. Shock is not generally marked in these cases. Drainage of the entire abdominal cavity would be very difficult. ROBERTS (Philadelphia) has found early venesection very valuable in the treatment of the pneumonias which frequently follow gunshot injuries of the chest. Hemorrhage and shock are by no means identical in these cases. OCHSNER (Chicago) called attention to the value of immobilizing the chest with a plaster cast from the umbilicus to the axillas or by the use of adhesive plaster. There is much more danger in gunshot wounds of the abdomen treated in civil practice than in military practice, for in these cases the intestines are practically always filled with food, and soiling of the peritoneum is inevitable. LAPLACE (Philadelphia) believes that immediate operation is very important, but it is also important that a diagnosis of the exact condition should be made before operation is undertaken. Drainage should vary according to the amount of peritonitis present. GRANT (Louisville, Ky.) called attention to the fact that perforations are usually double and of an even number. This is of help in avoiding overlooking perforations, for if one perforation is overlooked the operation is of no avail. It is sometimes necessary to eviscerate the patient in cases of extensive injury. GIBBONS (Scranton, Pa.) considers catheterization the step of first importance in these cases. This determines whether the bladder is injured or not. The all-important thing is not to get the patient off the operating table as soon as possible, but that the repair should have been thorough. McKAE (Atlanta, Ga.) stated that he had treated five cases of penetrating wounds of the chest and abdomen within 90 days. In one stab wound the perforation was through the chest wall, opening the abdominal cavity also through the diaphragm. Death resulted in this case. It is a mistake not to open the abdominal cavity thoroughly in these cases. WEEKS (Portland, Me.) does not agree with Grant that irrigation is usually advisable in these cases, for in this way bacteria will spread over the entire abdominal cavity, while if the soiled area be cleansed by wiping, the peritonitis will be localized. DAWBARN (New York) called attention to the value of cording the extremities to avoid bleeding in these cases. In military surgery it has not been found wise to operate on the battlefield in perforating wounds of the abdomen, but rather to trust to morphin as a splint to prevent peristalsis. RODMAN, in closing, stated that in military surgery the correct treatment was nonintervention on the battlefield. The conditions are not favorable for operation. Moreover, the balls or bullets are very swift, nicked and sharp, and do not tend to carry foreign material into the wound. The wound resembles a simple incised wound. In civil practice the opposite conditions usually prevail, and operative treatment at the earliest moment is advisable.

Case of Unique Foreign Body in Stomach.—J. C. OLIVER (Cincinnati, O.) reported the case of a girl who was taken with severe abdominal pain after eating a great many persimmons. Emetics and purgatives were given freely by the physician in charge, but the symptoms continued, and she was seen by him in consultation eight days after the onset of her symptoms. She was suffering very severe abdominal pain and a mass could be felt within the abdomen. On incision two good-sized balls were felt in the stomach, one near pylorus and the other near the fundus. These balls were found to be made up of persimmon shells, seeds and leaves. They were removed by gastrotomy, the stomach was sutured and the abdominal wound was closed. Recovery followed.

Discussion.—JACOBSON (Syracuse) reported a case in which he operated removing a mass of hair from the stomach of a girl who had been accustomed to chew the ends of her hair and swallow it until this ball was formed. On looking over the literature of this subject he found that 20 similar cases had been reported. The first operation was in 1778. A diagnosis has never been made. In one-half of these cases the condition was found at operation, in the remaining cases postmortem. There have been no deaths following the operative removal of such balls of hair.

The Diagnosis of Intestinal Perforation.—F. G. CONNELL (Leadville, Colo.). In spite of advances which have been made in surgery during the past century the means of diagnosis of intestinal perforations are the same that were available 100 years ago. He reviewed the various methods which have been advised for making a diagnosis, and reported some experiments—injecting filtered air or salt solution into the abdominal cavity, which was withdrawn later and examined for substances not normally found in the peritoneal cavity. Either in the absence or presence of perforations these injections are perfectly harmless. On removing the air and passing it through a bottle containing lead acetate solution, the solution is turned black, if sulfur from the lower intestinal tract has escaped. This method was suggested to Connell by the way in

which plumbers locate leaks by the use of lead acetate paper, the sulfur fumes turning it black. Positive results were obtained in all the cases in which the large intestine and lower part of the small intestine were perforated, but the results were negative in perforations of the stomach and upper part of the small intestine. In one animal eight experimental punctures of the intestine were made, recovery following.

THIRD SESSION.

The Results of Operation for Gallstones in the Common Duct.—MARTIN B. TINKER (Baltimore). When the disappointing results of medical treatment of stones permanently lodged in the common duct are considered it is surprising that such cases come to the surgeon so late. In about one-third of the cases treated at Johns Hopkins Hospital during 10 years the symptoms were of over 10 years' duration. In 27 cases of common duct stone 25 were treated with incision of the duct and removal of the stone. Two cases had general peritonitis from perforation and were treated with cholecystostomy, a fatal result following in both. In 21 cases in which the gall passages were drained recovery followed. In 4 cases treated by removal of the stone without drainage a second operation was necessary in all but 1 case, and 3 of the patients eventually died. The entire mortality of choledochotomy is 13.3% as compared with 16.6% in Mayo Robson's entire series, and 19% in Czerny's cases. Kehr's mortality is only 10.2%, but he excludes from this series all seriously complicated cases. In 21 consecutive cases treated by removal of the stone and drainage, all recovered. This experience, taken with that of Mayo Robson, with no mortality in his last 21 cases, and the results of Mayo, of Rochester, Minn., who has operated in 31 cases with only one death, leads to the conclusion that in uncomplicated cases the mortality of choledochotomy need not be greater than that of the operation for appendicitis in the interval.

Surgery of the Gallbladder and Bile Duct.—ALEXANDER HUGH FERGUSON (Chicago) called attention to the displacement of the gallbladder, which sometimes occurs even across the median line. Frequently adhesions form which have a tendency to produce displacements by dragging the gallbladder down. In discussing the symptoms and signs of infections of the biliary passages, Ferguson stated that he had always found gastrointestinal disturbances in every case. Pain, whether referred or local, is a symptom of much value. Tenderness is also of great importance, and is always present if there is a stone. The cause of elevation of temperature is still an enigma. The bile may be entirely sterile, but possibly the rise in temperature is due to the absorption of biliary products. In cases in which cholemia is present, Ferguson advises hepatotomy, draining the liver through the loins.

Discussion.—MAYO (Rochester, Minn.) called attention to the value of Robson's method of using a pillow which is of aid in giving better exposure in common duct operations. Robson also attempts to draw the liver up into the wound as an aid in exposure. Division of adhesions should be avoided because of the danger of hemorrhage. Drainage of the hepatic duct is necessary in these cases, and the tube should be tied in with catgut. DAVIS (Birmingham, Ala.) believes that it is unnecessary to suture the common duct after removing gallstones. He advises drainage in every case, and claims the honor of having first done hepatotomy in a case in which the liver abscess was suspected. DUDLEY ALLEN (Cleveland, O.) finds operation difficult in most of these cases because it has been so long delayed. In many simple cases pain is an unimportant symptom. If the symptoms are indefinite, an exploratory celiotomy is advisable. RANSOHOFF (Cincinnati, O.) called attention to the frequency with which operation is performed for stone in kidney without anything being found, while in the case of symptoms referred to the gallbladder, the results of operation was seldom negative. If the symptoms recur, it is probably because a stone has been left. He emphasized the danger of infection in opening the duodenum. ABBEY (New York) does not consider suture of the common duct necessary, and believes that it adds to the danger of the operation in difficult cases. He advised putting a small drainage tube into the duct. MARCY (Boston) claimed the honor of having been the first to remove a stone from common duct and to suture the duct. His first case was followed by recovery, but in a case operated upon a few days ago death followed.

The Surgical Aspects of Acute Pancreatitis and Fat Necrosis.—WILLIAM J. MAYO (Rochester, Minn.). The study of inflammatory diseases of the pancreas may be said to be the result of the inquiry into the causation of some of the complications of gallstone diseases. In 13 cases of pancreatitis there were gallstones in 10. In most cases the gallstones are quite small, thus not acting as valve stones to cause dilation of the duct, but plugging the opening. Experimental researches have been made by numerous investigators. The studies of Opie were mentioned as of special value, showing for the first time the direct connection between gallstone diseases and pancreatitis. Acute pancreatitis and fat necrosis are inseparably connected. From the acute stage chronic pancreatitis may develop. The indications would be to remove the obstruction to the bile passages, and for this purpose cholecystostomy was performed in three cases and cholecystenterostomy in four cases. The anastomosis of the colon in these cases answers as well as with the small intestine.

Discussion.—MUNRO (Boston) emphasized the importance

of early diagnosis. As no positive diagnosis can be made by laboratory methods, clinical methods are as good as any. Munro mentioned nine cases which had occurred at the Boston City Hospital, the diagnosis being verified either by operation or postmortem examination. Five of these cases occurred in his own personal experience. Two recovered and three died, two in the early stages of the disease and one after a few days had elapsed. The diagnosis is suggested by a history of previous attacks, with vomiting and acute abdominal pain, particularly in very fat patients. There is usually distention and there may be a history of gallstones. RIXFORD (San Francisco) stated that he had had three cases of chronic pancreatitis, and in all of these small stones had been found. STEWART (Philadelphia) mentioned a case which was operated upon for symptoms of acute intestinal obstruction. Death followed some time after the operation. No stones were found in the gallbladder, but there was a small stone in the pancreatic duct. ESTES (South Bethlehem, Pa.) called attention to the possibility of mistaking these cases for malignant disease.

Appendicitis: a Critical Review of 416 Cases Operated on at the German Hospital During 1901.—JOHN B. DEEVER (Philadelphia). In his 416 cases he had 279 cases of acute appendicitis, and 137 of chronic appendicitis. In the acute cases the mortality was 15.3%. In the chronic cases only one death occurred. He called special attention to the long array of pathologic symptoms which are likely to follow if early operation is not practised. Intestinal obstruction, fecal fistula and secondary abscess were mentioned as complications of special importance. It is the plain duty of all surgeons to insist on early operation. It is important not to mask symptoms by the use of the ice-bag or the administration of opium, which only ameliorate the symptoms. The pathologic conditions are too often indefinite, and fatal symptoms may arise at any time. Deaver believes that fulminating attacks are probably less frequent than is generally supposed. Probably these attacks usually follow previous mild attacks, or there have been many long-continued premonitory symptoms. With fecal fistula Deaver has not had as good results as are reported by many surgeons. Frequently they persist during many months and a difficult operation is required for their closure. He considers the white blood-count of value in doubtful cases, but if the diagnosis is definite, operation should not be delayed for it.

Appendicitis: a Brief Report of the Author's Nine Fatal Cases, with Comments.—PARKER SYMS (New York City). In his nine fatal cases there was acute gangrenous appendicitis in three and perforative appendicitis in three, and general peritonitis was present in all but one case. He believes that death was the result of too late operation in all of these cases. Appendicitis is always a surgical disease and should be placed under the care of the surgeon. Operation is much safer than any form of expectant treatment for the majority of cases. In abscess cases he does not believe that the appendix should always be removed. The peritoneum should be carefully protected by gauze packing. Opium should never be used except in combating abdominal shock. With ideal treatment there should be no mortality.

Discussion.—WEIR (New York) proposed a new use for the supposedly useless appendix. Cases of ulcerative colitis have recently been turned over to the surgeon for operation, an artificial anus being made. Gibson has suggested using Kader's method in making the opening into the colon. Weir operated in one case in this way, recovery following the injection of 5% methyl-blue solution. In another case it occurred to him to use the appendix stitched into the wound in place of making an artificial opening. By excising the end of the appendix he was able to use it in this way, making a permanent fistulous tract. In cases of appendicitis, he now advocates operation as soon as the diagnosis is made. ABBE (New York) has studied a large series of appendices by distending with alcohol and making sections. He finds that the organ is usually strictured, and later an enterolith forms secondary to the stricture. This gives rise to inflammation. Once the appendix has become diseased it is always diseased, and immediate operative removal is the safest treatment. GIBBONS (Scranton, Pa.) stated that Stillé recommended many years ago the treatment which has been recently suggested by Ochsner, of cutting off food and drink entirely, but in the later years of his life, after seeing the results of operation, Stillé advised operative treatment. OCHSNER (Chicago) stated that he had tabulated 416 of his consecutive cases of appendicitis, the same number that Deaver reported upon, the only difference being that the time which had elapsed was in his practice almost 1½ years instead of a year. This series of an equal number of cases should be directly comparable. In his cases Ochsner has had 10 deaths from acute appendicitis as compared with 37 in the same class of cases reported by Deaver. In chronic appendicitis he has had 2 deaths as compared with 1 in Deaver's cases. That is, in his cases the mortality was not quite 4%. The patients who died had almost all of them been ill over 36 hours, and in many of them the attack was of much longer duration. Ochsner is of the opinion that practically all cases coming to the surgeon within the first 36 hours and all cases in the free interval should be operated upon immediately. Later than 36 hours in most cases it is too late for an early operation and too early for a late operation. In these cases coming too late for early operation, and in all apparently hopeless cases, he follows out his method

of withholding food and drink by the mouth absolutely, washing out the stomach and large intestine and resorting to rectal feeding for a number of days, until the acute symptoms have subsided. He stated that every case of appendicitis, no matter how bad, had been admitted for treatment, and the very bad condition of the patient in many cases accounted for the mortality. Following his method of treatment, there is a great danger that the patients will feel so much better that they consider themselves safe, and are sometimes so considered by their doctors, and the treatment is not continued until they are really out of danger. Ochsner gave brief detailed reports of his fatal cases, practically all of whom were in an apparently hopeless condition at the time when treatment was begun. MURPHY (Chicago) agreed with Deaver completely, and he believes that the entire profession are rapidly coming to agree that the best form of treatment is early operation. We are already agreed upon the desirability of operating in every case during the first 36 hours. MAYO (Rochester, Minn.) stated that since he had adopted Ochsner's method of treatment he had reduced his mortality in acute cases from 15% to 4%. DEEVER, in closing, expressed the belief that the cases which came to him for treatment must be of a different class than those treated by Ochsner. In very many cases there was already an abscess with ulceration of the cecum, and he failed to see how the ulcerative process could be arrested by withholding food and drink.

FOURTH SESSION.

Obstruction of the Bowels by Meckel's Diverticulum.—JAMES E. MOORE (Minneapolis, Minn.). Although the name Meckel's diverticulum is commonly employed, Moore credits Rush with having first described this appendix in 1801. He believes that it may be found much more frequently than is generally believed, probably in 2% of all cases. The symptoms are the same as symptoms of obstruction from any other cause, and the treatment by early operation is also the same. Moore reported three cases, one occurring in a child seven months old, in whom operation was followed by rapid recovery. In a second case the bowel was found in such bad condition that it was considered not justifiable to exercise the diverticulum, but it was simply ligated, the end excised and allowed to fall back into the abdomen. In this and in a third case recovery followed operation.

Discussion.—MEANS (Columbus) believes that it is always necessary to keep in mind the possibility of obstruction from this cause. He had had no personal experience in such cases. MUNRO (Boston) doubted whether the diagnosis was possible in most of these cases. The symptoms are those of mechanic obstruction, indicating operation in every case. MCARTHUR (Chicago) reported a case in which an obliterated diverticulum existed in the form of a band lying over the appendix in such a way that the appendix was cut off and feces were escaping. McKNIGHT (Hartford) mentioned a case of intussusception of the diverticulum, and a case of obstruction from this cause.

The Symptomatology of Renal and Ureteral Disease.—C. L. LEONARD (Philadelphia) reports his results in the use of x-rays in diagnosis in 254 cases of suspected renal or ureteral calculus. In 73 cases in which a stone was found, it was in the ureter in 60% of the cases. A small calculus is often as dangerous as a larger one, for it may give rise to serious affection of the kidney before its existence is suspected. In a number of his cases the symptoms were such that a diagnosis of chronic Bright's disease had been made. It is impossible to make a diagnosis from urinary examination. Cases were mentioned in which a calculus impacted in the ureter had produced symptoms very much resembling appendicitis. There was tenderness in the loin and extreme pain. The negative diagnosis is of much importance in many cases. Illustrating this class of cases is a man of 33 years, who had suffered for five years with pains in the lumbar region, suggesting stone. There was pus in the urine, and sometimes blood but no casts. Inoculation of animals failed to show tuberculosis. The x-ray gave a negative result, and as the lancinating pains suggested spinal disease a neurologist was consulted and took charge of the case. Later on paralysis developed. The detection of calculus of suitable size and location may suggest expectant treatment in some cases. Leonard has had eight cases in which he has advised this and the calculus has been passed without operation. Cystoscopy and catheterization of the ureters as suggested by Young may give valuable information. The diagnosis by the means usually employed is extremely difficult and usually impossible. Clinical experience, as well as a command of x-ray technic and ability to interpret the x-ray, is necessary to success in these cases.

Infrapubic Section for Prostatotomy and Prostatectomy.—W. WYLLS ANDREWS (Chicago) said that the male pelvic outlet is seldom considered in connection with the treatment of prostatic or other pelvic affections, and Andrews calls attention to this new method of approach to the prostate. After considerable experience in both suprapubic and perineal methods, he believes that each have their advantages and disadvantages, but both have the disadvantage that the urinary tract is opened and often requires a long while to heal. After cystotomy by any method there is considerable mortality from sepsis, as shown in the cutting operations for stone as compared with the crushing operation. Andrews has tried to remove the prostate by the perineal method without opening the urethra without success. An incision just below the pubes sug-

gested itself to him as the best way of approach, and he believes that this method is not only feasible but has the additional advantage over the other methods of relieving pressure by dividing the pelvic floor, for a prostate like the uterus when enlarged lacks room and crowds against the region of the pubes, otherwise no obstruction would arise. By this method the prostate can be split readily and $\frac{1}{4}$ or $\frac{1}{2}$ of the prostatic ring can be removed without opening the urethra.

Drainage of Extravesical and Extraperitoneal Suppurations of the Male Pelvis.—EUGENE FULLER (New York City). The great mortality in pelvic suppurations results from the fact that they are not recognized early and freely drained. The pocket of pus should be first located and is usually exposed by an incision like that used for tying the internal iliac artery. By a probe passed into the incision the most dependent part of the abscess is located, and by cutting on the probe it is possible to drain through to the perineum, passing the drainage tube from above out through the perineum.

External Urethrotomy from the Standpoint of the General Surgeon.—JOHN C. MUNRO (Boston). External urethrotomy is an easy operation if a guide can be passed into the bladder. If several filiform bougies are used it is generally easy to pass one into the bladder. In case this is impossible it is sometimes best to make an opening above the pubes. Before making the perineal incision it is sometimes wiser to use Gavin's method of dividing the strictures with the Maisonneuve instrument, then pass a sound and cut down to it. A large catheter is inserted into the bladder and retained for several days. When it is removed sounds are passed at intervals of three or four days. It is difficult to determine the permanent result in many of these cases, but it is certainly a life-saving operation.

Discussion.—CABOT (Boston) does not believe that the x-rays can be relied upon for negative diagnosis and cited cases occurring in his practice in which the x-ray had not given evidence of the absence of stone. The seat and character of pain is important in diagnosis. He cited the case of a man supposed to be suffering with rheumatism of the back, but who was afterward found to have a stone which was dislodged by rubbing the abdomen downward and was passed through the urethra. BLASUCCI (New York) showed an ingenious apparatus for draining the bladder. HORSLEY (El Paso, Tex.) called attention to a somewhat numerous class of cases in which symptoms are present but no calculus is found. OCHSNER (Chicago) emphasized the value of Harris' segregator. He finds it perfectly reliable if carefully used and believes that its use will supplant the urethral catheter in nearly all cases. Catheterization of the ureter should not be done if simpler methods can be employed. He mentioned a case of calcareous degeneration of mesenteric glands which in the x-ray was mistaken for a ureteral calculus. BULLITT (Louisville Ky.) mentioned a case similar to those reported by Fuller in which there was infection of the space of Retzius following aspiration of the bladder. The pus had dissected the bladder from its attachments about the neck almost entirely. This abscess he drained by incision above the pubes and the perineum in a manner very similar to that suggested by Fuller. MURPHY (Chicago) called attention to the fact that if the prostate is enlarged the urethra is also enlarged. In 14 operations he has employed the perineal method in 13 cases with great satisfaction. The patients are usually up on the fifth day and are able to walk at the end of the week. Convalescence is much longer after the suprapubic operation. FERGUSON (Chicago) advocates the perineal operation and removes the prostate piecemeal with cutting forceps. He does not like the extensive curved incision from side to side which is advocated by many surgeons. He has operated upon 21 cases without any deaths, the patients ranging in age from 49 to 82. He has never found the urethra enlarged as mentioned by Murphy. MAYO (Rochester, Minn.) testified as to the value of the Harris segregator. His experience has been like that of Leonard, many more stones being found in the ureter than in the kidney. He also mentioned a case in which a calculus was lodged in the pelvic portion of the ureter, giving rise to symptoms like appendicitis. YOUNG (Baltimore) finds the cystoscope of the greatest possible value in the diagnosis of stone in the kidney or ureter. In many cases it is not necessary to catheterize the ureter, for with the cystoscope blood or pus can be seen escaping from one ureter while clear urine comes from the other. He mentioned a case in which a stone was overlooked both after cystoscopic examination and the use of the x-ray. The ureter was double, the catheter was passed into the healthy ureter, and the x-ray plate was not placed high enough to show the stone, which was located in the upper part of the kidney. Young favors suprapubic prostatectomy, but very many patients are too ill for any form of prostatectomy, and in these cases the Bottini operation is most suitable. He has had 15 prostatectomies with two deaths, but in both of these cases the patients were too ill to stand the operation. The operation is not necessarily severe and tedious. In many cases, by the suprapubic method, it is possible to shell out the prostate within five minutes. He has done the Bottini operation in 55 cases with only one death, and this was due to following the advice of a surgeon who advised too extensive an incision. Nineteen of his patients were over 70 years of age and three were over 80 years of age. One trouble with the use of the Bottini operation is that operators believe a stereotyped form of instrument must be used.

Young has devised an instrument with a series of adjustable blades of different lengths suitable for use in a variety of cases. SYMS (New York) stated that when he began to advocate prostatectomy no one was doing the operation, but now it is recognized as a valuable procedure. He does not consider the Bottini operation a suitable surgical procedure and believes that perineal prostatectomy is the safer operation. He mentioned his bulb with a stem for drawing down the prostate as a great aid in these cases. He has had 20 cases with no deaths or serious results. LEONARD, in closing, stated that of 250 cases which had come to him with suspected renal calculus he had failed in the negative diagnosis in only five cases. To avoid overlapping the pelvic bone obscuring the plate, as was suggested by some who had discussed his paper, he places his light obliquely. One error in diagnosis occurred from the presence of a phlebolith in the broad ligament. FULLER, in closing, expressed his belief that the Bottini operation in a nonsurgical procedure and doubts if permanent recoveries follow. He has done a large number of both suprapubic and perineal prostatectomies, but prefers the former method. A good recovery will follow if proper aftertreatment is employed. MUNRO, in closing, favored prostatectomy as the operation of choice. In many cases which Young treats by the Bottini method he believes that prostatectomy would be possible if suprapubic drainage of the bladder were done as a preliminary until the patient was in suitable condition for the more radical operation. Enucleation of the prostate is a very simple matter if the right plane is found.

FIFTH SESSION.

The Essentials in the Construction of Hospitals for Great Cities.—A. J. OCHSNER (Chicago). Our ideas with regard to hospital construction should be revised and should be based upon important principles relatively new and applying to great cities. Infection by direct contact is alone of practical importance and can be avoided in a single compact building divided into small wards as well as in separate pavilions. A high building is more favorable for hospital purposes than one of two stories, for surface air is much more impure than air at an elevation of 50 feet. Pasteur's students showed many years ago that germs are very seldom found on the tops of high mountains. If ground space is limited, by using a high building it can be set back from the street and dust and noise avoided. On the sixth floor the air will be practically as pure as in the country. A high building fronting a park, built from north to south, will get light in both morning and afternoon, and sunlight is a matter of great importance. All hospitals should be made perfectly fireproof, and a fireproof high building is as safe as a low one. Elevators make the handling of patients convenient and save time in getting from one part of the hospital to another. By using such high buildings, hospitals can be constructed in convenient parts of the cities, avoiding transportation of patients for distances and making it convenient for the attending medical staff and visiting friends of the patients. Because of their compactness such hospitals can be conducted at a smaller expense and many more patients can be benefited. By dividing the hospital into small wards only one nurse is needed for each ward, and there is a certain rivalry as to who will keep her ward in best condition. Small wards are also convenient for teaching purposes. In building hospitals it is important to use the money to the best advantage so that it shall not be all expended in construction and nothing be left with which to conduct the hospital.

Discussion.—SHERMAN (San Francisco) believed that no one could take exception to the principles laid down in Ochsner's paper. His plan is practically the pavilion system with the different compartments superimposed. He suggested several minor changes, among others that the bathroom be put nearer the middle of the hospital, where more convenient for nurses, thus saving a great deal of time. He believed that hot and cold water should be carried by plumbing to every ward. A number of small wards for one or two patients are desirable for patients recently operated upon or in a dying condition, in addition to the larger six-room wards. An annex for convalescents is also desirable, for the country is much more favorable for recovery than the city. CRILE (Cleveland) suggested the desirability of having the pathologic building isolated from the main hospital. Isolation wards should also be provided for the infectious diseases which are likely to occur. The pavilion hospital offers certain advantages, and in every case the amount of money to be expended should be considered and the hospital made as nearly ideal as possible.

Anatomy for the Practitioner.—C. N. JACKSON (Columbia, Mo.). Attention was called to the importance of the study of anatomy for graduates of medicine. The ideal course is to go to a university where well-arranged courses are provided, but this is often impossible. It is important that those to whom medical colleges are inaccessible should also have opportunity to do anatomic work. To determine the laws regulating the use of anatomic material Jackson has written to all the secretaries of the States of the Union and received replies from all except Nevada, South Dakota and South Carolina. He divided the States into those having no laws, those in which bodies were given only to medical schools, and those in which cadavers can be used both by practitioners and medical schools. The latter more liberal law is in force in a good proportion of the States, and the medical profession should demand a law

permitting the use of all bodies buried at public expense in this way. Practitioners who desire to study anatomy should not neglect the fetus, for a well-developed fetus shows anatomic conditions almost as well as the adult, as well as illustrating the peculiarities found in children. Such material should always be preserved, as medical schools are always glad to get it. A second source of material is the specimens obtained at operation. To preserve bodies, injecting a fluid containing alcohol, carbolic acid and glycerin into the arteries was recommended. The current of fluid should be kept up until all the capillaries have been reached. If there is any tendency to local decay, hypodermic injections of formalin solution may be used. Individual organs and parts can be preserved in a 2% formalin solution. If it is desired to section the material, 50% formalin solution should be injected, and the bones can be decalcified by prolonged soaking in weak HCl. Jackson called attention to the desirability of an anatomic museum in every county, the specimens of which should be available for the use of every member, and this material could also be used at regular meetings.

Discussion.—DICKINSON suggested the use of the fountain syringe in injecting bodies. Painting with linseed oil and bandaging prevents drying. Sawdust soaked with embalming fluid may be used in cavities of bodies on which a postmortem examination has been made. ECKLEY (Chicago) commended Jackson's plan: The chief difficulty is in overcoming public sentiment. The use of domestic animals as material for dissection is also very important. JACKSON, in closing, stated that it was possible to keep bodies prepared in the way he had suggested in all weathers, hot or cold, without the use of cold storage.

Anatomic Treatment of Fractures of the Femoral Neck.—C. E. RUTH (Keokuk, Iowa) insists that bony union is possible as the result of proper treatment in these cases, though the results of the methods usually employed are very unfavorable as the large number of cripples attests. He advocates traction in the line of the neck of the femur by use of a band about the upper part of the thigh attached to a weight by a cord running over a pulley. Buck's extension is used in connection with this. If the anatomic capsule is intact, it also acts as a sleeve helping to hold the fragments in place. Ruth showed two specimens taken postmortem, showing the excellent results of this method of treatment. Poor results are caused by imperfect adjustment and retention. Altogether he has records of 40 cases successfully treated in this way with no failure in union in patients under 80, and no failure to secure a perfectly serviceable joint in patients under 70.

Treatment of Fractures of the Neck of the Femur.—C. E. THOMPSON (Scranton, Pa.). For 50 years there has been a general belief that bony union and a satisfactory result never occurs in these cases. Various authorities were quoted to support this statement. Thompson does not believe in not treating these cases as is advocated by many, or in treating them with apparatus. He advocates reduction and fixation in plaster-of-paris in the extended and abducted position. In old cases operation is advisable. Age is not a contraindication to bony union or good function. The operative treatment in old and neglected cases deserves a trial. A patient was presented who had suffered from almost complete disability for 18 months, but who is now able to get about quite well after the operation. An x-ray showed the nail holding the bones in position.

Treatment of Fracture of the Patella by Subcutaneous Pursestring Suture.—JOHN B. ROBERTS (Philadelphia) advises putting the patient in bed, extending the knee and partially flexing the hip on the abdomen. The leg is then shaved and antiseptically prepared in the region of the knee. A needle threaded with heavy silk or catgut is then entered beside the patella and passed out through to the opposite side. Entering again at the point of exit it passes along the sides of the fragments and out below the knee, then it passes through below the lower fragment and up on the opposite side, entirely surrounding the fragments subcutaneously. The suture can then be tightened and draws the fragments into position. The leg is put up in plaster, and the patient can be up and about wearing the cast a week after the injury.

Discussion.—CARMALT (New Haven) believes that Ruth's treatment is correct in principle. He has tried the plan suggested by Roberts with success in certain cases. LEAVINGS (Milwaukee) believes that there is a tendency to tilting downward of the fragments, which prevents union even if a pursestring suture is used, for organization of clot often gives rise to a foreign body between the fragments. He believes that it is wiser to cut down on the injury, turn out the blood clot and wire the fragments. LORD (Omaha) described an apparatus for treating fractures of the neck of the femur. An extension apparatus is applied like the ordinary Buck's extension and over it plaster paris is applied with a board incorporated, which presses over the trochanter on the lateral and posterior aspect. Lateral extension is made in the direction of the neck of the femur over this plaster-of-paris cast. BECK (New York) believes that in fracture of the patella if there is but little separation of the fragments, simply a plaster cast should be used. If there is considerable separation, suture as suggested by Roberts would be advisable. The joints should never be opened for wiring the fragments without wide separation exists. MAXWELL (Keokuk, Ia.) described the details of the treatment of his first case by the method which has been men-

tioned by Ruth. He devised this method in 1866, and since then 40 cases have been treated by it. It is not only simple but painless. SHERMAN (San Francisco) emphasizes the importance of very gentle examination without manipulation or anesthesia. This avoids breaking up the impaction which exists in these cases and which is favorable to perfect recovery. ROBERTS, in closing, stated that probably bony union does not occur in these cases, but this is a matter of little importance, for firm fibrous union is just as good.

Acquired Nonmalignant Stricture of the Rectum; Causes, Symptoms and Treatment.—W. DUFF BULLARD (New York City) brought forward evidence to show that stricture of the rectum is not of syphilitic origin in the majority of cases. He advocates treatment by a specialist and by local methods. Antispecific treatment is not likely to give satisfactory results.

The Surgery of Rickets.—HENRY LING TAYLOR (New York City) finds that one-fifth of all the 6,000 which have been treated at the Hospital for Ruptured and Crippled in 18 years suffered from rickets. Half of these cases had bow-legs, one-third were knock-kneed. Most of the cases of coxa vara and lateral curvature are probably not of this origin. Delayed dentition and inability to stand and walk often suggest the diagnosis if other symptoms are not present. There is no sharp knuckle of bone in cases of curvature from this cause as is the case in Pott's disease. In the treatment of knock-knees and bow-legs, osteoclasis and osteotomy have both been suggested, but the method by chiseling through the bone is generally preferred. It is important to avoid an inward twist of the tibia, which is often present and is not due to rotation at the hips. There is no trouble about nonunion in these cases and wedge-shaped osteotomy is unnecessary.

Two Successful Operations for Brain Tumor.—JOSEPH RANSOHOFF (Cincinnati, O.) showed specimens of two cases of brain tumor. In one of these he had operated nine years previously. The case was one of Jacksonian epilepsy of two or three years' duration and without any general symptoms, such as headache, optic neuritis or vomiting. The tumor was a large one and the patient has remained well longer than almost any other case thus far reported. In the second case he operated, removing a tuberculous mass from beneath the cortex on the left side. The operation was done at two sittings, and the tumor was easily shelled out. Formerly it was considered questionable whether operation should be done in tuberculous tumors, but this patient has remained perfectly well. There were no localizing symptoms in this case. This is considered by von Bergmann a contraindication to operation.

The Surgery of the Heart (Experimental), with Stereopticon Illustrations.—B. M. RICKETTS (Cincinnati) showed a series of stereopticon pictures of the heart taken during 100 experimental operations on dogs which he has carried out during the past year. The views showed the location of the heart as related to the chest wall, the position of its cavities, the effects of wounds, and different forms of suture, etc. The pericardium may be entirely removed without death resulting. Either one of the coronary arteries may be ligated at its base without producing death. In a certain class of cases it is best to suture the pericardium to the chest wall that drainage may be more perfect. It is ideal to suture during systole, but one will be satisfied to secure perfect suturing in systole or diastole. Even though the auricular wall is thinner than the ventricular wall it may be sutured with equal success. Owing to this difference in thickness the percent of penetrating wounds of the auricles is much greater than those of the ventricles. Knotting of the sutures should be firmly secured, otherwise they may become untied by the constant action of the heart. The sutures should pass through the bottom of the wound when nonpenetrating, and through the endocardium when penetrating. If not in the latter the wound may become enlarged from within. Sutures should not be made tight enough to cut the heart tissue. The mortality is less in wounds of the right than those of the left auricle and ventricle. Bleeding is more severe in wounds from sharp instruments than when due to bullets.

SIXTH SESSION.

Traumatic Rupture of the Abdominal Viscera Without External Signs of Injury.—D. N. EISENDRATH (Chicago). Attention was drawn to the general lack of knowledge of this class of injuries and necessity in the future of earlier diagnosis and intervention. They are more frequent than gunshot and stab wounds of abdomen together. Ruptures of the kidney and intestine form 60% of these injuries; next in frequency come injuries of the liver and spleen. Surgical anatomy shows majority of the abdominal viscera, especially the kidney and intestine, to be poorly protected. The spleen is very movable, but the liver is quite fixed. The pancreas and stomach are well protected. The mechanism of the injury has much to do with which organ is injured; hence it is necessary to inquire exactly as to the nature of the accident. Force acts directly or indirectly, the former either over a large area (more likely to rupture parenchymatous organs) or over a circumscribed area (intestine or bladder). Indirect force, by falls on the feet, buttocks, or head is more apt to affect liver and kidney, but may rupture by tearing, bursting, or direct crushing (most frequent). The pathology should be clear before operation. In solid viscera subcapsular tears are rare; most frequent are lacerations involving the capsule, and varying in depth from

shallow to deep ones traversing the entire organ and even pulpifying it. Hollow viscera frequently have simple contusions of one or more coats, leading later to perforation or immediate rupture of all coats. Small tears may heal; large ones may not bleed temporarily (report of case), or may lead to death from anemia. Ruptures of small intestine are most frequent in the ileum. Traumatic appendicitis may occur (report of case). The symptoms and diagnosis are at times very deceptive. In general we can make a diagnosis between simple contusion and genuine injury within 12 hours. The general and local symptoms were considered. Of the former, especially shock and anemia. Local symptoms were divided, for convenience, into those of the alimentary canal, genitourinary system, and those in which symptoms of internal hemorrhage predominated. A detailed consideration of all of these show that we can make a fairly accurate diagnosis early. The chances of spontaneous recovery are only slight. They vary according to the viscous, from 7% in the intestine to 30% in the kidney. A detailed report and comparison of statistics for spontaneous recoveries and those after operation before and since 1896 was given. Beginning with the latter date, the percentage of recovery has been much greater because of earlier diagnosis and intervention. Celiotomy in vain is much better than death.

A Study of the Relative Merits of the Various Methods of Intestinal Anastomosis.—R. C. COFFEY (Portland, Oregon) reported a large series of experiments on the intestines of dead animals, and 20 experiments on living pigs, undertaken with the object of determining the comparative value of the different methods of intestinal anastomosis. He urged the importance of learning to do the suture method experimentally by those expecting to do intestinal surgery. Pigs were chosen instead of dogs for experimental purposes, because that their intestines are more like those of men. He finds all forceps which have been devised more cumbersome than helpful in the majority of cases. In one case in which he used the O'Hara forceps, so large a diaphragm was turned in that intestinal obstruction occurred. And Coffey believes that the O'Hara method is specially dangerous for this reason. Murphy's button should not be used except in cases in which rapidity is of great importance. He found that in Connell's continuous suture the silk was retained in the intestine two months after operation, and it was difficult to pull it away. Connell's method is nearly perfection. It can be rapidly done and holds perfectly, but it is difficult to learn and easy to forget. For the use of the practitioner who is only occasionally called upon to do intestinal anastomosis, he suggests the use of cylinders which can be cut out of a potato or other vegetable, and which should be hollowed out thin enough so that they can easily be crushed. By transfixing the intestine over these cylinders it is held in place while the suture is being made. Some such method as this is important, for there are many anastomoses done every year in emergencies in which it is impossible to have complicated apparatus, and by men who are not familiar with complicated methods.

Discussion.—CARMALT (New Haven) emphasized the importance of getting at the operation quickly in cases of traumatic rupture of the abdominal viscera. To save life the operation should be performed in most cases before any symptoms develop. He prefers to use suture in intestinal anastomosis instead of a nonabsorbable button, except in cases in which rapidity is especially desirable. CONNELL (Leadville, Col.) spoke of the advantages of his method of suture, and said that it had been used by many surgeons during the past year, the entire number now reaching 54 cases. He did not consider it more difficult to learn than the other suture methods, and there is much less liability to leakage. THOMPSON (Scranton, Pa.) has done intestinal anastomosis four times during the past year, using Connell's method. In two cases the patients died and he had occasion to see that the suture had held. In one case the operation was for gunshot wound of the abdomen, in the other a carcinoma of the pylorus. BULLITT (Louisville, Ky.) endorsed what Eisendrath had said about the importance of early exploration in traumatic rupture of the abdominal viscera. The surgeon is often placed in an unpleasant position, for he desires to avoid unnecessary operation which would be criticized by persons not familiar with the danger of these injuries, yet he cannot conscientiously afford to delay, and even if a few cases are operated upon unnecessarily the operation of itself is of little gravity. LORD (Omaha) called attention to the fact that rupture of the intestine is not usually the result of direct violence, but the bursting open of a tube filled with fluid and very often there is no evidence of injury on the skin. MUNRO (Boston) thinks it important to remember that the pulse does not rise in one-third the cases within 12 hours. As to intestinal anastomosis, it is not a matter of much importance which method is used, provided it is well used, for good results can be obtained with any of the methods. A matter of great importance is preventing distention after operation, for while peristalsis will not injure the suture, distention may force a leak. EISENDRATH, in closing, urged the necessity for very careful examination of the abdomen during the first 12 hours after injury. With such care a rupture will seldom be overlooked. In 16 out of 19 recoveries following operation for rupture of the viscera the intervention was within the first 12 hours, and 18 out of 19 were within first 18 hours. He agreed with Munro that little importance can be attached to the condition of the pulse. COFFEY, in closing, showed a mat of catgut

which he had devised to use in suturing wounds of the liver, where the stitches so readily tear out.

One Thousand Personally Conducted Cases of Ethyl Chlorid Narcosis.—MARTIN W. WARE (New York City). In addition to the 1,000 cases in which he has used ethyl chlorid personally, Ware has found reports of over 12,000 other anesthetics with only 1 death. He uses the form of ethyl chlorid which is sold under the name "Kelene", which is the only pure ethyl chlorid he has been able to find. He does not suggest it as a substitute for ether or chloroform but as a substitute for nitrous oxid in short anesthetics. It is cheaper, easier to transport; it does not cause cyanosis or rigidity and requires no cumbersome apparatus for its administration. He considers it perfectly safe in all ordinary cases, its safety being between that of ether and nitrous oxid.

Medullary Narcosis.—A. W. MORTON (San Francisco). As yet this method has been used in but a few thousand cases, not enough to entirely establish its safety. Morton has used it in 673 cases with no failures to secure anesthesia. In 60 of the cases the operations were above the diaphragm. One woman, weighing 348 pounds, who was suffering from strangulated hernia, and in bad condition at the time of the operation, died shortly after the operation. Morton believes that this form of anesthesia can be used with advantage in all cases of diseased heart, lung or kidney. He sterilizes his cocaine by dry heat to 300° F. for 15 minutes. The crystals are then kept in a small sealed bottle for use. If the crystals be dissolved with cerebrospinal fluid instead of with water, the patients are seldom troubled with headache. He reported successful anesthesia in such cases as excision of the tongue, lower lip and the superior maxilla.

Discussion.—EISENDRATH believed that formerly in our early experience with the use of ethyl chlorid for general anesthesia it was used in too concentrated form. In local methods of anesthesia mental shock often has to be taken into consideration. THOMPSON (Scranton, Pa.) reported two deaths from chloroform in his service during the past year. COFFEY considers the man who administers the anesthesia a factor of greater importance than the anesthetic used. WARE, in closing, expressed his belief that an anesthetic free from all danger would never be discovered. Death usually occurs from reflex impulses down the vagus. MORTON, in closing, called attention to the necessity of gaining the confidence of the patient if local methods of anesthesia were to be used. Cocain should never be injected until the cerebrospinal fluid flows from the needle, giving positive evidence that it is in the spinal canal. The failures to get anesthesia are generally from this precaution being neglected. SHERMAN (San Francisco) demonstrated the heart of a Japanese who was shot through the heart but lived without serious symptoms for 23 hours after the injury. The injury was near the base, the most dangerous area. This shows the possibility of persistence of the heart's action for many hours after an injury.

Section on Obstetrics and Gynecology.

SECOND SESSION.

High Amputation of the Cervix versus Hysterectomy for Operable Carcinoma of the Cervix.—C. C. FREDERICK (Buffalo). The final results of hysterectomy for cancer of the cervix is not what some writers would lead one to expect. Cases should not be considered as probable cures until the woman has lived five years and is healthy, and these cases are few in number. That recurrence is probably accompanied by less hemorrhage and discharge is the only valid argument in favor of hysterectomy. Frederick is well pleased with the results of high amputation of the cervix for the following reasons: (1) The results as to relapse are as favorable as from hysterectomy; (2) the period of relief is as long; (3) shock is less; (4) convalescence is shorter. Statistics of various observers were given in corroboration of this view.

Operation for Recurrence of Cancer After Hysterectomy.—E. W. CUSHING (Boston). Removal of the uterus through the vagina after freeing it and cleaning the pelvis through abdominal incision avoids infection of the wound and gives fairly good results. When this radical operation is not done primarily, it can be done in cases of local recurrence after vaginal operations, and if the recurrence is noticed early, cure may be effected in certain cases. To this end cases after operation should be watched for years to detect recurrence. The operation consists in as thorough cleaning of the pelvis, through abdominal incision, as is possible. A case of this kind was reported. The results to the present time are all that could be hoped for, the only complication being a urinary fistula resulting from wounding a ureter. This is healing.

Discussion.—MONTGOMERY (Philadelphia) said he preferred to get rid of the entire organ in cancer of the cervix. Recurrences follow either operation. These cases furnish the strongest indication for the use of the cauterium in operating. If the body of the uterus is left the disease tends to develop in the scar tissue. Stenosis of the canal leads to dysmenorrhea and collections of material in the uterus. NOBLE (Philadelphia) did not coincide with Frederick's pessimistic views. His operations show a recovery of 20%, counting all cases of cancer of the uterus. Cervix cases should have 10% recoveries. He prefers palliative treatment in hopeless cases; in early cases he

does the most radical operations. HUMISTON (Cleveland) knows of no recovery in cases having the trinity of symptoms—hemorrhage, pain, and odorless discharge. In fundus cases he always has scrapings examined microscopically. DUNNING (Indianapolis) said that high amputation of the cervix does have a mortality. In many cases it is important to remove the tubes and ovaries, and hysterectomy is the better operation in the beginning. Fewer recurrences will follow that operation. WALTHEN (Louisville) disapproves of high amputation. None but the radical operation should be done. MARCY (Boston) favors radical operation through the abdomen. Common experience shows this to be the better plan, and every one should use it instead of doing earlier operations, which have been proved inadequate. DOWNES (Philadelphia) emphasized the benefits resulting from the use of the electrothermic cautery in these cases. In three cases it has given better satisfaction than ligatures. CARSTENS (Detroit) prolongs life by palliative treatment, and does but few vaginal hysterectomies. FREDERICK (Buffalo) cannot see the use of removing the body of the uterus when it is healthy.

Hemostasis of the Broad Ligament.—H. P. NEWMAN (Chicago). The use of absorbable ligatures and later of clamps, angiotribs, etc., indicates a tendency to do away with ligatures in pelvic surgery. The aim in any method of hemostasis is to prevent hemorrhage, sepsis, injury to the parts, and to leave as little foreign material as possible. Newman's experience with the angiotribe or crushing forceps has been gratifying in operations on the broad ligaments. At times he reinforces the clamp by applying ligatures to the principal vessels before the clamp is removed. Some of the advantages of this method are: Complete hemostasis, inability of the arteries to contract and form hematomas, no strangulated stump to slough, the formation of multiple thrombi to occlude the vessels, a minimum amount of foreign matter left behind, lessening of shock and shortening of convalescence.

Discussion.—DUDLEY (New York) said that the principal use of the crushing instrument seems to be the prevention of hemorrhage, but its effects on nerves and lymphatics must be considered. Statistics and personal knowledge of cases show that patients after such operations die of tetanus and of shock. Secondary hemorrhage also occurs in as many cases as after simple ligation. Ligating vessels and closing peritoneum over the stump is better surgery than crushing the tissues. If that method is to prevent the danger of sepsis from ligature, why use them in addition? GOLDSPOHN (Chicago) said that the angiotribe was uncertain in thinning the tissue and gave rise to some danger of tearing off the tissue to be crushed. Its use with ligatures prolonged the time of operation. GOFFE (New York) uses crushing instruments. At times he uses the ligature in addition. No hemorrhage follows their use.

THIRD SESSION.

Deflected Presentation in Labor.—GUSTAV KOLISCHER (Chicago) defined deflexion and gave its causes. The various presentations depending on the degree of deflexion were considered and their treatment detailed. Anterior vertex, brow and face presentations and their complications were thus discussed. An important diagnostic point in anterior vertex presentation is that the fontanelles are on the same level. The condition liable to result in this presentation is delivery of the fetus into the lower uterine segment with impaction against the pubic arch. Rupture of the uterus is apt to result unless interference by changing into occiput presentation or delivery with forceps is accomplished. The main question in these cases is the diagnosis; they easily lead to complications, but are readily managed by interference at the right time. HOHNES (Chicago) said that an important point, not well understood by American physicians, was that in face presentations the fronto-mental line came down nearly in a transverse direction. Many physicians apply forceps to correct this when no interference is demanded.

Massage and Exercise in the Management of the Puerperium.—C. S. BACON (Chicago). Reasons were given why the horizontal position is advisable for some time after labor. One of the chief reasons is the tendency to splanchnoptosis, especially in patients with poor muscular development. The principles of massage are not taught in medical schools and many physicians do not use this measure because they do not understand it. Hence the paper gave the details of movements to counteract the effects of the long period in bed. Exercises are begun the second or third day after labor and exert no harmful influence on the lochial discharge. HOHNES (Chicago) determines by three tests when women are able to get out of bed after labor: (1) The tenseness of the abdominal wall; (2) the condition of the perineum; (3) the involution of the uterus. Healthy women after normal labor need be in bed only a few days.

Contribution to Ureteral Surgery, Including a New Operation for Double Uterovaginal Fistula.—X. O. WERDER (Pittsburg). In 1,500 abdominal sections Werder has injured the ureters but four times, details of these cases being given. The operation for fistula was described in detail, the upper portion of the vagina being used to form a diverticulum of the bladder, a good result being secured. Only the vaginal fornices were used, cohabitation not being prevented.

Some Cases of Ureteral Stricture.—H. A. KELLY (Baltimore). The causes, diagnosis and treatment of stricture were

discussed. The pathologic conditions of the urinary tract above the bladder need further discrimination. Hydronephrosis should have the name of ureteral stricture to call attention to the condition. Kidneys are removed for this condition when they are only the result of the lesion, not cause. The importance of saving even damaged kidneys was emphasized by detailing two cases where the patients lived for several years with only one kidney, it being damaged by infection. Strictures are usually at the lower end of the ureter and are commonly inflammatory in nature, the tubercle bacillus being the organism most frequently the cause. Diagnosis is made by no particular symptom but by direct examination. Distended ureters may at times be felt through the vagina or through the air-distended rectum. Cystoscopic examination and catheterization will lead to direct diagnosis. The catheter is introduced with difficulty and often gives rise to an immediate, steady flow of urine which is abnormal. The bite of the stricture may be felt on the catheter. To measure the extent of the stricture the distance to the lower end is determined. The catheter is then passed through, fluid introduced, the patient placed in an upright position and the catheter withdrawn until the fluid ceases to flow. This is approximately the upper border of the stricture. Treatment is palliative and radical. Palliative treatment consists in getting rid of the infection and in dilation. In aggravated cases the stricture can be excised and the ureters implanted into the bladder. In tuberculous conditions the entire upper urinary tract will need to be excised. Kelly said that wounds of the ureter were less common by experienced men. Bisection of the uterus helps to avoid injury. He lays great stress on a careful inspection of the parts before operation, after the abdomen is opened. Most injuries happen in the pelvis. If high up, do anastomosis, or if the patient's condition won't allow of this, simply tie the upper end. Often no symptoms follow this expedient.

A Plea for the Early Diagnosis of Ectopic Pregnancy.—H. D. INGRAHAM (Buffalo). General practitioners should either make the diagnosis of ectopic gestation, especially when rupture has occurred, or recognize that operative interference is necessary. The condition is too often mistaken for miscarriage or appendicitis or pus tubes. Ectopic gestation in the unmarried is not so easy of diagnosis, but if rupture has occurred, operation should be advised. Three cases of ectopic pregnancy undiagnosed until the patients were almost moribund were detailed. Certain symptoms should lead to the diagnosis, although the classical textbook symptoms are not often found. Paroxysmal pain in the pelvis, tenderness developing, symptoms increasing, with a mass in the pelvis—these women should not be let go until they die.

Cesarean Section Made Necessary by a Ventrofixation.—W. M. FINDLEY (Altoona). This paper detailed the case of a woman of 43, operated upon seven years before—ventrofixation. Difficult labor led to examination, when it was found that the cervix was undilated and only reached by the arm introduced in the vagina as far as the elbow. Cesarean section was done and a living child extracted. The silk worm sutures used in operation of 7 years before were found to be in perfect condition.

FOURTH SESSION.

Vaginal Section for the Uncomplicated Symptom of Sterility, with Relief of the Symptoms.—J. R. GOFFE (New York) referred to women in whom there may be pathologic conditions causing sterility yet who present no symptoms of such conditions except that of sterility. The question arises as to whether opening the peritoneum for the purpose of relieving sterility is justifiable. He believes it is and reported four cases to substantiate this position. A very essential point is that before operating on any woman there must be proof of the husband's fertility. The four cases were detailed. In one the sterility was not relieved, in the other three pregnancies afterward resulted. In all the cases the opening was made through the anterior vaginal fornix and the necessary treatment, removal or resection of ovaries, dilating and massaging the tubes, etc., carried out. Opening through the abdomen is also considered justifiable, but as the vaginal route is so simple it is to be preferred.

Discussion.—WATKINS (Chicago) said vaginal section was justified and had better be performed, at the same time curetment, repair of cervix, etc., is done to relieve sterility. He would hesitate to perform abdominal section in such cases. RICKETTS (Cincinnati) spoke of the need of conservative treatment of the tubes and ovaries in view of the fact that pregnancy occurs in cases where it is thought impossible from the small amount of tissue left. It is possible to save the tube by judicious methods of drainage in some cases of hydrosalpinx. MONTGOMERY (Philadelphia) practices conservatism and cited a case where one ovary was removed and the other resected at his advice instead of being removed. Pregnancy afterward occurred, this apparently being favored by a course of thyroid extract. NOBLE (Philadelphia) is optimistic regarding surgery of the ovaries, but never saw any good result, in the shape of subsequent pregnancy, by operations on the tubes. In the latter cases he would not operate to relieve sterility unless the patient absolutely insisted upon such procedure. HALL (Cincinnati) would consider opening of the peritoneum justifiable even if there was a small mortality rate to the operation.

The Influence of Prolapse of the Kidney on the Production of Pelvic Disease in the Female.—A. H. GOELET

(New York). The prolapsed kidney by pressure on the ovarian veins and other vessels of the abdomen may obstruct return circulation from the pelvis, and thus cause pelvic congestion and its attending evils. The effect on the kidney itself of movability may be hydronephrosis, atrophy, etc. Attention was called to the fact that a small diseased kidney may at times enlarge from more complete obstruction and thus cause the pressure on vessels mentioned. Some of the pelvic conditions thus engendered are dysmenorrhea of the congestive type, profuse leukorrhea, endometritis, salpingitis, uterine hemorrhage, etc. Cases illustrating these points were cited. All gynecologic patients should be examined for prolapse of the kidney, and that condition, when present, remedied by operation or other means.

Discussion.—MANTON (Detroit) said that 40% of the women applying to him for treatment had loose kidney. In many the symptoms point to gastropnoxis, chronic appendicitis, etc. Anchorage of the kidney is the treatment. He now operates in every case when the kidney is prolapsed or freely movable. Elderly women, upon whom operation is hardly justifiable, are made the only exception to this rule. DUNNING (Indianapolis), one of the pioneers in anchorage of the kidney, said the relation of the movable kidney to symptoms was a difficult question. When the expedient of anchoring movable kidneys was first used he operated on every one that came, but nine out of ten were not benefited. When a movable kidney is the only pathologic condition present, it should be treated, and the danger of the operation is nil. In cases of general ptosis, etc., relief from anchorage will be very small unless accompanying treatment relieves the other conditions. NOBLE (Philadelphia) has operated on 75 cases of movable kidney, but thinks congestive troubles in the pelvis are due to the condition of the general health. In the majority of cases satisfactory results were secured. Cases in which no improvement occurs are probably those in which the symptoms were due to hysteria or neurasthenia. CARSTENS (Detroit) said that there were movable kidneys due to a fall or a blow and loose kidneys which were a part of a general condition causing pelvic congestion, etc. Operation relieves the former. In closing, GOELET said that the causes of failure to relieve symptoms by operation in some cases were too late operation, the kidney anchored too low down, or there was not permanent fixation.

Pathologic Condition of the Omentum as a Surgical Factor; the Best Method of Treatment.—H. O. MARCY (Boston) called attention to the rich vascular and lymphatic supply of the omentum. Its constitution makes it resemble in some respects an enormous lymphatic gland and certain points suggest that the fat present is more than a mere heat equalizer, possibly an adjunct to the lymphatic system. Hence movements and injury of the omentum should be minimized. Its possible nonpathogenic or phagocytic power was mentioned. It is concerned in the so-called internal hernias in which the intestine is involved and obstruction follows. The omentum is a constant factor in every laparotomy and should be placed in the correct position after operation, as it adheres to the scar quite often and to areas denuded of peritoneum.

Discussion.—WIGGINS (New York) said the filling of the abdominal cavity with salt solution before the wound was closed helps prevent adhesions and also keeps the viscera in their proper position. CARSTENS (Detroit) looks on the omentum as the surgeon's friend. Hernia is prevented by its adherence to the abdominal wall.

FIFTH SESSION.

What Cases of Placenta Prævia Can be Best Treated by Cesarean Section?—F. D. DONAGHUE (Boston) read statistics showing the comparative frequency of placenta prævia in primiparas and its mortality rate for mother and child in the various forms of the condition. Donaghue finds that instead of the os being more easily dilated in placenta prævia it is more easily torn. The question as to cesarean section in placenta prævia is, Are we justified in doing that operation, which is slightly more dangerous to the mother but which offers 95 out of 100 chances to the fetus? He believes the profession has answered this question in the affirmative. The Sanger operation is superior to the Porro, and should be done in cases of (1) complete prævia; (2) prævia in primiparas in the presence of severe hemorrhage and a rigid os; (3) a history of previous operative delivery. It should also be considered in all cases where version is indicated if a skillful surgeon is obtainable and a skilled obstetrician is not at hand. These statements are based on the probability of the presence of a living child of over 28 weeks.

Discussion.—HORNES (Chicago) said it was pernicious to advocate cesarean section for prævia at the present time. General practitioners should be taught the old methods. For them the tampon is best, though that is not the best treatment for the skilled obstetrician. The use of the colpeurynter and early Braxton Hicks or late internal version is better than section. If cesarean section be done then use the Porro. This should be done only in flat or generally contracted pelvis. Donaghue said that any practitioner capable of packing a vagina properly is competent to do cesarean section.

The Restoration of the Pelvic Floor.—C. A. L. REED (Cincinnati) demonstrated by means of drawings his method of repairing injuries to the pelvic floor. The anatomy of the parts was considered and the statement made that a successful opera-

tion must consist in free dissection, isolation of the muscles, restoration of their integrity, and of the superficial structures. The operation is essentially a division of the rectovaginal septum and exposure of the muscles, through which are passed sutures that are continued out through the skin to form figure-of-8 sutures.

Discussion.—NOBLE (Atlanta) said that the fascia, not the muscles, was the strength of the perineum, and the layers should be opposed by buried sutures. CARSTENS (Detroit) emphasized the value of buried sutures, saying he had not used silkworm-gut or silver wire for 10 years.

Drainage versus Radical Operation for Suppuration in the Female Pelvis.—C. P. NOBLE (Philadelphia). The relative advantages and disadvantages of the two methods were compared. Drainage is indicated in large pelvic abscesses when the patient is acutely ill and in an exhausted condition from long sickness. In these cases the mortality is 2%, as compared with 25% in abdominal section for like conditions. The abscess is simply evacuated and washed out. Drainage is also indicated in pelvic suppuration occurring during an attack of peritonitis with some distention of the intestines and intestinal paresis. It is also indicated in suppurative hematocoele following ectopic gestation. It saves life and conserves organs—an important point. The greatest disadvantages of this method grow out of mistakes in diagnosis. Smaller collections of pus may be overlooked and demand later operation. The inexperienced surgeon may wound the viscera, the operation being very simple in some cases, difficult in others. In most cases the vagina is incised with a knife and the abscess opened with scissors. When pus points in that direction incision is made in the groin also, or in some cases in the groin alone. In very sick cases do as little as possible, perhaps not even wash out the cavity. Make a free opening. Packing and subsequent irrigation are used only when necessary to evacuate the abscess or aid closure of a sinus.

Discussion.—GORDON (Portland) said this was the application of the old surgical principle of letting out pus. Very little should be done at time of operation unless the abscess is old. CULLEN (Baltimore) gets good results from this method. In postpuerperal cases with a nodule in the broad ligament he makes an opening above Poupart's ligament and, pushing the peritoneum to one side, goes deeply down and opens the abscess, using a uterine dilator for that purpose. He uses drainage. NOBLE (Philadelphia), in closing, said the great field for the operation was in puerperal cases. The tubes seldom need after removal. He does not incise above Poupart's ligament unless pus is pointing near, as nearly every case is followed by hernia.

The Advantage of the Vaginal Route in Obese Patients.—W. H. HUMISTON (Cleveland) does not endorse the increasing popularity for vaginal hysterectomy but finds it expedient in certain cases, especially in persons where the presence of fat indicates a low vitality of the tissues and where the mechanic factor of abdominal fat is a hindrance. The case reported was a woman of 33, 5 feet 7 inches tall, weighing 281 pounds, with a uterus greatly increased in size. Vaginal hysterectomy was successfully performed which Humiston thinks would have been impossible through the abdomen.

Discussion.—GORDON (Portland) did not want the section to go on record as saying that vaginal hysterectomy was increasing in this country. On the contrary, he thinks the operation is decreasing. HUMISTON said that a few years ago he did only abdominal hysterectomy, now he studies his cases more closely and adopts the operation best suited to the condition present.

Adenomyomas of the Female Generative Organs.—T. S. CULLEN (Baltimore). In the more than 700 myomas examined, 19 adenomyomas were found. These are myomas in the wall of the uterus with extension into them of the uterine mucosa. These glands are confined to the growth and never extend into the uterine wall. In no instance was there suspicion of malignant change. Three groups were made, (1) where the uterus retains a relatively normal contour; (2) subperitoneal; (3) submucous. In some of the growths were found cysts lined with uterine mucosa and containing chocolate-colored fluid, these being practically portions of the uterine cavity pinched off by the growth and containing menstrual fluid. Prognosis is good. The clinical manifestations are profuse menstrual discharge during the regular period, with severe pain. Diagnosis is generally made at the operation or by the microscope. In reply to a question as to the origin of the myoma Cullen said there was probably some inherent change in the body of the uterus as the mucous membrane is normal. The origin is not more clear than is that of carcinoma.

Chronic Inflammation of the Uterine Appendages Treated by Mercury Cataphoresis.—G. B. MASSEY (Philadelphia). This treatment is applicable only to patients the author calls semi-invalids. By the use of the electrolytic salts of mercury, application can be made to the interior of the vagina without injury to the vaginal wall. Good results were obtained in the four cases cited.

Postoperative Intestinal Paresis.—F. H. WIGGIN (New York) considered the diagnosis and treatment of the above condition, which is too infrequently recognized in its early stages. The rapid development of gas in the intestines is probably due more to faulty innervation than to fermentation. Early signs of this condition are continuance of nausea after anesthesia, for

18 hours perhaps, regurgitation from the mouth of fluid becoming slightly yellow, no gas passing by anus, slight abdominal distention, some increase of pulse and temperature. Fatal termination comes on rapidly unless active measures are employed to open the bowels, etc. A seidlitz powder should be given and repeated in 15 minutes if rejected, and a rectal tube passed. When it acts give hot peptonized milk. Later pass a stomach tube, wash out the stomach and put in four or five ounces saturated solution magnesium sulfate. Give strychnin and atropin hypodermically, especially the former. There is little difficulty in treating the condition when the early stages is recognized. It can be prevented by careful preparation of the patient before operation by cathartics and washing out of the colon. In acute cases without this preparation wash out the stomach immediately after operation and put in magnesium sulfate.

Discussion.—NOBLE (Atlanta) gives nitrous oxid followed by ether as anesthetic. A routine in every case is to wash out the stomach after ether is stopped. Nothing is then given to the patient until nausea ceases, a rare condition, however. To move the bowel an enema of alum and water is given, followed by three or four compound cathartic pills by the stomach. The pills are powdered and put in capsule and are retained better than is calomel. BONFIELD (Cincinnati) thinks the majority of these cases are due to sepsis, another cause being exposure of the intestines to cold during operation. He is opposed to the use of salts before operation and gives compound extract of colocynth. WIGGIN said he did not use salines in preparing patients. He gives compound cathartic pills. Paresis is not due to sepsis as the condition ceases as soon as the bowels are opened. Vomiting from this cause is distinguished from ether vomiting by the fact that the patient is not nauseated as after ether. The condition is more that of regurgitation than of vomiting.

SIXTH SESSION.

Critical Remarks on the Methods of Operation in Vaginal Cystocele with and without Prolapse of the Uterus.—C. O. THEMHAUS (Milwaukee). The various degrees of cystocele and prolapse of the uterus were considered and attention called to the fact that in total prolapse the uterus was either retroflexed or retroverted. These conditions are concerned in producing prolapse and operation should dispose of the uterus in such a way as to avoid them. Themhaus dissects the entire bladder from the uterus, draws it up by a pursestring suture, and then fixes the uterus firmly under the bladder to support it and prevent the formation of a diverticulum.

Discussion.—METCALF (Detroit) thinks this operation would disturb the circulation in the organs involved. When the uterus is to be removed, as should be done in most patients past the childbearing period, vaginal hysterectomy and repair of perineum is done. When the uterus is to be saved he repairs perineum and then suspends the uterus. INGRAHAM (Buffalo) said the operation left the uterus in an abnormal position. Hysterectomy is one of the worst things that can be done in cases of prolapse. Results three or four years afterward are never good. BOYD (Philadelphia) looks upon and treats prolapse as a hernia. The important point in operation is to reduce the weight of the uterus by amputation of the cervix. This, with repair of perineum, is done, and three weeks later the abdomen is opened and the uterus fixed to the abdominal wall. BONFIELD (Cincinnati) said enough credit had not been given an American operator, Stone, of Washington, who introduced the plan of separating the bladder from the uterus. He endorsed Boyd's views of the condition and would not remove the uterus. He thinks the uterine ligaments supported that organ when our ancestors walked on all fours, but does not see that they do so when women are in the erect posture.

Surgical Treatment of Internal Hemorrhoids.—W. F. METCALF (Detroit) spoke of the many reflex phenomena ascribed to the female generative organs which are really due to hemorrhoids. The gynecologist should devote more attention to the condition of the rectum, and when possible operate on needed cases at the same time he operates on the genitals. The method he uses is based on an experience of over 700 cases during the past 10 years. Uncomplicated internal hemorrhoids arise between the sphincters, although they may later extend above the internal one. They consist of dilated vein-extremities imbedded in fibrous tissue, and can be cut without provoking much hemorrhage unless they extend above the internal sphincter, when arteries may need ligation. The comfort of the patient depends on the careful attention to detail in the operation. With little or no dilation of the sphincter, the fibrous tissue is clipped off with curved scissors, any bleeding points being grasped by forceps. When the circumference of the bowel has been gone over the sphincters are dilated to allow of full inspection. If there is bleeding a second application of forceps may be necessary. If the skin edge has been involved suture it to membrane. A plug of gauze is inserted and removed when uncomfortable to patient. This method leaves strips of membrane longitudinal to the gut and no stricture can result. A stool is forced on the fifth day. When there is total prolapse of the membrane a modified Whitehead operation is done. The danger of hemorrhage from this, as well as other rectal operations, has been greatly exaggerated.

Officers for Ensuing Year.—Chairman, A. Palmer Dudley, New York; secretary, C. L. Bonfield, Cincinnati.

Section on Hygiene and Sanitary Science.

SECOND SESSION.

Symposium on Tuberculosis.—This was introduced by S. A. KNOPP (New York), who read a paper on the present aspect of the tuberculosis problem in the United States: State and municipal sanatoriums. He gave a large amount of detailed information as to the steps being taken in different parts of the Union to combat the disease, the data being derived from replies to queries addressed to 47 States and Territories and a number of cities. There is no doubt, he said, that decided progress has been made during the last few years. While a few States and cities have made retrogressions the majority have advanced. Much more, however, is required in the way of united effort, and with a view to this what is principally to be aimed at is the establishment of a department of health in Washington and the passage of a general law having for its object the prevention of tuberculosis in man and beast. The first step should be the appointment of a national commission to formulate a law that would meet the exigencies of the case.

Results Obtained in the Treatment of Tuberculosis at Fort Bayard.—Major D. M. APPEL (Fort Bayard) described the methods of feeding, rest and exercise, and discussed the effects of altitude on the symptoms and blood. Since the establishment of the institution, 623 persons had been admitted, and of these 55 were readmitted after discharge. At the end of March 174 persons continued under treatment, and the remaining 449 were accounted for as follows: Discharged, clinically cured, after an average residence of eight months, 33; convalescent, 52; improved, 157; unimproved (including 17 discharged in less than one month), 113; died (including 25 in less than one month), 94. In considering the significance of these figures it has to be borne in mind that all classes of cases are taken, whereas in ordinary sanatoria only selected cases are admitted. A large proportion of the patients at Fort Bayard are from the tropics, and are feeble and emaciated, besides being in many cases addicted to the excessive use of alcohol.

Experience in the Treatment of Tuberculosis at Fort Stanton.—P. M. CARRINGTON (Marine-Hospital Service). Out of 303 cases admitted since the institution was opened two and a half years ago, 45 have died, 9 discharged unimproved, 97 discharged improved, 37 discharged apparently or clinically cured, and 115 remain under treatment. One feature of the institution to which Surgeon-General Wyman attaches importance is a garden or farm which, while helping to make the hospital self-supporting, affords congenial employment in a suitable climate to a considerable number of patients in a state of convalescence.

Sanatorium Treatment of Tuberculosis.—S. G. BONNEY (Denver, Colo.) discussed the question from two points of view: the welfare of the tuberculous class and the preservation of communities. There are three classes of cases for which institutional control is demanded: (a) Those in the last stages of tuberculosis and hopelessly impoverished; they are entitled to some care in their final days. (b) The tuberculous poor who by temporary care may be restored to their position as bread winners. (c) The ignorant and vicious, without regard to the stage of their disease, who wilfully or recklessly make themselves a public menace. On the other hand, there are certain classes for whom institutional treatment *per se* may still be regarded as *sub judice*—those for example of limited means who are in an incipient stage of disease, and those again with considerably more advanced infection, but in more comfortable circumstances. These cases must be determined on their individual merits. Over and above these there are cases in which residence in closed sanatoriums is contraindicated, and on the other hand cases in which in addition to climatic advantages sanatoria are of especial benefit.

THIRD SESSION.

The Relation of Human and Bovine Tuberculosis.—D. E. SALMON (Washington), after reviewing the investigations of De Jong, the Bureau of Animal Industry, Martin, Chauveau, Ravenel, Naughton, and others, concludes that there is now sufficient evidence to prove that tubercle bacilli of human origin may infect cattle and produce a progressive and fatal disease in them; also that tubercle bacilli from bovine sources may infect man and produce a progressive and fatal disease. Ingestion tuberculosis may have its starting point in the glands of the neck or thorax, or even in the lungs, and the number of cases of human tuberculosis showing a primary intestinal lesion is no indication of the number of cases which occur from ingestion. We must depend largely upon clinical evidence for a determination of the relative frequency with which man is infected by tuberculous food. Statistics seem to show a considerable number of cases in man originating from contaminated food, but still it must be admitted that this evidence is indirect and not altogether trustworthy. It must be taken as an indication rather than as a positive demonstration. Considered with other evidence, it justifies us in assuming provisionally that there is considerable danger to human life from the ingestion of food containing living tubercle bacilli.

The Intertransmissibility of Human and Bovine Tuberculosis: a Review of Experimental Evidence.—R. R. DUNWIDDIE (Fayetteville, Ark.). Does the experimental evidence tend to support the view that tuberculosis may at times have its origin in contagion from cattle? The question is purely

speculative, and in a purely speculative question it is common for different deductions to be drawn from the same data. Koch has drawn the inference, largely it would seem from his experimental work, that bovine tuberculosis can constitute no factor in the initiation of tuberculosis in man. Few, Dinwiddie thinks, will be able to follow him in his process of reasoning. Whether or not Koch's view be correct, it can hardly be said that it derives any support from the purely experimental evidence. There is a wide field of investigation yet to be covered before sanitarians can feel justified in recommending a discontinuance of those safeguards against infection from tuberculous dairy products which an unwilling public are just beginning to appreciate.

Some Practical Points in the Treatment of Tuberculosis from the Sanatorium Standpoint.—J. EDWARD STURBERT (New York) discussed the advantages of sanatoriums and open air treatment, showing the importance of hygienic surroundings, good food and proper medicinal treatment. Each case must be treated largely on its own merits. In connection with the influence of heat and light, he thinks much is yet to be expected from the x-rays, though so far we are groping in the dark as to their properties, and the agency is not a safe one to place in the hands of the general practitioner.

M. P. RAVENEL (Philadelphia) showed exhibits and described experiments to show that Koch was not justified in denying the intercommunicability of human and bovine tuberculosis. On the motion of KNOPF a vote of thanks was awarded Ravenel for his address.

Discussion.—KNOPF (New York) laid stress on the fact that, while climatic change was of great advantage and much good was being done by means of sanatoria in different parts of the country, the large majority of tuberculous patients must of necessity always be treated at home. He denounced as dangerous the custom followed in New Mexico of using tuberculin to see if a patient was cured. BOARDMAN REED (Philadelphia) suggested that with the view of absolutely demonstrating whether or not bovine and human tuberculosis were intercommunicable, prisoners condemned to death might be allowed to submit themselves as subjects for experimentation. C. L. MINOR (Asheville, N. C.) eulogized the French idea of a convalescent farm which he was glad to hear had been carried out at the government sanatorium at Port Stanton. At the close of the discussion, on the motion of S. A. KNOPF, seconded by BENJAMIN LEE (Philadelphia), a resolution was passed suggesting that the American Medical Association address an appeal to the Federal government to create a national commission for the study, investigation and consideration of means for the prevention of tuberculosis in man and animals.

A lantern-slide demonstration of smallpox and diseases apt to be confounded therewith was given by JAY F. SCHAMBERG (Philadelphia).

FOURTH SESSION.

Symposium on Tuberculosis: Sanitary Measures in New York City for the Prevention of Tuberculosis and their Results.—H. M. BIGGS (New York). There is no more serious problem connected with the public health, and yet none which gives more promise of good results. The measures adopted by the New York Board of Health are partly compulsory and partly voluntary, but the former are not strictly enforced. At first the medical profession was very much opposed to the ordinances, largely because they did not properly appreciate their aim and scope. In recent years a better understanding has prevailed and the consequence is a large and steady increase in the number of cases reported to the board. It has been found that 80% of the cases ending fatally have previously been registered. Much good has been accomplished by improving the sanitary condition of the overcrowded tenement-house districts, which were found to be the principal centers of infection. On the other hand harm has come from calling tuberculosis a contagious disease. It is communicable, but noncontagious. The pressing needs now are: Hospitals for advanced cases, sanatoria outside the city for incipient cases, the inspection of workshops, and the enforcement of sanitary measures in them and in public conveyances. With the cordial support of the medical profession, which is now being accorded by the best element in it, there is no reason why the almost complete eradication of the disease may not be looked for.

Discussion.—The paper was favorably discussed by KNOPF, CARRINGTON (the chairman) and others, most of whom spoke of the influence for good which the action of the New York Board of Health is having all over the country. REYNOLDS (Louisville) said that they were not prepared in Chicago to put tuberculosis in the same category with smallpox and the plague by making it a notifiable disease. BIGGS replied that it was necessary to get away from the idea that notifiable diseases were necessarily contagious. Malaria has been added to the list in New York, and it is proposed also to include pneumonia. He believes that eventually all infectious diseases—all diseases which are produced by microorganisms—will be reportable. On the motion of KNOPF, a vote of thanks was accorded Biggs for his admirable paper.

SIXTH SESSION.

Smallpox and Vaccination.—HEMAN SPALDING (Chicago) pointed out various common sources of error in the records of

the vaccinal status of cases. Among cases alleged to have taken smallpox after vaccination are included a large number in which the vaccination has only been performed after the patient has been exposed to the disease. Again, there are many whose history of having been vaccinated is unreliable, either on account of faulty technic, inert lymph or other cause.

Pneumonia: Its Increasing Prevalence and Fatality, with Suggestions for Individual and Communal Prophylaxis.—EDWARD F. WELLS (Chicago). Although the death-rate may not be greater than it was formerly, as he was inclined to think was the case before investigating the subject, the proportion of deaths from this cause to total deaths is increasing. The disease itself is much more prevalent, probably because of increased facilities for travel, the tendency of people to congregate, and other causes. This increase has been especially marked within the last 20 years. For individual prophylaxis, the nasal, pharyngeal and oral cavities should be kept as free as possible from accumulations of mucus; care should be taken not to become chilled when over-tired; and the individual should, as far as possible, keep out of range of the extruded pneumococcus-laden secretions of infected individuals. There may be simple means by which pneumonia may be prevented, but the fundamental information upon which prophylactic rules may be formulated is not yet at hand. Public health officers should seek assiduously for such knowledge, and as a preliminary step in this direction pneumonia should be placed on the list of notifiable diseases, the environment of pneumococci patients carefully noted and the results analyzed.

Epidemicity and Increasing Fatality of Pneumonia.—JAMES J. WALSH (New York City) adduced facts to show that in cities the death-rate from pneumonia is increasing while the general death-rate is decreasing. Pneumonia is more infectious than tuberculosis, therefore the necessity for prophylaxis against it in crowded centers is more urgent.

Discussion.—N. S. DAVIS, JR., (Chicago) was particularly interested in the conclusion arrived at by Wells, which seemed to be justified, that the mortality from the disease is not increasing, the impression of the profession having been rather in the opposite direction. The subject requires to be ventilated both among medical men and their patients with the view of securing the adoption of more precautionary measures. GEORGE M. KOBER (Washington) suggested that the increasing use of alcohol might be a predisposing factor in the production of pneumonia. He agreed with previous speakers that general as well as individual prophylactic measures were essential to the prevention of its spread.

Influenza.—SMITH ELY JELLIFFE (New York City) called attention to the increasing importance of the influenza bacillus in human pathology. Its action on the nervous system is particularly marked. The psychoses are mainly of the depressive type, and as a consequence there is a tendency to suicide.

In a further study of the influenza bacillus, F. ELDRIDGE WYNKOOP (Chicago) described the action of *Bacillus influenzae* upon the mucous membrane.

Venereal Diseases.—A committee, consisting of H. D. HOLTON (Vermont) chairman; GEORGE M. KOBER (Washington) and W. H. SANDERS (Alabama) was appointed to cooperate with a committee from the Section on Cutaneous Diseases in urging on the House of Delegates the importance of bringing about a propaganda in the different States with a view to the adoption of measures for the prophylaxis of venereal diseases. The holding of a national meeting under the auspices of the American Medical Association, similar to that held in Brussels under the authority of the Belgian government, was also suggested.

New Office-Bearers.—The new officers of the section were elected as follows: Chairman, H. M. Braeken, Minneapolis, Minn.; secretary, George T. Swartz, Rhode Island; member of the House of Delegates, Arthur R. Reynolds, Chicago.

Section on Diseases of Children.

SECOND SESSION.

Symposium on Infant Feeding: Acute Gastroenteritis of Infants.—MARGARET TAYLOR SHUTT (Springfield, Ill.). The heat of summer plays an important part by depressing the child's vitality and increasing the thirst, thereby causing overfeeding and the more easy production of fermentation in the food products during hot weather than at other times. Perhaps the greatest causes of summer complaint in children are improper feeding or overfeeding and artificial feeding that is not suited to the child's condition. Fever, prostration, vomiting, frequent and abnormal stools make up the clinical picture, and the diagnosis can only be mistaken in the beginning for the onset of some one of the exanthematous diseases. The prognosis depends, first, on the child's vitality, and second, on whether it receives intelligent care and treatment, the greatest problem being whether directions with regard to proper feeding and hygiene will be intelligently carried out by the mother. The most important points in the treatment are to keep the child cool, keep the child clean and give a limited quantity of the proper sort of food; during the attacks to absolutely stop all milk food, thoroughly clean out the whole alimentary tract, to reduce fever by sponging the body and irrigating the colon, and to secure intestinal antisepsis as far as possible. The most explicit directions as to the proper kind

and quantity of food after the attacks must be given and tonic treatment where it is indicated.

Milk Idiosyncrasies in Children.—LOUIS FISCHER (New York City) means by this term those children who will not digest milk at all. They are poisoned by the slightest amount of it given in any form, and seem to have an idiosyncrasy against milk almost analogous to drug idiosyncrasies. Many individual peculiarities are noted. There seems to be a constant irritability of the digestive tract and an absence of normal assimilative power accompanied with intestinal indigestion of milk, cheesy curds in the stools, vomiting, nausea and frequently colic. The dietetic treatment is the most important, but what food should be given in the interim until the acute symptoms subside is sometimes a troublesome problem. Breast milk is just as incompatible and just as frequently so as cow's milk. The author reports excellent results in a series of cases from the use of a malt soup, the formula for which is as follows: Take of wheat flour 50.9 (about 2 ounces). To this add 11 ounces of milk. Soak the wheat flour thoroughly and rub it through a sieve or strainer. Put into a second dish 20 ounces of water, to which add 3 ounces of malt extract; dissolve the above at a temperature of about 120° F., and then add 10 cc. (about 2½ drams) of 11% potassium carbonate solution. Finally mix all of the above ingredients and boil. This gives a food containing albuminoids 2.0%, fat 1.2%, carbohydrates 12.1%. There are in this mixture vegetable proteids 0.9. This food was very well borne and gave no discomfort.

Improvement of Breast Milk and Prolongation of Lactation.—THOMAS S. SOUTHWORTH (New York City). Lactation is a much neglected subject. Full chemic analyses of breast milk are important in judging the quality of milk, but are by no means imperative. The specific gravity affords a simpler method of judging its quality. The improvement of the quality and quantity of breast milk is not a complicated matter if begun early enough. Faulty or deficient milk on the part of the mother is often dependent upon an unsuitable diet or lack of outdoor exercise. Those cases of early failures of breast milk, where the supply is diminished or disappears in the first week or two, may often be prevented and the milk completely restored provided the woman is properly managed. Bad nursing habits and faulty maternal diet are the chief causes of trouble later on. To ensure the mother's having a full supply of milk plenty of fluid should be drunk during the first week of the baby's life. Then throughout the period of lactation there are four fluids she should have, important in the order of their enumeration. First, plenty of good cow's milk should be taken every day, as this is the greatest stimulator known of the maternal supply; second, corn-meal gruel; and third, plenty of water, and for a beverage cocoa. Tea should be prohibited. The balance of the diet should be plain, unstimulating and nutritious. Beer is not beneficial and has been found to be even harmful. The same may be said with regard to malt. Constipation and anemia must be corrected, and sleep, exercise and fresh air provided. The importance of breast milk for the child makes it advisable to continue nursing during the greater part of the first year, either with or without the assistance of a few bottle feedings. There is serious responsibility in weaning, as exclusive bottle feeding causes a larger mortality than when at least partial breast feedings are maintained.

Infant Feeding.—ALEXANDER MCALLISTER (Camden, N. J.) enumerated the difficulties growing out of the necessity of using an artificial food rather than a natural one. It is important to have a proper conception of the many difficulties that beset the feeding of the child both in food making or the preparation, and in selecting the proper food for the child in question. It should be remembered that cow's casein is not mother's casein, and that even though cow's milk may be intelligently modified it can never be made exactly as mother's milk.

Discussion.—C. F. WAHRER (Fort Madison, Ia.) said that a few years ago the milk supply of large cities was anything else but milk. He referred to the great advances that had been made by enterprising physicians and the dairymen in improving the milk supply. He agreed that the best substitute for mother's milk is cow's milk as pure as can be gotten. This may be slightly modified to meet the occasion, but he has seen many children thrive on the pure cow's milk. CHARLES G. KERLY (New York) said that most children can be fed on properly modified milk, but it must not be fed to every child alike. The milk must be changed as the child advances. Many physicians get discouraged because the child does not immediately improve and thrive when they have started the percentages too high to begin with. The child must be started on very low percentages when fed artificially and work up, at the same time they must be very carefully watched. The patient must be fed by the napkin. A careful observation of this and its characteristics is absolutely essential for an intelligent understanding of the condition of the child. It is true that there are some cases that cannot be fed on milk at first, particularly the cases that have been experimented upon with all kinds of food and fed in all kinds of ways until their digestion is so impaired that they cannot tolerate cow's milk and sometimes are not able to do so for a long time. The speaker disagreed with Southworth regarding the value of the malt extracts in a series of experiments for improving the milk of the mother in a number of ways some

years ago; he found the malt extracts and the malt preparations were more effectual than anything else in bringing up the percentage of fat. JOHN LOVETT MORSE (Boston) thinks that milk idiosyncrasies are rare, and are due when they are found to the improper modification of milk either for the time being or some time in the past. As to malt extract, that is the best single thing to increase the quality of breast milk in the mother. He holds that breast milk, even if artificial feeding has to be resorted to, should not be given up, because the breast milk ferments, may still be retained and are important in the digestive process of the child. J. P. C. GRIFFITH (Philadelphia) said there is no doubt in his mind that in the majority of cases physicians begin with the percentages too high for the baby. In regard to the question of vomiting, the fact is lost sight of that the dilution is not sufficient and the percentage of fat is too high. Many of the idiosyncrasies of milk are due to the fact that the child through past mismanagement has lost its digestive power. All children who have had such digestive disturbances will relapse at some time. It is a great mistake to change the food with every little variation of the gestive power of the child. Be sure you are on the right track and then follow out that track. A. C. COTTON (Chicago). Nobody who ever wrote a book or delivered a lecture can tell just exactly how to feed the individual baby under your care. The only way to settle the matter is to decide it for yourself. The man behind the bottle must mix his milk with brains and suit the feeding to the baby in question. If there were no means of modifying milk at all and no means of feeding a child artificially, it would be the greatest boon ever conferred on humanity, because it would drive all mothers to the necessity of nursing their own babies and giving it nature's own food, and would save more lives than all the doctors in the land. If every mother were assured that her baby could not live and grow to maturity unless it were nursed in the usual way, it would be the greatest incentive possible for mothers to nurse their babies instead of shirking their duty. A. JACOBI (New York). We generalize too much with regard to infants' feeding. The only two points of value that we have learned in the last 10 years is that cow's milk, which is pure, fresh and germ free, is the only food a child should be fed on artificially with proper modification. In regard to the feeding of a new-born infant, of course the baby is hungry, the baby ought to be hungry, and should be fed in a proper way, principally with water. There is no excuse for allowing a new-born baby to lose its weight in the first week of its life, and a small quantity of some simple food may be given. Plenty of water, however, flushes out the kidneys and the excretory organs and prepares the child for the proper handling of its food. If plenty of water were given the child at first, the uric acid infarcts which we hear so much about nowadays would probably be prevented. Many of the cases of renal calculus would not occur. There is no one special method of feeding that is absolutely the true one to the exclusion of all others. In each case the food must be suited to the individual, but there is the one principle that the milk should be good, fresh, pure and clean, and should be germ free.

THIRD SESSION.

Adenoids.—W. FREUDENTHAL (New York City) presented a paper entering into both acute and chronic inflammation of adenoids with the indications for palliative and operative treatment.

The Treatment of Acute Earache: Otitis Media in Young Children.—GEORGE L. RICHARDS (Fall River, Mass.). Earache in children is a most troublesome and annoying affection. Many methods have been advised for its relief and none of them attended with very much success. Several of these methods were mentioned only to be condemned. The author advocates a medicated gelato glycerin bougie, which he has been using for some time with excellent results. The bougie is composed of the following formula: Carbolic acid, minims 7; fluid extract of opium, minims 6; cocaine, grains 3; atropin sulfate, grains 3; water, minims 52; gelatin, grains 18; dehydrated glycerin, grains 158, a sufficient quantity to make 42 bougies. This gives to each bougie carbolic acid, minims ⅓; fluid extract of opium, minims ⅓; cocaine, grains ⅓; atropin sulfate, grains ⅓. These small bougies are particularly useful because they may be kept in the house and may be inserted by the mother at night when the child wakes up screaming with the earache.

Angiosarcoma.—H. C. COOK (Chicago) presented a specimen of a tumor removed from a child of 3½ years involving both the kidneys and filling up almost the entire abdominal cavity.

The Clinical Features of Some of the Anemias of Childhood.—W. C. HOLLOPETER (Philadelphia). The gastrointestinal tract is more to blame in these troubles than the food which goes into it. The great primary cause of anemia in childhood and the least recognized is dental decay. This furnishes more cases of anemia than all the other disorders of childhood put together. The result of dental decay is to infect the mouth and stomach, poison the gastrointestinal tract, producing a general catarrhal condition, deteriorating the blood and rendering the nervous system of the growing child unstable. Oral sepsis must be avoided, therefore, and gastric catarrh prevented by a proper toilet of the teeth. The child suffering from anemia and catarrhal affection of the gastrointestinal tract cannot grow and

develop properly. Associated with decaying teeth will be found many cases of tonsillitis, pharyngitis, infection of the ear and gastrointestinal infection, all of which may be prevented by a proper hygiene of the mouth. The second unrecognized factor in the anemias of childhood is nasal stenosis, which produces mouth breathing. This is frequently the result of the acute infectious diseases, and can most generally be avoided by a proper toilet of the nose and mouth during acute inflammation. The third factor contributing to anemia in children is eye-strain characterized by vomiting, headache, etc., in ear ringing and ear sickness, and may be prevented and corrected by proper glasses.

Retropharyngeal Abscess in Infancy.—JOHN LOVETT MORSE (Boston) reviewed the clinical history of these cases, which usually occur in the second or third year of life, and are almost always secondary to disease of the adenoids. In the diagnosis the author emphasized the importance of digital examination of the throat. Suppuration rarely takes place in more than one lymph node, though several may be involved. Retropharyngeal abscess is always preceded by retropharyngeal adenitis. When suppuration occurs it develops in five or six days and the abscess formation is in the lateral wall of the pharynx rather than in the back. Several interesting cases were reported, showing that the prognosis in those cases treated by incision and evacuation of the pus is very good, while if they are not incised, general infection may take place with an unfortunate result.

Report of a Case of Bulbar Paralysis.—A. C. COTTON (Chicago) reported an instructive case of bulbar paralysis occurring in a girl of 11 and following diphtheria, which had occurred several years before. The case was interesting on account of the various diagnoses that had been made before the paralysis was discovered.

FOURTH SESSION.

Synostosis of the Skull, with Universal Calcification of the Arteries, in a Boy Three Years of Age.—DAVID RIEMAN (Philadelphia). The author stated that arterial diseases in children are not nearly so rare as commonly supposed and that they frequently follow some of the infectious diseases. The case reported was remarkable on account of the synostosis of the cranial sutures, which was shown by the specimen. A number of medical men saw the case in question and it was pronounced an extraordinary case of malnutrition; deficient metabolism being no doubt at the bottom of the whole condition and the boy died of inanition. No drug nor any treatment was of any avail or had any effect on the course of the disease. The author thinks that the malnutrition of the case was perhaps secondary to a congenital abnormality. He referred to the interesting analogy between cases of this sort and certain forms of infantilism and cretinism. An interesting feature of this case was the atrophic condition of the thymus gland, but what bearing this had upon the condition present the author is unable to say.

Spontaneous Hemorrhage in the Newborn.—I. A. AET (Chicago). Two kinds of hemorrhage are observed in the newborn child, traumatic and spontaneous. The paper dealt wholly with the spontaneous variety and was accompanied with the report of ten interesting cases. There may be a variety of causes producing hemorrhage. It is possible it may be from any one of a number of infections. One case was directly traceable to hereditary syphilis. The recent tendency has been to study these cases along bacteriologic lines, and there are numerous microorganisms that are thought to be factors. There are, however, many conditions as predisposing factors. Changes in the bloodvessels themselves may favor it. The character of the hemorrhage is in some slow and oozing and in others profuse at intervals. The sites of the hemorrhage are also varied. It may occur from the umbilicus, under the skin, from the nose, mouth, vagina, stomach, bowel, ear, etc. The temperature varies, and in one case ran as high as 104° and remained elevated during the entire course of the disease. In another it remained subnormal. Cyanosis was a late manifestation in two cases. In a few icterus occurred and in one convulsions and muscular twitchings. Evacuations from the bowels were very offensive before the occurrence of the hemorrhages. As to treatment, internal remedies have no influence on the disorder, nor have local styptics any permanent value. The use of gelatin deserves some mention. The author concludes from a number of experiments on animals that the subcutaneous injection of gelatin will produce a toxemia in children. The nature of these toxins is not known, but they should be considered as ptomaines. No further proof is now needed that gelatin causes a rapid coagulation of the blood. Undoubtedly it can be given with good results by the stomach, but it is very questionable whether it should be given by the subcutaneous method in the present state of our knowledge.

Discussion.—ROSA ENGELMAN (Chicago) suggested inasmuch as infections were thought to play such a part in the hemorrhages that the germs found should be inoculated and cultures made so as to arrive at some classification of them. In addition to all these supposed infections there might be back of it all some constitutional trouble like syphilis. Certainly syphilis plays a most important part. HOLMES (Chicago) related his experiences with gelatin subcutaneously in two cases of obstetrics without reaction, and did not see why it might not be used

in children. JACOBI (New York) stated that he had seen a great deal more of hemorrhages in the newborn 15 or 20 years ago than he does now, and ascribed as a reason that he also saw at that time much more puerperal sepsis. At that time he almost considered the tendency to hemorrhage in the newborn a natural condition. He thinks puerperal sepsis has much to do with the occurrence of hemorrhage in the newborn. Another important cause is the insufficiency of the blood in certain conditions of anemia. It may also depend upon the structure of the bloodvessels themselves. The interna of the vessels are not fully developed. Hemorrhage in the newborn is very apt to be copious because there is a great deal of hemoglobin in the blood, and yet it is less dense than in the adult. In the hematoma found after hemorrhages the blood in the child will be found uncoagulated, where in a similar case in the adult the blood would have been found coagulated. Meningeal hemorrhage is quite frequent, and the speaker thinks most of the deaths occurring in the first day of life are due to this cause. Most of the cases of hemorrhage are postnatal, but he thinks puerperal sepsis is the most important cause of them.

Sporadic Cretinism in Children.—ROSA ENGELMAN (Chicago). Cretinism is relatively much more frequent in children than was formerly supposed. It passes oftentimes unrecognized. Koplik is the one who has plead most earnestly for its recognition. Heredity seems to be a factor in the adult form, but this has not been determined in the child. There is a growing opinion as to its infectious nature, but no very positive data has been obtained. The interdependence of nervous control over secretion is recognized as necessary to healthy functioning, but as to whether disorder of such control is the cause is not certain. The process is a slow delay of the bony development of the body and a consequent dwarfism.

Discussion.—JACOBI (New York) wished to emphasize the importance of combining the different glands in the treatment. Many of the insufficient results of glandular treatment are because the case is treated in only one direction. After having seen that a single ductless gland has been given without results a combination with other glands should be made. As a rule thyroid feeding will be sufficient for myxodematous conditions, but not always. Another point is a shortening of the cranium, producing as a result a spondyrodrosis of the bones. Many of these cases are due to rickets—a rickets which runs its course before birth. When the child is born there is a shortening of the bones at the base of the cranium, because of the ossification of the occipital and sphenoid. The basal ganglia are, as a result of this shortening, undeveloped. The cases that have a short base of the cranium will be improved the least. RIEMAN (Philadelphia) called attention to the fact that it was in this class of cases that preventive medicine might achieve its most brilliant results. The term athyria employed by the author should be used to designate functional athyria, and not anatomic athyria. ROSA ENGELMAN, referring to the correlation of the glands, stated that the combination of the pituitary with the thyroid showed quite a difference in the growth of the patient.

Chlorosis.—C. F. WAHRER (Ft. Madison, Ia.). Diagnosis and treatment of this affection is easy for the skilled clinician, but presents many possible errors for which chlorosis may be mistaken or with which it may be complicated. The author reviewed the various theories of the etiology of chlorosis, and described the early and latent forms among adolescents. There is no relation he thinks between this disease and tuberculosis.

Dermoid Tumors in Children.—S. W. KELLEY (Cleveland, O.). Two cases were reported, one a dermoid tumor occurring in the testicle of a boy of 2½ years, and the other in the ovary of a girl of eight.

Sudden Death in Infants with Lymphatic Constitution.—F. X. WALLS (Chicago) reported two cases of so-called thymic sudden death in infants, and presented a brief review of the literature on the subject, showing the relation of sudden death in infants to the lymphatic constitution.

Recognition and Prompt Removal of Postnasal Adenoids in Children.—LOUIS J. LAUTENBACH (Philadelphia) pointed out the great frequency of this trouble, and showed that it is among the poorly nourished and scrofulous that adenoids are most commonly found. It is also oftentimes found in deaf-mutes, and perhaps is the cause of their deaf-mutism in many cases. He mentioned the various methods of determining their presence and modes of making the examination. The nature of the growths vary and present different appearances. Many constitutional ailments follow in the wake of adenoids and their obstructive influences in respiration are productive of many bodily ailments. The posterior and upper walls of the nasopharyngeal space are by no means always smoothly and regularly arched. There are frequently ridges observed on the posterior and upper pharyngeal wall, and this fact is important in the method of operating. The author does not usually use an anesthetic in operating nor does he use the curet, forceps and cauteries, but operates by scraping the mass out with the finger nail or steel finger nail. He lays stress on knowing the exact condition of the pharyngeal vault after the operation, and pointed out the necessity of constitutional treatment in all cases of postnasal adenoids.

Officers elected for the ensuing year were John C. Cook, of Chicago, chairman, and Thomas S. Southworth, of New York, secretary.

Section on Ophthalmology.

FIRST SESSION.

Address of the Chairman.—FRANK ALLPORT (Chicago) said that he thought it was quite unnecessary to assure his colleagues how much he appreciated the honor of being permitted to preside at the meetings of this section, which he considered the representative association of ophthalmologists in this country and the chairmanship of which he regarded as the highest gift of American ophthalmologists because no taint of political manipulation had ever sullied its reputation. In the program of the present meeting the endeavor was to have a few subjects systematically and thoroughly treated rather than to treat a great variety of topics. The officers were much gratified at being able to announce that owing to an invitation extended to Professor Haab, of Zurich, Switzerland, he had traveled from that distant country expressly to deliver an address before his American colleagues in this section, and in behalf of the section he bade the Professor welcome and extended to him the privileges of the floor.

The Treatment of Serpiginous Ulcer of the Cornea.—CHARLES J. KIPP (Newark, N. J.) said that 20 years had now passed since he first observed that certain cases of serpiginous ulcer of the cornea in which no further progress was noticed after they came into his hands presented the following features and healed under very simple treatment; from the margin of the ulcer straight lines diverge in all directions through the parenchyma of the deepest layer, not giving off branches and the further ends of which lines are connected by grayish intermediate striæ; if present all around these intermediate lines form a distinct ring, and if the ulcer is situated in the center of the cornea with these striæ well developed the appearance might be compared to a spider's web. He considered that ulcers presenting this appearance had ceased to be progressive and that no treatment involving further destruction of tissue should be used. When blepharitis of the sac is present he splits the canaliculus. The only treatment required is warm fomentations and installation of a mydriatic. When these linear opacities are not present he uses the galvanocautery and iodoform powder; if there is much pain, abstraction of blood from the temple; fluorescein is used to determine the extent of the ulcer before using the cautery; if tension is high he perforates the floor and sometimes does paracentesis of the corneal margin, but prefers perforation with the cautery. The writer spoke of the hope held out by Dr. Roemar that we shall soon possess a serum which will arrest the progress of the pneumococcal ulcer when injected subcutaneously or applied locally.

Discussion.—DE SCHWEINITZ (Philadelphia) said it was unfortunate that the name serpiginous ulcer was used, as it gave a wrong idea of the disease; it was his practice to make his treatment agree with the bacteriologic conditions; in the absence of virulent infection he curetted and used bichlorid; in virulent infection he used the actual cautery, tincture of iodine, or carbolic acid; blepharitis of the sac was treated by splitting the canaliculus and use of protargol. JACKSON (Denver) had used with decided benefit an application of nitric acid, and seen rapid improvement follow its use, even in the pneumococcal infections—a 20% to 50% solution. WILSON (Elizabeth, N. J.) had had some experience with these ulcers and could endorse what Kipp said, that when one sees these striæ one can make up his mind that the infection will extend no further. CONNER (Detroit) said that a new remedy for the destruction of infectious germs had recently been introduced by Dr. Novee, which in solutions as weak as 1:10,000 destroyed gonococci in a few minutes without irritation, and said from the small experience he had had with it he thought it a useful agent. HAAB (Zurich) said he preferred to destroy the microbe directly by use of pure carbolic acid. RANDOLPH (Baltimore) called attention to the superiority of holocain over cocaine as an anesthetic in these cases prior to cauterization and also that carbolic acid had anesthetic properties itself. RISLEY (Philadelphia) also emphasized the value of holocain and preferred to use a double strength tincture of iodine. WILDER (Chicago) agreed with Risley as to the value of iodine, and had dispensed with the cautery in many cases. TAYLOR (Wilkesbarre) had come to use the cautery more and more, and also used a strong solution of silver nitrate. FRIEDENWALD (Baltimore) was somewhat surprised to hear the tincture of iodine spoken of so highly, as he had been very much disappointed in its use; he thought it invaluable for dendritic or other superficial ulcers, but had given up its use in infected ulcers. HIERS (Savannah) used the tincture of iodine, curetting thoroughly before its application. GREENWOOD (Boston) added his testimony to the usefulness of iodine, and also of iodoform powder and said the cases were often benefited by the use of mercury.

The Nature and Treatment of Pterygia.—JOHN O. McREYNOLDS (Dallas, Texas) said that Prof. Fuchs speaks of pterygia being peculiar to those past middle life, but that while that might be true of Vienna it was not true of the southwestern part of the United States. He attributed the cause to heat and dust with high winds, and said it was not infrequent to see boys with pterygia; those living in the warm, dry and dusty regions were the ones who most frequently developed the growth. When the evaporation of the tears is so rapid that they do not accumulate in sufficient quantity to wash away the foreign particle, the conditions for development of pterygia were present. He described his method of operating which had given the

most satisfactory results, and consisted of subconjunctival anteroinferior fixation.

Discussion.—SAVAGE (Nashville) agreed with McReynolds as to etiology of pterygium and did not believe pingueculæ were ever transformed into pterygia; he believed all these growths due to foreign bodies imbedded in the cornea, the bodies being too small to be noticed at the time; the process is one of ulceration, the extension bringing about changes in the epithelium and the conjunctiva becomes swollen, the limbus overlapping the cornea and becoming adherent to the base of the ulcer; men who are exposed in sandy countries are the most frequent sufferers. He had done the McReynolds operation more than a hundred times with only 2% of failures. WOOD (Chicago) endorsed what Savage said of the operation and said a most important thing was the excellent cosmetic effect; that after the operation one cannot tell that it has been done. He said that one of the chief factors was heat, as in their part of the country, although there was much wind and dust, the moist atmosphere prevented the frequent occurrence of trouble. JACKSON (Denver) emphasized what the other men had said as to the value of the operation. HOLT (Portland) and SUKER (Chicago) had also used the operation with success.

Thiosinamin in Corneal Opacities: Experiences and Clinical Results.—GEORGE S. SUKER (Chicago) referred to the use of thiosinamin as a resolvent of cicatricial tissue in the removal of keloids, lupus, urethral strictures and rheumatic joint-affections, which led to experiments to determine its efficacy in ophthalmic practice. It is an active alternative belonging to the same group as potassium iodide and mercury, and its use is indicated in corneal opacities from any cause, cicatricial contraction of the lids, exudative choroiditis, symblepharon, capsular opacities, and cicatricial ectropion. Experiments were made to determine whether it would prevent the maturing of cataracts, but no results of value were obtained. The best mode of administration is in three-grain capsules once or twice a day. After the patient has been taking it for five or six days it is well to intermit a week or ten days. It is a marked tonic, favors absorption of exudates, clears up corneal nebulas and produces local reaction without systemic disturbance. SHERMAN (Cleveland) had used it in a case of interstitial keratitis in which the vision was reduced to 20%, and after using the drug in one-grain doses t.i.d. for a year the vision was improved to 40%; he had reported 33 cases of its use with marked benefit in each case and was of the opinion that it is a valuable remedy, especially in cases of a vascular character.

Discussion.—RANDOLPH (Baltimore) alluded to its use in tinnitus, in which class of cases he had found it of benefit given in half grain doses t.i.d.; in some cases it had produced distressing vertigo. SUKER, in closing, said the tendency to vertigo would be overcome by its continued use, and he had not had a patient who could not take three grain doses.

Should the General Practitioner Have a Working Knowledge of the Ophthalmoscope and Trial Lenses?

A. R. BAKER (Cleveland, O.) considered that it was possible for the average medical student to gain a working knowledge of the instrument in the time allotted him. Twenty years ago that was not so, but the student now enters the medical school having learned how to study and comes to his senior year with a trained mind, trained eye and trained hand; it is the exception that one of them doesn't see the fundus the first time he takes the instrument in his hand and is able to make a drawing of what he sees and they gain a good practical knowledge of its use before they graduate.

Teaching Ophthalmology to Undergraduates.—F. C. TODD (Minneapolis, Minn.) said he considered the subject under the two heads—didactic teaching and clinical work; there should be textbooks adapted to the student's needs, from which lessons could be given; the most valuable method is clinical teaching where a series of cases can be presented for illustration. Laboratory work should be taught the student before he comes into the clinic; he believed there were certain portions of ophthalmology essential to the general practitioner, as the differentiation between the glaucoma and iritis. He thought that while formerly too little attention was paid to the specialties we were now going to the other extreme.

Discussion.—BURNETT (Washington) thought the less the general practitioner had to do with the ophthalmoscope the better, because ophthalmoscopy is an art by no means easy to learn and one that requires constant practice, and "a little knowledge is a dangerous thing." To be of real value the instrument must be used by an expert. WOOD (Chicago) said they had given up operating before large classes and preferred to teach by use of a projecting apparatus, insisting that the student should understand the eye symptoms of disease as thoroughly as any other symptoms. WILDER (Chicago) was in accord with the views of Baker, that the general practitioner should have a good knowledge of ophthalmoscopy and described in detail the method of teaching at the Rush Medical College, which consisted chiefly of practical instruction in the clinic. JACKSON (Denver) thought that ophthalmoscopy should be considered a very important branch in the education of the general practitioner and that it was being too much neglected. He considered it just as important as the teaching of microscopy. SUKER (Chicago) thought that a student before he is graduated should be able to describe the normal fundus if nothing else; he should be able to appreciate the variations in the normal fundus. CONNER (Detroit) thought the students should be

taught ophthalmoscopy if only to let them see that there was something absolutely certain in medicine. KNAPP (New York) did not think any retrograde movement should be encouraged in this respect; that in Vienna one could not get a license to practise medicine without passing an examination in ophthalmoscopy and that we as a progressive country would soon have the same requirements. CRUM (Utica) thought that teaching ophthalmoscopy properly would cause the general practitioner to fully appreciate the skill required and enable them to send their cases to the oculist at the proper time. CARMALT (New Haven) thought the discussion really belonged to another department, as the ophthalmologists themselves were practically all agreed on the importance of the proper teaching of the subject. ALLPORT said that in his teaching he used the papier mache eyes and found them of great aid. In closing, BAKER said that the student could be taught to use the ophthalmoscope in just as short a time with the dilated pupil as with the papier mache eyes.

SECOND SESSION.

The Removal of Foreign Bodies from the Eye.—O. HAAB (Zurich, Switzerland) spoke favorably of the Desmarres capsule forceps, saying that they caused but a slight wound and injured the vitreous as little as possible, but they were only of use when the splinter was free and visible in the vitreous. That we possess valuable aids in the diagnosis of foreign bodies in the x-ray and sideroscope, but they required much skill and patience in their use and could be almost dispensed with by use of the large magnet. He described in detail the use of the large magnet in the extraction of various foreign bodies from the eye, which with him in 165 cases had only failed 23 times and in these cases the failure was due to the body being too firmly imbedded in the posterior wall of the globe or having pierced it completely; situated in the ciliary body; having produced fibrinous purulent exudate; or had been healed over for months or years. He had never observed any risk in its use and did not deem it necessary to have three different sizes as advised by Hirschberg, the large magnet answering for all cases. In this country the large magnet was used almost immediately upon its introduction and with success.

Foreign Bodies in the Eye.—WILLIAM M. SWEET (Philadelphia) said the majority of injuries were now due to iron or steel, but occasionally small shot, pieces of copper, glass, and coal are the cause. That a small wound of the cornea with opacity of the lens is almost positive proof that the foreign body has passed into the interior of the eyeball and been retained; when there is cloudiness of the media the x-rays are the most accurate means of diagnosis; excellent results have been secured with the sideroscope, but owing to its delicacy it has a limited usefulness. The low power of the Hirschberg magnet necessitates the introduction of its point into the vitreous and, therefore, the large magnets are now more generally used. A chart was given showing the attracting power of the different magnets and demonstrating the superiority of the Haab magnet. If the wound of entrance had closed it was better to extract through an opening in the sclera. The after treatment should consist of cold, supplemented by atropia.

A Report of Some Cases of Foreign Bodies in the Eye: where Haab's Magnet was Used.—MYLES STANDISH (Boston) reported a series of eight cases, in which a long, slender bit of steel was driven through the cornea and lens and removed without making an incision in the sclera. The undesirability of such an incision is due to the danger to the choroid and retina. In all these cases, by use of the Haab magnet, the body was compelled approximately to retrace the tract by which it entered. The method of procedure was to bring the point of the magnet almost in contact with the cornea with its axis in a projection of the line of entrance.

Discussion.—KIPP (Newark) said the use of the large magnet was indeed a happy thought and the man who conceived the idea should be regarded as a benefactor of mankind. He related a case in which by reversing the poles of the large magnet he had successfully removed a large piece of iron that could not be turned otherwise. KNAPP (New York) said the usefulness of the Haab magnet was self-evident and agreed with Kipp that Haab should be considered a great benefactor to mankind. He referred to the danger of extracting foreign bodies through the sclera and preferred to bring them out through the original wound of entrance. WOODRUFF (Joliet) had had 25 cases of injury by steel: located and removed by large magnet in 22 cases. SHERMAN (Cleveland) said the cost of the Haab instrument precluded its use in many instances and spoke of one he had made by the Brush Company which worked very well. WEINER (St. Louis) spoke of a case in which he had failed to remove body with Haab magnet and had to make an incision and extract with small magnet. He had had a magnet made after the Haab pattern at a cost of less than \$50. HOLT (Portland) preferred to extract through the sclera and had operated on cases where the eye was in a state of suppuration and seen the suppuration cease. LIPPINCOTT (Pittsburg) said in his observation many patients had reason to be grateful to Professor Haab for having devised the best method for removal of foreign bodies from the eye. He said all the other magnets were really children of Haab's. The best method of diagnosing was by the Röntgen ray, but the difficulties of using it were great. ELLETT

(Memphis) reported a case in which the foreign body had passed through the lens without producing cataract, and another where evisceration had to be done. RISLEY (Philadelphia) reported a case where, not having a Haab magnet at hand, he had with a Graefe knife made a meridional incision just to the nasal side of inferior rectus and placing the tip of a Hirschberg magnet in the small wound withdrew the body. No reaction whatever. WOODS (Baltimore) reported a case in which the proceeding described by Risley was used, the tip of a Johnson magnet being used; no reaction; discharge; but came back in six weeks with detachment of retina. APPLERY (St. Paul) said one should pay especial attention to the location of the foreign body in these cases, and for that purpose should employ the sideroscope and x-ray. GREENWOOD (Boston) reported a case in which a piece of steel was located in about the same position as that spoken of by Risley; removed by incision in sclera; three years later patient has $\frac{2}{3}$ and lens absolutely clear. SWEET, in closing, said that any body having the power to enter the eye could be located by the x-ray, and showed some very minute bodies that had been located in that way. HAAB, in discussing the papers, thanked the members for the cases related and the approval of his magnet. He said it was often of advantage in nervous patients to use the magnet from behind. He said the first rule should always be to let alone the vitreous.

THIRD SESSION

An Operation for the Restoration of a Culdesac for the Wearing of an Artificial Eye, with Report of Cases.—

JOHN E. WEEKS (New York) spoke of the difficulty of establishing a culdesac, the various operations, and said various kinds of tissue had been transplanted, a flap of integument or mucous membrane being most frequently used; partial success has attended all, but because of shrinking there is usually loss of the primary favorable result. The operation advised is to dissect the lid from the orbital tissue, carrying the dissection down to the tissue just above the periosteum; the skin on the inner aspect of the arm is taken as a flap, the margins of which are sutured to the margins of the defect and held in place by a sheet of rubber tissue lubricated by bichlorid vaselin. Seven operations, all attended by success.

The Relative Indications for Enucleation and the Mules Operation.—N. J. HEPBURN (New York) spoke of the indications for removal of the eyeball, viz., danger to fellow eye, pain in affected eye, extensive destruction of globe, malignant growth and cosmetic effect, and said it ranked with major operations, such as removal of a limb. The Mules operation is preferable when time of healing is no object, when the sclera is healthy and there is no affection of the optic nerve. The balls have been mostly of glass, but gold and platinum have been used, and lately experiments have been made with balls of hardened paraffin, which are lighter in weight, adaptable in size and nonabsorbable. The operation is contraindicated when sclera is not healthy and in malignant or tuberculous disease of any part of uveal tract; also in glaucoma and gouty affections, and where old cyclitis exists.

Discussion.—WOOD (Chicago) emphasized the difficulties of forming a culdesac and said the attempts to put in Thiersch grafts were almost invariably attended by failure; we must have something to hold the flap in place, and he usually used iodoform strips for this purpose; was glad to hear of Weeks' method. BURNETT (Washington) related a case in which he had used a rubber piece something after the method of Weeks, getting a perfect culdesac measuring 2½ inches from upper lid to bottom. BLACK (Milwaukee) asked if paraffin could not be used in place of the rubber tissue. TODD (Minneapolis) said he had inserted glass ball in 50 operations, and in only two did it come out, in one of which it was removed on account of irritation. WEEKS, in closing, said it was necessary to attach the flap to some fixed point, and he preferred to attach it to the periosteum. It was necessary to have a firm sheet to hold the flap in position, and paraffin would be too friable. HEPBURN said that the Mules operation had fallen somewhat into disrepute but was being again resurrected, and in the last four years he had seen 70 or 80 cases, and thought we were doing the operation better now because the cases are better chosen.

On the Symmetry of Our Visual Apparatus as a Dual Organ. Plea to Modify the Customary Notation of the Ocular Meridians.—HERMAN KNAPP (New York) said that of 1,473 cases examined in 80% the meridians were symmetrically placed, and in 20% asymmetrically. The vertical meridian has the strongest curve about five times as often as the horizontal. In the intermediary positions the strongest meridian inclines to the nasal side about twice as often as to the temporal. In order to establish a uniform designation of the meridians of the eye and of the field of vision as well he recommended a method which is to begin at the nasal end of the horizontal meridian in both eyes, counting upward and going all around the circle, which puts us in perfect harmony with the law of symmetry and the diagram will read the same whether looked at from before or behind. The chart contains meridional and parallel circles all around so that any point or defect can be designated by two numbers, that of the meridian and of the degree of latitude. The writer considered the proposition which he made at Utrecht, at the International Ophthalmological Congress, the best of many that had been tried, as it rested upon a scientific basis, is easy of application and meets

the requirements of daily practice. The change from the old system would require: (1) a new plate on the spectacle frame for the left eye, placing zero on the nasal and 180 on the temporal side; (2) a diagram of the prescription with the same change for the optician; (3) perimeter charts marked in the symmetrical way.

Discussion.—**RISLEY** (Philadelphia) said he regretted that he could not agree with Knapp as to the advantage of abandoning the methods employed for the past 30 years and confusing the records which had been made by the adaption of a new, unless it were an unquestionably better and more scientific method. He said that in all sciences where the circle is introduced the eastern or left-hand end of the horizontal line has been used as the starting point and the degrees counted upward and we should hesitate before we divorce our ophthalmic records from a method so universally used by scientific men in all fields. **BURNETT** (Washington) did not agree that the visual apparatus in man is a dual organ in the same sense that the hands are, but must be considered as a cyclopedic eye and the symmetry of the visual apparatus does not consist in the relations, nasal and temporal, of each globe to a vertical plane. The cyclopedic eye has no nasal and temporal, but a right and left side and this method divides the visual apparatus into two halves, for which there is no warrant. He could see no practical advantage in it. **JACKSON** (Denver) said the tendency is to get some one basis and use it in many departments of life and we would do best to have our methods correspond to those of other branches of science.

Concerning the Symptomatology and Etiology of Certain Types of Uveitis.—**GEO. E. DE SCHWEINITZ** (Philadelphia) spoke of the significance of the symptom, punctate keratitis, a deposit of opaque dots, generally arranged in a triangular form upon the posterior lamina of the cornea; three disease manifestations are encountered to which this name is applied: (a) keratitis superficialis punctata, (b) keratitis punctata vera, or syphilitic, (c) keratitis punctata. It has been noticed by many that when the characteristic deposits appear upon the posterior surface of the cornea recent patches of choroiditis are found often and perhaps always in some portion of the fundus; in all varieties of iritis corneal lesions are always demonstrable by careful examination. The causes of uveitis may be diathetic, toxic or infectious; as rheumatism, gout and diabetes; syphilis, gonorrhea or tuberculosis; septic fevers and diseases of the blood. He spoke of the symptomatology of recurrent and malignant uveitis terminating in secondary glaucoma and cataract and of the significance of the size, deposition and color of the deposits; of acute uveitis, beginning as a sclerotic-choroiditis, especially in young subjects, terminating in myopia and posterior polar lenticular opacity; of chronic uveitis of mild type in elderly subjects associated with hemorrhage in the vitreous; relapsing plastic uveitis, with reference to the insidious approach of certain types in gouty and rheumatic subjects. In one form the primary lesion appears in the fundus as a well-defined choroidal change; in another class it appears first as a flitting conjunctival congestion, the hot eye of Jonathan Hutchinson, the vasomotor dilation of Swan Burnett and the periodic episcleritis of Fuchs.

An Analysis of 37 Cases of Uveitis, with Special Reference to (1) Etiology, (2) Relapses, (3) Rare Early Symptoms, (4) Importance of Perimetric Examinations.—**HIRAM WOODS** (Baltimore) studied the cases from the standpoint of (1) visual symptoms with intraocular appearances, sudden and sometimes complete loss of sight, deceminitis with metamorphopsia, photopsia, scotomas and muscae; dim areas in field brought out by perimetric examination; (2) etiology; there were a small number showing syphilis, scrofula or rheumatism, intestinal or menstrual disorders, acute systemic infection and sympathetic ophthalmia; (3) relapses; the 37 cases indicate that menstruation in its establishment, or later if abnormal, intestinal disorders, and nasopharyngeal disease are among the causes of plastic choroiditis, either as direct causes or by altering the resisting power. Cases of obscure etiology show a greater tendency to relapses; the changes in so-called choroidal hyperemia demand guarded prognosis and repeated examinations.

The Diagnostic Significance of Keratitis Punctata.—**HARRY FRIEDENWALD** (Baltimore) said that keratitis punctata interna, or deceminitis, is observed in various vascular diseases, is found in every case of iritis, is an almost constant sign of exudative choroiditis and sometimes found in syphilitic choroiditis and acute and chronic cyclitis. When no other signs of uveitis are noted except deceminitis, it is due to carelessness in examination. The writer has reported 53 cases, and even including the earlier ones, in which the examination was not made with the thoroughness of later years and those in which opacities of the media prevented examination, about three-fifths had exudative choroiditis. It is due to carelessness in examination that so many cases are recorded as serous iritis and serous cyclitis. Exudates in the anterior portion of the choroid may be beyond the reach of ophthalmoscopic examination. We find deceminitis in choroiditis only when there is exudative inflammation. "Serous iritis" and "serous cyclitis" have no clinical basis and the terms should be discarded.

Injuries of the Eye Productive of Diseases of the Uveal Tract.—**HOWARD F. HANSELL** (Philadelphia) said that the ocular injuries that produce diseases of the uveal tract includes the great majority of traumatisms to which the eye may

be subjected and that apparently insignificant injuries are sometimes followed by disastrous results; that the character and intensity of the disease depends upon the nature of the injury and the condition of the patient when the injury is received; contusion, concussion, penetrating and incised wounds and the entrance and lodgment of foreign bodies, will almost always induce a plastic or purulent inflammation of the uveal tract from which recovery is seldom complete and partial or complete loss of vision common; syphilitic, diabetic, and tuberculous diathesis delay recovery; the diseases are modified by early surgical treatment; enucleation is to be practised immediately when a foreign body lies imbedded in the ciliary region and can not be extracted, or when the eye is mangled.

The Pathology of Uveitis.—**W. H. WILDER** (Chicago) said all the divisions of the uveal tract, iris, ciliary body and choroid, may be involved by severe inflammation of any of them. He considered particularly lesions of the choroid. A satisfactory classification is difficult; may be grouped in plastic, serous and purulent forms; in acute suppurative choroiditis there is rapid infiltration of the vascular layers, vessels become blocked, external layers become distended by exudate; the retina is lifted up and becomes involved in the inflammatory process; vitreous becomes turbid and intraocular tension is increased. Panophthalmitis may result. Most cases are of traumatic origin, but may be metastatic, or pseudoglioma may result. In choroidoretinitis and central choroiditis changes in the vitreous may precede the choroiditis. The writer had observed opacities of the vitreous so fine as to escape hurried examination without a mydriatic.

Pilocarpin Injections in Diseases of the Uveal Tract.—**T. A. WOODRUFF** (Chicago) observed that in the treatment of diseases of the uveal tract, especially in exudative choroiditis, diseases of the vitreous and chronic irido-cyclitis, very few remedies were of value. Disturbance of the general health is a frequent cause of inflammatory degeneration of this tract although in many instances the etiologic factor is shrouded in mystery. Although many lesions are irreparable, a large minority are capable of improvement by the internal administration of thiosinamin, subconjunctival injections of mercury, common salt, etc. But none of them give as good results as the hypodermic injection of pilocarpin in gr. $\frac{1}{4}$ doses in conjunction with the internal administration of potassium iodid. Sufficient emphasis has not been placed upon the extreme value of these agents in certain deep lesions of the eye.

Discussion.—**DE SCHWEINITZ** (Philadelphia) said he desired to emphasize as his colleague, Freidenwald, had done, the great importance of investigating the fundus in these cases. He believed the old methods of treatment were best, and had never seen a case in which some benefit could not be derived from mercury. **SHORT** (Georgia) called attention to the great prevalence of the disease among negroes, and said that females were especially predisposed. **ZIEGLER** (Philadelphia) said that turpentine was also an excellent remedy in this class of cases, and thought its action somewhat similar to that in typhoid fever. **COULTER** (Chicago) said that he had been struck by the tendency to recurrence of certain types of uveitis in the late winter or early spring months, and he had observed a number of cases in which he could predict a return of the trouble in the months of March and April, and in these cases he had noticed that elimination by the kidneys was below normal, with sometimes a slight suggestion of albumin. **CONNOR** (Detroit) had obtained good results in the chronic cases by the use of potassium or sodium iodid, beginning with small doses and systematically increasing it. **GARDNER** (Chicago) spoke of the value of exercise and electricity, saying they were excellent adjuvants. **WOOD** (Baltimore), in closing, said the cases were much more frequent among females, and agreed with Woodruff as to the value of pilocarpin.

FOURTH SESSION.

Address of Chairman of Committee on Exhibit of Early American, British and Colonial Ophthalmologic Literature.—**CASEY A. WOOD** (Chicago) said it was impossible to divorce ophthalmic from general medical literature. The Greek schools derived much of their knowledge of ocular therapeutics from the Egyptians; in the ancient Nile region there were "eye doctors." From the Greek school the Roman oculists arose, followed by the Arabian ophthalmologists. He referred to the work of Bartholomew Traheron (1543), in which cataract was referred to as a "slimy humor coming about the apple of the eye." The first separate and complete treatise on the eye in English was by Richard Banister, who early observed the hurt done to inflamed eyes by the application of astringent remedies. In the exhibit is a first edition of Newton's book which played an important role in the knowledge of ophthalmology. One of the best known surgeon oculists of the eighteenth century was Thomas Woolhouse, followed by his pupil, John Taylor; the former was the author of many books on the eye and the first to suggest the possibility of making an artificial pupil. In 1759 William Porterfield published his masterly treatise on the eye, and in 1743 William Rowley published a work illustrated by plates made from engravings on steel and copper. John Ware, who died in 1816, wrote many books on ophthalmology. At first the British and French ophthalmologists were best known, but were shortly eclipsed by the German surgeons. Then appeared that greatest

of all British textbooks by Wm. Mackenzie. The first complete work published in America was by John Saunders, who was the first to establish a hospital for eye diseases. The first textbook by an American writer was that of Geo. Frick. Americans early begun to push forward the car of ophthalmologic progress. Isaac Hays, the first editor of the *American Journal of Medical Science*, was a voluminous writer on ophthalmic subjects. The first Canadian treatise was by Henry Howard, of Montreal, in whose work there is a description of removal of a cataract with an arrow-headed knife. In concluding, Wood called especial attention to the excellency of the textbook by Wm. Mackenzie and said there was not today a more accurate account of external diseases of the eye.

Neuroepithelioma Retina (Glioma), with Report of Cases; Illustrated.—C. R. HOLMES (Cincinnati) reviewed the history of the subject and considered the question of whether or not this class of tumors should be classified with the sarcomas. He considered the macro- and microscopic appearance and differential diagnosis. He said no case had yet been recorded where the disease had traveled from one eye to the other—that although both eyes are affected in a large percentage of cases, the disease starts independently in each eye, a fact he considered of interest inasmuch as it would argue in favor of double enucleation to preserve life if performed early. He then discussed several cases in detail.

Discussion.—KNAPP (New York) reported three cases bearing on the subject. WEEKS (New York) spoke of the involvement of mesoblastic tissue in these tumors and thought the term gliosarcoma particularly applicable. WYERS (Cincinnati) referred to a case in which nine years had elapsed since the enucleation and patient was in good health. BAKER (Cleveland) spoke of the difficulties of diagnosis and said several weeks ago he had enucleated an eye which he and several other oculists had called glioma but which the pathologist said was not glioma. JACKSON (Denver) referred to a case he had had recently in an adult where the appearances were such that had it been a child he would have been led to make a diagnosis of glioma. PYLE (Philadelphia) spoke of a case in which diagnosis of glioma had been made and on enucleation it was found to be a subretinal cysticercus. RISLEY (Philadelphia) said there was often great difficulty in diagnosis and the child should be given the benefit of the doubt always.

Detachment of the Retina.—R. L. RANDOLPH (Baltimore) had been impressed with the results obtained by Dor, Winselmann and others with subconjunctival injections of salt solution, and recited two cases in which he had put the treatment to the test, and in which it was undoubtedly beneficial. He thought the tendency of the method was to do good.

Discussion.—HOLMES (Cincinnati) spoke of the operative treatment of these cases, and said the results had not been very brilliant. KNAPP (New York) spoke of the benefit of iridectomy in secondary complications, and said the eye might often be preserved with partial detachment. RISLEY (Philadelphia) thought the salt injections had a tendency to do good, and said he had seen the retina reattach itself, but that always the detachment recurs.

The Disappearance of Opacities of the Crystalline Lens.—WALTER PYLE (Philadelphia) briefly reviewed a previous paper on the spontaneous disappearance of senile cataract and spoke of the artificial production and dissipation of lenticular opacities and of the disappearance of opacities after traumatism. He said there is no question of the authenticity of many reports of the spontaneous disappearance of senile cataracts; that it is not uncommon for opacities as a result of traumatism to disappear, even when the capsule has been penetrated. He said too much stress could not be laid on the value of personal hygiene, treatment of local disorders, careful refraction and proper use of the eyes in arresting the progress of incipient cataract; in certain cases secondary to nutritional disturbances, opacities might disappear under proper treatment. The non-operative treatment of cataract as practised by charlatans and irregular physicians is worthless, dangerous and consists of no beneficent measures not known and properly used by all reputable oculists.

Discussion.—BLACK (Milwaukee) reported for Würdemann 3 cases of lenticular opacities which were absorbed or greatly improved by treatment, which consisted of rest, atropin, alteratives—mercury and arsenic—and regulation of diet. TAYLOR (Wilkesbarre) said that undoubtedly many cases remain stationary or vision slightly improves and that in some cases the opacities do entirely disappear. APPLEBY (St. Paul) recited a case in which opacity of the lens produced by a foreign body had cleared up and the patient had vision of $\frac{30}{60}$. STANDISH (Boston) said the cases of injury by foreign body followed by clearing up of the opacity were only when the foreign body was exceedingly small and the wound a minute one; when a lacerated wound is made the lens is doomed.

FIFTH SESSION.

The Anatomy of the Ocular Muscles and Their Accessory Structures.—J. ELLIOT COLBURN'S (Chicago) observations were based upon the study of two hundred cases examined for errors of refraction. He said the size and mobility of the eyes seems to vary with the size, shape and position of the orbital cavity and its relation to the plane of the face; there is a direct relation between the angles of the base of the orbits and

the facial plane. He considered three types, the emmetropic, hyperopic and myopic. The orbital apices were nearer together in the myopic type. The facial plane was determined by a line drawn through the attachments of the tendo-oculi and orbic. palpe; plane of the base by drawing lines from these points to outer angles of orbits. He considered the anatomic differences in the development of special types. Hyperphoria occurs most frequently in unsymmetrical orbital planes, the direction of the error following the most marked displacement.

The Physiology of the Ocular Muscles.—E. C. ELLETT (Memphis, Tenn.) referred to the planes of reference and rotation and axes of rotation, and spoke of the need of a definite and accepted nomenclature of the ocular movements, with suggestions for such a table. He said that rotation about the anteroposterior axis never occurs in a normal eye, and that "false torsion" does not exist.

Principles Controlling Operative Interference in Heterophoria.—E. J. GARDINER (Chicago) advised thorough examination of the patient and exclusion of errors of refraction with repeated tests of muscular imbalance with careful regard for the power of each muscle. Correction of the ametropia and anisometropia may be all that is required. It should be determined whether the defect depends on the predominance of one muscle, or upon weakness of the opposing muscle and whether the condition is inherent or induced. He thought orthoptic exercise and electric treatment should precede operative measures. He said, if in doubt don't operate.

Principles Controlling Nonoperative Treatment of Heterophoria, Including the Use of Prisms and Prism Exercise.—S. C. AYERS (Cincinnati) spoke of the frequent occurrence of heterophoria in girls and boys who are physically not well developed, but are often strumous and ill nourished; in girls just before the menstrual function develops and in boys about puberty. He said more regard should be paid in the public and private schools to the differences in physical and mental vigor. Much can be accomplished by the correction of the ametropia, the judicious use of prisms and freeing them from the restraints and exactions of school life. Operative measures should not be resorted to until all other resources have been exhausted. We cure esophoria and convergent strabismus by proper adjustment of glasses, though it takes months and years to do it. We should give the weak intern the same chance we give the weak extern.

Discussion.—RISLEY said that it came down to this, that the man who got the best results was the man who had the widest knowledge and best judgment, and referred to the importance of taking into consideration the various reflexes, and cited various disorders as causative, pelvic troubles being a frequent factor. BATES (New York) called attention to the value of the tropometer in these cases.

The Principles Controlling Operative Interference in Strabismus.—EDWARD JACKSON (Denver) said that two kinds of structures share in determining the positions of the eyes, neuromuscular and connective tissues. The latter may determine the position for a time, but the former ultimately predominate. The capacity for hypertrophy under the proper nerve influence is the most distinctive characteristic of muscular tissue. Hence a muscle is too strong or too weak, according to the nerve impulses it receives. The function of a particular eye muscle is not to effect a single movement of the eye ball, but to take an appropriate part in almost every ocular movement. Its importance as a secondary rotator in effecting certain movements comes close to its importance as a primary rotator for other movements. He then considered the various operations for the correction of strabismus.

Principles Controlling the Nonoperative Treatment of Strabismus.—GEORGE M. GOULD (Philadelphia) refers to his suggestion made in 1893 at the Pan-American Medical Congress, and more fully set forth in articles in the *Medical News* of October 4, 1893, and November 13, 1893, that heterophoria is an innervational disease and that therefore surgery is not applicable or genuinely curative. A reaction against operation has taken place and a similar one is looked for as to operation in strabismus, because strabismus is preceded by heterophoria during which it is curable without operation. Chronic or permanent strabismus is also preceded by a stage of acute, functional or incomplete strabismus during which the reinstatement of binocular vision without operation is not impossible. The peripheral mechanism in strabismus is not primarily at fault. All myology resolves itself into neurology. The nonoperative treatment consists in:

1. Prophylaxis.
2. The treatment of ametropia.
3. The treatment of heterophoria.
4. The treatment of amblyopia.
5. The treatment of physiologically curable strabismus.
6. The treatment of alternating strabismus.
7. The treatment of anomalous cases.
8. The treatment of incurable cases.

Prophylaxis consists in instruction of the public and of parents as to the prevention of strabismus by placing the care of the child in the oculist's hands from the age of one year on. Anisometropia and strabismus are the two great causes. Glasses from about the age of two years will prevent strabismus. They can be prescribed by retinoscopy only. The treatment of heterophoria was described in the author's paper before the section last year, and the treatment of amblyopia in the *Medical*

News of December 31, 1892. All cases are physiologically curable if taken in hand early enough. The treatment of alternating strabismus is exceptional, and in anomalous and incurable cases operation is not advised as the results are not usually real or permanent cures.

Discussion.—BLACK (Milwaukee) spoke of the nondevelopment of the fusion center as a factor in these cases and said it was well to first find out the degree of fusion of the eyes and then proceed to the refraction under mydriatics. He also referred to the value of the ambuloscope. STEVENSON (Akron) said the first thing to be done was to determine the condition at rest and said the great reason we had so much trouble with the external ocular muscles was due to the amount of close work and the convergence necessary. We should not only use the Maddox rod for distance but should determine the condition for near work, too. He had used the ambuloscope with considerable success. VALK (New York) did not think it would be proper to condemn a pretty child to go on for years with one eye turned in with the hope that some day by exercises it would turn out properly. It is not fair to the child. RISLEY (Philadelphia) said binocular vision was a matter of experience; it is acquired as are other things in life. He could relate many instances of persons removed from invalidism by tenotomy after other means had been exhausted. GARDINER (Chicago) believed there were many cases in which nothing short of tenotomy would be of benefit. JACKSON (Denver) said the elasticity of the muscles on a given day might depend upon the innervation of preceding days; they vary in their length and in their strength. He thought there was no more reason to suppose that the excessive action of the internal rectus, for instance, is related to some peculiar shape of the bones of the orbit than to suppose that thickness of the biceps is due to the shape of the humerus.

SEVENTH SESSION.

A. A. HUBBELL (Buffalo, N. Y.) delivered an address commemorative of the one hundred and fiftieth anniversary of the publication of the first description of the cataract operation, by Jacques Daviel, and the beginnings of the modern operation of cataract. He said it was somewhat divergent from the ordinary scientific program, but he thought it well sometimes to pause and look back at these things purely from an historic standpoint; that we had honored Helmholtz by public celebration and public tribute, and had honored Donders, but had perhaps forgotten the man who originated the modern operation for cataract, Jacques Daviel. The address was not a history of cataract operation, except as it touched the life of Daviel, which it reviewed from the beginning.

Test Objects and Test Letters.—ELMER G. STARR (Buffalo) considered the importance of painstaking care and accuracy in determining the refraction of the eye, and referred to its great value for the relief of many disturbing conditions; a slight error in the measurement of the refraction might render valueless the attempt to relieve the patient. One of the most serious objections to the test card ordinarily employed was that the glare of light reflected from the white background produces retinal fatigue. He spoke of the effects of irradiation in the use of the card with black background, which was to increase the apparent size of the object and lessen the sharpness of outline. The writer showed a series of letters he had devised which were in color on a ground of another color, the colors used being yellow and blue, which are complementary. The glare of light and retinal fatigue is lessened and the letter is strengthened and made more brilliant. Yellow is used for the ground and blue for the letter, which, being complementary, brings out the letter more sharply defined.

Discussion.—GOULD said the black background being a nonstimulating color to the retina did not tire and fatigue it, especially where accommodation is paralyzed. $\frac{2}{3}$ could be read easily with it because the retina acts physiologically. He thought Starr's ingenious device deserved further consideration. GARDINER (Chicago) suggested that the irradiation spoken of by Starr might be due to uncorrected astigmatism. RANDALL (Philadelphia) called attention to the importance of proper regard for the size of the letter and said that 99 out of 100 make it according to the tangent of the angle, while twice the tangent of one-half the angle was the correct thing. STARR said, in closing, that as to the suggestion of the irradiation being due to uncorrected astigmatism, it was of course worse in that condition, but he had found it troublesome at all times.

Metastatic Sarcoma of the Choroid.—MEYER WEINER (St. Louis) spoke of the extreme rarity of the disease and the scant literature upon the subject. He described a case occurring in his practice, considering the probable location of the primary growth and the organs involved. There were multiple metastatic lesions of the choroid in both eyes. He did not get any history from the patient, did not see the case until postmortem, and had simply reported the case because of its rarity. The growth probably started in the mediastinum, and corresponded in many ways with a similar case reported by de Schweinitz.

The Use of a Mydriatic After 45 Years of Age.—H. M. STARKEY (Chicago) said a mydriatic was often required for proper estimation of refraction with the ophthalmoscope and for examining the media and fundus. He said there was absolute necessity for cycloplegia in certain cases before the refraction could be properly determined, and advised cycloplegia

in other cases, not only for purposes of refraction, but for the relief of retinal and choroidal hyperemia and irritation. He thought that while cycloplegics were required in fewer and fewer cases as life advanced, no age could be arbitrarily fixed beyond which they should not be used, but they should be used with caution after the age of 40 because of the greater danger of glaucoma in the elderly, and of course in certain conditions should not be used at all.

Discussion.—KNAPP (New York) spoke of the use of a cycloplegic after operation for glaucoma, where in healing there occurred a number of fine filiform adhesions; he used a drop of atropin on the first and second days. Had never seen any unpleasant result. He considered that the danger of producing glaucoma were less with eucaïn than with homatropin or atropin. WEEKS (New York) said the late Dr. Noyes used atropin after iridectomy as a routine practice, and kept it up for two or three days, or until the wound was well closed. RISLEY (Philadelphia) said it had not been his habit to use mydriatic after iridectomy for glaucoma and thought it might not be free from danger. HIGGINS (Cortland, N. Y.) thought it was an unfortunate thing that patients referred any eye symptom that might arise for months or years after the instillation of a mydriatic to its use, but thought also that in persons past middle life these symptoms were not altogether imaginary. McREYNOLDS (Dallas, Texas) said he always used a mydriatic after operation for glaucoma and glaucomatous cataract, and considered it a reasonably safe thing to do. YOUNG (Burlington, Iowa) said he believed that the use of a cycloplegic in persons after 45 for refraction was especially indicated in strong robust people where the power of accommodation was excessive and did not think these people at all liable to develop glaucoma. LIPPINCOTT (Pittsburg) said in his earlier practice he had used mydriatics in persons past 45 more frequently than he did now, and had seen ill effects from their use in several cases. JACKSON (Denver) said mydriatics should not only be used with caution after the age of 40, but should be used with caution always. The only case of glaucoma he had seen produced by a cycloplegic was in a woman of 25, and he had no doubt that if the history had been carefully looked into before using the drug a diagnosis of glaucoma might have been made. He considered that it is often as necessary to use it after the age of 50 as before. BATES reported a case in which atropin had been used in patient aged 18, and where the pupil failed to contract and remained dilated for six months after its use. STARKEY said he had found it necessary to use stronger cycloplegics and for a longer time in older people than in younger ones in order to get relaxation.

The Decentering of Lenses for Near Work.—G. C. SAVAGE (Nashville, Tenn.) said that if there were no muscle error presbyopic lenses should be properly centered, so placed that the visual axes would pass through the optical centers. In orthophoria the placing of the presbyopic lenses with their optical centers low would be preferable to placing them high. In simple esophoria both presbyopic lenses should be decentered out, and equally, or what would be the same thing, the frames should be made wider than called for by the pupillary distance. In esophoria complicated with hyperphoria of one eye and cataphoria of the other, the decentering of presbyopic lenses should be confined to the lens for the esohyperphoric eye and should be down and out. In simple exophoria both presbyopic lenses should be decentered directly in, and equally, or the frames should be made narrower than indicated by the pupillary measurement. In exophoria complicated by hyperphoria of one eye and cataphoria of the other, the decentering should be confined to the lens for the exocataphoric eye and should be up and in. In exophoria complicated by hyperphoria of one eye and cataphoria of the other and plus cyclophoria the decenteration should be confined to the lens for the exocataphoric eye, and should be up and in. In hyperphoria of one eye and cataphoria of the other with or without plus cyclophoria, the whole prismatic effect should be given to the lens for the hyperphoric eye; decentering should be down. In double hyperphoria both lenses should be decentered down. In double cataphoria both lenses should be decentered up.

The Genesis and Treatment of the Myopic Eye.—S. D. RISLEY (Philadelphia) considered the origin of the myopic eye as to heredity, disease, physiologic and sociologic evolution and discussed the clinical aspects of myopia in its higher degrees and considered the various methods of treatment.

Discussion.—JACKSON (Denver) said that in the cases of high myopia he had seen nothing pointed to heredity; none of them had myopic parents. But they showed marked evidence of ill health and disturbance of nutrition. He thought the great majority developed during school life. He called attention to the importance of early correction of the refraction as a means of prevention of the development of high myopia, and deprecated the wearing of undercorrecting glasses. RISLEY said, in closing, that he advised the wearing of undercorrecting glasses only in-doors and where the tendency to progression was marked; otherwise they are sure to have headaches and discomfort.

The Need for Correcting Ametropia After Middle Life.—C. M. CULVER (Albany, N. Y.) said that even with Donders' liberal definition of presbyopia most of it begins at the time known as middle life. That it is for presbyopia that most glasses are worn. He considered ametropia as worthy of correction at any time of life and that to try to relieve presbyopia

without correcting attendant ametropia is like building on a foundation of quicksand. He considered that astigmatism changes after middle life more than before.

Discussion.—JACKSON (Denver) agreed with the writer that the correction of ametropia after middle life is just as important as at any other time.

Associated Movements of the Eyes and Head.—WM. C. POSEY (Philadelphia) considered the physiologic movements, including the many and various movements which the head makes through the medium of the neck-muscles. He said there were movements of the head and eyes which were abnormal and which though symptoms of the same disease and having the same origin, are not related in the sense of being dependent upon one another. Under this class he included the movements of the head and eyes which occasionally occur simultaneously in disseminated sclerosis, paralysis agitans and other diseases of the cerebrospinal system. Then there are movements of the head that are compensatory of some failure of one or more of the extraocular muscles to properly perform their function, and under this class he included the position which the head assumes after paralysis of the various ocular muscles. Other movements of the head and eyes, abnormal in character, seem to bear a direct relationship with one another without being compensatory. Under this heading he considered the subject of conjugate deviations, miners' nystagmus and head jerking in infants. The writer reported two cases of synchronous movements of head and eyes due to a central cause.

A vote of thanks was extended to the chairman and secretary of the section for their very efficient work, which had resulted in one of the best meetings the society had ever held. A vote of thanks was extended to Haab for his kindness in coming to address the section. Haab briefly thanked the section for having conferred the honor upon him of making him a member and said he was very proud of it and would try to make a worthy member. He regarded the honor as the coronation of all the kindness he had met with in this country.

The Committee on Nominations.—Chairman, John E. Weeks, New York; secretary, Frank Todd, Minneapolis, Minn.; representative in the House of Delegates, Frank Allport, Chicago.

Section on Nervous and Mental Diseases.

SECOND SESSION.

Exceptional Forms of Pressure Palsies.—J. D. MCCARTHY (Philadelphia) reported his observations of 564 cases of this condition. Among this series were three cases of ulnar palsy, one case of bilateral median palsy and one case of single median, and all the other cases of this series were cases of palsy affecting the musculospiral nerve. In one of the cases reported the element of alcoholic intoxication acted as a causative factor, and the treatment employed was to immediately stop the alcohol and build up the general nutrition, at the same time giving the patient massage and galvanism.

Discussion.—F. SAVARY PEARCE stated that he had never seen a case of pressure palsy in which there was not a history of alcoholism, and most of them which had come under his observation had been during acute attacks. This condition he thinks is due to the abtunding of the sensation by the alcohol, so that the patient is not aroused from the paresthesia which has developed. The prognosis in these conditions was thought to be favorable, provided the patient has previously been in fairly good health and that the treatment, consisting of massage, strychnia and galvanism, is carried out. WILLIAM H. WALLING reported a case of pressure palsy affecting the musculospiral nerve which had come under his observation. This condition had been produced by the pressure of the crutch under the arm, and had been diagnosed by his physician as rheumatism. The case was treated with galvanism and made a good recovery. MCCARTHY stated that he felt that this condition was rather a lowering of the nutrition of the nerve than it was an abtunding of the sensation, and that while very little was known about the pathologic condition of the nerve, what changes had been observed were thought to be rather a degeneration of the nerve than a distinct neuritis.

Concerning Morphin Addiction and Its Treatment.—C. B. BURR (Flint, Mich.) stated that 50% of the cases of this condition occurred in physicians and their families, which he felt was due to the too prevalent habit of seeking relief in this manner from particularly arduous duties, the habit soon obtaining the mastery of the victim. The most difficult cases to treat that have come under the author's observation have been those of short duration, and those who have manifested the least discomfort from the use of the drug have been in the habit of employing alcohol in conjunction therewith, and it was thought good results would probably be obtained by the administration of cardiac stimulants prior to beginning treatment. The rapid withdrawal of the drug, substituting therefor strychnin, quinin, cocoa, aromatic spirits of ammonia and giving hypnotics at night as needed, was thought to be the best method of procedure, as it thus reduces to a minimum the period of the patient's suffering.

Discussion.—D. R. BROWER stated that while he favored the rapid withdrawal of the drug he did not think that it should be withdrawn immediately, as cases had come under his observation in which this method of procedure had been followed by

insanity. H. A. TOMLINSON stated that he believed in the immediate withdrawal of the drug in these cases, and that while he had sometimes seen a patient greatly depressed and even in a state of apparent collapse, he had never observed any real harm following this method of procedure. The patient's recovery is more rapid and the length of the sufferings during the withdrawal of the drug is much shortened. In the cases which have come under his observation in which alcohol has been used in conjunction with the morphin, the patients usually make more rapid progress, not only so far as the immediate results are concerned, but the permanent cure is more certain. J. P. MCBRIDE believed that the greatest difficulty was not in breaking the patient of the habit, but in preventing a relapse. Treatment in an institution was thought to be the ideal method and the gradual withdrawal of the drug was favored rather than the immediate removal. In order to prevent relapses, it was recommended that the patients be kept in an institution for a year after they have abandoned the habit. JOSEPH H. COLLINS stated that he felt the morphin should be reduced to a very small amount as soon as the patient was placed under treatment and entirely removed within the first ten days or two weeks, except possibly in cases where the habit had been acquired to overcome an asthmatic neurosis, in which case he felt that it might be necessary to give the patient morphin to control the paroxysm. In the treatment of the collapse which often follows upon the total withdrawal of the morphin, a very hot bath has been observed to be of considerable service. The value of institutional treatment and the detention of the patients until entirely cured was recognized, but under the present system of legislation was thought to be impossible. CINE said that tendency to immediately withdraw the drug was more particularly prevalent among those connected with institutions, and under such conditions he believed that this was the proper method, the general condition of the patient being observed by the attendant and when it is seen to be necessary, morphin being administered to tide him over a sudden collapse. The speaker referred to the growing use of drugs in the South and particularly to the use of dope, which is a mixture of cocaine and other drugs and is generally used in conjunction with opium and alcohol. A. H. RICHARDSON stated that the indications for the immediate or gradual withdrawal of the drug should be the physical rather than the psychic condition of the patient. As a general rule the best results would be obtained by the immediate withdrawal, as the sufferings of the patient would be terminated sooner and would be no greater than if drawn out over a longer period. Reference was made to a case in which hydrobromate of hyoscin had been given hypodermically in the treatment of this condition and the patient pronounced cured. A few days afterward she was seized with an attack of acute pneumonia and was greatly depressed, and it was only by careful nursing and attention to her heart that a fatal result was averted. This remedy should be used with great caution if used at all in these cases. J. P. MCBRIDE referred to the practice in vogue among medical students of taking morphin or some other drug to buoy them up during some strain, particularly at the time of examinations, which habit is accentuated after they enter upon active practice whenever they are confronted by more than ordinary exigencies. The tendency to use the drug in this manner as well as the giving of it to patients, except in cases of urgent necessity, was remarked, and the necessity for the teachers in medical colleges to impress upon the minds of their classes the derogating effect of these methods was commented upon. The speaker thought that such preventive measures as this are of more value than remedial methods. BURR, in closing, stated that there was no case in which the drug could not be safely withdrawn within two or three days, being reduced to a very small quantity in the interim. The importance of keeping the patient in utter ignorance of what he is taking was also noted.

A Plea for a Simpler Therapy in Nervous Diseases.—JOSEPH H. COLLINS (New York City) commented upon the excessive use of drugs by some physicians in these cases, and expressed the opinion that better results would be obtained by hygienic and dietetic treatment and the employment of less complex medicinal principles.

Discussion.—H. N. MOYER stated that many of the nervous conditions were the result of nutritional disturbance, and that he believed that external measures, such as hygienic and dietetic treatment would be far more effectual in overcoming the disorder than drugs. H. A. TOMLINSON thought that whatever curative effects were exerted by the drugs in these cases would be accentuated by the carrying out of these external factors. J. D. MCCARTHY referred to the fact that these methods had been practised by S. Weir Mitchell for many years with great success, and stated that the discovery of new drugs and the advances in therapeutics had impressed the physicians too much with the value of the latter. ADELE A. CLEASON stated that in her experience the greatest difficulty had been with neurotic patients, some of whom had even become insane from the taking of large quantities of medicine. COLLINS, in closing, stated that he had seen so many cases of locomotor ataxia which had been treated with mercury and potassium iodid as to produce very deleterious results that he had been prompted to write this paper. In regard to suggestion in neuropathic case, he stated that no matter what form the suggestion assumed, it was used in a

manner which benefited the patient, and that it was to be commended.

Three Cases of Involuntary Movements in Locomotor Ataxia.—J. H. W. RHEIN (Philadelphia). The first, which occurred in a widow, 66 years of age, in whom the disease had been present for 19 years, presented the typical choreiform movements. The second case was that of a widow, aged 55 years, which presented all the usual symptoms of tabes, in addition to which there was an almost constant clonic contraction of the toes of the left foot, except during sleep. The movements were sometimes slow and sometimes rapid, but always rhythmic, and the patient was unconscious of the condition until her attention was called to it. The third case, which occurred in a man aged 57 years, showed in addition to the ordinary symptoms a fine rhythmic tremor resembling Parkinson's disease in the hands.

Discussion.—H. N. MOYER stated that he was inclined to look upon these as being cases of disseminated sclerosis of the posterior column, which thus presented the typical signs of locomotor ataxia. The speaker cited a case which had come under his observation which had been diagnosed at the time of its inception as ataxia, and upon the diagnosis of which several of the foremost physicians both of this country and Europe varied, but which finally turned out to be disseminated sclerosis. D. R. BROWER suggested the possibility of the patient with choreiform movements having Huntington's chorea in association with the locomotor ataxia, and cited a case which had come under his observation in which alcoholic neuritis and tabes were associated in the same individual. J. M. MCCARTHY stated that tabes beginning in the posterior column would present the same symptoms as would disseminated sclerosis commencing in that region. Attention was directed to the fact that in many of these cases of disseminated sclerosis the so-called cardinal symptoms are absent, and in several cases of this condition which have recently been examined pathologically by the speaker that condition existed. F. SAVARY PEARCE stated that he believed the choreiform movements which Rhein had described were probably cerebral in character, whether the disease be of a sclerotic or nutritional type. A. J. PRESSEY stated that he felt that the symptoms described portrayed a primary condition of posterior sclerosis, although it might not be confined to that area at the present time, and cited a case which had come under his care in which, at the beginning of the posterior spinal sclerosis the individual had no tremor, but in which the patient ultimately developed typical symptoms of disseminated sclerosis, and finally became mentally involved. RHEIN stated that he had not intended to convey the idea that they were cases of disseminated sclerosis and that they did not present the mental changes and characteristic tremor noticed in the latter condition, whereas in one case ataxia was present and the lateral columns were involved, which is a condition that is quite frequent in the last stages of locomotor ataxia.

THIRD SESSION.

Encephalic Localization, Especially with Reference to Osteoplastic Operations for Brain Tumors.—CHARLES K. MILLS (Philadelphia) gave in detail the method for the localization of cerebral tumors, which he illustrated by means of diagrams, in which the brain was divided up into several zones, a tumor in any one of these areas producing certain symptoms, both local and general nervous manifestations, from which the exact locality could be determined, and thus the site of the operation mapped out. The fact was remarked that tumors always confine themselves to one of these zones and do not develop partly in one area and partly in another.

The Pathogenesis and Etiology of Epilepsy.—F. SAVARY PEARCE (Philadelphia) mentioned the direct causes as being heredity and metabolic poisons, while extraneous poisons and traumatism were thought to act as reflex causes. Just as any other trait of character is inherited so may the epileptic tendency be transferred to the progeny and this is especially apt to occur in the case of alcoholics. It was stated that from 50% to 75% of the cases of epilepsy are hereditary, the remainder being produced by some accident in early life or from reflex causes. Various observations which have been made by Fery and others tend to confirm the theory that metabolic poisons, such as uric acid, leukomains, ptomaines, etc., act as inducing factors in the production of epilepsy. The products of infectious diseases, such as septicemia, toxemia, etc., and the various chemic and vegetable poisons all act as reflex causes, and syphilis of the parent is often manifested in the child in the form of irritable cortical neurons, with resultant epilepsy. Injuries to the brain, such as fractures of the skull, meningitis, etc., are well-known causes of epilepsy and there is no doubt that psychic trauma as a result of fright plays a considerable role in this direction, although the usual tendency under such circumstances is to attribute it to a predisposition.

Epilepsy: Its Psychopathology and Medicolegal Relations.—H. A. TOMLINSON (St. Peter, Minn.) referred to the fact of the small value of psychopathologic observations, which is principally due to the fact that the opportunity so seldom presents itself for the study of the brain in idiopathic epilepsy before the development of changes common to all forms of degeneration, the brains of such epileptics as have died from other disease and been examined showing no changes other than those present when death resulted from a similar condition and the epilepsy was not present. It was felt that all

these cases probably had what might be called an epileptic constitution, or a defective development of the brain which renders the cortical cells in the motor area abnormally unstable, so that any disturbance of the system is likely to cause an epileptic seizure. Psychic epilepsy was thought to be a sequence of the convulsive form of the disease rather than a distinct condition, probably being preceded in all cases by at least attacks of petit mal. Regarding the medicolegal relations of the epileptic the author stated that he believed that many of his abnormalities were superinduced by the defective condition of the child from infancy which had resulted in his being yielded to by his family and consequent progressive degeneration.

Epilepsy: Its Treatment, Hygienic, Medicinal and Surgical.—D. R. BROWER (Chicago) referred to the formation of the "epileptic habit" and stated that for the successful treatment it was necessary not only to remove the cause of the disease but to break up the habit, the greatest difficulty in that direction being to get the patient to persevere in a systematic course of treatment. The hygienic treatment should be disciplinary, pedagogic and dietetic, and for those cases of epilepsy where the instability is particularly marked, institutional treatment is recommended. The use of lavage, colonic flushing, laxatives, baths and massage, in order to increase the elimination, was recommended. If an aura is present it should be treated, and for this purpose nitrite of amyl in various-sized doses was thought to be of value. The bromids were thought to produce beneficial results in at least 80% of the cases, and in conjunction therewith was recommended the fluid extract of adonis vernalis, and acetanilid, phenacetin, antipyrin and belladonna were thought to be of value in certain cases. As counter-irritants to check the symptoms of bromism were recommended arsenic, strychnia and cauterization. In the syphilitic cases the iodids and mercury must be employed, and instances were noted in which nitroglycerin had produced favorable results. Surgical procedure was thought to be of but little value. For the relief of the paroxysm inhalations of chloroform and hypodermic injections of hyoscin hydrobromate were recommended.

Institutions for the Epileptic.—WILLIAM P. SPRATLING (Soynea, N. Y.) thought that the best results could be obtained in these cases by having the three different classes of institution established: (1) Colonies for the insane; (2) colonies for selected cases; and (3) colonies for all cases, except the insane. In the colonies for the selected cases are to be placed those who are not totally incapacitated, allowing them to work at various vocations, thus diminishing the cost of the support of these institutions, as well as keeping the patient occupied. In the institution of which the writer is in charge, the patients are performing all sorts of work, some of them being entrusted with the care of stationary engines, although, of course, for such occupations as this specially selected cases are employed.

Discussion.—J. D. MCCARTHY stated that in his opinion the explanation of the etiology of epilepsy was purely theoretical and he felt that the most accurate explanation was afforded by the toxic theory and the assumption of the instability of the cortical cell. The speaker believed that many of these cases, whether resulting from autointoxication or from alcoholic excess, were cases of a reflex type, the development of the convulsion being paroxysmal. A distinction was noted between these cases of pure epilepsy and the convulsions which were produced by a change in the organic condition of the cortex itself.

Medicolegal Aspect of Epilepsy.—A. B. RICHARDSON (Washington) divided epileptics into three classes, (1) those cases in which the congenital defect shows itself in retarded and imperfect mental development, and of which the epileptic attacks are only another expression; (2) those cases in which the occurrence of the epileptic attacks is the first evidence of the epileptic attacks, which commencing in early childhood result in imperfect mental development, and (3) that class of cases in which the mental capacity is up to the average and in which the disease occurs at a later period of life. The most difficult medicolegal cases are the so-called psychic equivalents, or periods of unconscious or subconscious cerebration without very evident implication of the muscular system. F. SAVARY PEARCE stated that in the treatment of these cases of epilepsy particular attention should be devoted to the condition of the intestinal tract, and rectal irrigation and lavage, and in the cases of fistula in ano, surgical treatment was thought to be indicated. The diet should be carefully regulated and predigested foods, proteids and iron are thought to be of value, particularly in anemic patients. The reflex causes, such as deafness, the conditions of the eyes, etc., should be carefully considered and mental and physical work regulated. The use of the bromids, while they should be employed only while the patient is under the observation of the physician, venesection, eliminative measures, hydrotherapy, such as hot baths and hot packs, were recommended. As a cardiac stimulant tincture of digitalis in conjunction with the bromids was recommended. T. D. CROTHERS reported a case which he has treated by means of the electric light bath, the light being supplied by about 100 16-candle power lamps. Six months ago when this patient first started this treatment he was having a paroxysm every two or three weeks, but he has not had one since. FRANK P. NORBURY reported several cases of nocturnal epilepsy, some of which had occurred in students and the others in men who were doing hard mental work. The attacks in the students

would usually occur just prior to an examination when they were under unusual stress. These cases have been treated by the bromids and eliminative measures and in none of them has there been noticeable mental deterioration, although the paroxysms still continue at irregular intervals. J. H. LLOYD remarked upon the value of the colony method of treating epileptics and stated that he felt that idleness acted as a marked factor in the accentuation of the epileptic paroxysms. A. A. STEVENS stated that he felt that in these institutions for epileptics there should be constructed some kind of an elastic floor so as to prevent injury to the patient in falling. Nocturnal epilepsy was thought to be the most difficult variety to treat. The most important factors in the treatment of these conditions were thought to be the elimination of the toxic processes and the controlling of the epileptic habit. Ammonium bromid was thought to be of value and as cardiac tonics digitalis and strophanthus were recommended to be used in conjunction therewith. H. A. TOMLINSON stated that he did not think that there was such a condition as psychic epilepsy in the literal sense of the word, but that there was a condition which is characterized by an aberration from the normal manifestations of the individual which has no relation to his environment and in which his consciousness is not involved. SPRATLING cited a case of psychical epilepsy which had come under his observation a short time previously, in which even an expert observer would have failed to detect any evidence of mental commotion, although the patient had a typical psychical epileptic seizure. MILLS remarked that he believed epilepsy belonged to the great class of developmental diseases. In regard to treatment he felt that the best results would be obtained by carrying out the colony farm idea. The mental and physical habits of the individual should be regulated. The bromids in combination with other remedies, such as codein, digitalis, strophanthus and cactus, were thought to be of great value, and as a nutrient cod-liver oil was mentioned. KENISTON stated that he had seen good results in evading the paroxysm obtained by compressing the carotids. WALLING reported two cases which had been treated with galvanism, which had resulted in a freedom from the attacks for two years. RUBY referred to the work of Ohlmacher in his pathologic investigations of epileptic cases, and expressed the opinion that efforts in this direction would be productive of good results.

FOURTH SESSION.

Continuing the discussion on epilepsy, H. N. MOYER stated that he felt these conditions were largely the result of a defective nutritional condition, and reported a case in which the use of suprarenal extract in five grain doses three times a day had prevented the occurrence of an attack for about a year and a half, the patient previously having had frequent attacks. He has used this remedy in about 25 cases, and considers that at least one-fourth of this number have made good recoveries. A. A. ESHNER remarked that he believed the two principal causes of epilepsy were sensitive nervous systems and various irritants. The use of digitalis in conjunction with the bromids was recommended, and in some cases the mixed bromids were thought to be preferable to a single bromid. The greater difficulty in controlling the attacks of petit mal was noted, and in the cases in which the attacks occur at long intervals it was thought that the best results would be obtained by endeavoring to remove the causative agent. H. A. TOMLINSON stated that he believed the treatment should be directed to the constitutional condition. WILLIAM P. SPRATLING had observed good results follow the use of the horse-nettle berries in selected cases. In a series of 1,200 cases observed at the Craig colony over 50% were attributed to heredity, in 16% one of the parents being epileptic, while the hereditary predisposition was traced to insanity, tuberculosis and alcoholism in 8%, 14% and 15% respectively of the others. The treatment should be individualized, and while the value of the bromids in certain cases was recognized, deleterious effects have been observed following the administration of this drug.

Prognosis in Mental Disease.—F. P. NORBURY (Jacksonville, Ill.) stated that he considered that prognosis was both an art and a science and should be based upon (1) family history; (2) etiology; (3) pathology; (4) clinical history; (5) complexly related physical diseases. It should be comprehensive and attempt to include (1) the prospects in the present attack; (2) its effect upon the patient's future, and (3) its effect upon his descendants.

Static Electricity in the Treatment of Morphinism.—A. J. PRESSEY (Cleveland) stated that he believed the best results were obtained by the gradual withdrawal of the drug, static electricity being used to relieve the symptoms which usually accompany the withdrawal period, such as nausea, nervousness, headache, neuralgic pains, sleeplessness, etc. The course of treatment employed by the author is to give all cases from 10 to 20 minutes per day of this treatment during their stay in the institution, in conjunction with other therapeutic measures. The patient should remain in the institution until entirely well, and under proper conditions it was thought that most of the cases of drug habituations could be cured.

Discussion.—RICHARD DEWEY mentioned the fact that the mica plate machines were said to retain their power during hot and damp weather better than the machines with glass plates. PRESSEY stated that many of these cases occurred among sporting men and women, under which conditions there was almost

uniformly a relapse, while in the cases occurring in the intellectual classes he believed from 70% to 80% made permanent recoveries. The derogating effect of the various institutions which claim to cure the habit in a few weeks was commented upon.

Peripheral Neuritis as a Complication of Whooping-cough.—AUGUSTUS A. ESHNER (Philadelphia) considered the causes of neuritis under three subdivisions: (1) Physical, (2) chemic, and (3) biologic. The symptoms mentioned as being most prominent in neuritis were pain, tenderness and swelling in the course of the affected nerves, with muscular weakness and wasting and degenerative electric reactions and alterations in the reflexes. At first there may be increased sensibility, but usually it is more or less impaired, and associated with this there may be ataxia. The rarity of the complication of neuritis and whooping-cough was commented upon, and mention made of the fact that the inflammation might involve many nerves, as well those of a special as those of a common sensibility, six cases of the latter variety being reported, four of which made good recoveries.

Discussion.—E. G. CARPENTER believed that the majority of neuritis due to external causes were of toxic origin and this was borne out by pathologic observations. These substances produce changes in the cortical cells and vasomotor system and eventually destroy the nutrition to the neuron paths. ESHNER remarked that he believed the condition of occupation neurosis to be a functional and nutritive disturbance rather than a pure neuritis.

FIFTH SESSION.

Determinate Factors in the Cause of Insanity.—EUGENE G. CARPENTER (Columbus, O.) divided the causes of this disease into (1) heredity, and (2) strain, about 60% of the cases being attributed to the former factor. Under the head of strain may be mentioned alcohol, which is directly responsible for from 12 to 20 of the insane, beside being a factor in the production of this condition in the progeny of the afflicted parent. About 4% of the insane population are suffering from parietic dementia due to syphilis, and it is believed that syphilis is responsible for from 8% to 10% of all cases of insanity. Among the other causes are injuries to the head, ranging from 2% to 3%; drug habit and tuberculosis are mentioned. While a large number of lunatics died from tuberculosis, the writer is prone to believe that a large number of these cases contract the disease while in the asylum. Among the other classes of insanity are the insanity of pubescence, adolescence, paranoia and senility, the first three being phases of the so-called developmental insanity. Infectious disease, toxemia and moral causes also play an important role in the production of insanity, although in the latter cause it is thought that a pathologic basis is always established previous to its manifestation.

Discussion.—MCBRIDE stated that he believed that in many of the cases in which tuberculosis was associated with insanity, the tuberculosis was contracted after the inception of the mental condition rather than being a preexisting causative agent thereof. Among the other factors tending to produce insanity were mentioned Bright's disease, prænatal anatomical defects, heredity, traumatism, syphilis and alcohol. TOMLINSON expressed the belief that in all cases of insanity there existed a primary cerebral instability or defectiveness, which under the influence of the tuberculous, alcoholic or syphilitic conditions develops into insanity. DEWEY felt that the condition of melancholia which is often found in the tuberculous insane was secondary to the insanity and was produced by the effect of the patient's physical condition upon his mind. He did not believe that tuberculosis played much part in the production of pure insanity. SEARCY expressed the opinion that many cases of insanity were the result of excessive use of the brain, especially during childhood. CARPENTER stated that he looked upon insanity following tuberculosis as a reflex condition, the cerebral functions being impaired by the nutritive disturbance caused by the disease.

Causes Other Than Syphilis for Paresis.—H. P. SIGHTS (Paducah, Ky.) stated that while he recognized the fact that syphilis is present in a large percent. of the cases, he felt that even in those it was rather the mental worry and anxiety that caused the paresis than the physical condition. Paresis is of most frequent occurrence at about the age of 45, and usually the patient has been subjected to excessive cerebral strain, irregular eating and sleeping, and very often is of a sensitive temperament. In support of the view that syphilis was not as prevalent as a cause of this disease as is generally supposed was cited the fact that among the patients in the Western Kentucky Asylum personal observation of the author had revealed the fact that paresis existed in but 2% of the colored inmates, while 18% of the white inmates were suffering therefrom, although syphilis is far more prevalent among the negroes than the whites. Sexual excesses and alcohol were thought to play a role in its production in the same manner that would any other factor inducing worry. The disease should be recognized as early as possible, and treatment, consisting mainly of rest and mental relaxation, at once instituted, the small percentage of recoveries in this condition being attributed to the late diagnosis and the difficulty in securing the mental relaxation of the patient.

Discussion.—SYDNEY A. DUNHAM reported a case of paresis which had come under his observation, in which he could

obtain no history of specific disease and where he did not believe the disease existed, although the records of the asylum where the patient had been treated before consulting the speaker had noted the presence of syphilis. For this supposed condition potassium iodid had been administered in large quantities, and at the time he left the institution he had atrophic ulcers of both heels, was much emaciated and was in a very precarious condition. Nuclein in 30-drop doses, three times a day, was administered, under which treatment, in conjunction with nutritive aids, the patient made a good recovery. DEWEY reported several cases which had come under his observation in which specific disease could be excluded, when he attributed the condition to excessive mental work, probably accentuated to some extent by alcohol which may have been taken with a view of strengthening their endurance. TOMLINSON expressed the belief that in many cases of paresis associated with syphilis the specific disease was not present as a causative agent but was contracted during the first stages of the paresis. SIGHTS, in closing, remarked that in the cases where syphilis was present the mental anxiety acted as a superinducing cause of the paresis.

The Diagnosis of Brain Abscesses.—HERMAN H. HOPPE (Cincinnati) mentioned the difficulty of determining whether or not the abscess was present, and if so, locating it. The importance of the early recognition of the condition was remarked and it was thought that surgical interference was much more likely to be attended by success when the operation was performed before the rupture of the abscess. The writer classified these abscesses under four subdivisions: (1) traumatic abscesses caused by an open scalp wound or a fractured skull; (2) abscesses resulting from a purulent inflammation of a bone or bony cavities, (a) otitic abscesses, (b) rhinogenic abscesses, and (c) abscesses due to caries of the bones of the skull; (3) tuberculous abscesses; and (4) metastatic abscesses, cases illustrating the different classes being reported. The consideration of the symptomatology of this condition was thought to be facilitated by considering them in three groups: (1) those due to suppuration, (2) those due to increased intracranial pressure, and (3) local symptoms.

Section on Laryngology and Otology.

SECOND SESSION.

The Teeth as a Cause of Pathologic Conditions in the Throat, Nose and Ear.—KATE W. BALDWIN (Philadelphia) reported a number of cases in which treatment of the teeth had relieved symptoms on the part of the throat, nose and ear. If there is a preexisting suppurative condition it is not cured by treatment of the teeth but the suppurative conditions are relieved much more rapidly if the teeth are put and kept in good condition.

The Diagnosis of Carcinoma of the Larynx.—O. T. FREER (Chicago) made a plea for the earlier diagnosis of carcinoma of the larynx. Ordinarily the diagnosis is not made until nothing but total laryngectomy offers any hope. Often the diagnosis is difficult, even for an expert, and frequently little or no attention is paid by the patient to the early symptoms, such as persistent hoarseness, which may be present for years before the advent of graver symptoms. Too often the general practitioner fails to even inspect the larynx in the presence of hoarseness. Chronic hoarseness, especially in men past 40, should make a laryngoscopic examination an imperative duty to all practitioners. Most cases occur after 40 and in men, but the disease is not rare in earlier life or in women. In the later course of the disease there is pain, with sloughing and ulceration, which would serve to exclude benignant growths. The pain usually occurs as otalgia, during swallowing or spontaneous, darting from the larynx to the ear, angle of the jaw or back of the head. In Freer's experience pain is not a regular or prominent feature of laryngeal carcinoma. Suspicion of carcinoma may be aroused by dyspnea, especially by a slowly increasing laryngeal stenosis in an old man. As a very late symptom, the breath becomes offensive, but this may be present in syphilitic necrosis of the cartilages. Freer showed that the symptomatology may be suggestive, but that dependence must rather be placed upon the laryngoscopic and microscopic examination. The laryngoscopic appearances of carcinoma was gone into quite thoroughly from the standpoint of differential diagnosis. The paper was accompanied by 15 illustrations.

The Early Appearance, Diagnosis and Treatment of Tuberculosis of the Upper Air Tract.—WALTER F. CHAPPELL (New York City) stated that more or less definite symptoms preceded every local deposit of tubercle in the larynx, but as they are not pathognomonic they cannot be depended upon. Recurring and persisting hyperemias, infiltrations and tumefactions are the most usual and characteristic signs of early laryngeal tuberculosis. An edematous or semisolid appearance of the mucous membrane is usually a precursor of tuberculous ulceration, especially when it occurs over the arytenoid cartilages, aryepiglottic fold and epiglottis. At times the swelling is so great as to seriously interfere with respiration and deglutition. In tuberculous ulceration there is always a long history of hoarseness or pain, with other laryngeal symptoms, running a chronic course. Pain is an important diagnostic symptom;

in tuberculous ulceration there is pain on swallowing. The pharyngeal infections are usually secondary to pulmonary and laryngeal tuberculosis. Tracheal tuberculosis is more often present than is generally supposed. The tuberculous ulcers are usually found on the anterior wall of the trachea just below the vocal cords. During six years Chappell had seen 15 cases of tuberculosis of the tongue, of which 14 were secondary and 1 primary. As to nasal tuberculosis, ulceration on the anterior part of the triangular cartilage of the septum is not rare, but the essayist had observed only two cases in other parts of the nasal chambers. In considering the treatment, Chappell took a conservative view, and thus he would not use the curet except to relieve dyspnea and dysphagia in advanced cases, or to remove tumefied tissue and for scraping ulcers during a quiescent period. He uses a dull curet. Speaking of climate, he would rather take his chances with a good climate without special medical treatment than the best treatment in a poor climate. Residence near the sea or any large body of inland water or in large cities is bad for tuberculous throats.

Laryngectomy for Carcinoma.—E. FLETCHER INGALLS (Chicago) based his paper on the last operation performed by the late Christian Fenger. A preliminary tracheotomy was done through the third, fourth and fifth cartilages three weeks before the laryngectomy and the temporary tracheobronchitis had subsided. The patient was anesthetized with chloroform, administered through the cannula. A Hahn cannula was inserted. The operation was begun by making an I-shaped incision, the upper transverse cut following the hyoid bone, the lower one a line below the cricoid cartilage. The vertical incision was made in the median line. The two flaps thus outlined containing the skin, superficial fascia and prelaryngeal muscles were held aside. A curved needle was next passed under the hyoid bone, which was then pulled forward by a strong silk ligature. This brought the laryngeal region into strong relief, the thyroid, cricoid cartilages and trachea lying bared to view. The larynx was next opened in the median line, the thyroid and cricoid cartilages being split vertically and the thyrohyoid membrane severed from the hyoid bone. At the anterior inferior angle of the right quadrilateral plate the thyroid cartilage was found very thin, and when touched with a probe broke down before it, yellow carcinomatous material in a state of fatty degeneration oozing out. This condition and the fact that the growth was found to have involved the anterior half of the other cord made Fenger decide that total laryngectomy was necessary. He called attention to the fact that the laryngoscopic appearances gave no proper idea of the great extent of the disease. Though no enlarged lymphatic glands could be detected he thought that the best course would be to follow the laryngectomy in about six weeks by an operative search for lymphatic metastases in the carotid and submaxillary regions. The patient was lowered into an extreme Trendelenburg position, the body being inclined at an angle of 45°, so that in addition to the tampon cannula the position of the patient with the head downward made it impossible for blood to enter the trachea or for the saliva to flow into the wound. The patient's heart at this time began to beat very slowly and finally stopped for a few seconds, but he was revived and the operation finished without further anesthesia. Contrary to the usual practice, Fenger began the removal of the larynx by severing it from its attachments at its upper part, as this gave a better chance to treat the pharynx and esophagus conservatively because they could thus be brought into view and separated more carefully from the larynx. It also gave great freedom of motion to the larynx and made it possible to lift it from its bed and twist it so as to expose the lateral portions in order to reach the vessels at its side. These were the superior laryngeal, superior thyroid and inferior laryngeal arteries. The vessels were divided between two artery forceps and each severed portion tied. Working downward in this manner on both sides the larynx was carefully dissected from the pharynx and esophagus, and then drawn forward and removed from its attachment to the trachea. After the larynx had been removed it was found that the growth had extended close to the base of the epiglottis which had been left with the intention of using it for closing the wound in the pharynx. Because of the nearness of the carcinoma it was thought safest to sacrifice the epiglottis. The opening into the pharynx and esophagus was now closed by sutures from above downward, thus completely restoring the pharyngeal tubes. The severed end of the trachea was brought out of the wound and stitched to the skin where the lower transverse incision met the median incision. The skin flaps were turned in and sutured, care having been taken that every nook and corner of the wound was properly drained. Hahn's cannula was removed and the old cannula replaced. No blood had entered the trachea around the sponge. Catgut was used for the ligatures and pharyngeal sutures. The knots were tied inside the pharynx. Moist boric acid dressing was used. The recovery was uneventful, except that on the fourth day the esophageal tube was retched up by the patient, and on the same day a communication formed between the pharynx and the wound from sloughing away of the anterior wall of the pharynx. This untoward event afterward prevented the patient from swallowing liquid food, which would escape through the pharyngeal fistula. Whether this fistula will close spontaneously in a few months or be closed by a plastic operation remains to be determined. Fenger concluded that it would be better not to use a permanent esophageal tube for feeding,

but to nourish the patient by rectum for a few days and afterward to teach him to swallow liquids, for this purpose using sterilized milk, or if this did not succeed an esophageal tube should be used for a time at each feeding.

A Case of Sarcoma of the Maxillary Sinus: Partial Excision of the Upper Jaw, with Remarks.—JOSEPH S. GIBB (Philadelphia). The maxillary sinus is an unusual site for the development of malignant growths, but they are not so infrequent in this locality as the statistics would seem to indicate. Gibb reported a case in which the maxillary sinus was, no doubt, the original site of the malignant growth, and several similar cases had come under his notice. Sarcoma of the nares is of slow growth compared with other malignant growths affecting this region. There is very little data on which to base conclusions in the similar conditions affecting primarily the maxillary sinus. Rapidity of growth is not unique in this locality, but it is not the usual cause. The presence of nasal discharge with a growth in the nasal chambers and concurrent swelling of the same side pointed to disease of the sinus and justified the removal of the nasal tumor for microscopic examination. Transillumination rendered invaluable aid in showing the antrum filled by a foreign body, and the natural inference was that this foreign body was of the same nature that the microscope showed the nasal growth to be, and that the latter was a mere extension of the former. The history of the case emphasized the utter futility of any operation in malignant disease of the nose that does not include the entire removal of the growths. The ligation of the carotid, by starving the tissues, plays an important part in the treatment of sarcoma of the nose and accessory cavities. J. A. GIBBONS (Syracuse) thought in such cases the x-rays might be used, although at the present time its use is more or less experimental. G. V. WOOLEN (Indianapolis) reported a case of sarcoma involving the axilla, neck, and the groin. Under the use of the x-rays upon the upper growths that involved the neck and axilla, the symptoms improved and these growths melted away entirely, while the tumors in the groin that were not treated continued to grow. There was a fatal termination in the case, which the physician in charge attributed to toxemia due to the liberation of toxic material.

THIRD SESSION.

C. R. HOLMES (Cincinnati) addressed the section on the development of the organ of hearing. He said the evolution was traced from the simplest form in lower animals up to and including the human ear.

Prophylaxis of Sinus Diseases.—D. BRYSON DELAVAN (New York City) made a plea for the early recognition and treatment of sinus disease.

Acute Sinusitis.—A. G. STUCKY (Lexington, Ky.) emphasized the difficulty of diagnosis, and called attention to the irregularity in shape of the sinus, and its size, location and communication. The obstruction of the natural outlet is a prominent etiologic factor. The temperature and pulse do not correspond with the severity of the subjective symptoms. In the way of palliative treatment, rest in the recumbent position and the use of dry heat and sodium salicylate are most important. In the way of surgery turbinectomy may be performed, to facilitate drainage, or the radical operation may be done.

Functional Tests of Hearing: Some of the Principles Upon Which They are Based.—WILLIAM LINCOLN BALLENGER (Chicago). 1. The range of hearing in adults under 55 years of age is approximately 16,000 to 48,000 vibrations per second. After 50 or 55 years, hearing for the upper tones is somewhat reduced, so that the very aged do not, as a rule, hear tones higher than 37,000 vibrations per second. This should be borne in mind, as the case might otherwise be mistaken for one of labyrinthine disease. (a) Anything which disturbs the normal tension of the drumhead and ossicular chain will diminish or abolish the hearing for the two or three lower octaves. (b) Any disease affecting the perception apparatus will diminish or abolish the hearing for the upper tones in the range of hearing. 2. Hearing by bone conduction is approximately one-half as long as hearing by air conduction. This rule is subject to considerable variation in normal ears, but for practical purposes in the study of these principles we do not need to make a closer analysis. (c) Hearing by bone conduction is increased in those affections of the middle ear which disturb the normal tension existing between the drumhead and ossicular chain. (d) Hearing by bone conduction is diminished or abolished in affections of the labyrinth or perception apparatus. 3. The intensity of hearing by bone conduction is either increased or diminished by morbid conditions within the middle ear or labyrinth. (e) Any disturbance of the normal tension existing between the drumhead and ossicular chain will increase the intensity of hearing by bone conduction. (f) Any disturbance of the perception apparatus will diminish the intensity of hearing by bone conduction. Thus Ballenger would classify all the functional tests of the ear under the various principles which they elucidate.

Some Notes on Aural Vertigo.—B. ALEX. RANDALL (Philadelphia). In all cases of vertigo coming to the otologist he should employ minute methods of study as to the tympanic and labyrinthine condition. The general aspects of the patient's condition should also be carefully investigated. All involvements of the accessory nasal cavities should be excluded or relieved. He should investigate the refraction and

muscular relations of the eyes, as well as learn whatever teaching may be given him by the eye grounds, and abating nothing of the local treatment by inflation and massage which the aural condition may seem to demand, and using strychnia and other tonics, according to the general needs of the patient. He may yet employ as a direct and almost specific means of treatment that vigorous vascular tonic, adrenal extract.

Transillumination of the Nasal Accessory Sinuses During Acute Coryza.—CAROLUS M. COBB (Boston). To do satisfactory work it is necessary to have lamps of much greater candle-power than those usually sold by instrument dealers. It is rare to find the accessory sinuses dark on transillumination during the early stages of acute coryza. During the later stages of a prolonged attack it is usual to find one or more of them dark. Hemisideria is often associated closely with antrum disease. It is almost the rule to find one or more of the nasal accessory sinuses involved when the ears are affected during acute coryza.

An Unusual Case of Nasal Syphilis in a Child, and a Consideration of Syphilitic Nasal Tumors (Syphilomas).—CLEMENT F. THEISEN (Albany) had seen three cases in which the only evidence of syphilis was a nasal syphiloma. In the case reported, in a boy of 7 years, no history of syphilis could be obtained until after the patient was under treatment for two months, when there was disclosed an infection of both parents before the birth of the child, and under potassium iodid the child recovered promptly.

The Diseased Middle Turbinate.—CHARLES H. BAKER (Bay City, Mich.). The middle turbinate should be removed in all cases of recurrent polypus of the middle turbinate; in all cases of recurrent polypus of the hiatus semilunaris; in all cases when the removal of polypus opens and reveals collections of pus issuing from the sinuses, and in cases when by pressure the enlarged turbinate causes reflex nervous ailments such as muscular asthenopia, persistent headache, chorea or epilepsy and especially asthma.

The Arch Operation for Deviations of the Cartilaginous Nasal Septum, with Some Conditions Complicating Its Performance.—EMIL MAYER (New York City) emphasized the value of the arch operation for the correction of deviations of the cartilaginous septum, and replied to recent criticisms of that operation.

Remarks Concerning the Management and Treatment of Rhinopharyngeal Tonsils by the General Practitioner.—ROBERT C. MYLES (New York City). The paper was intended especially for physicians in remote districts where the patients may not be seen by a specialist. First, cocaine should be used for half an hour, using a .1% solution of cocaine as a spray through the nose, then a stronger solution (10% or stronger) should be applied by means of a curved cotton carrier behind the soft palate to the uppermost part of the adenoid, the applications being repeated at intervals of 5 to 10 minutes. The child is then wrapped in a sheet, passed around the body several times with the hands down by the sides, and the sheet is tightly and securely joined from top to bottom. The child is placed on the right knee of an assistant or attendant, who embraces him firmly with arms and legs, and the head is securely held by the nurse. For general use a medium-sized sharp semicircular curet is passed upward behind the soft palate until it strikes the posterior border of the septum; then it is firmly driven upward until it strikes the vault and presses upon the rostrum of the vomer. The cutting surface of the curet must be kept at right angles to a perpendicular line through the center of the head. A quick, firm movement is made directly backward and downward. Usually the large mass removed consists of nearly all of the adenoid tonsil proper. The curet is reintroduced, and rapid and moderately firm scrapings are made in both of the fossas of Rosenmüller and over the posterior pharyngeal wall. Then the finger is introduced and any remaining masses are broken up and smoothed down. The after-treatment consists in rest and the insufflation of equal parts of aristol and boric acid. The patient should be kept where he may readily be seen by the physician in case of serious bleeding. Severe hemorrhage calls for the use of the tampon.

The Degenerate Tonsil.—EDWIN PYNCHON (Chicago) advocated thorough removal of the tonsil by dissecting it out with the electrocautery. In this way the field of operation is practically bloodless. Owing to the lack of hemorrhage there is no loss of the local anesthetic.

Section of Materia Medica, Pharmacy, and Therapeutics.

SECOND SESSION.

The Mydriatic Drugs: their Chemistry and Active Principles: the Tropicins.—ALBERT B. LYONS (Detroit) referred to henbane, its mixtures and properties, and drew attention to the difference between the drugs of commerce and drugs in their pure state, by which physicians were often misled in prescribing. Plants of the several genera, atropa, datura, hyoscyamus, mandragora, scopolia and duboisia, all belonging to the natural order Solanaceae, contain certain alkaloids closely related chemically, characterized by their power to dilate the pupil of the eye. These alkaloids are called tropicins. Among these the most important are hyoscyamin and atropin (isomeric), and hyoscin and atrosin (also isomeric).

Chemists had not agreed to the nomenclature of certain alkaloids. The author pointed out the different results from the same plant grown in different climates and soils. This was frequently overlooked. Other points were the chemic characteristics and relations and the proportions of the several alkaloids present in each. After dealing with the methods of assay the speaker showed the insufficiency of any standard based on determination of total alkaloid in the drug. The use of the polariscope was noticed, but owing to small quantities of the alkaloid it would have to be a very delicate instrument to make distinctions. There was a wide field open for investigation, which was of two kinds—commercial and scientific. It would be a shame for the scientific class of investigators to pay tribute to the commercial; to them belonged the glory, and a glorious opportunity was given them in connection with the American Medical Association.

The Physiologic Action of the Mydriatic Alkaloids.—HORATIO C. WOOD, JR. (Philadelphia) pointed out the groups into which the natural mydriatics might be divided physiologically. Four mydriatics occur in nature. After referring to the similarity of atropin and hyoscyamin the author pointed out that hyoscyamin was widely distributed and that atropin was found chiefly in belladonna. The effect of the atropin group on various organs was shown, and diagrams used with reference to its special effect on the pupil of the eye. The dilation of the pupil and the manner in which it might take place were shown, and also that the dilation obtained by atropin was observed after the removal of the eye from the body. So closely are hyoscin and scopolamin connected that some investigators are unable to detect any difference. His own belief is that there are two distinct bodies, identical in physiologic effects but with chemic evidence of distinction. After giving account of his researches on hyoscin and its physiologic action, the conclusion was that there were many gaps in their knowledge and great need for careful scientific study.

The Mydriatic Drugs and their Active Principles: the Ophthalmologic Relations.—CHARLES A. OLIVER (Philadelphia) was absent, but on vote the secretary, C. S. N. HALLBERG (Chicago) was instructed to read the concluding portion, which referred to the improper and undue application of such drugs as cocain, eucaïn, etc., and the means of controverting harmful and injurious localized results.

Discussion.—ROBINSON said there might be ophthalmologic contamination through cocain solution used carelessly; boric acid was not always admissible but they might guard against contamination by using 45% alcohol, which he considered the best vehicle. It is not always necessary to have it that strength; it could be diluted as needed; he had kept it for as long as seven months without any trace of decomposition. LYONS (Detroit) thought one of their great difficulties was to get things as they should be, and WOOD (Philadelphia) emphasized what had been said by Lyons, declaring that very often physicians did not know what they were giving their patients. He cited a case in which he had prescribed a certain drug where the effects produced showed that it could not have been the drug he prescribed. The manufacturers did not always supply what was ordered and he had no great faith in them.

THIRD SESSION.

The Cardiac Stimulants.—JOS. M. PATTON (Chicago) introduced the digitalis group and showed their tonic effect, the efficiency of which might be easily impaired. When and how to give was the practical question; the principles which govern digitalis applies to rest of group; indication as to use are insufficiency of heart murmurs and irregular action of heart; relatively good results are had from digitalis. In acute degeneration of the heart digitalis is excluded; there is difficulty in recognizing changes; considered impossible by some; when alcohol and tobacco have caused trouble much good might be obtained from the use of digitalis; it should always be administered with regard to the conditions present. He had found it safe and efficient in vascular trouble. Personally he had never observed the cumulative effect of this drug and Jacobi had said that in prescribing it for children it did not lose its effect by continued doses. Strophanthus, spartein, caffein, strychnia and other cardiac stimulants were also considered, but they were considered less valuable, strychnia being regarded as the most valuable next to digitalis.

Discussion.—BEATES had one principle to guide whether stimulant or sedative had to be used; it was one and the same thing; contraindications often called for more heroic measures; there was not sufficient importance attached to the arterial system; in using stimulants one did not operate on the heart only, but also on the arteries; he gave reasons for using both stimulants and their opposite. ROBINSON said that the cumulative effect of digitalin was due to something outside of digitalin. He recommended camphor as a good cardiac stimulant, a 10% solution produced marvelous results; suprarenal extract was a temporary stimulant, but the results were evanescent. HEINRICH STERN (New York) expressed himself as strongly in favor of adonidin. WOOD (Philadelphia) wanted activity of heart kept up, and was not in favor of drugs to any extent; suprarenal extract he considered useless in its action on the heart. COHEN (Philadelphia) advocated use of digitalin in larger doses than he had at first given, also musk or camphor; did not agree with Wood as to effect of adrenalin; it was not inert, and he had seen some very remarkable effects through

its being held in the mouth and absorbed by the mucous membrane; also dropping adrenalin into the conjunctiva had produced wonderful results on the heart. W. F. THOMPSON (W. Va.) favors rest and the study of the idiosyncrasies of the patient; strychnia may be better than digitalis, but each case is a law unto itself. HALLBERG gave some reasons for the conflicting testimony about digitalis.

The Cardiac Sedatives.—L. FAUGERES BISHOP (New York) spoke of the complicated action of cardiac depressants and the power of decreasing the activity of the circulation being so mixed with other properties that these drugs were among the most difficult to use. In the practice of the present day they are but little considered; newer and safer drugs replace them; some valuable uses remain; when chiefly indicated; not much use in heart disease proper; aconite in large doses a violent poison; in suitable cases cardiac depressants are most striking in their physiologic activity and in their power of relieving symptoms; administration requires skill; often given so small a quantity that no effect is produced; dosage should be small, frequent and guided wholly by physiologic effect; he recommended saline carbonate baths; rest in bed, suitable diet, general treatment.

Discussion.—BEATES finds patients experiencing syncope resulting from use of aconite rarely recover; how aconite depresses the heart. COHEN said there was a difference as to the meaning and use of terms; he cannot consider aconite as a cardiac sedative, rather cardiac depressant; adrenalin is excellent to contract the arteries.

Pneumonia: Venesection and Counterirritation.—JAMES TYSON (Philadelphia) said there were two periods in which venesection may be of service in the treatment of pneumonia—in the first stage and at a later date, when cyanosis and overdistention of the right heart threaten the patient. Counterirritation is sometimes serviceable in delayed resolution. Venesection is serviceable when there is engorgement of the right heart. Good judgment and decision are required; opportunity to do good is sometimes lost by hesitation. Blood-letting is more effective when used with saline solution but there is danger of overcharging the heart.

Discussion.—WELLS heartily agrees with author as to blood-letting, but wishes more stress had been laid on reasons for it; toxin in blood circulation is one of the reasons for venesection in the early stages of pneumonia; solution injected equals amount of blood withdrawn. COHEN thinks danger in venesection lies in trying to introduce solution too quickly and using too large a needle; large quantity not necessary; he advocates the use of oxygen.

Pneumonia: Its Drug Treatment.—ARTHUR A. STEVENS (Philadelphia) showed that complications were often the cause of death; treatment must be aimed at the infection itself; nature helps herself; injection of quinin useful; antipneumonic serum has not been sufficiently tried to prove its efficacy, and has not been so successful as antidiphtheric serum. There is no specific treatment, it must be symptomatic; defensive rather than heroic; no one rule of thumb for every case. Each patient must be carefully studied from the standpoint of toxemia with relation to the demand for circulatory stimulants—digitalis, strychnin and ammonia. The author attaches special value to hypodermic injections of camphor; and of ammonium carbonate for expectorant; he is against antipyrin and the use of morphin and chloral.

Discussion.—ROBINSON thinks serum useless as pneumonia is not due to any specific germ; it is impossible to say whether drugs are of use. WELLS considers statistics fallacious; in his experience the strong go off and the weak get well, disagrees with last speaker and finds only one germ. WOOD treats patient rather than the disease; there is no specific for pneumonia; there are very few infectious diseases for which there is a specific. PATTON thinks use of serum may not be entirely futile; irritating the lung by aspirating needle in delayed resolution produces good results. In concluding, STEVENS declared himself as not in harmony with WELLS as to pneumonia being more fatal among the robust than the weak; too much stress is laid upon the work of the right ventricle in pneumonia.

Intraorganic Treatment of the Pneumonic Lung.—W. BYRON COAKLEY (Chicago) indicated a nondepressing means of promoting and controlling a high leukocytosis in which the microorganisms are killed by injection; heat is more effective than salt; hemoglobin displacement by carbon and its prevention; infusion and bleeding indispensable factors in the treatment of this disease.

Discussion.—McPHERSON advocates venesection and the instillation of hydrogen dioxid in lung.

FOURTH SESSION.

Glycosuric Symptom of Disease and its Medical Treatment.—HEINRICH STERN (New York). An unusual amount of sugar in the urine is by no means absolute indication of presence of diabetes mellitus. It may be concomitant with or sequential to various other transitory as well as chronic anomalies; glycosuria may appear after injuries and extirpation of less important organs; after ether and chloroform anesthesia; after administration of drugs and chemicals like ploridin, mercuric chlorid, chlorid, chloral, morphin, strychnin, etc.; after inhalation of carbon monoxid; after excessive use of tobacco or alcohol; and after infectious diseases. The good results attained by the institution of rigid diet in diabetes and

its concomitant glycosuria lead to the supposition that analogous improvement would accrue from it in other glycosurias. In fact, little discrimination is exercised between the various types of chronic glycosuria. It is evident that excellent empiric methods in combating diabetic state to treatment of all glycosurias, irrespective of underlying cause, is irrational and injurious in many instances. Bring to mind that glycosuria is but consequence of manifold causes; we will understand that it is useless to treat symptoms alone, and must try to influence causes and conditions themselves. It is not necessary to combat glycosuria whenever it occurs. If the patient feels well, and there is no symptom of physical or mental decline one should not attempt to interfere with a slight glycosuria. End may not justify means, especially if routine treatment implying deprivation is employed. On account of general application of dietary methods to the management of various glycosuric states, and on account of injudicious prescribing and the polypharmacy of former years, medical treatment has of late been relegated to the rear. In the degree, however, in which the influence of diet upon amelioration of all forms of melitura has been overestimated, the potency of medicinal agents upon various substrata of the glycosuric symptoms is nowadays unquestionably underrated. Indications for institution of dietary treatment alone: All patients exhibiting the usual symptoms of diabetes mellitus whose urine is free from acetone, disacetic and beta-oxybutyric acids should be subjected to strict dietary relations until all symptoms have completely subsided, or until all symptoms, excepting glycosuria, which meantime has declined to less than 1%, has disappeared. Indications for institution of medical treatment alone: 1. All cases systematically declining under regulation of diet. 2. All cases in which long continued rich diet cannot effectually compel cessation of glycosuric symptoms. 3. All cases excreting less than 1% of glucose in which the patient suffers from some disorder, but does not exhibit the second symptom complex of diabetes mellitus. 4. Such cases in which diet has brought about subsidence of diabetic phenomenon, but in which continued mental excitement is liable to effect a recurrence of glycosuria. Indications for both dietary and medical treatment: All cases in which diet and special hygienic treatment is indicated in which the patient, on account of circumstances, is prevented from properly executing them. 2. All cases exhibiting symptoms of diabetes mellitus, but which for reasons accompanying affections, like chronic nephritis for instance, cannot be kept under rigid antidiabetic regimen. The author then presented a number of conclusions and specific lines of treatment.

Discussion.—THOMPSON had large number of negroes in practice; not syphilitic; has never seen diabetes in them. WOOD has used methylene-blue with beneficial results. SLACK draws attention to potato diet as giving better results than bread. ROBINSON said there are many diseases about which we know very little; diabetes and rheumatism less than any other; if physicians had ordered potato diet a few years ago they would have been laughed at. Replying, the author said they knew all about glycosuria although not about diabetes; does not occur often in negroes; potato results explained by the amount of water in potatoes as compared with bread; had been using methylene-blue for three or four years without results.

Some Sugar Tests.—ALBERT B. LYONS (Chicago) did not read paper, but gave informal talk on subject. Reduction tests are not so important now as a few years ago. The copper, bismuth, and indigo tests depend on reduction; they are inconclusive, yet not without value; the normal urine contains reducing substances and things accidentally present may not indicate sugar at all; among newer reducing tests are methylene-blue, litmus blue, safranin, potassium ferricyanide. Johnson's test is most useful because easily made and approximately quantitative; the phenyl-hydrazin test for glucose is superior to reduction.

Discussion.—STERN does not think phenyl-hydrazin test good; approved of fermentation and the new instrument because it prevents the absorption of gas. His own gave good results in five hours and was an improvement on the one shown.

The External Preparations and Their Therapy.—CARL S. N. HALLBERG (Chicago) first gave review and history and grouped them from a therapeutic standpoint; classified the ointments according to the vehicle; absorbative and semiabsorbative; suppositories; vehicle for rectal, vaginal, urethral; gelatin not good for rectal; for plasters, many people believed in anything that would stick; still, plasters served useful purposes; directions for preparing different plasters; oleates do not penetrate the skin; collodions; liniments; preparations of the newer dermatology pastes, glycerogelatin, salve mulls, etc., deserve more attention from dermatologists.

FIFTH SESSION.

Cutaneous Therapy: Some of the Newer Methods.—CHARLES W. ALLEN (New York), after a brief review and history, said that enough had been achieved by radiotherapy to justify certain conclusions. Author presented report of 35 cases of cancer treated by radiotherapy in which the success was such as to lead him to believe that while they could not claim any very brilliant success, it had been shown that in the x-rays they had an adjunct which might be of incalculable benefit. Notes of nine breast cases were given; five cases still under treatment and showing improvement. Case of man

suffering from cancer, who improved under treatment; death had been predicted from day to day; could eat nothing; now able to walk around. Three cases of sarcoma under treatment, tumor decreasing perceptibly. One case after being partially treated went to surgeon; man now in pitiable condition; being treated by rays, not because of any hope of recovery, but for mental help to patient; man would die and it would be quoted as a death due to the use of the rays. One case of leprosy reported as improving. Other cases of skin disease, ulcer, etc.

Discussion.—C. H. SKINNER (New Haven) considered the question of permanence of cure as not so important as made out; pain was alleviated by use of radiotherapy just as it was by medicines which did not effect permanent cures. He had seen a number of cases which he had dismissed as cured. He showed the use of the rays in surgery; remove cancer by surgery and then use the rays. BAER considered the question of sarcoma an interesting one; in carcinoma let the surgeon do his work. Before coming to Saratoga he had given the rays in a case of a moist ulcer which had dried up in 15 minutes; he would see the patient on his return. He asked for the experience of members in the use of static and coil machines. R. VARNEY (Detroit) had worked with both; found coils expensive to operate and dangerous to patient; preferred the static machine; found better results; exposed every day with but little risk; might burn patient, but got warning and knew extent of burn; get as much penetration from static as from coil. It is right to say that every malignant case should be exposed to the rays after operation. ALLEN said rays may do harm; uses static, coils and storage battery; prefers coils for therapeutic treatment; uses rays before operation.

Mercury in Syphilis: Its Administration Hypodermically in Contrast with Other Methods.—EUGENE FULLER (New York) said that all were agreed as to the use of mercury. It is administered in many different forms and in different ways. He showed objections to administering by mouth, and said the cutaneous method is objectionable because of soiling of clothing. In using hypodermically best results obtained. Patient must stand erect with buttocks exposed, and everything must be done speedily except the injection itself. When obstruction is met with withdraw the needle and select another spot; sore spots are sometimes left. The first few injections may bring systemic changes. He closed with a strong appeal for hypodermic injection.

Nerve Nostrums and Their Dangers.—WILLIAM P. SPRATLING (Soyea, N. Y.) was convinced that one of the reasons for the success of these nostrums was that they were secret. If only the element of secrecy were removed the quack would lose his power. It is the duty of physicians to do all they can to suppress quackery. The way might be long and tedious, but it ought to be done for the sake of the public. One method he would suggest would be the preparation of literature on the subject; let eminent physicians write a series of articles and have them published in their medical journals and afterward in the daily papers and magazines, paying for the insertion if necessary. The drugs to be avoided should be named. It would cost money, but the money could be raised. Physicians were occasionally to blame for prescribing these secret nostrums. It was derogatory to their character to do so whether the nostrum was their own or some other's make.

Hypnotics, Analgesics and Resultant Drug Addictions.—SMITH ELY JELLIFFE (New York) thought that the people of today bear pain with less equanimity than formerly. Physicians are often to blame for prescribing when it would be better to encourage the patient to bear the pain. Insomnia and pain are relieved by the use of drugs, headache being relieved for the time by an expenditure of 10 cents. Physicians are easily led to give relief instead of seeking for the cause of the trouble. All these drugs are dangerous if used indiscriminately, and in this way the least harmful becomes the most deadly. He condemned bromo-seltzer and phenacetin, and said that combinations of well-known drugs are claimed to be new, and physicians describe in detail these wonderful new drugs. This is emphatically wrong; these are sold from 50 cents to \$1 an ounce, when the constituents can be bought for 10 cents a pound. Legislation is imperative if physicians cannot find a means of checking this. The physician may prescribe an opiate, but should keep his mouth shut. The introduction of nerve drugs by honest chemists deserves commendation.

Discussion.—The majority of the members present took part in the discussion which followed the reading of these two papers, and thoroughly endorsed the main ideas contained therein. It was unanimously resolved that arrangements should be made for their publication.

Dosage of Liquid Medicines: Simple Plan for Greater Accuracy and Metric Measures.—CARL S. N. HALLBERG (Chicago) points out the anomalous state of affairs, that physicians should concern themselves so much about quantity, and when it comes to dosage speak of spoonfuls. Spoons should not be used, but graduated glasses. Advocating the use of the metric system of weights and measures, the author introduced the copy of a bill which he wished the Association to support in Congress, to the effect that on the first of January, 1904, all departments of the government should use the metric system, and that on January 1, 1907, the metric system should become the legal standard throughout the country.

Miscellaneous Business.—In the course of the discussion

in this section a motion was passed unanimously that at future meetings of the Association exhibitors should not be permitted to distribute literature and samples to any but members of the Association wearing the badge. It was also resolved unanimously that boards of health were acting beyond the proper sphere of their duties in manufacturing and selling vaccine virus and serums, in this way interfering with the interests of manufacturers and their own legitimate duties.

The New Officers.—Chairman, S. Solis Cohen, Philadelphia; secretary, C. S. N. Hallberg, Chicago, Ill.; member of the House of Delegates, W. B. Hill, Milwaukee, Wis.

Section on Physiology and Pathology.

SECOND SESSION.

Specimen of Normal Intestine Perforated by a Lumbricoid.—LOUIS C. AGER (Bay Ridge, N. Y.). The specimen was taken from a man 36 years of age, who the week previous had complained of diarrhea; there were signs of a mild peritonitis, which suddenly became worse and it was supposed that the man was suffering from appendicitis; operation followed. Although perforation was suspected the man's condition would permit of no further interference. At the necropsy the worm was found to have perforated the bowel about 10 inches above the caecum coli.

Discussion.—WARD asked if the bowel was normal, as cases had been reported when the worm had perforated a diseased intestine, but as the worm could not coil itself to brace against the side, he did not see how it could possibly develop sufficient force to puncture normal tissue. The worm's skin is rather brittle and when bent sufficiently will break. The male worm, which the specimen undoubtedly is, has its tail slightly bent and contains the genital organs; besides, the head is slightly more pointed than the female. EVANS stated that in the lower animals, as pigs, these worms are often imbedded in the mucosa, but rarely go below this coat. WARD said that this was frequently observed in cases of ankylostoma, ucinaria, and trichocephalus, but lumbricoids normally do not. AGER replied that the bowel was normal, and that it would be a rare instance that this worm should have found an ulcerated spot. Furthermore, cases have been reported when they were discharged from the umbilicus (abscess), and even from the eye-duct and external ear canal.

Points Relative to Precipitins.—W. A. EVANS and A. GEHRMANN (Chicago) defined the limits of dilution of blood or dried blood in different solvents, such as normal salt solution, acetic and caustic soda, the latter they thought the best, and the strength was .001%. The test was easily carried out in solutions of 1 to 1,000, and an evident reaction was still appreciable at 1 to 100,000, which is far beyond the spectroscope. Four methods of keeping the serum were described, but they preferred the one where it is dried in filter paper over sulfuric acid or calcium chlorid; some degeneration was noticed in specimens by other methods. The practical application of these serums and antiserums is to determine the adulteration of cow by horse meat, and this is accomplished by the immunization of rabbits. Certain pigments that might be taken for blood can easily be told.

The Identity of Nerve Force and Electricity.—J. EMMETT O'BRIEN (Scranton, Pa.) compares the insulation of nerves, with their complex cross-currents, etc., with the same that is observed in telegraphy and telephone outfits.

Report of a Case of Ankylostomiasis.—CLAUDE A. SMITH (Atlanta, Ga.) presented the specimens of ankylostoma from a man and two dogs. He believes that these parasites are commoner than is usually supposed. People who are dirty and careless about their eating, particularly in the Southern States, are liable to this disease. The difficulty is in diagnosis, but the embryos are easily found in the fecal discharges of infected persons. Constipation is usually marked. In the instances where the dogs were affected, thymol failed to cause the worms to be discharged. The man in this case was also affected with a pleuritic abscess, from which he died. WARD questioned the identity of these worms, as several species of ankylostomas are known and some are known not to be pathogenic to man. The term ankylostoma means nothing more than bacillus. Smith replied that in his case he had infected a dog with the specimen from the man.

Some Rare Forms of Chronic Peritonitis Associated with Productive Fibrosis and Hyaline Degeneration.—A. G. NICHOLS (Montreal). The various forms of chronic peritonitis he divides into (1) exudative, (2) exudative and adhesive, and (3) hyperplastic. The last is mainly considered. The characteristic anatomic feature is hyperplastic growth of fibrous tissue with more or less hyaline degeneration, which occurs in two forms, sporadic and diffuse, both have ascites present, both may result from simple or tubercular inflammations, and many cases of sporadic forms, discovered at operation and regarded as tuberculous, are in reality due to simple infection. These are no doubt the cured cases. All suspected cases, the lungs, lymph-glands, etc., should be carefully examined for primary infection. Cases of simple hyperplastic peritonitis are rare but are most common from chronic inflammation of abdominal viscera, as the gallbladder, ulceration of the stomach and intestines, etc. Many examples are really affections of several serosa "Zuckerguss" of the Germans. Multiple progressive

hyaloserositis is a better name for these hyperplasias. He reports a case occurring in a man having the previous history of alcoholism and syphilis.

Discussion.—WELCH (Baltimore) commended the author upon his classification and mentioned cases under his observation. These cases have to be studied with great care and many sections of this hyperplasia have to be made before nests of cancer cells are found. The same condition is found in colloid cancer of the stomach and sometimes with the bilateral tumors of the ovaries. The etiology is still an open question, but is evidently allied to chronic pachymeningitis and old recurrent hemorrhagic conditions of the pelvis. LECONTE observed a case in which the liver was encased in a capsule that resembled a coconut shell, from which the liver could easily be peeled out. Though many cases of this description have been reported the probability is that they are simply tuberculous forms; the fact is that it is difficult to tell the difference between endothelium and epithelium proliferation.

THIRD SESSION.

Clinical and Pathologic Aspects of Rabies.—D. J. MCCARTHY and M. P. RAVENEL (Philadelphia) divided the three stages of rabies into: (1) Irrelative, (2) febrile, and (3) convulsive; the onset of the disease is from a few days to six weeks. The pathologic evidences of this disease are in the central nervous system and the intravertebral ganglia; the latter is perfectly characteristic, as they occur in no other disease. This conclusion was based upon the examination of 105 animals. The ganglion cells of the cord show a degeneration; the border cells of its capsule wander into the cell itself, while the nucleus becomes indistinct. This change in a suspected animal can be regarded as affirmative of the disease. AGER (Bay Ridge, N. Y.) mentioned a case where a man had been bitten by a dog; he took the Pasteur treatment and some weeks afterward he developed a double facial paralysis but finally recovered. MOORE thought that any number of nervous diseases would show the changes as described. LOEB said that these lesions were frequently observed in other toxin poisonings. RAVENEL thought that if these lesions were found with a history of rabies and no peripheral neuritis the diagnosis was absolute. A great fault in many cases was the fact that the animal was killed before these degenerations take place. It is best to allow it to die and not kill it. Many specimens have been sent to him in alcohol for diagnosis. This cannot be accomplished as the specimens are in this instance ruined. BECKER has performed autopsies upon animals supposed to have rabies, although he found no change that would not have happened under other toxins. LECONTE asked how long was it safe to let a suspected animal live, and if there was any suspected pathologic change in chronic cases. RAVENEL answered about three days was needed for diagnosis, but it is best to leave the dog die. He knew no records of chronic cases. MCCARTHY said he could express no opinion upon the case of facial paralysis. As far as these conditions are described, he believed them typical.

Observations on the Absorption of Albumins and Globulins.—CHARLES T. MCCLINTOCK (Detroit) said that the study of this absorption was important, as many physicians persist in giving toxins by the mouth and not hypodermically. Although it is supposed that albumins undergo a change when they enter the stomach, some enter the system unchanged, and just the same with the toxins; although the greater part may be digested and changed, some is absorbed without change; therefore a person may be protected by taking a toxin in this manner; the amount will be necessarily larger. This observation was the same in rectal feeding. An infant feeding upon the breast of its mother receives protection through the lacteal secretions. The absorption of the stomach was found to be relatively small, and that most occurs in the lower and small bowel and colon. This was influenced by drugs and irritants. BECKER tried similar experiments to ascertain the amount of absorption in diseased conditions. Alcohol favors the amount of toxin absorption by paralyzing the digestive cells.

The Chest Pantograph: Its Physiologic Significance and its Clinical Application.—WINFIELD S. HALL. The construction is similar in plan to the artist's pantograph, with a long arm provided with a rotating semicircle that enables the tracing point to encircle the chest in its movements, while the short arm outlines the contour of the chest upon paper. It makes an exact tracing of the contour of the chest small enough to be filled in one's records.

FOURTH SESSION.

The Laboratory Method of Teaching the Medical Sciences.—W. T. PORTER (Boston) outlined the course to be given at Harvard University. The method of concentration has been adopted and one study is to be given at a time. The first four months are to be given to anatomy; the second to physiology; the third to pathology; after this clinical studies follow. Physiology is not to be taught by lectures; the student begins with his own simple demonstration of some experiment, more complex ones are done by demonstrators. When the branch is sufficiently understood by the students they have short lectures of a half hour on such material as may be demanded. After the student has performed an experiment he writes a description of it, and once a week he reviews his whole work thoroughly. Examinations are to consist of practical application of work done by him. Physiologic apparatus for

the student's use was exhibited, its construction was as simple as possible but exact. This gave the greatest amount of usefulness with little liability of breakage. The student was expected to carry out his experiment with the help of an assistant, but usually they managed to get along alone.

Clinical Methods of Determining Blood Pressure.—JOSEPH ERLANGER (Baltimore) said that apparatus depending upon mercury to show the fluctuations in the pulse were not exact, as the finer curves were not registered, besides such apparatus as is so devised either registers the maximum on the minimum pressure, but none registered the mean pressure and this really was what was desired, and for this reason he had devised his pattern. A demonstration was given.

Discussion.—HALL asked if any clinical work had been done with it, and thinks it will prove invaluable especially when anesthesia is to be administered. COTTON asked if the pressure upon the arm would give any cyclic disturbance of pressure in other parts. BECKER asked the price. ERLANGER answered that a ring around any part of the body would disturb pressure. The price was about \$30 or \$35. Clinical work is being done, but it is too early to give any details.

A Demonstration on the Growth of the Tubercle Bacillus and Other Organisms Resembling the Tubercle Bacillus Upon Fruit and Vegetables.—M. J. ROSENAU (Washington, D. C.) showed the difficulty of distinguishing them. He thought that they all might be the same bacillus, but of different pathogenic activity. Although there was a decided difference between the extremes, they resembled each other as the grades are advanced. His idea in making these cultures was to find a medium that would produce a typical growth so an exact diagnosis could be made, as the stains have been proved to be fallible. The heat produced one of the best growths.

Discussion.—McFARLAND asked if the growth depended upon the amount of sugar the vegetable contained. SMITH inquired how these vegetables were prepared. ROSENAU replied that the question of sugar was under consideration and that the preparation was the same as in other culture mediums.

Recent Investigations of the Mechanics of Digestion.—W. B. CANNON (Boston) studied the movements of the alimentary canal, and has found some movements that are rather novel and unsuspected. His studies were carried out by the x-rays, the animals were fed and afterward given pellets of bismuth subnitrate. These could be distinctly seen. The movements of the stomach were two: First, a tonic contraction of the cardiac end, while there was a wavelike contraction of the pyloric end. These pills, by this gradual motion would come to the pylorus and be pushed through to the small intestine. There was no sweeping motion, or circulatory motion as described; the food remained in the same relative position; this, therefore, allows salivary digestion to go on in the stomach for some time uninfluenced by the gastric secretions. These waves of the pyloric end are a reverse peristalsis rather than peristalsis. In the small intestines a peculiar rhythmic annular contraction takes place that divides and redivides the food, in the white rat it happens as often as 60 times a minute, in the dog and cat it is somewhat slower. This shows how well the food is mixed. In the large bowel there was a reverse peristaltic motion for some time, then there would be a tonic contraction that would work the food onward. Then this reverse peristalsis would work it back again, and afterward carry it into the small bowel. In some animals that were fed by the rectum and had been previously purged, the food could easily be seen working back into the small bowel. Another interesting observation was the fact that all these motions stop from fear, rage, and other cyclic influences.

Discussion.—HALL thought that these observations were of the greatest influence as they upset all theories previously considered. WILBUR asked how long these motions were observed after injections of food. CROFTAN asked if there might not be some irritation caused by the presence of a foreign substance like bismuth. O'BRIEN thought there might be some explanation in this theory for the difficulty in unloading the bowel in cases of appendicitis. CANNON then replied that antiperistalsis and this tonic contraction of the bowel depended upon the condition of the animal as to starvation, etc. Although antiperistalsis is denied by many high in authority, these observations to him are conclusive, the bowel is not emptied by peristalsis, but by a tonic contraction.

A test for a clinical diagnosis of hypernephroma of the kidney, by A. C. CROFTAN and A. O. J. KELLY (Philadelphia), was then demonstrated. The test has been based upon the fact that if a small quantity of suprarenal extract is added to a starch solution, the color that usually occurs when iodine is added is lost. This gives a rapid method of readily demonstrating if the tumor is a hypernephroma, it containing the same extracts as suprarenal body. This test will respond even when the tumor has been preserved in formalin and alcohol.

• FIFTH SESSION.

Plasmodia Phora, the Parasite of Cancer.—HARVEY GAYLORD (Buffalo) referred to the observation of others in this field and the effect of this parasite upon plant life, and compared its identity in the vegetable and animal kingdom. In certain plants affected by club-foot it can be found in its various forms, from spore formation to a protozoon. These

organisms undergo changes similar to those found in malaria, and they are found within and without the cell, but he has never seen any evidence of their entering the cell, though this is also true of malaria. Staining of these bodies and their analogy to centrazones were considered. Details were mentioned of experiments where these plasmodia phora introduced under the skin would cause granulomas to develop in animals, and in one instance when he introduced them from cancer juice into the jugular vein of a dog it was followed by carcinoma of the liver. The increase in growth of a tumor is due to the irritation of the surrounding cells rather than an infection. Lantern-slide illustrations were given to illustrate the details of these experiments and observations.

Discussion.—WELCH (Baltimore) said it was impossible to go into sufficient detail in such a short time on such a remarkable theory. He thought that Gaylord was on the right path, but it was too early to judge the correctness of these observations. Tumor growth was too erratic and too ponderous to be explained by theories heretofore advanced. No doubt that there is a resemblance between the plasmodia phora and the bodies found in malignant tumor, but it is hard to conceive why these parasites stop at a definite boundary after affecting so many cells. The experiment upon the dog is remarkable, but more work is needed in this line before it becomes convincing, as it might be one of those chance experiments that so often happens. However, the work may be erroneous, or it may be right; in all events it was most commendatory. McFARLAND thought there was very little to be gained from Gaylord's experiments, as they had all been done by him some 10 years previous. LeCONTE agrees with the sentiments of Welch. The cytoplasm of malignant tumors needed considerable study, as did this theory before it could be accepted. Like bodies had also been found in hypernephroma and axillary glands.

Cell Implantation in the Production of Tumors.—LEO LOEB (Chicago). The theory that detached cells give rise to tumors was explained with reference to clinical observations in its support. He considered it from (1) experiments on early embryonal stages; (2) experimental implantation of embryonic cells; (3) of adults' cells; and (4) of tumor cells. PLASE agreed with the theory but thought more knowledge was still necessary upon cell development and differentiation to explain the different forms of tumors.

Endothelioma of the gallbladder was the subject of a paper by W. BECKER (Milwaukee), in which he classifies these tumors into endo- and perithelioma. Although he had collected a number of cases, the history was usually too short for sufficient reference.

Officers of the Section.—Chairman, Victor C. Vaughan, Ann Arbor, Mich.; secretary, Joseph McFarland, Philadelphia, Pa. A resolution was adopted by the section that the name of the exhibition of specimens, etc., be changed from pathologic to scientific; and that a director be appointed by the trustees, and that he be chairman of the committee of exhibits, with the secretaries of the other sections as an advisory board.

AMERICAN ACADEMY OF MEDICINE.

Twenty-seventh Annual Meeting, Held at Saratoga Springs, N. Y., June 7 and 9, 1902.

[Specially Reported for *American Medicine*.]

[Continued from page 999.]

A symposium on politics in the medical profession was opened by JOHN B. ROBERTS (Philadelphia) who read a paper on the political side of medicine. Roberts believes it selfish and unjustifiable for the physician to neglect all attention to civil and political affairs. The educated man owes part of his day to the community. Few have greater personal capacity than the physician, and hence few owe more to the state. Wherever medicine has touched politics, politics has been better—Havana being an instance. The converse is also true. Common school education in Philadelphia suffers from political influence. It is said that medical men should have no part in the management of hospitals and medical colleges. This is no more true than it is that legal or military boards should be composed of outsiders—which they never are. The purse and the good name of institutions will do better in the hands of the composite medical man than in the care of the business man. Medical men should be on the boards of hospitals, medical schools and other institutions of like character. Another point is that hospital service should be paid. Much hospital work is now done carelessly, either by inexperienced men who can afford to spend lots of time or by experienced men who slight hospital work for their many private patients. The salary need not be large, but should compensate the members of the staff to some extent. The baleful influence of practical politics upon medical organizations was strongly emphasized. The statement was made that the suppression of the knowledge that tetanus bacilli had been found in vaccine virus was not the function of a medical society.

SIXTH SESSION.

The Relation of the Physician to Politics.—D. C. HAWLEY (Burlington). The object of the paper was to controvert the sentiment that the physician should not take a prominent part in public affairs, the term politics being used, in addition

to its broader meaning, in the narrower sense of the art of influencing the policy of the state through party organization. The physician by education, training and daily experience, is especially qualified to grasp the fundamental principles of political science and of abstract politics, and to take an active part in practical politics or the management of public affairs. The argument that the physician is not a good business man is being constantly disproved. In every community the physician is accorded a position of high respectability and of leadership and can make an impress on public opinion and public affairs. He is a close observer and is qualified to grapple intelligently with the vital questions which interest his State and municipality, especially those pertaining to public health, sanitation, etc. The objection may be made that this will divert the energy and absorb the time of the physician and thus hinder him in his work, but to the educated physician with well-balanced mind there is no danger of this result. It is better for the individuals and better for all the profession when its members are elevated to positions of trust.

Compensation for Medical Services Rendered the State.

—T. D. DAVIS (Pittsburg) stated that it is difficult to decide what in any given case is a fair compensation for medical services. By visit and mileage is unfair in many instances. Reputation has real value in medical practice. The fact remains that the medical, of all the professions, is poorest paid. It is difficult to get appropriation for paying boards of health, etc. A comparison of the compensation of the legal and medical employes in four large cities showed that the former receive approximately three times as much as the latter. The reason of this is that physicians underrate the value of their services. The compensation of the physicians of all State institutions is low. The gratuitous service to hospitals has lowered the idea of importance to many physicians. Davis is convinced that the practical advantage of hospital work to a diligent practitioner who does not teach is greatly overestimated. He concludes that the low compensation for public services is the fault of physicians themselves and the remedy must also lie with them.

Medical Representation in Hospital Management.

—A. A. ESHNER (Philadelphia) said that the physician had so often heard that he was not a business man that he had come to believe it. That fallacy has also grown to such an extent that the governing boards of hospitals think that hospital management is purely a business affair. The physician is especially equipped for hospital management, and instead of being subordinate, the correct relation between the hospital management and the medical staff is that of coordination. The lay managers should be responsible for all purely business matters and the medical staff for all purely professional matters, thus bringing about a subdivision of labor with each branch in the hands of experts. This end can be attained: (1) By electing one or more members of the staff to membership in the board; (2) by periodic conferences between the staff and the board; (3) by conferences between a committee of the staff and the board, or a committee of the board.

Discussion on these four papers was opened by FOSHAY (Cleveland) who said that the physician could take an active part in politics with benefit if he enters with the right motive. If he has a high motive he may with advantage imitate some of the methods of the politician. The winning man is the one who associates with all the leaders, is familiar with their ways, and in time comes to be trusted by them and consulted. The physician can thus have the most influence if he meets constantly, but not ostentatiously, and wins the confidence of the leaders of political activity. When thus acquainted he can place ideas where they will do some good. Medical societies usually make a mistake when they try to interfere with political action, especially when they do so by passing a set of resolutions. RISLEY (Philadelphia) considers it the duty of physicians to take an active part in civic affairs. He stated that the faulty action of ward and other politicians is often due to the low standard they have from poor education, etc. He finds that they are quite easily influenced if a higher standard is presented. The physician, however, should not accept office except under exceptional circumstances. He is in favor of medical men serving on the hospital boards. BULKLEY (New York) favors the plan of having physicians not on the staff as members of hospital boards. In closing, ROBERTS said that the question of medical men in politics had struck a very receptive chord in the meeting, but he did not premise a like reception if advanced to laymen. In other words, do the people who pay physicians for their professional services think they should engage in politics? It seems probable that the public don't care for any interference by physicians, but he thinks it advisable, especially when political affairs become as they are in Philadelphia, to take part, even at the loss of money. HAWLEY thinks it the duty of the physician to take part in the affairs of state with no policy but that of doing good for the people. Then if the public finds him fitted for office and elects him it is his duty to accept it.

May Hospitals Steal?—P. MAXWELL FOSHAY (Cleveland).

An instance was related of a hospital surgeon, quite innocently on his part, operating without charge (except hospital ward fee) on an employee of a large corporation whose surgeon had offered to do the work for a good fee. The corporation manager is telling others of how the surgeon's fee was evaded. The system of hospital management is wrong when things like this are per-

mitted. Hospital surgeons are imposed upon because not informed of the circumstances of the case. Such affairs tends to the degradation of the profession. Members of the hospital staff must investigate cases or medical societies will cause them trouble. The circumstances of all who apply for free treatment should be investigated by hospitals. Hospitals and charities working together could district cities and thus do away with this evil.

Discussion.—BENEDICT (Buffalo) said that hospitals which are public to patients should be public to physicians also. They have no legal right to withhold from a patient the right to select any physician they choose to treat them. To stop the evil mentioned by the paper, the physician must go to each individual who takes cases in that manner and ask him plainly if he means to steal. ESTES (South Bethlehem) said that he had been in sole charge of a hospital for many years and finds that physicians will not stand by each other. That hospitals treat no patients free unless they bring a certificate, signed by a responsible person, stating that they are unable to pay. The greatest transgressors of this rule are physicians themselves, who sign papers for persons who can pay. He thinks it hardly practicable to maintain a hospital where all physicians can go and treat patients. KNOFF (New York) said that no certificates should be accepted even when signed by physicians. Each case should be investigated by paid inspectors. The charity organization of New York will examine cases for hospitals, another argument for the cooperation of physicians and lay organizations.

[To be concluded.]

THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Eighth Annual Meeting, Held at Washington, D. C., June 2, 3 and 4, 1902.

[Specially Reported for *America in Medicine*.]

[Continued from page 1003.]

High Altitudes in Tuberculosis of the Upper Air Passages.—ROBERT M. LEVY (Denver), the author, showed that the great desideratum in all tuberculous cases is pure air, which can be got in elevated regions, in the desert and at sea. Dry air is not always necessary and it must not be dust laden. Figures show that the progress of the disease is greatly retarded, if not altogether cured, in high altitudes. A. G. ROOT (Albany) had no doubt that they would one day solve the problem of the cure of this greatest of social evils. Dryness and purity of air are essentials, but all patients can not be sent where these are to be obtained. A careful diagnosis should be made before sending patients away. W. H. LOEB (St. Louis) had changed his opinion considerably since hearing Levy's paper. McREYNOLDS sends his patients away where he thinks the climate will suit them. He advises them to stay away. He finds the best place for them the plains of West Texas, at an altitude of 3,000 feet. SNOW thought so much does not depend upon the altitude as the suitability of the place. He finds that an altitude of 2,000 feet in the Adirondacks or the Catskills suits his patients admirably. LEVY, in conclusion, said that in the West they sometimes have to send their patients away. Cases which develop in Colorado do poorly there.

Infection Through the Pharyngeal Gland Structures.—D. BRADEN KYLE (Philadelphia), the author, pointed out that certain cases of this nature should be considered nonsurgical. He then referred to mouth-breathing cases; certain cases with inflamed condition of structure are more susceptible to cold and diseases of childhood than those who do not have it. Partial obstruction may render the case surgical, and after removal of obstruction it is often noticed that there is no rapid rise of temperature. HOLMES in discussion expressed opinion that removal of adenoids always removes ear trouble. D. J. G. WISHART (Toronto), thought that a great deal of infection in childhood takes place through this gland. STUCKY at one time regarded the infection as due to some defect in the alimentary canal; he had many recurrent cases with high fever; now believed that the infection resides in the pharyngeal gland. C. G. COAKLEY (New York) held that inspection with mirror often gives imperfect idea; the adenoids should be removed no matter how small. LOEB was inclined to be rather conservative; opposed to removal unless the glands cause trouble.

Report of a Case of Rapid Necrosis of the Temporal Bone Following Scarlet Fever.—FRANCIS R. PACKARD (Philadelphia) gave the history of a boy, 4½ years old, who two months previous had an attack of diphtheria followed by scarlet fever; discharges from both ears, no dead bone; operation declined; ears cleansed; operation later; pieces taken out about the size of a quarter of a dollar; recovery uneventful; bacteriologic examination showed streptococci and staphylococci in both ears.

[To be concluded.]

State Registration of Trained Nurses.—An association known as the Society for the State Registration of Trained Nurses has been formed in London. The society consists of 461 trained nurses, the object being to obtain by Parliament the registration of trained nurses.

ORIGINAL ARTICLES

HYPERCHLORHYDRIA.¹

BY

MAX EINHORN, M.D.,

of New York City.

Professor of Medicine at the New York Postgraduate Medical School.

By the term hyperchlorhydria is meant the condition in which the gastric secretion is abnormally strong and accompanied by manifold subjective symptoms. The question at what degree of acidity of the gastric contents hyperchlorhydria begins is not so easily answered. While physiologically the gastric juice at the height of digestion usually shows an acidity varying from 40-60, instances are found frequently in which deviations exist in both directions. For this reason we speak of hyperchlorhydria merely if the hyperacid gastric juice is accompanied by various dyspeptic symptoms. A degree of total acidity above 70 or of free HCl above 50 marks the point at which this abnormal condition is liable to cause symptoms.

Etiology.—Hyperchlorhydria forms a very great portion of the functional disturbances of the stomach. According to my own statistics over half of dyspeptic patients are afflicted with hyperchlorhydria. Sex does not appear to make much difference with regard to its frequency. It occurs more often in the prime of life, while in infancy and old age it is least prevalent. It is very frequently found in chlorotic individuals, and almost always accompanies ulcer of the stomach. The factors that are liable to produce hyperchlorhydria are mental strain and worry; students working hard to pass their examination, stock brokers who speculate a great deal, persons who worry over long illness or death in the family, etc., are often troubled with hyperchlorhydria; the abuse of alcohol and tobacco, too highly spiced foods, eating very fast and gulping the food down in big lumps, may also cause hyperchlorhydria.

Symptomatology.—At the height of digestion (one hour after a small breakfast or about two to three hours after a larger meal) the gastric contents show a large percentage of acidity, caused by free HCl. The figure of acidity is one and one-half, sometimes double or three times as large as normal. In the fasting condition the stomach is empty and the motor function, as a rule, is not impaired, the stomach emptying at the right time (about two hours after a small, six hours after a large meal).

While during the meal and for a short period afterward there exists a feeling of perfect euphoria, about an hour or two later manifold symptoms appear. There is either a feeling of uneasiness or pressure in the epigastric region or frequently heartburn accompanied by pain of a more or less severe character. Frequent eructations of gas and occasionally waterbrash annoy the patient. In some of the cases nausea, headache and dizziness exist, either alone or associated with the disturbances just mentioned. The ingestion of food or drink almost immediately gives relief to the symptoms for a short while. At the time when the stomach is empty these patients are free from symptoms. The appetite is usually not impaired, in some instances it is exaggerated, in others again somewhat decreased. Sleep is usually not disturbed. In almost half of the cases there exists constipation of a more or less high degree. Only a small percentage are afflicted with diarrhea. Both the constipation, as well as the diarrhea, are dependent upon the hyperchlorhydria and are relieved by a treatment of the primary condition.

Diagnosis.—The diagnosis of hyperchlorhydria can frequently be made by the existing subjective symptoms; discomfort or pains, appearing one or two hours after

meals and alleviated by the ingestion of food or liquid or alkalies, speak most prominently in favor of this condition. The diagnosis, however, is only a probable one, not yet positive. In order to make it decisive, it is necessary to examine the gastric juice at the height of digestion. If too great acidity (caused by HCl) is found and the just-mentioned subjective symptoms prevail, the diagnosis of hyperchlorhydria is positive. There are rare instances in which the symptoms of hyperchlorhydria exist and also improve on an alkaline treatment without the presence of hyperacidity. For these cases the name "hyperchlorhydria spuria" seems to be appropriate. It is understood that hyperchlorhydria as the only affection in question will be assumed if an organic lesion (ulcer of the stomach) can be excluded. The latter is accompanied frequently by hyperacidity, but in these instances the hyperchlorhydria is only a concomitant factor in the disease, and not the primary affection, and for this reason treatment will be determined by the original disease, and not by the hyperchlorhydria.

Prognosis.—The prognosis is generally good. There are but few cases which resist all kinds of treatment, and for these in most instances complications (either some organic lesion of the stomach or of the central nervous system) must be looked for.

Treatment.—The diet for hyperchlorhydria is yet a subject of great controversy. Some clinicians forbid starchy foods entirely and nourish their patients principally on an animal diet. Their reason for forbidding the starches is that the amylolysis in hyperacidity is greatly diminished, the acid checking the conversion of starch into sugar quite early. There is, on the other hand, quite a number of wellknown clinicians who forbid meats to patients with hyperchlorhydria on account of their property to produce an increased flow of gastric juice. They prefer a milk diet and the carbohydrates.

Another controversy exists with regard to the frequency of the meals to be advised. Some institute two meals daily with the idea of giving the stomach a long period of rest between meals; others again prescribe frequent meals, their object being to diminish the too great acidity existing at the height of digestion by the addition of another small meal and thus diluting the contents.

When such differences of opinion exist, personal experience appears to be of some value. I am in favor of frequent meals, three larger ones (breakfast, lunch and supper) and two or three smaller ones (consisting only of milk and bread and butter). The larger meals should consist of foods commonly taken at these meals with the exception of acid, too greasy and indigestible substances. Meats and eggs (hard boiled) should preponderate while all kinds of spices and too highly seasoned foods should be avoided. I always permit patients to take considerable quantities of bread and butter, especially of the latter. It is only within the last two to three years that butter has been found, according to investigations of Strauss and others, to exert a beneficial influence upon lessening the gastric secretion. My object in giving butter was, however, not with the intention of diminishing the gastric secretion, for formerly I knew nothing about it, but for the purpose of increasing the state of nutrition which in most cases is essential.

The medicinal treatment consists in administering alkalies one to two hours after meals. Plain sodium bicarbonate may be given in one-half to one teaspoonful doses t. i. d. In cases of constipation it is best to combine the sodium bicarbonate with calcined magnesia or with calcined magnesia and rhubarb. Thus the following combinations may be used:

Magnes. ust.	} ãã 5 drams
Sodium carb. exsicc.	
Sod. bicarb.	
Sacch. lact.	
M. f. pulv.	

¹ Read before the Orange Mountain Medical Society, on April 25, 1902.

One-half to one teaspoonful three times a day two hours after meals. Or,

Magnes. ust.	} aa 5 drams
Pulv. rad. rhei.	
Sod. bicarb.	
Sacch. lact.	

M. f. pulv.

also given in the same amount.

The bromids are likewise of great benefit in this affection, especially if we have to deal with persons presenting other symptoms of nerve irritation (headache, sleeplessness, discomfort, etc.). Atropin has also been variously recommended, but I must say that I have not seen very much benefit from its use.

The physical methods of treatment consist of electricity and hydrotherapy. The intragastric faradization and also galvanization often exert great benefit. A wet compress over the stomach at night is also often useful. The same can also be said of cold ablutions followed by a good rubbing of the chest and back. Lavage of the stomach is not essential in this trouble. Spraying the stomach with silver nitrate or protargol, or powdering it with suprarenal glandular extract, have appeared to me to be of value in cases of an obstinate character.

Within the last few years gastroenterostomy has been recommended off and on for the treatment of this malady. I do not generally approve of this surgical measure for this particular condition. I have several times seen cases in which a gastroenterostomy had been done for pyloric obstruction, but the patients suffered nevertheless after the operation from hyperchlorhydria, showing that gastroenterostomy does not always necessarily remove the trouble. Besides, patients with simple hyperchlorhydria, *i. e.*, not complicated with ulcer, almost always get well by simpler methods of treatment.

A CLINICAL STUDY OF THIRTY-SEVEN CASES OF NEPHRITIS, WITH ESPECIAL REFERENCE TO THE TERMINAL SYMPTOMS.¹

BY

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AND

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During the six months included in this report, from September, 1901, to February, 1902, inclusive, nephritis has been more in evidence in Denver than in any similar period heretofore. We base this statement upon our own experience, upon the hospital records, and upon the statements of numerous medical friends.

The first 19 cases occurred in Dr. Hall's fall service at the Arapahoe County Hospital, and all but Cases 8, 13, 15, 18 and 19 were shown at his clinics. The remaining 18 cases occurred in his private practice during the time mentioned, Cases 21, 22, 24, 27, 28, 29, 31, 32, 34, 35 and 36 being seen respectively with Drs. Kleiner, I. B. Perkins, Love, Graham of Greeley, Craig, Kemble and Dean, McLaughlin and Hopkins, L. Freeman, Sirois, Eskridge, Tyler and Eisenstadt. Many of these gentlemen spoke of the unusual frequency of similar cases.

It is needless to say that most of the cases did not originate during the time covered. It seems as if some cause, of the nature of which we can form no accurate idea, brought many cases of chronic Bright's disease to a fatal termination during this time. The winter was unusually mild, and yet one-fourth of the medical beds in the County Hospital were at times filled with patients having chronic parenchymatous nephritis. Dr. Hall repeatedly showed three or four new cases at the weekly clinic. Some of these patients had been in the hospital several times before, but came in moribund from uremia, pneu-

monia or other acute causes. When we state that 15 of the 19 County Hospital cases terminated fatally, the character of the final attack may be estimated. Dr. G. E. Tyler, of the other medical service, with whom we saw casually nearly as many other cases as occurred in Dr. Hall's service, had precisely the same experience.

Of the 37 patients 28 were males, 9 females. Of the 18 in private practice 9 were males. Apparently women with this disease are less likely to enter hospitals than are men.

The lines of demarkation between the different varieties of nephritis represented may be drawn quite sharply. Five patients with acute parenchymatous nephritis were noted, 3 recovering and 2 dying, each of the latter upon the fifth day, of uremia. The 3 that recovered were girls of 8, 11 and 19 years, respectively.

An alcoholic male subject in the fifth decade of life had an extremely acute attack, fatal from uremia on the fifth day, as mentioned. The autopsy by Dr. Hillkowitz showed the typical red, dripping kidneys of acute Bright's disease, and the partially encysted appendiceal abscess from which the process originated. Operation had been urgently advised in this case two months before, but was refused persistently. The acute inflammation had doubtless started as a mild septic nephritis, and was presumably hastened in its course by the long continued inhalation of chloroform, against advice, during several days for relief of pain in a fresh attack of appendiceal inflammation. Almost complete suppression of urine occurred, but in the two ounces which were obtained during the last two days of life there was found much albumin, a sediment loaded with blood-cells, and blood and epithelial casts. Edema was scarcely perceptible.

The other fatal case of acute nephritis occurred in a woman in the fourth decade, as a complication of pregnancy. Five days after the induction of premature labor in the fourth month by Dr. Graham for pernicious vomiting of pregnancy, almost complete urinary suppression occurred. Vomiting had ceased, the uterine condition was perfect, and the temperature practically normal; but, coincident with an alarming decrease in the amount of urine, its cloudy appearance and peculiar odor led us to suspect some unusual bacterial infection. Albumin, repeatedly found absent before, was now present in small amount, while granular, epithelial and blood casts, free blood and millions of colon bacilli filled the microscopic field. The bacilli were identified by cultures by Dr. H. R. McGraw. After my previous experience with general infection by this bacillus¹ I have no doubt that it stood in a causative relation to the acute nephritis. The patient died from uremia after delirium and repeated convulsions. No edema was present at any time. The salivation of pregnancy had been very troublesome for a month previous.

The 3 patients with acute Bright's disease, who practically recovered, had much edema. In all much albumin, blood, blood casts and epithelial casts were found in the urine. One escaped uremic manifestations; one had severe and continued vomiting and delirium only. The third had three convulsions; four days later left hemiplegia from cerebral thrombosis appeared, and the urine and feces were passed involuntarily for more than a week. Left otitis media with deafness then developed, and the prognosis seemed very grave to both Dr. S. D. Hopkins, who saw her with me repeatedly, and myself. She has nevertheless made a complete recovery. This case apparently arose from a sore throat so mild that she had not seen a physician in regard to it. In both the others that recovered the disease was thought to have originated from exposure to cold.

It is noticeable that but one case occurred in an alcoholic, and in none was syphilis a cause.

Of cases covered broadly by the term chronic interstitial nephritis there were 10, of which 5 were hospital patients. All were males. Six are dead, and one of the 4 living is in a very critical condition. The other 3 are able to continue their usual vocations.

Two occurred in the fourth decade, 3 in the fifth, 3 in the sixth and 2 in the seventh. In 5 patients there was well-marked alcoholism, and in 3 syphilis was acknowledged, 1 being an alcoholic also. In 1 emphysema was present, and another had contracted the morphin habit. The duration of the cases averaged

¹Of the hospital cases studied especially by Dr. Arndt we speak faintly, while for the others Dr. Hall is alone responsible.

¹ Philadelphia Medical Journal, December 30, 1899.

over 2½ years after the diagnosis was made, but the real duration was certainly much longer. The diagnosis was confirmed on autopsy in three instances.

In 8 of the cases well-marked enlargement of the heart and palpable atheroma with accentuation of the aortic second sound were noted. One patient, nearly 70 years old, died of angina pectoris, having suffered numerous attacks. At autopsy Dr. Wilder found the coronary arteries extremely tortuous and atheromatous, the left one of actually bony hardness. Marked hypertrophy and high vascular tension, the latter little relieved by the nitrites, were notable features in this case.

Pericarditis occurred in another case. Terminal hemiplegia was noted in 3 cases, all on the right side, with aphasia; in two probably from hemorrhage, and in the other from thrombosis. The vascular nature of many of the accidents in interstitial nephritis is very striking.

The quantity of albumin is noted in 5 cases as moderate, and in 5 as slight. In 9 cases hyalin and granular casts were found in moderate numbers, in 1 a few fatty casts also.

In 4 of the cases the urine was over 50 ounces, and in 6 under that amount. It should be noted, however, that most of the cases were seen in the last stages.

Edema was moderate in 3, slight in 4, absent in 3. In none was ascites ever discovered.

Uremia occurred in 4 of the cases, and in 2 convulsions occurred. Delirium tremens was noted in 1, and acute mania in another.

Well-marked albuminuric retinitis was present in two of the fatal cases, and under favorable conditions for examination would almost certainly have been found in many others. A cataract had been removed by operation in one.

It is rather surprising that the group of cases follows so strikingly the usual description of chronic interstitial nephritis. The small amount of albumin; the presence of fatty casts in but one case, all having hyalin and granular ones; the well-marked circulatory conditions, which were fatal in 8 cases; the frequency of uremia, of hemiplegia and of retinitis, the absence of great edema, and the presence of alcoholism and syphilis in the etiology, are to be noted. In one patient, aged 36, beginning cirrhosis of the liver was also noted at autopsy. In the next youngest patient, aged 37, nothing but bad heredity could be found as a cause.

Nineteen of the cases were well-marked examples of chronic parenchymatous nephritis. Fourteen of these were fatal, 4 patients are in very serious condition, and 1 is comfortable temporarily. Fifteen were males, 4 females. The diagnosis was confirmed at autopsy in 4 cases, all having the large white kidney. In one of these the left kidney weighed 10 ounces, the right 8 ounces, according to the report of Dr. Hillkowitz. One was in the first decade, 3 were in the third, 6 in the fourth, 4 in the fifth, 3 in the sixth, and 1 each in the seventh and eighth decade.

As to the etiology of these cases, syphilis was found in 3, and alcoholism in 12. Amongst other alleged causes are noted, exposure to cold in 3 cases, septic infection in 2, tuberculosis in 2, chronic bone disease, chronic diarrhea, emphysema, asthma and acute rheumatism in 1 each. One patient had had 5 attacks of acute pneumonia. Syphilis, alcoholism, sepsis, bone disease or tuberculosis, or combinations of these, were noted in every case with 3 exceptions, and alcoholism could not be wholly excluded in 2 of these. The etiology of this form of nephritis is manifestly fairly plain.

The cases averaged 18 months in duration when seen.

Great edema was noted in 11 cases, repeated tapping of the abdomen being required in 8. The dropsy was moderate in 5 cases, and slight in 3.

Cardiac complications were frequent. In 7 cases mitral regurgitation was noted, in 10 cases an increased

area by percussion, in 2 cases marked atheroma. In 8 cases only was the heart entirely negative. In 1 case with adherent pericardium the heart weighed 39 ounces, and marked mitral stenosis was present. This was the case in which the kidneys were found to weigh 8 and 10 ounces respectively. The liver was cirrhotic.

Uremia was noted in 7 cases. Albuminuric retinitis was found in 2 cases, and the vision is noted as poor in 3 others, but of these no ophthalmoscopic record has been preserved. Two patients died of acute pneumonia, 1 being saved for four days by venesection, amounting to 30 ounces, this being the case just mentioned with mitral stenosis. One died of erysipelas, and another under chloroform, at the close of an operation for removal of necrosed bone, the surgeon having wisely mentioned this possible contingency to the friends in view of the seriousness of the operation. No case of cerebral hemorrhage nor of hemiplegia from any cause was recognized. Albumin was noted as present in great quantity in 10 cases, moderate in 6 cases, and slight in 3. Hyalin and granular casts were present in 10 cases, with fatty casts also in 6 cases, with epithelial casts in 2, and with epithelial and blood casts in 1, there being an acute exacerbation in the latter. Blood-cells were especially abundant in one other case.

In a general way this group of cases is as distinctively characteristic as the last. The presence of the usual etiologic factors, of much albumin, of casts showing distinct degenerative epithelial change, of much edema, of uremic symptoms, and the absence of distinct vascular accidents, are to be noted. It is striking to observe the distribution throughout the life period, and to note that not a single case was recognized to have followed acute parenchymatous nephritis, although those cases attributed to cold may well have done so.

In one case of chronic parenchymatous nephritis Dr. C. B. Lyman operated after the Edebohl's method, but the fatal termination was not materially delayed.

Three cases not properly classed with either of the three forms mentioned remain.

The first, a young professional man, formerly much given to playing football, complained of dizziness and mental dullness. Examination was negative except as to the urine. This was normal in amount, contained on an average about ½% of albumin by Esbach's albuminometer, with a moderate number of hyalin, granular and fatty casts. The total solids were normal. No edema, nor cardiovascular signs. There was no possibility of a previous attack of acute nephritis so far as careful interrogation and intelligent response could guard against it. A severe gonorrhea several years ago, followed by stricture and prostatitis, offered the only cause recognizable.

In this case I believe the trouble was not constitutional, if we may so speak of chronic interstitial or of chronic parenchymatous nephritis, but should be regarded as rather a local infection. I gave a favorable prognosis, and gradual improvement under the use of Basham's mixture and other tonics confirms me in my diagnosis. The patient has fewer casts and less albumin than at first, weighs more than ever before, and is entirely well, aside from his urinary findings. Dr. W. P. Munn relieved his urethral and prostatic symptoms, and I think the gradual improvement points to a complete recovery.

The second case was that of a woman of about 38 years, who had for several years symptoms of chronic appendicitis, with movable right kidney and moderate edema. Dr. I. B. Perkins drew the urine separately from the two kidneys. Examination showed that both specimens contained a large trace of albumin; that from the left side no sediment, but that from the right showed hyalin, granular and fatty casts, free fat, epithelial cells, and pus in abundance. The left kidney secreted three times as much urine as the right.

On November 26, Dr. Perkins, under chloroform, removed the appendix. It was found in a state of chronic inflammation, with semipurulent contents. Recovery was prompt and the urine showed no change during the following week. On December 3, the right kidney was anchored, the capsule being freely separated. No abnormality was noted in the kidney aside from its mobility. She recovered well from the chloroform and the operation. During the next few days much

albumin, with free blood and blood casts were found together with the former sediments. Improvement has been steady, and the patient gained 15½ pounds in the first two months after. The urine was gradually clearing when she left for her home, and a recent letter states that she is entirely well. We have had no recent opportunity to examine the urine.

From my study of this case I have little doubt that some of the so-called appendiceal attacks were in reality Dietl's crises. I regard the inflammation in the right kidney as largely due to the faulty mechanic condition under which it labored, and look for continued improvement, with a probable complete recovery. The chronic intoxication from the appendix doubtless aggravated the trouble, and it is my only explanation for the left-sided albuminuria without sediment. The edema was doubtless due to the albuminuria with its secondary anemia. I believe this patient would have eventually perished from nephritis if not operated upon.

The remaining case must be called one of mixed nephritis. This occurred in a clerk, aged 37 years. His habits were good. He had albuminuria for at least three years with no discernible cause. He had had great edema before coming under my care. The urine was decreased in quantity, with a moderate amount of albumin. Many hyalin, granular and fatty casts, with fatty epithelial cells, were found. The urea was reduced to about 200 grs. daily, and uremia was present when first seen. Marked hypertrophy of the heart, with aortic accentuation and general atheroma, were noted. On the fourth day of my attendance pericarditis developed, followed shortly by convulsions, right hemiplegia, aphasia and death. No autopsy was permitted.

I regard this case as one of secondary contracting kidney following a chronic nephritis, chiefly parenchymatous in character. The comparative youth of the patient at the beginning, the edema, the small quantity of urine, the rather large amount of albumin, and the fatty elements in the sediment, point toward the parenchymatous involvement, while a history of recent polyuria, the cardiac hypertrophy and extensive atheroma, with the final cerebral hemorrhage, suggest the secondary cirrhotic change. The case is one of those best described by the term "mixed nephritis."

While writing this article I have received from Dr. I. R. Swigart, of Laramie, Wyoming, several specimens of urine worthy of mention in this report. They were passed at different times by a young ranchman rejected for life insurance on account of albuminuria. He was in perfect health in every way so far as known, excepting in this particular.

Dr. H. R. McGraw, in charge of my laboratory, reported that the different specimens contained, in varying amounts, serum albumin and serum globulin. Dr. Swigart presented with the specimens an excellent report of the routine examination for albumin, extending over several months, showing that often two different specimens passed within a few hours reacted in an entirely different way. Dr. McGraw found serum albumin present constantly, from a bare trace up to greater amounts, with a still more variable quantity of serum globulin. Hyalin and granular casts in moderate numbers were constant.

I have no doubt that in this case a definite nephritis exists. As more or less acid was used in the different tests for albumin and the relative amount of the two substances mentioned were constantly varying, the results of the tests for albumin were most confusing.

I have scarcely mentioned treatment, having followed the usual line. We certainly have reason for pushing the treatment of cases of acute or subacute parenchymatous nephritis vigorously. In the chronic forms, and especially after arterial and cardiac changes occur, merely palliative measures are usually called for, since the outcome is necessarily bad.

Latent Rabies.—The *Lancet* reports that a boy and a man were bitten by a rabid dog in August, 1900, were treated at the Pasteur Institute for three weeks and apparently suffered no ill effects from the bite. May 27, 1902, the man, who was 66 years old, developed rabies and died in great agony the following day.

THE RELATION OF THE CALIBER OF THE URETHRA, AND ESPECIALLY OF THE MEATUS URINARIUS, TO VESICAL TONE.

BY

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For many years it has been my custom to note the remote effects of anterior urethrotomy, the most frequent operation which the surgeon is called upon to perform upon the male genitourinary tract. In the earlier years of my experience in the surgery of the genitourinary organs I was led to believe that internal urethrotomy, and especially meatotomy, *per se*, was not only a safe operation, but absolutely devoid of untoward results. Increasing experience has modified my views somewhat. It is obvious that the consideration of the remote results of any operation revolves largely around the physiology of the part involved. The surgery of the urethra, and especially of the meatus, is no exception to the rule.

That there is a normal vesical tonus, varying in quality and degree with physiologic limits at all ages, and varying normally with age, is well recognized. That this tonus is regulated and controlled by the caliber of the urethra, and more especially of its outlet, is not so well understood. During micturition the stream of urine escapes only after overcoming the resistance of the urethral walls. This resistance is elastic under normal conditions, and its degree necessarily depends upon the caliber of the canal. Anything which diminishes the elasticity of the urethral walls, without at the same time materially diminishing its caliber, or anything which increases the urethral caliber, with or without decreasing its elasticity, necessarily lessens the resistance. That the converse is true of a diminished urethral caliber is shown by such wellknown conditions as prostatic hypertrophy, tumors at the vesical outlet, and stricture in any portion of the urethra.

Obstruction in the old usually produces vesical atony. In the young, vesical hypertrophy results. The evidences that the structural and functional integrity of the vesical muscle depends upon a certain relation of the power of the bladder to the degree of resistance which the urethra opposes to the urinary outflow is at once evident on surveying the secondary results of obstructive urinary disease. Any disturbance of pressure equilibrium, whether in the direction of increased or diminished resistance, results in a greater or less degree of pathologic change in the proximal portion of the urinary way.

The meatus urinarius bears a more important relation to the pressure equilibrium of the bladder than does any other part of the urethra. It is the narrowest part of the canal, and opposes a greater resistance to the urine during micturition than any other portion. Its function is similar to that of the nozzle of a hose in directing and projecting the escaping fluid. When the meatus is nearly or quite as large as the remainder of the pendulous portion of the canal, the urine flows away more passively than in the normal condition. The elasticity and caliber resistance of the rest of the canal, however, neutralizes the effect of the meatotomy in great degree for the time being. In time, however, a relative atony of the bladder results. The normal resistance to the contraction of the vesical muscle being gone it suffers from lack of its accustomed exercise and becomes weak—*i. e.*, atonic. This result is often not perceptible until some years have elapsed, and is not always a source of annoyance, but is none the less an inevitable result of too free meatotomy in many cases. What has been said of meatotomy applies also to internal urethrotomy.

A very tight meatus produces in some instances vesical atony from overstrain of the vesical muscle. This

occurs only in advanced life, save in exceptional cases in younger subjects in whom temporary atony results from it as a pure reflex neurosis. When it occurs in advanced life, the vesical muscle is usually hypertrophied, columnated, and possibly sacculated.

When the meatus is congenitally large, it has been my experience that relative vesical atony develops in time.

The important practical point in connection with the subject under consideration is the desirability of avoiding meatotomy and free urethrotomy when possible. This the conscientious surgeon fully recognizes. When urethrotomy is performed, the meatus should be enlarged only sufficiently to facilitate the passage of sounds of sufficient caliber to properly dilate the urethra during healing of the urethrotomy wound. In cutting the meatus, it is usually possible to avoid producing deformity, and to preserve the integrity of the greater part of the tissues at the inferior commissure of the orifice, by cutting within it on the floor of the fossa navicularis with the belly of the knife until all obstructions have been removed. A large caliber may often be thus attained without much cutting of the external meatal ring.

CONCLUSIONS.

1. The normal vesical tonus depends upon a certain degree of physiologic obstruction to the urinary outflow.
2. The structural and functional integrity of the vesical walls depends upon this same resistance.
3. The resistance is normally most marked at the meatus, although the entire urethra is a factor in its production.
4. This resistance is both elastic and inelastic at different points in the urethra, and in varying conditions.
5. An exaggeration of this resistance produces atony of the bladder in old subjects, hypertrophy and exaggerated power in the young. Exceptionally, it produces atony in the young, but, as a rule, only as a reflex neurosis.
6. A marked diminution of this resistancy, such as results from urethrotomy, and especially meatotomy, produces vesical atony of greater or less degree.
7. The foregoing should be borne in mind by the surgeon, and, in certain cases, the resistance of the meatus preserved by careful operative technic.
8. In most cases the resulting atony is of little moment, but it is always worthy of consideration, and in some cases of sufficient prominence to be worthy of serious attention.
9. In cases in which a free urethrotomy has been performed, it is wise to instruct the patient to compress the meatus somewhat during micturition, so as to maintain the normal vesical tonus by offering sufficient resistance to the outflowing urine to properly exercise the vesical muscle.

THE EVAPORATION BATH IN TYPHOID FEVER.

BY

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During the months of May, June and July, 1901, 108 patients were treated for typhoid fever in the medical wards of the Presbyterian Hospital in Philadelphia; of these, 22 under the care of Dr. S. S. Stryker, were given the evaporation bath treatment, after the method described by Williams, of Boston.¹

The results achieved by this procedure have been tabulated and are given below, together with a few conclusions as to the efficacy of this method of treatment.

The technic of the bath is as follows: The patient is first placed on a blanket, then a layer of one thickness of absorbent gauze is fitted closely to the body surface. This

is sprinkled with water at a temperature of 100°–112° F. An electric fan situated at the foot of the bed on a level with the patient's body furnishes the change of air necessary to dry the gauze. It was found that the average length of time required to evaporate one pint of water was 30 minutes. This, therefore, may be taken as the duration of the baths. The temperature was taken regularly every four hours throughout the course of the disease and the patient bathed at 102.4° F., or above. The immediate response and the response one-half hour after the bath was then taken both by mouth and rectum. No exact record of the temperature between the half-hour and the next regular four hour period was kept, but in every case, though taken irregularly, it was found that the half-hour temperature would indicate what was to be expected one or two hours afterward.

As to the results achieved, they were on the whole extremely disappointing. Perhaps the best way to treat of them will be to take up, the effect on: First, the temperature, and second, the circulatory and nervous systems, then to report one or two special cases which are worth noting, and finally, to summarize.

1. *Temperature.*—The general temperature curve was extremely high and persistent, running a course almost identical with a series of cases which had no hydrotherapy whatever. As will be seen from the appended table, the average response immediately after the bath was 1.07°+ F. (mouth) and .12°+ F. (rectum), a fair result, but on looking farther we find that one-half hour afterward the average is 1.04°+ F. and 34°+, the effect not being at all lasting, and even in the short space of 30 minutes the drop occasioned by the bath had almost reached its limit and in the majority of instances, as seen in the table, had again begun to rise.

2. *Circulatory and Nervous Systems.*—The effect on the circulatory system was decidedly nil. No stimulating effect whatever could be noted and there was not that increase in volume and tension of the pulse, with increase in the volume of the muscular sounds of the heart, which is usually so noticeable after a tub. As to the nervous symptoms: In almost every case they were severe and well marked. There was much subsultus and carphologia, usually a low muttering delirium and extreme mental hebetude. Absolutely no change in these conditions was seen after a bath; the result, if anything, being an aggravation of all of them. Then from the patient's standpoint the ice sponges were highly preferable. In two of the cases in which sponges were given in conjunction with the baths the complaints against the latter were loud and vigorous, while the sponges were scarcely objected to at all.

3. SPECIAL CASES.

Case VI, on the twenty-fifth day of the disease and the fourth day after the patient's admission to the hospital, since when she had regularly received the evaporation bath treatment, was unconscious, pulseless (heart sounds 140-160), respirations were 30-40, hurried and shallow; she was practically in extremis. At this time hypodermoclysis of normal salt solution was exhibited freely and a treatment of cold tubs every two hours instituted. From the time of the first plunge an improvement was noted and the patient left the hospital on the sixty-first day, cured. Case XV, of similar type, treated persistently throughout with evaporation baths, proved fatal on the fifteenth day. The other cases were all typhoid, varying from a mild to a severe type, and only one, Case XVI, seems worthy of further note; death being due indirectly to an abortion during the course of the disease.

4. *SUMMARY.*—In conclusion it may be said that in all the cases of typhoid fever (100+) treated in the Presbyterian Hospital during a period of three months, those treated by the evaporation bath method gave the least satisfactory results, as compared with tubs or sponges, and their course was almost identical with a series of cases in which no hydrotherapy was used. The baths were distasteful to the patients and in addition the entire ward was disturbed by the constant buzzing of electric fans. There was practically no response except

¹ Jour. Am. Med. Assoc., May 18, 1901.

Number.	Day of Disease on Admission.	Number of Days in Hospital.	Widal Reaction.	Leukoocyte count.	Spots.	Urine.	Enlarged Spleen.	Highest Temperature.	Evaporation Baths.										Result.	Remarks.					
									Average Response.				Greater Response.				Least Response.								
									Mouth.		Rectum.		Mouth.		Rectum.		Mouth.				Rectum.				
									Immediately After.	$\frac{1}{2}$ Hour After.	Immediately After.	$\frac{1}{2}$ Hour After.	Immediately After.	$\frac{1}{2}$ Hour After.	Immediately After.	$\frac{1}{2}$ Hour After.	Immediately After.	$\frac{1}{2}$ Hour After.							
I	7	52	+	+	4,600	?	Albumin.	+	105.2	.88	.65	1.03	None taken.	None taken.	2.2	3.0	None taken.	None taken.	+1.0	+8	None taken.	None taken.	Cured.	Also tubs 17; average response, mouth, immediate .5+, $\frac{1}{2}$ hr. .7+; rectum, immediate .05, $\frac{1}{2}$ hr. .7+. Also sponges 35; average response, mouth, immediate .8, $\frac{1}{2}$ hr. .7+. Long course complicated by endocarditis.	
II	10	52	+	+	6,200	+	Albumin.	+	104.6	.39	.9+	.7	None taken.	None taken.	3.2	1.3	None taken.	None taken.	+2.0	+2.0	None taken.	None taken.	Cured.	Also sponges 4; average response, mouth, immediate 1.35, $\frac{1}{2}$ hr. 1.1. Uncomplicated course.	
III	9	50	+	+	4,400	-	Albumin.	-	106.2	.71	.6+	.6+	+4+	+05+	3.0	2.4	1.6	1.2	+4	+8	+1.8	+1.4	Cured.	Also sponges 14; average response, mouth, immediate .6+, $\frac{1}{2}$ hr. .4. Relapse.	
IV	10	31	+	+	10,500	+	Albumin and casts.	+	104.2	.28	.17+	.6	+52	+41	1.8	1.2	1.0	1.0	+1.0	+1.0	+1.8	+1.4	Cured.	Uncomplicated course.	
V	10	40	+	+	8,600	+	Albumin.	+	105.4	.55	1.4+	1.2-	.37+	.36	3.8	3.4	2.8	2.2	+8	+8	+1.8	+2.0	Cured.	Uncomplicated course.	
VI	21	40	+	+	3,200	+	Albumin.	?	106.0	.17	1.35	1.41	.52	.86	1.8	1.6	1.4	2.2	+1.0	+1.4	+6	+6	Cured.	Also tubs 11; average response, rectum, immediate 1.4, $\frac{1}{2}$ hr. 1.1+. Severe course. Bad nervous symptoms.	
VII	12	27	+	+	6,300	-	Albumin.	+	105.0	.40	1.41	.6	+32	+43	5.6	3.0	.6	1.6	+2.0	+1.2	+1.8	+1.8	Cured.	Uncomplicated course.	
VIII	7	28	+	+	5,800	-	Albumin.	+	103.1	1	.4	1.0	+2	.4	.4	1.0	+2	.4	.4	1.0	+2	.4	.4	Cured.	Uncomplicated course.
IX	7	39	+	+	8,700	+	Albumin.	+	104.3	.62	.9+	.7+	.1+	.06	2.8	2.2	1.8	1.4	+4	+4	+1.8	+1.4	Cured.	Uncomplicated course.	
X	7	30	+	+	7,200	+	Albumin and casts.	+	105.1	.65	1.5+	1.3+	.7+	.6+	4.6	3.4	2.4	2.8	+2	+6	+1.2	+1.0	Cured.	Uncomplicated course.	
XI	12	10	?	?	5,300	?	Albumin and casts.	?	106.1	.52	1.1+	.8+	+5+	+4+	3.6	3.8	1.6	2.6	+4	+1.0	+2.6	+2.4	Death.	Diagnosis confirmed at autopsy. Pathologic changes in kidney and heart. Cause of death, edema of lungs.	
XII	10	30	+	+	6,200	+	Albumin.	+	104.1	.13	.8	.9+	.4+	.5-	2.8	3.8	1.6	2.2	+4	+2	+2.4	+1.2	Cured.	Abortion 1 wk. after discharge; 4 mos. fetus.	
XIII	10	38	+	+	3,300	-	Albumin.	+	103.3	.10	.5+	.8+	+3+	.1-	1.2	1.2	.4	.6	+6	.2	+6	+6	Cured.	Uncomplicated course.	
XIV	7	42	+	+	6,300	-	Albumin and casts.	-	103.8	.12	1.0+	.7+	+2+	.2-	2.6	1.8	1.2	1.6	+6	0	+1.6	+1.6	Cured.	Uncomplicated course.	
XV	3	12	+	+	4,800	?	Albumin and casts.	?	105.6	.55	1.2+	1.0+	.6+	1.1+	5.2	3.2	1.4	.24	+1.0	+6	+2.6	+2.0	Death.	Severe and persistent high temperature; wild delirium; myocarditis.	
XVI	7	49	+	+	5,200	+	Albumin.	-	104.0	.70	.7+	.8+	.3	.2+	3.8	3.4	1.8	2.2	+1.0	+8	+1.6	+1.8	Death	Relapse, 25th day. Abortion, 40th day; 3 mos. fetus. Severe and persistent nausea and vomiting.	
XVII	6	38	+	+	8,500	?	Albumin and casts.	?	104.6	.46	1.4+	.9	+2+	+6+	5.2	3.0	2.4	1.6	.2	+6	+1.2	+1.2	Cured.	Uncomplicated course.	
XVIII	21	28	+	+	3,300	-	Albumin and casts.	-	103.8	.7	1.1+	1.1+	.2+	.4+	2.0	1.8	.8	.4	0	.6	+6	+4	Cured.	Uncomplicated course. Also sponges 22; average response, mouth, immediate .2+, $\frac{1}{2}$ hr. after .3+.	
XIX	7	55	+	+	4,600	+	Albumin.	-	105.1	.83	2.1+	1.9+	1.0+	1.1+	5.8	5.4	3.4	3.0	.4	+8	+1.6	+1.6	Cured.	Severe course; delirium; abdominal distention.	
XX	8	56	+	+	19,800 12,500 3,200 4,100	+	Albumin.	?	105.2	.69	1.8+	1.4+	1.1-	1.0+	7.0	5.6	3.4	4.4	.2	+1.6	+1.4	+1.4	Cured.	Pneumonia; weak heart; severe nervous symptoms; marked furunculosis during convalescence.	
XXI	7	54	?	?	?	-	Albumin.	-	103.6	.9	1.3+	1.0	+5+	.5+	3.6	3.0	1.0	1.2	.6	0	+1.0	+1.0	Cured.	Uncomplicated course, except exacerbation 33d day.	
XXII	7	50	+	+	6,100	?	Albumin and casts.	+	105.4	.53	1.2+	1.1+	.3+	.6+	5.6	3.2	2.6	2.8	+4	+8	+1.4	+1.2	Cured.	Long course; weak heart; hypostatic congestion of lungs.	
Aver.	.....	38 $\frac{1}{2}$ +	.....	.....	6,800	.....	.....	.....	.....	.40	1.07-	1.04+	.12+	.34+	3.5+	2.8+	1.5+	1.8+	+51	+60	+1.4	+1.2		

in temperature. And lastly, although the series is somewhat short for comparison, the mortality in the evaporation bath series is 13 $\frac{3}{4}$ % as compared with 10 $\frac{5}{8}$ % in all other typhoid cases during the same period.

REPORT OF A CASE OF DIAPHRAGMATIC HERNIA, FOLLOWING A PENETRATING WOUND OF THE THORAX.¹

BY

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The patient, a boy of 10 years, on the afternoon of December 7, 1901, while playing with other boys in a hayloft, fell a distance of about four feet, striking upon the point of a hay knife, which had fallen and become concealed in the hay. The knife was 2 $\frac{1}{2}$ feet long, 2 inches wide, with a blunt point. Its cutting edge consisted of a series of serrations such as are found on the modern bread knife. The knife penetrated the thorax on the left side, in the anterior axillary line between the seventh and eighth ribs: coming out posteriorly through the tenth and eleventh ribs 1 $\frac{1}{2}$ inches from the spinous process.

When I arrived, Dr. Edward Van Duyn had made the first dressing. I found the boy in a condition of shock, pulse 160 to 170, extremities cold, temperature 98° F., pupils normal, respirations 30, short, with a labored expiration; all hemorrhage apparently arrested. Physical examination of the thorax revealed slight tympany on the left side, a few friction rales in the area of the injury, vesicular breathing indistinct. The patient lay upon his right side. The abdomen was soft, he had little or no pain, but complained of great thirst. He vomited nearly all the water taken.

The day after the accident, at 6 a. m., the pulse was 130, temperature 102°, and respirations 24, easy and regular. The patient had not retained liquid of any kind during the night, but had slept for half hour intervals. From 3.30 p. m. of the first day, until 6.30 a. m., the second day after the accident, the patient retained dram doses of beef juice; upon increasing the size of the dose he vomited.

The second day after the accident, at 6 a. m., the patient had a night terror, a condition from which he had suffered occasionally. He sprang out of bed and the nurse was unable to control him. This exertion started a slight bloody oozing from the external wound and otherwise upset his condition. At 9 a. m., the second morning, we were able to get a fair movement of the bowels by means of an enema. At this time the condition of the external wounds was excellent; physical examination showed slight emphysema of the surrounding subcutaneous tissue, the left thorax slightly bulging, tympany increased, no friction sounds, vesicular breathing still indistinct. There was slight pain upon pressure in the left hypochondriac region. The abdomen was soft and slightly retracted with no rigidity. At 9.30 a. m. the patient vomited considerable watery material, containing a small piece of undigested meat. As he had had no meat since the accident, this must have been in the stomach at the time of the injury. During the afternoon of the second day the patient retained nourishment until 5 p. m.; he again vomited a large quantity of fluid at 9.30 p. m. and at 2.30 a. m. the following morning. The nurse remarked that the fluid vomited was greatly in excess of the amount taken. During the night he was slightly delirious, grasping at imaginary objects and pulling at the bed clothes.

The third day after the accident the patient's face had a pinched expression, his hands and feet were cyanosed and his pulse, difficult to count, ranged from 140 to 160. His temperature was 99°, respiration 30, easy and regular. Physical examination showed the wounds healing by first intention, also marked tympany of the thorax on the left side, and more bulging of the chest wall. The apex beat of the heart was distinctly seen just under and a little to the left of the right nipple. The heart could be easily outlined to the right of the sternum; heart dulness was entirely absent on the left side. There was very little vomiting and none during the following night.

The fourth day after the accident at 6 a. m., the pulse was 158, temperature 98.2°, respirations 32, somewhat more labored. Tympany over the left thorax was increased. Heart entirely displaced to the right of the sternum. Apex beat disseminated. Vesicular breathing heard over the apex of the left lung. Abdomen flat and soft. The patient died at 9 a. m., the fourth day after the accident.

There was no cough or expectoration at any time during the patient's illness. The tongue remained soft and clear.

The necropsy disclosed the following conditions: The external anterior and posterior wounds had apparently united by first intention. Upon removing the sternum we found the stomach filled with gas and occupying the entire left pleural cavity, with the exception of a small space at the apex, which was filled by collapsed lung and a small portion of uncollapsed lung. The heart lay entirely to the right of the sternum,

between the third and fifth ribs. There was evidence of slight laceration of the lower lobe of the left lung. No fluid or blood was in the pleural cavity, nor was there macroscopic evidence of any infection. Upon the upper surface of the stomach there was a slight cut which involved only the outer layer. After puncturing the stomach and letting out some of the gas, we were able to return it to the abdominal cavity. There was only a small amount of fluid in the stomach. The opening in the diaphragm was three inches in length, in a line with the anterior and posterior openings in the thorax. In its passage through the opening in the diaphragm, the stomach had carried part of the greater omentum with it, and had so turned upon the lesser omentum as to constrict the cystic duct, causing a distended gallbladder.

Leichtenstern, who has collected reports of 250 cases of traumatic hernia of the diaphragm, found that in five only was it diagnosed before death. Lachner¹ is reported as having collected statistics of 266 cases of diaphragmatic hernia, in seven only of which had the diagnosis been made. W. E. Home² reports a case in which he did an exploratory laparotomy for symptoms of obstruction in a man who four months previous had sustained an injury to the thorax, but he failed to find the obstruction. The necropsy, two days later, showed a knuckle of transverse colon in an opening in the diaphragm. Howe³ reports a case in a boy who sustained a contusion of the chest in the anterior axillary line in the sixth interspace. He recovered apparently, but seven months later was taken ill. He had nausea, vomiting, severe pain beneath the sternum and severe constipation. Necropsy showed the stomach, the transverse and part of the descending colon, and fully one-half of the omentum in the left pleural cavity. The heart was entirely displaced to the right, and the left lung was compressed above the fourth rib. Maynard⁴ reports a case in which fluid was diagnosed in the pleural cavity, but aspiration disclosed intestinal contents. In the London Clinical Society Transactions, Vol. 26, page 105, a case is reported in which the diagnosis of carcinoma of the stomach was made, but necropsy disclosed a diaphragmatic hernia.

In reviewing the literature of traumatic hernia of the diaphragm, it is very evident that the diagnosis is rarely made before death. The following conclusion may be formed from the foregoing report: that diaphragmatic hernia is usually attended with symptoms of partial or complete obstruction, nausea, vomiting, constipation.

In the case just reported the abdomen was soft and slightly retracted, the left thorax was increased in circumference, and the heart was displaced to the right. Pneumothorax, due to gas in the stomach, caused increased tympany and bulging, but there was no bulging of the intercostal spaces as in pneumothorax ordinarily, a point which I believe might be valuable in differentiating simple pneumothorax from a condition due to a distended stomach or intestine in the pleural cavity. The quantity of fluid vomited was greatly in excess of the amount taken. The stomach retained fluid for periods varying from 1 to 15 hours. The absence of pain is to be noted. The ease and regularity of respiration was remarkable with one lung completely collapsed. The embarrassment to the circulation by displacement and pressure on the heart was evident.

REFERENCES.

- ¹ Gould's Year-Book, 1898.
- ² London Lancet, December 1, 1900.
- ³ Medical News, November 30, 1901.
- ⁴ London Lancet, May, 1891.

Free Dispensaries.—At a meeting of the Alumni Association of the College of Physicians and Surgeons of Chicago, held May 19, resolutions were passed condemning the establishment of free dispensaries throughout the city by the faculty of the college, alleging that the free dispensaries encouraged pauperism and were in direct opposition to the graduates of the college who upon locating in different parts of the city found themselves surrounded by these free institutions. The secretary of the faculty, who with other representatives were present, in answer to the charge said that the dispensaries were established equally for the instruction of the students of the college as well as the benefit of the poor.

¹ Read before the Syracuse Academy of Medicine, January 21, 1902.

THE DIAGNOSIS AND TREATMENT OF INCIPIENT PULMONARY TUBERCULOSIS.

BY

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Incipient tuberculosis is curable if the disease is diagnosed early. Therefore, the means and methods by which we are enabled to arrive at an early diagnosis require particular attention. Such diagnosis rests upon a multitude of details and observations. Many cases of tuberculosis are passed by able men who would undoubtedly diagnose them were their suspicions aroused, but they allow themselves to be diverted, and a diagnosis of some simple disorder allows precious time to elapse. The suspicious symptoms, arranged in the order of their prominence, are as follow:

1. *Cough*.—A slight, hacking, persistent cough, which can be referred to the larynx or upper trachea. It is worse at night or upon lying down. There is little or no expectoration.

2. *Failing Appetite*.—There is a repugnance for fatty foods and some degree of indigestion.

3. *Loss of Weight*.—Patient is a few pounds below his average weight.

4. *Sleep Sweats*.—Upon lying down, day or night, the patient awakes with the neck and upper chest bathed in a warm or cold perspiration.

5. *Accelerated Pulse*.—A pulse of 90 to 100, which is quick, irritable, and ill sustained.

6. *Elevation of Temperature*.—This is an unobtrusive symptom, but is of the highest importance. When a case of beginning tuberculosis is suspected, a temperature record at 2.30 p. m. on several successive days should be insisted upon. A temperature elevation of 1° F. is a symptom that must be accounted for absolutely by some other condition, or tuberculosis must be suspected and confirmatory symptoms searched for.

7. *Fistula in Ano*.—When syphilis is eliminated, this condition calls for a careful examination of the chest.

8. *Pleurisy with Effusion*.—A history of pleurisy with effusion in a patient who complains of any of the above-mentioned symptoms, is important.

These are a few of the things that should cause a physician to make a thorough examination of the chest for the signs of beginning apical catarrh. Such inspection of the suspect will often reveal many points of distinct diagnostic value. Enlargement of the superficial veins is an important symptom. A penciling of the pearl-colored skin by bluish veins running over the chest is also suggestive of apical trouble.

Careful observations should be made of the degree of nutrition, the form of the chest, the degree of prominence of the scapulas and clavicles. Get the circumference and expansion, and make a note of the rapidity of respiration and the degree of completeness. Locate the apex beat and observe if there is any difference in the expansion of the two sides of the chest. Palpation shows nothing of much value at the stage in which we hope to find the disease, auscultation being the more valuable method of examination. At this stage the sounds are so faint and delicate that to me a stethoscope is indispensable. It should fit the ears closely with a medium-strength spring, and without the slightest discomfort; the room should be quiet, or the sounds those to which the ear of the examiner has become indifferent from their constancy. The position of patient and examiner should be relaxed and comfortable. There must be nothing to distract attention from the sounds transmitted. He must be able instantly and infallibly to detect and ignore all signs generated within the stethoscope, upon the surface at the point of contact of the bell, conducted upon the surface from friction of the fingers, shirt, etc., and finally, those generated within his own nasopharynx by respiration. I assume that he will be able to ignore all heart and muscle sounds.

We must be familiar with the sounds of the healthy chest in order to determine slight departures from the normal, for instance, the quality, pitch, intensity and duration of inspiration and respiration and the normal respiratory rhythm. Karl von Ruck says, "If the formation of tubercles in the lung is peripheral or approaching the pleural surface, and is of recent date or just beginning, the recognition of such a process by auscultation is one of the most delicate tasks in physical diagnosis; and percussion, especially when not forcible, is of no avail at this period; the eruption is not yet dense enough, the connective tissue proliferation peripheral to the tubercles is not great enough, and the bronchioles are not yet sufficiently obstructed, to alter the ordinary percussion note or to give rise to bronchial respiration."

One of the most important signs of tubercle is a fine moist crackle occurring at the end of inspiration, to me identical with the familiar crepitant rale. It frequently disappears with coughing so it must be searched for early in the examination. Often it will appear after a cough or a deep inspiration and will then disappear for some time. A slight roughness of the respiratory murmur, a weakening of it and a prolongation of expiration changing the normal rhythm of respiration is very important confirmatory evidence.

These signs will be limited to a portion of one or both apices in the majority of cases. If a spot of dulness with crepitant rales, prolonged blowing expiration and increased vocal fremitus be found and the temperature is elevated 1° or 2° with a corresponding elevation of pulse, some cough, loss of weight and appetite, the diagnosis is as positive as though deferred till breaking down of tissue with liberation of bacilli occurs.

The examination of the sputum is of the greatest positive but of little negative value. If the examination of the chest reveals the evidence approved above, repeated negative examinations are admissible but are to be considered only as negative evidence.

The use of the Röntgen ray is a fascinating method of diagnosis in diseases of the chest but the daily use of the best apparatus in several hundred cases has convinced me that, for me at least, it will always be a means of confirming the evidence drawn from other and more reliable sources. I have been repeatedly unable to discover the slightest sign of alteration of specific gravity in a chest that was undoubtedly the seat of a tuberculous process easily recognizable by ordinary methods of exploration. The stage of consolidation must be marked, before enough new formation is present to interfere with the transmission of the x-ray.

The diagnosis being made, the means at our command to combat the disease are many and varied, but I shall confine the discussion to the lines of treatment that in my own hands and those of others have shown themselves to be of actual value. These are: (1) remedial measures other than drugs; (2) tonic medication; (3) specific medication; (4) climatic treatment.

Remedial Measures other than Drugs.—Under this head will be considered all the measures that tend to increase weight, strength and vitality.

As a usual thing, one finds a tuberculous candidate with a flat, sunken chest, poor muscular development and a chest expansion of 2½ to 4 inches. It has been my rule to try and increase this to 6 inches by suitable exercises. Those which have proved most practical are as follows: The patient with the chest covered with light loose clothing stands erect in the open air or in a room with the window open. With arms hanging loosely at the sides, shoulders well back, and head erect he exhales as much of the residual air as possible. He then inhales through the nose slowly till the chest is filled to its greatest capacity. The arms are then raised, palms forward, till the thumbs touch above the head, and while in rigid extension are returned forcibly to the sides. The air in the lungs is then forced out slowly against the resistance offered by the closed lips. This

is repeated at intervals of a half minute. This exercise may be graded from mild to severe and will soon develop the apices. At first especially in anemic patients an attack of vertigo is apt to be produced and the patient should stand near some object of support such as the foot of the bed.

While walking in the open air daily a full inspiration should be taken and held for some ten paces and then slowly exhaled, and this repeated as often as possible without causing fatigue. All exercises intended for tuberculous patients follow this important rule.

The theory of absolute rest for a tuberculous apex does not appeal to me. Rigid exercises of the muscles of the neck, arms and abdomen should be taught. These should be done slowly at first and the weight record carefully watched. Should a loss of one pound in the first week occur it may be disregarded; a greater loss of weight than this should cause interruption of the exercises for a time, those of the chest excepted. Massage of the chest is of value, and if constipation exists the patient should be taught abdominal massage.

Having by the above measures developed a pair of lungs competent to aerate the blood, it is of the highest importance that they shall at all times have a supply of pure oxygen, hence as much time as possible must be spent in the open air. Each patient should be taught that devitalized air is to him the most virulent poison. Cigaret smoking must be absolutely interdicted. As little smoking as possible should be allowed, and then always in the open air. The patient should sleep on a hard mattress, with enough blankets to keep him warm. These should be aired three hours daily. A window in the bedroom or in an adjoining room should be kept open regardless of the weather and your amateur assistants. If necessary, the bed may be protected from draughts by a suitable screen.

Baths should be taken frequently, and always in a warm room. A portion of the body should be bathed and dried at a time; this should be followed by a hot plunge and friction with a coarse Turkish towel. After this a glass of milk, malted milk or hot cocoa should be taken, and then the patient should go to bed. Cohabitation should never follow this bath, and should be restricted to reasonable bounds at all times. In order to effect a cure the stomach must remain unimpaired; and valuable as the method of forced feeding is, it must be used intelligently. The stomach must never be coaxed to take more food than it can prepare for assimilation. Autointoxication is not an aid in the treatment of incipient tuberculosis. A patient who can, should take warm milk. It should be taken slowly, and, preferably one hour before meals and at bedtime. Rare roast or broiled beef or lamb should be eaten. The administration of raw chopped beef has shown no results in my hands, except to increase the existing repugnance to all kinds of meat. Eggs in any form, save hard-boiled, may be used. Peanuts, bananas and sweet potatoes are valuable articles of diet if they can be tolerated. I advocate the use of malt liquors in this disease. Beer, well aged and poured light, may be taken up to five pints a day if it agrees with the stomach. A small Manhattan cocktail a half hour before meals will stimulate the appetite and aid digestion.

Under this first heading should be classed electricity and the inhalation of ozone. Personally, I prefer static and faradic electricity. Those patients whose place of residence permits, I am in the custom of treating daily as follows: A foot plate is connected to the negative pole of a good-sized coil of medium coarse winding, a moistened sponge electrode is then placed over the seventh cervical vertebra and a strong current passed for ten minutes. The patient then takes his place upon the insulating platform of a static machine, and is connected with the positive side of the machine. The head breeze is employed for five minutes, and then a point electrode is placed at a distance of six to eight inches from the

affected apex, and allowed to collect for five minutes. The ozone inhaler is then suspended before the patient, and he is instructed to breathe as deeply as he can and inhale as much of the ozone as possible without exciting cough.

In order to obtain any benefit from this treatment a powerful machine must be employed; one capable of giving a 12 inch arc and lighting the largest Crooke's tube at a 30/35 vacuum.

Tonic Medication.—This consists of the administration of drugs to increase flesh and strength, and assist nature to throttle the disease. Cod-liver oil, iron, quinin and strychnin, hypophosphites, etc., are all of value, but of themselves quite insufficient. Strychnin should be pushed to a daily dose of $\frac{1}{10}$ grain. Under its use appetite usually increases. The cough is generally controlled by cod-liver oil, but it is a tax upon most stomachs and few patients can or will tolerate it.

When the cough is annoying it is best controlled by terpin hydrate and codein in the form of an elixir or by one full dose of codein at bedtime. Arsenic in small doses often increases weight.

The weight of all tuberculous patients should be taken daily and at the same hour if possible. The *weight card* is the surest and also the simplest indication of the patient's progress or decline.

Iron in the form of Bland's mass is indicated for the anemia usually present. The much-vaunted iron peptonates are of little value. Over-medication is to be avoided in these cases, and nothing should be given without a clear idea of what it is expected to do.

Under *specific medication* come those remedies which are directed toward the process or its cause, the bacillus of Koch. As a type of these preparations may be taken the ill-fated tuberculin of Koch and its successors, Klebs' tuberculoicin and von Ruck's watery extract of tubercle bacilli. These fluids have for their object the generation within the system of substances inimical to the life of the bacillus of Koch. Theoretically they are right, practically they are dangerous unless handled by one fully alive to their enormous potentiality for harm. In the hands of the discoverer they are, as might be expected, of great value and safe. The work of Dr. von Ruck in this connection promises much for the future for this line of treatment. The attempt to cure tuberculosis by creasote is no longer considered seriously. It is as sensible to attempt to cure tuberculosis by saturation with creasote as to attempt to cure septicemia by inunctions of magic silver salves.

The use of those substances which increase leukocytosis as a means to assist nature to wall off the infected area is rational and efficacious. The best agent of this group is cinnamic acid. The objections to it are its insolubility and tendency to produce local injury at the site of injection, but this is overcome easily by the use of sodium salt. In a 5% solution it keeps indefinitely if care is taken, and I have never seen it produce more than a transient sense of discomfort at the site of injection. The dose should be pushed to 20 minims daily. Under its use weight increases, cough lessens and appetite returns. In advanced cases it is useless, and in cases of mixed infection its use is followed sometimes by a marked rise of temperature. Its use in many cases has convinced me that it has actual antituberculous powers. Under the name of hetol a similar preparation has been used extensively abroad with excellent results. In incipient cases it is well worth a trial.

Climatic Treatment.—In spite of our vaunted therapeutics the fact remains that a suitable climate without drugs will do more to cure this class of patients, than the most careful attention of a competent physician, handicapped by unfavorable climatic conditions.

When a patient whose means permit, is found suffering from incipient tuberculosis, duty demands that he be placed under the most favorable conditions for his recovery, and one of our friends along the Rocky Moun-

tain plateau receives the patient and his coin. A year spent in investigating the climatic advantages of the west, southwest, and south, has taught me certain facts which are a help in deciding the question which presents itself with each of these patients—Where shall I send this particular patient. If the patient is nervous and troubled with insomnia, Colorado Springs will be found too high, and Las Vegas will suit him. If he sleeps well and is not nervous, he may remain in Colorado Springs from May till November, and then go down to San Antonio for the winter. Denver I do not like in the fall and winter. While the air is usually dry, yet it snows heavily at times and the air becomes raw and cold with high winds. Colorado Springs is sheltered on the west by the Pikes Peak range, on the north by the divide, and on the east by a line of high bluffs. It is open to the south only, and has not the variable weather that Denver experiences. Moreover it is quiet and there is not the inducement to over-exertion that is always present in a large city. A tuberculous patient, if sent early to this locality has the best possible chance for recovery.

The pine woods of Georgia and South Carolina are of great value in the treatment of asthmatic and bronchial troubles, but the only result in tuberculosis that I have seen there in spite of the gilded reports of the promoter, is to postpone the inevitable for a variable length of time. For advanced cases with cavity formation, hectic, etc., this region answers well; the balsamic odors borne from hundreds of miles of long-leaved pine, act kindly upon the sufferer, loosen the expectoration, stimulate appetite and digestion, and promote restful sleep, free from the cough that makes the night so long and dreadful to so many of these sufferers.

But the effect is only palliative, hence I am forced to send those in a curable stage to Colorado or New Mexico in the hope that the continual sunshine, forced respiratory exercises due to altitude, and the extreme dryness of the air may do as much for them as it did for me. Those whose means will not permit the long journey and abstinence from their accustomed means of livelihood must remain in our charge and be aided by every means in our power in the unequal fight for life and health. And the physician under whose generalship this battle is to be lost or won, must engage in it not with the hopelessness bred of despair, but with the fixed determination to forget the odds till victory is won. Let him use not only the well tried weapons of old, but the newer and more powerful ones; and his reward will be, that the patient saved will express a doubt as to his ever having had tuberculosis. For to the laity tuberculosis means consumption, and consumption means death.

The Summer Corps of Physicians.—It is proposed to increase the number of physicians who attend the sick in the crowded tenement districts of New York during the summer from 42 to 75, to commence the work earlier than heretofore and to include in it vaccination in the tenement houses and prophylactic measures against malaria which is said to be steadily increasing in Manhattan and Brooklyn although it is included in the category of preventable diseases. To meet the extra expense entailed by these changes, Health Commissioner Lederle has asked for a special appropriation of \$10,000 from the Board of Estimate in addition to the \$10,000 provided by the Legislature for the Borough of Manhattan, and \$5,000 for Brooklyn.

Deaths and Diseases in Indiana During May.—The statistics of the State Board of Health for May show there were 2,502 deaths for the whole State. This is a rate of 11.7. The city deaths numbered 1,065, a rate of 14.6. The country deaths numbered 1,437, a rate of 10.2. It will be observed that the city rate is 2.9 higher than the rate for the whole State, and that the country rate is .5 lower than the rate for the whole State. By important ages the deaths were: Under 1 year of age, 353; from 1 to 5, 126; from 5 to 10, 60; from 10 to 15, 47; 65 and over, 658. The month seemed to have been unusually severe with old people as 28% of the deaths were of those over 65. Smallpox was reported from 60 counties. The total number of cases reported was 692, with 1 death. The greatest number, 53, was reported from Knox county. In the preceding month 878 cases of smallpox were reported in 55 counties, with 6 deaths.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

June 14, 1902. [Vol. XXXVIII, No. 24.]

1. The President's Address. Delivered at the Fifty-third Annual Session of the American Medical Association at Saratoga Springs, June 10-13, 1902. JOHN A. WYETH.
2. The Relation of Medical Science to Commerce. Oration on Medicine. FRANK BILLINGS.
3. Suture of Heart Wounds. Oration on Surgery. HARRY M. SHEERMAN.
4. State Medicine, Past, Present and Future. Oration on State Medicine. J. M. EMMERT.
5. A Simple and Accurate Method of Outlining the Stomach. WILHELM BECKER.

1, 2, 3, 4.—See *American Medicine*, Vol. III, No. 24, pp. 1004, 1007, 1011, 1018.

5.—**Method of Outlining the Stomach.**—After washing the stomach with Turck's double tube 200 cc. of water are allowed to remain. With the patent horizontal an atomizer bulb is attached to the inlet tube. The outlet is compressed by kinking. With a stethoscope over the stomach air is introduced by compressing the bulb, producing thus a gurgling, which becomes muffled when the stethoscope passes the borderline. To ascertain the location of the lesser curvature the atomizer is attached to the outlet tube. The advantages of the method are simple apparatus and technic; it is more accurate and simpler than gastroduaphany; it is less painful than percussion after distention with CO₂ or air, and it does not give exaggerated outlines. [H.M.]

Boston Medical and Surgical Journal.

June 12, 1902. [Vol. CXLVI, No. 24.]

1. The President's Address. Delivered at the Fifty-third Annual Session of the American Medical Association at Saratoga Springs, June 10-13, 1902. JOHN ALLAN WYETH.
2. On Tuberculosis: In Relation to the Live-stock Industry. J. G. ADAMI.
3. The Struggle Against Tuberculosis. EDWARD O. OTIS.
4. Cystoscopic Appearances in Nontuberculous Cystitis and Pylonephritis in Women. EDGAR GARCEAU.

1.—See *American Medicine*, Vol. III, No. 24, p. 1004.

2.—**Tuberculosis.**—Under ordinary conditions tuberculosis of domestic animals does not develop from human infection, but is conveyed from animal to animal. Its existence is a menace to the live-stock industry. The ranch herds of the West, which live almost entirely in the open air are, with rare exceptions, exempt. The number affected in the East shows the urgent necessity for active steps to arrest the disease as it spreads with appalling rapidity, as shown in the experience of Denmark and Germany, where now about one-third of the cattle are infected. The invested capital exceeds that of any other industry. If only 1% of the animals slaughtered were in advanced tuberculosis the loss would be enormous. In the earlier stages the flesh is safe for food and the cows can be employed for breeding, but the later stages cause emaciation and diminished milk flow and render the milk unfit for consumption. The animal's life is shortened, causing material loss to the farmer. The cost of eradication is much less now than it will be later; taken in time it need not be costly. Bangs' method of isolation renders a herd free in 3 to 5 years. Tuberculous milk can undoubtedly cause human infection, but this is not common. The community should, however, demand milk free not only from all disease germs, but as free as possible from putrefactive organisms. The great danger from impure milk is gastroenteritis, the mortality from which in young children far exceeds that from tuberculosis. [H.M.]

4.—**Cystoscopic Appearance in Nontuberculous Women.**—Garceau states that it is fair to assume that if lesions are present at or about a ureteral eminence, we may expect to find lesions in the upper urinary tract on that side. Attention is particularly directed to cases in which the ureter is diseased, especially the cases of ureteritis. In such cases the eminence is enlarged and the surface red. It is believed that this will be found to be a valuable diagnostic sign of ureteritis, though, of course, the number of cases is too small to allow positive deductions to be made. In three cases of pyelonephritis with diseased ureter in which there was stone in the ureter and strictures,

marked changes in the nature of ulceration and cicatrization were found; so that we may presume that the more extensive the ureteral disease the more marked the changes to be observed at the ureteral orifice. [A.B.C.]

Medical Record.

June 14, 1902. [Vol. 61, No. 24.]

1. The President's Address. JOHN ALLAN WYETH.
2. State Medicine, Past, Present and Future. J. M. EMMERT.
3. Suture of Heart Wounds. HARRY M. SHERMAN.
4. The Relation of Medical Science to Commerce. FRANK BILLINGS.

1, 2, 3, 4.—See *American Medicine*, Vol. III, No. 24, pp. 1004, 1018, 1011, 1007.

New York Medical Journal.

June 7, 1902. [Vol. LXXV, No. 23.]

1. Cerebral Localization and Brain Function. L. HARRISON METTLER. (Continued).
2. The Complications of Phimosis, with Treatment. FREDERIC GRIFFITH.
3. Some Considerations on the Hygienic and Prophylactic Treatment of Myopia. ALEXANDER DUANE.
4. Gunshot Wounds of the Stomach, with Report of a Case. PAUL F. EVE.
5. A Case of Transverse Fracture of the Sternum. WALTER J. ROBINS.

2.—Complications of Phimosis.—Griffith divides the complications arising from an elongated and constricted foreskin into (1) those which follow as a direct result of the local conditions; and (2) those occasioned through sympathetic nervous connection. Under the first division are balanitis and posthitis, separate or combined, adhesions, edema, hypertrophy, extravasation, cellulitis, gangrene, arrested development, herpes, eczema, paraphimosis, preputial calculi, urethritis, cystitis, dilation of the bladder, ureters and pelvis of kidneys, difficult urination, impotence, prostatitis fissures, hemorrhoids, perineal abscess, prolapse of rectum, hernia, hydrocele, cancer and anemia. Second: Eneuresis, hair-trigger orgasmal condition with heightened or lessened erotic tendencies, the "reflex paralyses" of Sayre, incoordination, mild epilepsy, melancholia, convulsions, bladder tenesmus, symptoms resembling calculi, gastrointestinal catarrh, nasal and eye disorders, false diabetes. Cases illustrating many of these conditions are mentioned. The treatments of phimosis are enumerated under the heads of hygienic, forcible dilation, incision, excision and circumcision. Dilation should not be too frequent. If stretched more than once in two or three days, fissures in the mucous layer of the prepuce are likely to occur, and the end desired may be defeated. Incision and excision are usually employed as temporary relief measures. The author employs cocaine hydrochlorate in strength varying from $\frac{1}{2}\%$ to $\frac{1}{4}\%$ in a weak soda solution. His method of performing circumcision is given in detail. [C.A.O.]

3.—The hygienic and prophylactic treatment of myopia is discussed by Duane. The patient should employ the full correction for his myopia all the time, both for distance and near. Proper attention should be given to illumination, the size and legibility of the print, the quality of paper used in the books read, and the relative height and disposition of the seat and desk. In low and medium myopia, moderate restriction of near work, or rather its better distribution, so that it is done mainly by daylight and not for too long at a time is important. In high myopia with evidences of progress, much more stringent restriction of near work should be observed. Plenty of sleep and outdoor exercise are advised in medium, and especially in high myopia. The patient should be examined at frequent intervals. [C.A.O.]

4.—Gunshot Wounds of the Stomach.—Eve advises immediate operation. After repairing the wounds of the stomach he always flushes out the abdominal cavity with a copious saline solution. He does not allow anything even of a liquid nature to pass into the stomach until after the fourth or fifth day, maintaining the patient during this time by rectal nutritive enemata. After the fifth or sixth day, the patient is allowed at intervals of from two to four hours a small quantity of egg albumen, augmented by beef-juice, administered about the end of the eighth day. He does not allow solid food to be taken

until 18 or 20 days after the injury, and even after this period he is careful to withhold any article of food which would produce fermentation. A case is reported in a man of 25. The point of entrance of the bullet was opposite the costal cartilage of the right ninth rib, about one inch to its left side; the point of exit lay between the costal cartilages of the tenth and eleventh ribs, the bullet having ploughed twice through the stomach, no other abdominal viscera having been injured. The first opening into the stomach, which corresponded to the wound of entrance, was of almost the size of a silver dollar and situated in the anterior border of the stomach; the second opening was larger than the first and involved in its tear some of the attached portion of the great omentum at the greater curvature. The wounds were both closed after the Lembert plan, and the patient, after the first few days, had a normal temperature and respiration. He made an uneventful recovery and left the hospital in about a month. Several days later the patient was taken with a chill, temperature 103.5°, respirations 46. Stomach very much distended with gas. During the next ten days he had rigors with rise and fall of temperature and colliquative sweats. There were marked symptoms of pneumonia, which were followed by empyema of the right lung. Thoracotomy was done, but the patient died a few days later of exhaustion. The question with the author is whether the infection spread from the stomach or was due to exposure to severe cold weather. [C.A.O.]

Medical News.

June 14, 1902. [Vol. 80, No. 24.]

1. President's Address at the Fifty-third Annual Session of the American Medical Association. JOHN ALLAN WYETH.
2. Suture of Heart Wounds. HARRY M. SHERMAN.
3. The Relation of Medical Science to Commerce. FRANK BILLINGS.
4. Intestinal Anastomosis: Further Remarks Thereon. FREDERICK HOLME WIGGIN.
5. Hysteria: Its Etiology and Management. JOSEPH M. ATKIN.
6. Stone in the Female Bladder: Report of a Case. H. H. STONER.

1, 2, 3.—See *American Medicine*, Vol. III, No. 24, pp. 1004, 1011, 1007.

4.—Intestinal Anastomosis.—Wiggin objects to the Murphy button for reasons which he has already set forth, and prefers a modification of the method devised some years ago by Maunsell, which is essentially as follows: Make a V-shaped incision, removing diseased bowel and its attached mesentery. Pass a suture so as to approximate the cut ends at the attachment of the mesentery, the suture including a portion of the same. The knot is tied within the lumen, the ends being left long for future handling. Directly opposite to this suture another is passed, tied similarly, and left long. By means of these long sutures the assistant holds the bowel while the operator unites the ends by interrupted sutures $\frac{1}{2}$ inch apart, passed through the entire bowel wall and tied within the lumen. The final is a Lembert suture and tied without the bowel wall. This method may be applied to uniting any part of the alimentary tract. [A.B.C.]

6.—Calculus in the Female Bladder.—In nearly all recorded cases of calculi in the female bladder the cause has been the presence of some foreign substance introduced from without, which formed the nucleus around which the salts were deposited. The symptoms are paroxysmal vesical tenesmus, frequent urination and severe cystitis. According to Stoner there is but one remedy for this condition—the removal of the offending calculus. Three methods of doing this offer themselves: Litholapaxy, suprapubic cystotomy and cystovaginal incision. If the urethra can be sufficiently dilated to admit easily a lithotrite with which to crush the stone, this is the ideal operation. Its dangers are that the vesicle mucous membrane may be injured by the grip of the instrument and that all of the calculi may not be removed. Of the other methods, the suprapubic is preferable for large stones, and vaginal cystotomy is proper if they are an inch or less in diameter. If there is much inflammation the incision should be kept open for drainage; otherwise it may be closed with silkwormgut sutures. Stoner reports a case successfully treated by vaginal cystotomy. In this case the formation of the calculi was undoubtedly due to bad stricture of the urethra caused by a severe injury incurred during childbirth. [W.K.]

Philadelphia Medical Journal.

June 14, 1902. [Vol. IX, No. 24.]

1. Food Preservatives. HENRY LEFFMANN.
2. Dr. Wyeth's Presidential Address at the Fifty-third Annual Session of the American Medical Association at Saratoga Springs, June 10-13, 1902.
3. Suggestions for Certain Cheap and Convenient Forms of Apparatus for Class Work in the Bacteriologic Laboratory. ALLEN J. SMITH.
4. Some Gastric Conditions as Found in Forty Healthy Persons. RICHARD F. CHASE.
5. The Place of Drugs in the Treatment of Stomach Troubles. BOARDMAN REED.
6. Focal Facial Epilepsy. Followed by Temporary Unilateral Paralysis of the Face and Tongue. D. J. MCCARTHY and A. P. FRANCINE.
7. Superior Tabes. M. H. BOCHROCH.
8. A Study of Heredity. HIRAM A. WRIGHT.

1.—Food Preservatives.—Leffmann has rendered in a very concise manner the subject of food preservatives, as viewed from various standpoints. The reader is referred to the original article. The use of the mixture of borax and boracic acid is the special storm center at present, but the author claims there is no evidence to show that the quantity employed is sufficient to do harm. [F.C.H.]

2.—See *American Medicine*, Vol. III, No. 24, p. 1004.

4.—Some Gastric Conditions.—Chase details the results of his recent investigations of the following gastric conditions as found in 40 medical students; the subjects examined, with but three exceptions, considered themselves free from acute or gastric diseases. The amount of contents, the relation of the lower border of the stomach to the navel, the xipho-umbilical resonance, the relation of the greater curvature to the costal cartilages, the stomach-lung resonance, the pyloric resonance, the liquid capacity test, and acidities. [F.C.H.]

6.—Focal Facial Epilepsy.—McCarthy and Francine detail a case of focal facial epilepsy followed by temporary unilateral paralysis of the face and tongue. The case has not only a localizing value, but is of especial interest in connection with the "explosion" theory of epileptic convulsions, and the exhaustion paralysis of Hughlings Jackson. [F.C.H.]

7.—Superior Tabes.—Bochroch details a case in which the slightly marked ataxia in the legs, which is so pronounced in the arms, suggests superior tabes. He is inclined, from the symptoms, to believe the case is one of paresis with beginning tabes of the cord. [F.C.H.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

Excision of Fistula in ano Without Section of the Sphincter.—Barge (*Bulletin Général de Thérapeutique*, July 23, 1901) practises excision of the fistulous tract and of the indurated tissues surrounding it in the same manner that he would a tumor, guiding himself with a grooved director. Section of the sphincter and incision into the rectum must be avoided, so he simply makes an incision around the opening of the fistulous tract in the rectal mucous membrane; the internal orifice of the fistula is then closed by a few catgut sutures and the rectum attached to the outer wall of the ischio-rectal fossa, thus approximating the walls of the wound by a number of deep sutures in such a way as to leave no space where blood may accumulate. The wound is dressed by applications of sterilized or iodoform gauze, over which absorbent cotton is placed, the whole being held in position by a bandage. No tampon nor drain is introduced into the anus, as these foreign bodies, by producing contractions of the sphincter, might prove unfavorable to immediate healing of the wound. Rapid cure often follows this method of treatment. [L.F.A.]

Diet in Cases of Acne.—According to N. S. Davis (Cohen's System of Physiologic Therapeutics, Vol. 6), nothing contributes more certainly to the relief of acne than preventing abnormal fermentation in the gastrointestinal tract. This can best be accomplished by a diet of simply prepared foods, by their abstemious use, and by frequent, sometimes daily, gentle purgings. A dose of Carlsbad salts in a glass of water taken when the patient first arises will usually suffice as a purge. A glass of hot water 20 or 30 minutes before meals is a help.

Overeating, which is especially apt to be indulged in at puberty when children grow rapidly, must be forbidden. The trouble is produced or aggravated in many cases by oatmeal, pancakes, particularly when made of buckwheat, pastries, candies, and sweets generally. To the list of foods that must be forbidden, or whose use must be regulated carefully, should be added foods cooked in fat, such as fried meats and vegetables, sausages, doughnuts, cheese and any other food slow to digest or liable to ferment. Coffee and tea made very sweet are also often harmful. When derangements of the sexual organs exist, they must be corrected. The period of puberty is often accompanied with persistent or recurrent acne, and while treatment may diminish the disfigurement, time alone seems able to bring complete relief. The affected portion of the skin must be kept clean and functionally active. Fomentations and massage help to do this. Antiseptics also may usefully be applied.

Treatment of Scleroderma Associated with Raynaud's Disease.—Ewart (*Medical Press and Circular*, Vol. cxxiv, No. 8, 1902, p. 182) points out that in his patient the nutritional indication was met by rest in bed and an easily digestible diet, including 6 ounces of port wine daily. The next most important indication is protection of the peripheral circulation; for this purpose the hands were anointed with a mixture of equal parts of almond and olive oil with 5% of oil of eucalyptus, and covered with gloves, and each hand was kept night and day in a bag containing a hot-water bottle wrapped in cotton. In this way the daily recurrence of morning cyanosis was obviated. The thickening and stiffness of the skin were treated with passive movements and massage with oil, applied to the arms and hands and to the upper parts of the chest and back. Later on, the patient was encouraged to practise movements of the fingers. Internal medication included diaphoretic and diuretic mixtures. To remedy the deficiency of subcutaneous fat, half an ounce of olive oil and 1 dram of whisky were ordered to be taken every night. A 4-grain pill of mercury with rhubarb was ordered every other night to aid in the digestion of the oil. This treatment was followed by a gratifying improvement, both as to the condition of the skin and the cyanosis, and the tendency to cardiac oppression and syncope. The subcutaneous fat in almost every part of the body, except the breasts, was also increased. [R.M.G.]

Hypnotic Cure of Spasmodic Contraction of the Urethra.—Watheau (*La Médecine Moderne*, May 28, 1901) reports the case of a medical student who suffered for three months from a spasmodic contraction of the urethra, which was cured by hypnotic suggestion. [L.F.A.]

An Efficient Treatment of Septic Endocarditis.—K. F. Wenkebach,¹ of Groningen, refers to the happy results which followed the injection into the superficial veins of the arm of 12.5 mg. to 24 or 30 mg. collazol (*Argentum colloidalé, crédé*) in patients suffering from septic endocarditis. He regards this preparation as a valuable blood antiseptic, due probably to its power as a katalyzator, by which the bactericidal power of the blood is greatly heightened. [C.S.D.]

FORMULAS ORIGINAL AND SELECTED.

Hypodermic Injections of Iodin Compounds in Syphilis.—Lang (*Bulletin Général de Thérapeutique*, June 23, 1901) states that when potassium iodid is not tolerated by the stomach it should be given by hypodermic injection as follows:

Potassium iodid 75 grains
Codein hydrochlorate $\frac{1}{2}$ grain to $\frac{1}{4}$ grains
Distilled water 1½ drams

Sixteen minims to 48 minims of this solution should be used for each injection.

This solution may be replaced by the following preparation of iodoform:

Iodoform 75 grains
Liquid vaselin 1½ drams

Eight minims to 16 minims of this may be injected every day or every two days.

The iodoform gives excellent results in certain syphilitic infiltrations, especially in ganglionic enlargements, which disappear rapidly when the injections are made near them. [L.F.A.]

¹ Die Therapie der Gegenwart, 1902, No. 2.

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King Edward's Operation.—As we go to press the startling news comes that the coronation of King Edward has been postponed because of serious illness requiring operation. So often some imaginary indisposition is used as a pretext by royalty to excuse them from numerous functions with which they are overburdened, and newspapers are so ready to enlarge upon any such reports, that possibly the gravity of King Edward's condition has not been generally appreciated. At the present writing it is difficult to determine definitely with regard to the nature of his trouble. By the time this is read it will no doubt be generally known through the daily papers. From newspaper reports it now seems most likely that the trouble is appendicitis or perityphlitis, as some of our English friends choose to call it, though the statements of some papers who quote the Bishop of London as saying that the trouble is strangulated hernia, and the statement which they make that he did not lose consciousness during his operation, (a cocain operation would be suitable for hernia but inadvisable for appendicitis) make this a possibility. It seems unlikely that any condition which would give rise to strangulation of a hernia would be present and it is also rather unusual for a person of King Edward's age to suffer from a first attack of appendicitis. In either case with proper surgical attention, which is assured by the eminent reputation of the King's attendants, it would seem that the prognosis should not be very grave. However, the chances of some charity patient, who would be operated upon immediately, would perhaps be as good or better than those of a king, in whose case there would of course be a good deal of hesitancy about undertaking any operation that was not urgently demanded. In any case, Americans, and especially members of the American medical profession, will await the outcome with interest second only to that of the King's own people. The sorrow of our nation in the recent illness and death of President McKinley will make it a more appreciative sympathizer with British subjects as they anxiously await news of the King's improvement.

The smoke nuisance has become acutely aggravated by the miners' strike in the anthracite regions, and should have a powerful influence in bringing about an ending of that unfortunate controversy. Corporations especially believe, or pretend to believe, they have a just

ground for going back to the use of soft coal, and every chimney is belching forth huge clouds of unburned carbon to hang over the city and almost to stifle those living in the more densely populated parts. The elevated roads which use coal instead of electricity are great offenders, and the officials of the law and health departments in New York are undertaking their prosecution; as many as 150 suits have been instituted for violation of the sanitary code. If anthracite coal is not to be had of those alleged to be holding it for higher prices, it may be obtained by pressure to end the strike. In the first place coke may be used in many cases where soft coal is now burned, and in the last resort the demand by an indignant public may be made that the most of the offenders should no longer delay the use of electricity as a motive power.

Insanitary City Markets.—We scarcely doubt from the observations personally made that if the Health Commissioners of a majority of the cities of the United States should make an examination of their local markets they would find as bad conditions as in those of New York. As revealed by a special report to Health Commissioner Lederle the inspectors find that:—

In most of the markets drainage is defective; that the buildings are neglected, the floors allowed to become water-soaked and decayed, and the roofs to leak; that refuse is permitted to accumulate; that waste water is not properly drained, and in some instances is poured on to the sidewalks, into the streets, and under buildings, where it stands in stagnant pools; that fowl coops are unclean, and that there is scant, in some markets no, lavatory accommodations.

Above all things the food we eat should be as clean as every sanitary precaution can keep it. Such a state of uncleanness as is described above, and worse ones that exist in many cities, supply conditions that are extremely likely to infect the foodstuffs and thus bring unsuspected and unnecessary disease into households. Our professional influence with Boards of Health may well be exerted to make them take action similar to that of the New York Commissioner.

Medical Profession and Organized Charity.—Human want and misery is not to be altogether attributed to ignorance in the ordinary educational sense, nor altogether to economic conditions; but more largely to the malign effects of hereditary physical taint and unsani-

tary surroundings. All modern communities possess organizations of the charitably inclined, and to the efforts of such benevolent persons the medical profession is chiefly indebted for the founding and support of the many institutions through which physicians exercise their function among the poor. It remains for the profession to enter into this work in a more systematic way. Every city, county and State medical society should have a standing committee of its most public spirited members, whose particular business it should be to cooperate actively with the organized charities in the capacity of an advisory board. By such a system much may be done in the way of preventing mistakes and of developing the form of preventive charity which will seek to ameliorate suffering by the reduction of pernicious conditions. The splendid work of infirmaries, dispensaries, and hospitals in placing curative medicine at the disposal of the diseased poor, needs to be supplemented by bringing the science of preventive medicine into harmonious action with that form of charity which looks to the lessening of social evils along the lines of personal and public sanitation.

A roof-garden for heat-prostration cases has been established by the Boston Hospital Relief Station. Wire fences give protection, and awnings are stretched for shading. All the necessary accessories for treatment are at hand. Patients are brought to the roof in an elevator, a cold bath is given to lower temperature, followed by stimulation, proper diet, quiet, etc. Better air, coolness, and absence of noise are thus secured. In all tropical and oriental countries the valuable roof has always been used to escape from the heat and confinement of the streets and rooms below. For one-fourth of the year we live in a tropical country, and the one-fourth of the city space we are strangely slow to utilize. Especially for the care of the sick both in hospitals and private houses we should demand of our architects provision against the foolish waste of sanitary means. So far as we know this is the first instance of civic recognition and action in the matter. Boston is said to be not a city, but a condition of mind. A word to the wise should suffice.

The New York Charity Organization Society's work in the prevention of tuberculosis is deserving of all praise. The success of the organization in bringing about tenement-house reform in New York has encouraged it to undertake a similar task in reference to the study of tuberculosis, its prevention, and the cure of those afflicted. It has enlisted the cooperation of such leading physicians as Biggs, Janeway, Bryant, Lederle, with other prominent citizens, and purposes a carefully planned and thoroughgoing crusade. First will be an exhaustive study of the social aspects of the disease, the relation of infected living apartments and patients, the therapeutic power of diet, light, and pure air, the usefulness of instruction in precautions, etc. There are at least 20,000 consumptives in the city and the wisdom of a change of environment is to be tested in as many cases as possible. The education of patients and their friends as regards the disease, without unduly arousing fear, is

to be undertaken. A great many people have misunderstood the motives and methods of work of the Charity Organization Society, but such results as it has won in tenement-house reform, and the movement it is now undertaking against tuberculosis, will leave no room for doubt as to the beneficence and effectiveness of its labors.

"Medical Freedom" is often the title of a page in the antimedical journals at the top of which as mottoes are appended such quotations as the following:

"A man ought to be as free to select his physician as his blacksmith for he alone is to profit or suffer by his choice. The responsibility is his." WM. E. GLADSTONE.

"How is it that there are a thousand ways in which I may be permitted to damn my soul, but when it comes to a trivial matter like temporary ill health, the Legislature must prescribe how I shall do it. It is absurd and ridiculous." MARK TWAIN.

We do not know whether these men are correctly quoted or not, but if Mark Twain ever wrote or spoke such nonsense he should as an antidote be compelled to read the periodicals which trade upon his gullibility. The spread of infectious diseases among the innocent and ignorant by wilful fanatics shows that the responsibility is not individual when a man chooses his own physician. Gladstone would of course repudiate the idea that a man has a right to choose as his family medical advisor one who was not a physician but a morbid-minded ignoramus. We notice that our genial American humorist was not present at the latest legislative committee meetings in New York to argue in the cause of quacks. Has he learned that he might render himself "absurd and ridiculous" by his support of their cause?

An artificial scientific language has been gravely proposed, because of the present difficulties of intercommunication of scientific men. One of the strange vagaries of prophecy is the contention of Wells that French will outstrip English as the world language of the future. It would seem that nothing can prevent the ascendancy of English and of English speaking races. This, however, has not prevented the invention of complete systems of artificial language, not less than half a dozen of which have been wrought out and seriously proposed for acceptance. The last is the "blue language" of M. Bollack and has many scientific supporters. But what folly! Who will take the trouble to learn a language that has no literature, and how would the men of different nationalities ever secure such uniformity of pronunciation as to understand each other in their new language? So far as medicine is concerned the utility of an artificial language would be greater than in any other science, but the impossibilities of securing any practical result are so many sided and so appalling as to render the attempt grotesquely absurd.

A Psychophysical Difference Between Europeans and Malays.—There is a general conviction that in the tropics the accomplishment of any effort demands the overcoming of a greater inertia than is the case in Europe. This inertia manifests itself especially when systematic work is required. The results obtained by Grijns,¹ in his study of the reaction time in Europeans

¹ Archiv f. Anatomie u. Physiologie, Physiologische Abtheilung, 1902, Hfte. 1 u. 2.

and Malays, seem to be in accord with the prevalent view. He found that after a sojourn of more or less duration the reaction time of the European was reduced 14.4% as compared with the reaction time of the recent immigrant, and 16% as compared with that found by observers in Europe. The native, on the other hand, responded as well as the European living in Europe, if not better. The author inclines to the view that the observations upon Europeans indicate a general retardation of psychic processes, and that the necessity for overcoming this inertia is responsible for the greater prevalence of neurasthenia in the tropics.

Suggestions on Institutional Accounting. I.—

Recent comment has been made in these columns upon the lack of proper accounting existing at the present time in nearly all hospitals, homes and other benevolent and charitable institutions. It may be helpful to indicate now some of the points that should be covered by the accounts of such institutions, and to suggest some of the ways by which a good system of accounts may be applied, for the benefit of the management of the institution as well as for the information of the public. This, of course, can be done here only in a very brief manner, without attempting much more than to touch upon general principles applicable to all institutions. When we hear an institution mentioned for the first time we naturally ask, Where is it located? What does it possess in the way of a plant? So in planning the accounts of any concern, whether run for profit or for philanthropic purposes, it is necessary first of all to provide certain accounts dealing with plant or principal, as distinguished from income accounts. What, then, should be considered as principal items? Speaking broadly it may be said that funds to be used for the acquisition of land, buildings or original equipment, together with all investments in interest-bearing securities, should be treated as a part of principal. In the expenditure of these funds a classification should be maintained to show, at least, the cost of lands and buildings apart from the cost of equipment, and in large institutions, owning a number of buildings, the cost of each should be shown; while accounts should be kept showing the material facts pertaining to each security owned. Where large quantities of securities are held it is advisable, as a matter of convenience, to carry only one investment account in the general books, and to show the details in a separate investment ledger of special design, where an account can be assigned to each security, showing how acquired, cost, etc., together with a record of the income received therefrom.

The principal of endowments, left in trust to be invested in approved securities, the income from which alone can be applied to maintenance purposes, must be kept distinct. Except in cases where it is specially required it is not necessary to apply particular investments to each endowment, and in fact it is often an advantage in making investments or reinvestments to merge the cash received from two or more endowments. As long as the accounts state clearly the amount of each endowment received and the cost of each investment made the question as to what investments are covered by any par-

ticular endowment is unimportant, except in the comparatively rare cases when such a segregation of securities is named as a condition in the bequest or deed of trust.

A separate bank account should be kept for cash belonging to principal, including moneys awaiting investment, whether received from endowments or other sources.

The Newspaper Doctor and His Photograph.—

All antinewspaper doctors have wondered at the success of the reporter in securing photographs from the unwilling and surprised newspaper doctor, and at the quickness with which the picture appears in the morning papers when sudden emergencies arise. In explanation members of the profession are receiving the following letter:

"The art of newspaper illustration has reached such a stage that ——— feels justified in asking for the portraits of men and women, who as leaders in various lines of thought and activity are helping to make the history of our time. As you are aware, until recently the portrait cuts used in the daily papers were far from perfect. Perfection has not yet been reached, but progress has been made, especially in reproducing photographs by the half-tone process, so that it is now possible to print pictures which are good likenesses. A good photograph is, however, the first requisite to a good newspaper cut, and it is for this reason ——— takes the liberty of asking for a photograph, as recent as possible, of yourself. Envelope for photograph is enclosed. Please be sure to have your name accompany the photograph. ——— would also be pleased to have you fill out the accompanying blank form for biographic data and mail with your photograph."

Ignorant Erudition.—Every person who has studied the origins and history of English words for even an hour is well aware that in the vast majority of words their spelling does not convey any knowledge of their etymology. In some scientific words it may do so for a few college bred men who have no lexicons (or *lexica*?), but even here the changes from the classic stems are so numerous that the present forms often convey little or no valuable instruction as to the primitive ones. Notwithstanding all this, the old exploded belief is so ineradicable in some minds that its manifestations provoke much amusement for those really instructed. The solid and enduring basis of practical English is English, *i. e.*, not Latin or Greek, but for this Anglosaxon element of the language the self-praising etymologists care nothing. Their interest is only with the Greek and Latin roots and for the accurate reproductions of these they have no concern. As to the English forms and significances of the many suffixes derived from these languages they also care nothing. The limit of the ridiculous is reached, however, when this utter ignorance demands the "scholarly form," and yet has not the most remote suspicion of what the form of the original was. A valued contemporary who is cynically opposed to "the new spelling" repeatedly spells *ameba* as here written, and we have had several manuscripts in which authors have demanded that their equally wrong spelling should not be changed. In such matters we wish to allow authors every liberty which does not make our proof-readers the butts of just ridicule, but "there are limits,"

and we could not permit the scholars to spell *hæmianopsia*, *hæmorrhage*, *amæba*, *œdema*, *cœcum*, etc., in these their chosen ways—not even for the sake of the “etymology.”

The Relation of Teratogenesis to Pathogenesis.

—There seems to be no clear distinction in the minds of medical writers between pathogenic and teratogenic phenomena, the general tendency being to regard all anomalies and monstrosities as essentially due to pathologic alteration. This view is opposed by Etienne Rabaud,¹ who maintains that normal histogenesis and integrity of tissues is essentially characteristic of anomalies and monstrosities. In contradistinction to morbid phenomena, which are characterized by partial or total destruction of protoplasmic elements, the formations of inert substances, and the checking of vital changes pathogenesis involves histogenetic abnormality together with cytolysis, or other disturbances of histologic integrity; while teratogenesis may be regarded as involving some infectious or toxic factor or agent which provokes abnormal cell differentiation and variations in the rapidity of growth, but does not effect any change in the fundamental qualities of the cells or tissues involved.

The factor that primarily determines teratogenic change may secondarily give rise to pathogenesis or the two processes may act in concert, teratogenic alteration being at first visible but finally masked by the pathogenic changes. Clear distinction should be made to the effect that teratogenesis has to do with viable and sound tissues capable of evolution while pathogenesis incites tissue change and prepares the way to its destruction.

Oral Pathology and General Medicine.—After the sixteenth century when dental work formed a part of the physician's regular practice, dentistry was dropped from courses of medical instruction and fell into the hands of the barbers and the advocates of the tooth-worm theory. Here it languished until the nineteenth century, when it received a scientific development, especially in the United States, which has finally forced a recognition of dentistry as a specialty of medicine. The dangers that arise from neglect of the clinical aspects of the mouth on the part of the general practitioner are emphasized by M. L. Rhein,² who decries the tendency to replace, by a reliance on scientific apparatus, the natural ability on the part of the physician of observing the minor phenomena of disease. While recognizing the value of the stethoscope, laryngoscope, clinical thermometer, sphygmograph, x-ray and similar inventions as aids to diagnosis, Rhein maintains “that modern medical education, with the aid of all this scientific apparatus, has a strong tendency to make machines of many graduates who automatically diagnose and treat the readings of their apparatus, and not their patients, with their endless variations and idiosyncrasies.” However this may be, Rhein is justified in urging the importance to the general practitioner of a knowl-

edge of dental principles and of the local pathology of that region circumscribed by the gums, the teeth and the alveolar process, and the advisability of placing dental surgeons in medical colleges and stomatologists on the staffs of hospitals.

A study of suicide is made from the records of his company by Dr. Hanscom, of the Royal Arcanum, which brings out a little known phase of the question. In a total death-loss of 2,375 in 1901 there were 81 members who committed suicide. The continued losses from this cause incited the company to enact a law that no claim of the estate of a suicide would be paid unless the membership had existed at least five years. By an accurate comparison it was found that this restriction reduced the number of suicides to one-half or one-third what it was when the claims of suicides were paid the same as those of others. It is a strange datum of human nature, this demonstration that a certain number of men thinking of suicide will insure their lives prior to doing so. It has been said that married men are less prone than others to commit suicide, but Dr. Hanscom's figures show that 67 married men, 7 widowers and 7 single men committed suicide in 1901. The report is mildly cynical as to the too common verdict of the coroner, “while temporarily insane.” “Such verdicts may be excusable in the coroner, as an official who is called upon to perform the duties of both the physician and lawyer cannot be expected to perform either with skill or satisfaction to disinterested parties.” In five years the suicidal means employed were by firearms, 182; by poison, 88; by hanging, 43; by asphyxiation, 35; by cutting, 21; by drowning, 15; by jumping from train or window, 4. It is a pathetic fact that of the 81 cases, 23 of the men were at the time of death out of employment and 25 had been in previous ill-health.

EDITORIAL ECHOES

Christian Science Tolerance.—It has recently come within my own knowledge that a Christian Scientist refused to attend a lecture on domestic economy by an expert because the latter happened to be at the time attending a meeting of the American Public Health Association, alleging that no one could be worth hearing on the subject appointed who had anything to do with an association devoted to a purpose so useless. [William T. Sedgwick in *Science*.]

Two Vivisectors.—“So it comes about that, in this year of grace, 1877, two persons may be charged with cruelty to animals. One (a fisherman) has impaled a frog, and suffered the creature to writhe about in that condition for hours; the other (a teacher) has pained the animal no more than one of us would be pained by tying strings round his fingers, and keeping him in the position of a hydropathic patient. The first offender says, ‘I did it because I find fishing very amusing,’ and the magistrate bids him depart in peace—nay, probably wishes him good sport. The second pleads, ‘I want to impress a scientific truth with a distinctness attainable in no other way on the minds of my scholars,’ and the magistrate fines him five pounds. I cannot but think that this is an anomalous and not wholly creditable state of things.” [Huxley, Address on Elementary Instruction in Physiology.]

¹ Comptes hebdomadaires des Séances de l'Académie des Sciences, de Paris, April 21, 1902.

² Albany Medical Annals May, 1902.

AMERICAN NEWS AND NOTES.

GENERAL.

Japanese Surgeon Here.—Dr. S. Kirnura, inspecting surgeon of the Japanese Navy is spending three months in the United States, to examine the medical and hygienic arrangements of the Navy.

Hospital Ships.—The hospital ship is apparently to have a permanent place in the Navy, orders having been given for the equipment of the cruiser *Dixie* for such purpose. The vessel will have accommodations for about 100 sick and as many more convalescents.

Honors for General Girard.—The medical staff of the U. S. Army General Hospital at the Presidio, California, presented Colonel A. C. Girard with a loving cup June 19, on the occasion of his promotion to the position of assistant surgeon-general of the U. S. Army.

Officers of Climatologic Association.—At the closing session of the American Climatologic Association at Los Angeles, June 12, the following officers were elected: President, Dr. Norman Bridge, Los Angeles; vice-presidents, Drs. J. C. Wilson, Philadelphia, and H. S. Orme, Los Angeles.

Inoculated Cattle for South Africa.—The report is being circulated in New Orleans that the disease now raging among the live stock in South Africa are largely due to inoculations made in that port by Boer sympathizers. A chemist of Philadelphia is said to have furnished the material for causing glanders, etc.

Cost of Hospital Maintenance.—According to official statistics, it costs the city of Boston \$2.12 per capita to maintain her hospitals and kindred institutions. In New York it is \$1.47, and the average in ten cities used in the comparison is 31 cents. These figures do not include the cost of permanent construction.—[*Hospital Record*.]

Volcanic Gases.—As the result of analyses made by J. S. Diller, George Steiger and others of the United States Geological Survey, of the volcanic sand and dust from St. Vincent, the conclusion is reached that the sudden destruction of life resulting from the recent eruptions at St. Vincent and Martinique was due to the heavy sulfurous acid and sulfurated hydrogenc gases.

American Gynecology.—A new journal under the title of *American Gynecology* will begin publication in New York during July. It will be devoted to gynecology, abdominal surgery, and obstetrics, and it is said will be owned entirely by members of the profession. The editors will be Drs. J. Wesley Boveé, of Washington, D. C.; Charles Jewett, of New York; Charles P. Noble, of Philadelphia; Reuben Peterson, of Ann Arbor, Mich., and J. Whitridge Williams, of Baltimore.

NEW YORK.

Salaries of Fire Department Physicians.—The suit against New York City by the physicians of the fire department to recover a salary of \$3,000 per annum since the consolidation of Greater New York has been decided against them. They will receive \$2,000, the amount received before the former sum was fixed by two departments afterward consolidated.

Care of the Insane.—At the annual convention of the Superintendents of the Poor held at Yonkers, June 18, F. B. Sanborn, of Massachusetts, stated that much of the existing insanity is practically incurable when it comes to the notice of the hospital physician. His task in these cases is not to try curing the incurable, but to make the residue of insane life as useful and comfortable as possible. In this task the well-trained nurse or sensible layman is often the equal or superior of the medical man. After advocating small asylums, Sanborn said it was proper that a certain proportion of the chronic and harmless insane should be taken from the hospitals and placed in private families at board where they can have domestic surroundings, greater freedom and a more natural life than even the smaller asylums can afford. The system now in vogue in Wisconsin, where overcrowding of asylums is practically impossible, was highly commended.

PHILADELPHIA, PENNSYLVANIA, ETC.

Medico-Chirurgical Hospital.—E. M. Paxson, president of the board, has given \$5,000 for the endowment of a free bed in memory of the late Judge Henry Chapman, of Doylestown.

Polyclinic Hospital.—At the meeting of the Board of Trustees, held June 17, Dr. Hilary M. Christian was elected Professor of Genitourinary Surgery. Dr. Christian has for many years been adjunct professor in this department and now succeeds to the full chair which was recently made vacant by the resignation of Dr. Thomas R. Neilson.

Boracic Acid Preserved Meat Barred in Pennsylvania.—The latest case won by the Dairy and Food Department of Pennsylvania is considered of great importance. The case was that of an Altoona grocer who sold oysters preserved by boracic acid. It is claimed that this decision will keep the goods of the meat trust out of the State.

Police Surgeon Andrews Resigns.—Dr. T. H. Andrews, Police Surgeon of Philadelphia since 1887, has resigned that position. Among the improvements effected by Dr. Andrews during his service are the abolishment of detaining in police stations persons presumed to be insane or intoxicated and whose real condition is doubtful, and the organization of the Medical Emergency Corps composed of district police surgeons.

SOUTHERN STATES.

Rupture of Heart.—The *Baltimore American* reports the death of a boy of 16 while at play, the cause of death as revealed by autopsy being the rupture of the right auricle of the heart. It is stated that the heart was much atrophied, the auricular walls being barely thicker than writing paper.

Dustlaying by Oil.—This method of laying the dust in streets has become very popular in New Orleans, where it has proved an unqualified success. The oil as yet has been furnished by the residents, the city doing the sprinkling. The smell is not unpleasant and the dust is kept down for several months.

Dr. A. Douglas McConachie has been appointed associate professor of materia medica at the Maryland Medical College, and will begin a series of lectures at the opening of the session in October. Dr. McConachie has also been appointed surgeon of the eye and ear department of the Northeastern Dispensary, on Monument street.

Railway Hospital at St. Augustine.—Patients of the railway hospital service will soon be removed from temporary quarters in the U. S. Hospital at St. Augustine, Fla., to the new hospital erected on the site of the one burned last winter. This railway hospital is maintained by a monthly assessment of all the employes of the Florida East Coast Railway.

Changes in the Medical Faculty of the University of Maryland.—Dr. L. McLane Tiffany having resigned the chair of Surgery in the University of Maryland faculty of physic, Dr. Randolph Winslow was on Friday elected professor of surgery. Dr. John Holmes Smith was elected professor of anatomy, Dr. D. M. R. Culbreth professor of materia medica, Dr. Frank Martin and Dr. St. Clair Spruill clinical professors of surgery, and Dr. Joseph W. Holland demonstrator of anatomy.

WESTERN STATES.

Erysipelas from Money.—It is reported that the treasurer of the Illinois theater in Chicago barely escaped death from erysipelas which he contracted from infected money.

The University of Nebraska at Lincoln has incorporated the Omaha Medical College as its department of medicine. The work of the department will be divided between the two cities.

Poisoned by Beet Greens.—A family in Michigan has been poisoned by eating beet greens which grew beneath fruit trees that had been sprayed. Two members are dead and three are in a critical condition.

CANADA.

McGill University.—Dr. Gilbert P. Girdwood, professor of chemistry in the faculty of medicine has resigned his position on account of age. He is now president of the American Röntgen-ray Society.

Officers of Medico-Psychologic Association.—At the recent meeting in Montreal, the following officers were elected: President, Dr. G. Alder Blumer, Rhode Island; vice-president, Dr. A. B. Richardson, Washington, D. C.; secretary-treasurer, Dr. C. B. Burr, Flint, Mich.; council, Dr. G. F. Jelly, Boston, Mass.; W. F. Drewy, Pittsburg, Pa.; W. H. Hattie, Halifax; and M. J. White, Wanwasota, Idaho.

Curious Medical Case in Montreal.—An interesting judgment has been given by Judge Doherty in the Superior Court of Montreal. A man who was injured by a locomotive was taken to the Royal Victoria Hospital, where the toes and a portion of his left foot was amputated with his consent. Two weeks later the entire foot was removed without the patient's consent, who brought suit for \$1,999 damages. The court found that the surgeons and the hospital had exceeded their rights, and were to be held responsible for any damages resulting to the plaintiff. However, as the evidence showed that the patient's condition had been improved by the operation in question, the Court held that no damages had been proved, and the case was dismissed.

FOREIGN NEWS AND NOTES

GENERAL.

New Medical Review.—The *Al-Tib Al-Hadisse* is the title of a new medical review in the Arabic language, edited by Dr. A. Eid.

Famine in Siberia.—The famine in Siberia is spreading with increasing intensity, especially in the transcasian territories. Cattle plague also prevails in the stricken districts.

Nail Biting.—Observations of French physicians tend to show the habit of fingernail biting is the result of a diseased nervous system. It is more frequent among girls than boys, prevails most often between the ages of 12 and 14, and the devotees are the poorest students.

Care of the Insane in Egypt.—There is still but one asylum of 500 beds for a population of more than 10,000,000. Many needed improvements have recently been completed. The ignorance of the native attendants, only 1 in 10 of whom can read and write, is now the worst evil of the institution.

GREAT BRITAIN.

British Medical Society.—The seventieth annual meeting will be held at Manchester, England, July 29 to August 1, 1902, under the presidency of Dr. George B. Ferguson.

Alleged Cure for Diabetes.—It is reported that Dr. A. C. Faulds, of Glasgow, has had good success in treating diabetes with an infusion of dried eucalyptus leaves. Of 46 patients treated in this manner 15 are said to have been cured. This remedy was first employed by the natives of New Zealand.

CONTINENTAL EUROPE.

Physicians as Legislators in Belgium.—The new Belgian Chamber of Deputies contains seven physicians, an increase of two over the preceding.

Medical Premier of France.—Justin Louis Emil Combes, the new Premier of France, in addition to being a doctor of medicine is a doctor of letters and frequent contributor to literature.

Transmissibility of Tuberculosis.—Dr. Garnault, of Paris, has inoculated himself with material from a tuberculous cow in order to prove that bovine tuberculosis is transmissible to human beings.

Number of Blind in France.—Dr. Trousseau has presented a report to the Ophthalmologic Society from which it appears that the number of the blind in France reaches the high figure of 31,966, or a proportion of 8 to 10,000 of the population. This proportion considerably exceeds that of Denmark, Sweden, Switzerland, Austria and notably Holland, where it is exactly 4.46 per 10,000.

OBITUARIES.

Stephen C. Russell, the oldest practising physician of New Orleans, June 12, aged 83. He was a native of Yarmouth, Me., and practised in California in the gold-fever days and in Panama. He removed to New Orleans in 1851 and was active in the epidemics of yellow fever in 1852, 1853 and 1856. He was for years secretary of the Louisiana State Board of Health.

Francis Daniel Muller, of London, June 16. Muller was a surgeon in the Confederate Army during the Civil War, but for years had lived as a recluse in London.

John H. Kimball, of Bridgeton Centre, Me., June 18, aged 69. He was at one time King Kalakaua's family physician and medical director of Hawaii.

William H. Barton, pathologist of the New Jersey State Insane Hospital, June 20, aged 31, as a result of infection received during an autopsy.

Thomas W. Reynolds, of Brockville, Ontario, Can., at Johns Hopkins Hospital, Baltimore, June 9, aged 44.

Wyatt Jonsson, who was recently appointed Professor of Hygiene at McGill University, June 19.

George F. Carey, a specialist in diseases of the eye and ear, in New York, June 16, aged 66.

Elias C. Price, of Baltimore, June 16, the oldest homeopathic physician in the city.

Robert E. Greenleaf, of Wilmington, Del., June 12, aged 72.

James MacAulay, the author, in London, June 19, aged 85.

Alban V. Elliott, of New York, in Florence, Italy, June 19.

G. W. Goldsborough, of Greensboro, Md., June 14, aged 86.

William Christy Wilson, of New Orleans, June 5, aged 78.

Robert A. Work, at Bethlehem, aged 34, of appendicitis.

Caleb Harlan, of Farnhurst, Del., June 12, aged 88.

James A. Wright, of Brooklyn, June 18, aged 90.

SOCIETY REPORTS

AMERICAN ACADEMY OF MEDICINE.

Twenty-seventh Annual Meeting, Held at Saratoga Springs, N. Y., June 7 and 9, 1902.

[Specially Reported for *American Medicine*.]

[Concluded from page 1063.]

S. D. RISLEY (Philadelphia) read a paper on **good vision as a factor in the education process**. Attention was called to the large proportion of children which start in school with some visual defect—88.8% by actual tests in Philadelphia. Many children are handicapped by this fact and more serious defects develop by application to books. Children do not realize that their condition is abnormal and are thus less apt to complain than are adults. There is now systematic examination in Philadelphia of the eyes of pupils at the beginning of each year. The great value of this to the community is the diminution in the number of nearsighted children visiting ophthalmologists. Parents generally heed the cards of warning sent by the teacher when deficiency in eyesight is discovered.

State Aid for Medical Schools and Hospitals.—**CHARLES MCINTIRE** (Easton). This paper was the tabulated answers from each State in response to a request for information on the above subject.

Children in Cities.—**ROSA ENGELMANN** (Chicago) spoke of the diminution in our country of American born children and the increase of the children of the more fertile immigrants of all the races. The housing and environment and education of the poor children are problems that confront us. The home environment of the poor will be raised when the wage question is properly settled. As to education the limit should be raised to 16 years, night schools should be for adults only and more industrial training should be furnished by the schools. The prevention of vagrancy, the providing of public amusements, sanatoria, hospitals, etc., were considered. For orphans there must be asylums. Great advance has been made in this direction by making them temporary homes from which children are sent to school and then placed in private homes. The good accomplished by truant courts and the probation system was emphasized; plans to limit and finally prevent prostitution were advanced.

Officers for the Ensuing Year.—The following were elected: President, Charles McIntire, Easton, Pa.; vice-presidents, William R. White, Providence, R. I.; George Dock, Ann Arbor; Rosa Engelmann, Chicago; D. C. Hawley, Burlington, Vt.; treasurer, Edgar M. Green, Easton, Pa.; secretary, A. R. Craig, Columbia, Pa.; assistant secretary, John S. Davis, University of Virginia.

THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Eighth Annual Meeting, Held at Washington, D. C., June 2, 3 and 4, 1902.

[Specially Reported for *American Medicine*.]

[Concluded from page 1064.]

A Case of Fibropapilloma of the Larynx, with Unusual Movements.—**H. W. LOBE** (St. Louis, Mo.). In presenting his paper the author said that movable tumors in the larynx were common. Peculiarities in case of A. D., 6 years of age. Difficulty in breathing, obstruction in larynx, dyspnea, loss of consciousness, almost suffocated, little hindrance to inspiration, trouble with expiration; two tumors noticed; in breathing second tumor would rise and surmount the first. Operation performed and three tumors removed by forceps (drawings shown); small tumor removed later; patient perfectly well; points of interest were little interference with respiration considering size of tumors, all tumors pedunculated; movements of last tumor removed the same as those of larger growths, severe attack of dyspnea, movements easy to observe. **G. L. RICHARDS** (Fall River, Mass.) spoke of the technic; administered $\frac{1}{2}$ gr. morphin.

Spasmodic Torticollis Following Adenotomy.—**JOHN M. INGERSOLL** (Cleveland, Ohio). The author referred to two of his own cases; one week after operation position of head improved; adenoids left. Second case, boy seven years of age; history good; adenoids removed; boy said operation did not hurt; returned two days later with torticollis: complained of pain in throat; head turned to left; cases of others quoted. **T. H. HALSTED** (Syracuse, N. Y.) reported a similar case. **W. R. LINCOLN** (Cleveland) advised care and gentle treatment in operation, and quoted cases to show necessity for it. **INGERSOLL**, in concluding, said that he had been particularly careful.

Influenza as a Causative Factor in Inflammatory Diseases of the Respiratory Tract.—**W. B. SHIELDS** (St. Louis). The speaker opened his paper with a reference to an epidemic of very infectious influenza 15 years ago. These epidemics give rise to conditions requiring operation; death may result from lobular pneumonia. **STRUCKY** favored rational treatment;

put the patient to bed; avoid opiates and coal-tar products; local treatment; dry heat; use of saline solution of adrenalin; warned them not to use adrenalin solution too strong; finds 1 to 8,000 enough to clean the meatus. Shields approved of the use of adrenalin in many instances, but was a little doubtful about its efficacy in influenza cases.

The Value of Various Operative Procedures for the Relief of Chronic Suppurative Otitis Media.—EDWARD B. DENCH (New York). Necessity for operation might depend on severity of condition in middle ear; no matter how virulent, as a general rule, if seen in early stage, within 24 hours the removal was free from danger. Two methods of operation were pointed out: use of curet; in certain cases necessary to expose the tympanum; every vestige of diseased bone should be removed; if mastoid cells are involved a more extensive operation is required; choice of operation must depend on nature of each case. Cases were given and authorities quoted showing as high as 58% cured. Technical operation; complete search for and removal of incus; no operation is complete until whole middle ear is curetted although prolonged hemorrhage may be experienced; packing with gauze steeped in suprarenal extract beneficial.

Chronic Suppurative Otitis Media: When Should Radical Surgery be Employed in Its Treatment and of What Should this Consist?—G. L. RICHARDS (Fall River, Mass.). These cases are found everywhere and the author asked why they are not cured before they reach the supreme stage. General practitioners do not apprehend the conditions. It may be termed appendicitis of the head; bronchial trouble follows 80% of chronic suppurative otitis media; three cases referred to in which death resulted from complications; individual experience of author in a practice where time is an important factor with patients, is in favor of operating; inclined to urge radical operation. Good light was needful while performing operation; facial paralysis occasionally results; usual time of recovery 12 days to two weeks; number of cases five or six weeks to three months. S. MACC. SMITH endorsed the previous speaker; early treatment advocated; a very large percentage of cases can be cured if early looked after. C. R. HOLMES (Cincinnati) reported case of facial paralysis after curettage; curettage not free from danger; should never operate against time; chronic suppuration very deleterious to constitution.

A Nasopharyngeal Tumor, with Exhibition of Patient.—C. H. MAKUEN (Philadelphia). Patient exhibited; operation two years previous accompanied by hemorrhage; slight deafness, no nasal respiration; description of tumor; thought by different physicians to be fibroma; some time ago operation attempted with application of ether and cocaine; No. 10 silver wire used; index fingers used to engage it behind tumor; only slight portion removed with loop, about size of almond; hemorrhage. Not inclined to regard growth as sarcoma; microscope revealed nothing abnormal; for the last year the patient, with slight exceptions, had been quite comfortable; swellings in cheek; no syphilitic history. H. W. LOEB had seen five cases of sarcoma and fibroma; not much confidence in microscope; electrolysis suggested; he had seen vast improvement; it overcomes vascularity and reduces size of tumor. J. O. McREYNOLDS had tried electric cautery; introduce cold wire and then turn on battery; gave case in which solution of adrenalin in form of spray had been of value.

Stenosis of the Larynx.—PRICE BROWN (Ontario, Canada). Read by title.

Staphylococcus Sequela, Vis a Tergo.—THOMAS F. KELLER (Toledo, Ohio). Read by title.

Tuberculosis of the Middle Ear, with Report of Case.—MAX A. GOLDSTEIN (St. Louis, Mo.). The author finds the disease extremely difficult to diagnose; there is reason to suppose that tubercle bacilli can be found in upper respiratory tract without appearing in the lungs; four cases cited in which tubercle bacilli were found in middle ear with no sign of pulmonary trouble. R. LEVY thought important lesson might be learned; if more physicians were in the habit of making bacteriologic and microscopic examinations, many more such cases might be found. DENCH, McREYNOLDS, LOEB, RICHARDS and BALLENGER expressed considerable doubt as to the value of the tuberculin test.

Report of a Case in Which Laryngeal Symptoms Complicated Purpura Hemorrhagica.—JOSEPH T. GIBB (Philadelphia). The author reported an unusual case brought to hospital, November 30, 1901; age 42; never ill in life; legs swollen; growing gradually weaker; strange sensation in limbs; difficulty in walking; hemorrhagic spots and eruption; bowels moved several times at night; blood; followed by vomiting; December 19, depression in breathing lasting 36 hours; examination of larynx easily accomplished; found vocal cords altered; following day less marked; vomiting gave relief; swelling diminished by application of adrenalin chlorid, with marked improvement in breathing; return of symptoms following day; death—patient had been vaccinated three days before admission to hospital and the question was asked, What influence might vaccination have exercised? patient in perfect health at time of vaccination. Purpura occurs in certain cases; question also asked: What might the effect of adrenalin be in such cases? the effect sought is to constrict the vessels.

Hemorrhage in Nasal Operations.—JOHN O. McREYNOLDS (Dallas, Tex.). Single case; man 25; removal of obstruc-

tion from left side of nose; cocaine and adrenalin used; plugged with sterile gauze; young man had hardly left office before hemorrhage began; seen two hours later; blood had been flowing in steady stream; entire surface of body bathed in cold perspiration; packed; in few days all right; there is danger of secondary hemorrhage following the use of adrenalin. A. THOMPSON thought possibly an artery had been severed in the operation; he had little faith in gauze under such conditions. J. A. STRUCKY said too strong a solution of adrenalin may have been used, causing reaction. H. B. ELLIS (Los Angeles, Cal.) found in his personal experience that he did not have secondary hemorrhage after adrenalin when used alone; it occurred after cocaine and adrenalin. MAX A. GOLDSTEIN advocated proper use of gauze with vaselin or some oily substance.

The Rationale of the Symptoms of Postnasal Adenoids.—WILLIAM L. BALLENGER (Chicago). Mouth-breathing results from loss of nasal respiratory function. What does the term mouth-breathing mean? Mouth-breathers do not receive the full amount of moisture, with a consequent impairment of different processes and malnutrition. E. L. VANSANT (Philadelphia) had cases of nasal breathing with the mouth open; the pharynx replaces to a certain extent the function of the nose. W. FREUDENTHAL (New York) gave experience; pharynx gives out.

Electric Light in Diseases of the Respiratory Organs.—W. FREUDENTHAL (New York). The x-ray has passed too quickly into hands of unscrupulous physicians and quacks, and has been too greatly exploited by the yellow press of New York. The arc light may be used for the larynx; the ordinary searchlight may be made available by a simple contrivance; very few rays get lost; exposure should last from 30 to 60 minutes; after treatment of tuberculosis of the lungs and of the larynx he could not claim to have cured one case, but cases had been helped; the treatment helps expectoration; in hay asthma the effect is much more conspicuous. R. LEVY had not been able to satisfy himself that sunlight or artificial light had done much good.

Symposium: Diseases of the Accessory Sinuses.—1. **General paper,** R. C. MYLES (New York). These affections are due to the action of bacteria. 2. **Frontal sinus,** C. A. THIGPEN (Montgomery, Ala.), read by title. 3. **Ethmoidal cells,** E. L. VANSANT. It is almost impossible for the ethmoidal cells to be diseased without affecting other sinuses and vice versa. 4. **Sphenoidal cells,** C. G. COAKLEY. It is not yet possible to recognize sphenoidal diseases when treating for other diseases; acute symptoms, smart pain in back part; nasal pharynx under action of adrenalin and cocaine; mucus present; treatment, constrict with cocaine and adrenalin and use saline solution; in chronic suppuration and discharge of pus disease of the sinus is often overlooked; he preferred the nasal route. 5. **Antrum of Highmore,** F. C. COBB (Boston). External factors often play prominent part; roots of teeth; foreign bodies introduced in dental operations. 6. **On the diagnosis and treatment of frontal sinus disease,** when acute there is little trouble in diagnosis for a trained man; he had never tried x-ray; chronic cases not so easy; exploration necessary; if properly done, patient need hardly lose a day (trephine shown); different operations; objects to closed method. 7. **The technic of frontal sinus operations, report of three cases treated without nasal drainage,** H. HOLBROOK CURTIS (New York). First case, male, 23, subject to colds and catarrh; both nostrils; operation March last; another operation April 27; results promise to be most brilliant. Second case, female, 27, grippe, followed by nasal discharge; pains in head; used dozen handkerchiefs a day while at business; returned to work three weeks after. Third case, male, 20, subject to cold from childhood; pains in head; excessive discharge; pus; radical operations; the careful curetting of the sinus is an important point.

Discussion.—JOHN O. ROE (Rochester, N. Y.) produced a number of skulls; showed need for free drainage; no two skulls with sinuses the same; rarely one skull with two sinuses the same; in some cases the septa are divided into compartments; sometimes there is total absence of sinuses. S. F. SNOW (Syracuse, N. Y.) thought they must not lose sight of the fact that many cases would get well with good treatment and drainage. T. H. FARRELL (Utica, N. Y.) wanted to know the value of adrenalin. Concluding, R. C. MYLES remarked that large sinuses take long time; they must differentiate. C. G. COAKLEY had secured no results from x-rays. A. COFFIN thought transillumination an aid.

A Study of Singers' Nodes, with Special Reference to Etiology and Treatment.—F. E. MILLER (New York). The author presented several patients who had undergone operation for removal of nodes; nodes are produced by improper use of the voice in singing; by straining and otherwise the voice is changed and in some cases disappears; it may be restored by treatment, in one case by use of adrenalin.

Primary Epithelioma of the Uvula and Soft Palate and Treatment with the Röntgen Ray; Report of a Case.—J. F. MCCAW (Watertown, N. Y.). Extremely rare case; patient enjoyed general good health; a number of sittings had been given with satisfactory results; (instrument for applying and directing rays shown; made of block tin, with shield and tube for mouth). O. J. STEIN (Chicago) had similar case; treated six months with x-ray with negative results.

Report of a Case of Laryngeal Papilloma in a Child,

with Remarks.—DUNBAR ROY (Atlanta, Ga.). Case, girl aged 9, hoarseness, difficulty in breathing at night; application of cocaine; gradual disappearance; palliative treatment advocated, especially in children. The speaker opposed hasty resort to surgery; use of alcohol a good thing. W. C. PHILLIPS (New York) sounded a warning note as to care needed in making diagnosis. Wm. BAYARD SHIELDS (St. Louis) had operated twice for what he thought was papilloma; afterward found to be sarcoma; used spray of adrenalin with benefit, but whether due to adrenalin or not he did not know. In closing, the author believed in keeping the growth under observation so long as it did not interfere. Surgery might change a benign case into a malignant one.

Abductor Paralysis of the Larynx.—D. J. GIBB (Toronto). The case had been under observation four years; married man, 26; four healthy children; gonorrhea previous to marriage; might have been chancre; two years before noticing numbness of tongue; hoarseness; felt as though walking on wool; swallowed without pain; incontinence of urine; no loss of sexual power; no tremor of lips; examination of larynx showed vocal cords in apposition; voice hoarse and coarse; operation performed, tube being worn constantly. Examined May 31; numbness of feet continues; patient still sways when standing with eyes closed; incontinence of urine still continues; general improvement, and gain of 36 pounds.

Failures in Attempted Correction of Septal Deviation.—CHEVALIER JACKSON (Pittsburg, Pa.). Read by title.

The X-rays in the Treatment of Tuberculosis, with Special Reference to Tuberculous Laryngitis.—W. SCHEPPEREGL (New Orleans). Read by title.

Report of a Case of Epithelioma of Tympanic Cavity and Involving the Mastoid.—W. H. HASKIN (New York). Female, 42 years; had trouble of ears for 30 years; history of scarlet fever; unable to sleep for four months; removal of large polypus; pains not removed by operation; another and radical operation; left hospital, to be readmitted shortly afterward; three months later ether given and wound scraped out; worse pain on April 15, 1902; wound increased in size.

Pus Examination in Middle Ear Suppuration.—W. C. PHILLIPS (New York). Of late years microorganisms have been discovered in pus from middle ear; bacterial examination should be made as soon as possible; the effect of microorganisms is modified by surrounding anatomic conditions and the patient's power to resist; streptococci and staphylococci are also found in the eustachian tube and might even be found in the blood. J. F. McKERNON (New York). Germs occur in large masses, resembling tubercles. E. B. DENCH advocated early examination as likely to lead to making good prognosis; given streptococcal infection they should incise and drain freely. C. R. HOLMES said they might overlook important factors in bacteriology and it was necessary to have men who could do the work. G. L. RICHARDS agreed as to what had been said, but wanted to know how to accomplish the work in small towns where they had not finely-equipped laboratories with competent men to carry out the work.

Two Cases of Mastoiditis, one Resulting in Thrombosis of the Cavernous Sinus, the Other Complicated with Tumor of Cerebellum Simulating Abscess.—EWING W. DAY (Pittsburg, Pa.). Case of a child with history of measles and typhoid fever; discharge from right ear for eight months; temperature 103° on admission to hospital; operation; rise of temperature; later another operation; twelfth day right eye swollen; incision; diagnosis, infectious thrombosis; following day left eye swollen, loss of sight in both eyes; transferred to hospital for the blind. Second case, Children's Hospital, October, 1900; headache; vomiting; pus from left ear; tympanum destroyed; no paralysis; knee-jerks normal; slight swaying; discharge from both ears during life; operated May 20; mastoid opened, found normal; June 18 patient removed; year later patient again examined; postmortem showed tumor size of hen's egg in right cerebellum; medulla turned on axis quarter of an inch.

The Value of Leucæ's Pressure Sound in the Treatment of Nonsuppurative Otitis Media.—W. S. RENNER (Buffalo). Read by title.

Exenteratio Cavi Tympani for the Relief of Chronic Suppuration.—NORVAL H. PIERCE (Chicago). Read by title.

The Pathology and Diagnosis of Otitis Media Insidiosa (i. e., Sclerosis).—H. J. HARTZ (Detroit). Deafness due to sclerosis; condition of bone elements; tympanum found thick; 10% of diseases of the middle ear are true sclerosis. Bezold's set of continuous tone tuning forks exhibited and experimented with. W. L. BALLENGER put cases in three classes; advised the use of tuning forks and whistles. C. R. HOLMES considered the subject comparatively new, requiring further study.

Prognosis in Chronic Catarrh of the Throat and Ear: Some Remarks by a Would-not-be Pessimist.—T. J. HARRIS (New York). Many brilliant results are reported; what of 99% who did not improve? Aural catarrh cases; two symptoms, deafness and tinnitus; many aurists had abandoned use of catheter; the speaker held little progress to have been made. W. C. PHILLIPS: All knew that they had failures, but they succeeded in a large number of cases; those who said they had abandoned use of the catheter were men who had lost faith in themselves and everything. C. R. HOLMES believed in the use of the catheter. Spurs may be left if they do not obstruct movement. C. A. STUCKY did not believe in eustachian cath-

eter so much as he formerly did. W. L. BALLENGER advised close study of individual cases; believed in removing spurs. T. P. BERENS, G. L. RICHARDS and MAX GOLDSTEIN also gave their opinions.

Case of Thyroid Tumor in Interior of the Larynx.—WALTER A. WELLS (Washington). Patient, 50; had suffered for 10 years; difficulty in swallowing; dyspnea and hemorrhage; patient generally healthy; liquid food for two months; tracheotomy thought of; hemorrhage last July; small piece of tumor removed; hemorrhage; operated by mouth several times since.

1. Mucoid Cyst of Middle Turbinal. 2. Polypoid Excrescence of Tonsil. 3. Aortic Aneurysm with Unusual Symptoms.—G. T. ROSS (Montreal). Read by title.

Foreign Bodies in the Lower Respiratory Tract in Children: Report of Five Tracheotomies in Children Under Two and a Half Years of Age.—T. H. HALSTED (Syracuse, N. Y.). X-rays are useless. 1. Child 18 months; had tried two physicians before he saw patient; tracheotomy, tube removed in four days; permanent. 2. Foreign body present for a week; removed by tracheotomy. 3. Patient at St. Joseph's Hospital; precarious condition; tracheotomy. 4. Same as previous; child of 15 months; swallowed ring; obstruction of larynx; tracheotomy. 5. Three pieces of egg shell removed.

A Case of Glioma of the Pons: Operation, Death Three Months Later; Autopsy.—T. P. BERENS (New York). History: discharge from right ear; vertigo, vomiting, weakness, extreme on right side; when walking continual tendency to fall to right; eyes affected. Autopsy: after removing brain large growth found in medulla; death resulted from hemorrhage in medulla.

Paraffin Injections in Nasal and Other Deformities of the Face.—F. F. QUINLAN (New York). Read by title.

The Venous System of the Temporal Bone and Its Relation to the Complications of Mastoid Disease.—SEYMOUR OPPENHEIMER (New York). Read by title.

A Simple Method of Correcting Deflections of the Nasal Septum.—G. FETTEROLF (Philadelphia). No one operation could be laid down; performed operations under general anesthesia (files of varying configuration exhibited); cut through septum, one or two grooves, according to amount of tissue. J. A. STUCKY, W. R. LINCOLN, M. GOLDSTEIN, D. J. G. WISEHART, D. B. KYLE took part in the discussion, and all approved, more or less, of the files submitted by the author.

At the close of the meeting H. SMITH showed a method of paraffin injection in nasal and other deformities.

The following officers were elected: President, J. A. Stucky, Lexington, Ky.; vice-presidents, M. R. Ward, Pittsburg, Pa.; Dunbar Roy, Atlanta, Ga.; L. C. Cline, Indianapolis, Ind.; B. F. Gildea, Colorado Springs, Colo.; R. C. Myles, D. B. Kyle, J. F. McKernon, S. MacCuen Smith, F. C. Cobb, N. H. Pierce, T. P. Berens and C. P. Holmes.

On the second day of the meeting the members attended at the White House by special invitation and were introduced to President Roosevelt.

Famine in India Predicted.—The meteorologic department in Bombay predicts a deficiency of rain in Bombay presidency, and warns the government to prepare for a severe famine.

Hospital Reform in France.—The Paris Municipal Council has recently begun a series of radical reform in the hospital system of that city. The Assistance Publique, corresponding more or less to our poor law authority, is to be placed under the supervision of a permanent committee of hygiene, comprising sanitary engineers, physicians, architects, hospital managers, and members of the municipal council. A loan of about \$15,000,000 is to be asked, this to be expended in remodeling the hospital system. The present solidly built hospitals are pronounced unsanitary in the extreme. Smaller hospitals built on sanitary plans are to be erected in sparsely populated suburbs which are well served by trains or tramways. Hospitals in the central parts will be few in number and small and reserved for accidents or for patients not able to bear transport to the suburbs.

Birthrate Lowest on Record.—The annual report of the Registrar-General on England and Wales has just been issued. The births numbered 927,062, equal to an annual rate of 28.7 per 1,000—the lowest on record since the establishment of civil registration in 1837. The rate is 1.3 below the average rate in the 10 years 1890 to 1899. The decline in the birthrate has been continuous since 1895, when it was 30.2 per 1,000. The deathrate was 18.2 per 1,000 against 17.4, 17.5 and 18.2 in the three preceding years; the mean rate in the 10 years 1890 to 1899 was 18.3. The proportion of deaths of infants under one year to registered births was 154 per 1,000 against an average of 153 in the 10 preceding years. The mortality from alcoholism was 132 per 1,000,000 among males and 95 among females, both of which are the highest rates recorded. The mortality from cancer has continuously increased in recent years; in 1900 it was 16% in males, and 10% in females in excess of the decennial average, and in each case exceeded the highest previously recorded. The mortality from pulmonary tuberculosis was considerably lower than in the preceding 10 years, the decrease amounting to 2%.

ORIGINAL ARTICLES

MILK, BUTTER, AND BUTTER SUBSTITUTES, IN
RELATION TO PUBLIC HEALTH.*

BY

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Much has been said and written on the subject of milk in relation to public health, during the past 10 years; indeed, the production of pure milk may well be considered one of the most important problems which confront the sanitarian.

Numerous instances have been observed in which outbreaks of typhoid fever, scarlet fever, and diphtheria, by their sudden and explosive character, affecting families living in streets and localities supplied by the same milkman, naturally pointed to the milk supply as a common cause, but not until 1857 was it pointed out definitely, through Dr. Michael Taylor, an English physician, that cow's milk might serve as a medium for spreading typhoid fever from a dairy where the disease prevailed. In 1867 he also showed that scarlet fever might be distributed in the same way. In 1877, Mr. Jacob traced a diphtheria epidemic at Sutton to the milk supply, and in 1872, Macnamara traced an outbreak of cholera at Calcutta to an infected dairy. These facts could not fail to sharpen the powers of observation in others, and in consequence similar outbreaks were reported more frequently, so that Mr. E. Hart, the editor of the *British Medical Journal*, was enabled to present to the International Medical Congress, held in London in 1881, the history of 50 outbreaks of typhoid fever, 15 of scarlet fever, and 7 of diphtheria, all traceable to the milk supply. In a similar communication made before the International Medical Congress at Paris in 1900, I presented my conclusions based upon the tabulated histories of 330 epidemics spread through the medium of the milk supply.

It has been demonstrated by numerous bacteriologists that disease germs may not only survive, but in many instances actually proliferate, in the milk; and it is not a difficult matter to point out the many ways by which these germs gain access, especially when some of the employees are also engaged in nursing the sick, or are suffering themselves from some mild infection while continuing their duties, or are convalescent from the disease. It is quite conceivable how animals wading in filth and sewage-polluted water may infect the udder with the germs of typhoid fever, and through it the milk. We can also appreciate how infected water may convey the germs by the washing of the utensils or by deliberate adulterations. Infection may also take place through the agency of scrubbing brushes, dishcloths, exposure to infected air, or flies.

Of the 195 epidemics of *typhoid fever* tabulated by me, there is evidence in 148 of the disease having prevailed at the farm or dairy. In 67 instances the infection probably reached the milk by percolation of the germsin to the well water, with which the utensils were washed; in 16 of these the intentional dilution with water is a matter of evidence. In 3 instances *Bacillus coli communis* and typhoid germs were demonstrated in the suspected water. In 7 instances infection is attributed to the cows wading in sewage-polluted water and pastures. In 24 instances the dairy employees also acted as nurses. In 10 instances the patients, while suffering from a mild attack or during the onset of the disease, continued their work, and those who are familiar with the personal habits of the average dairy hands will have no difficulty in surmising the manner of direct digital infection. In 1 instance

the milk tins were washed with the same dishcloth used among the fever patients. In 2 instances dairy employees were connected with the night-soil service, and in another instance the milk had been kept in a closet in the sick room.

Of the 99 epidemics of *scarlet fever* the disease prevailed in 68 instances either at the dairy or milk farm. In 6 instances persons connected with the dairy either lodged in or had visited infected houses. In 2 instances the infection was conveyed by means of infected bottles or milk cans left in scarlet fever houses. In 17 instances the infection was conveyed by persons connected with the milk business while suffering or recovering from the disease and in at least 10 instances by persons who acted as nurses while handling the milk. In 3 instances the milk had been stored in or close by the sick room. In 1 instance the cans had been wiped with an infected cloth. In 19 instances the infection was attributed to disease of the milch cows, such as puerperal fever and inflammation of the udder and teats, but these latter outbreaks were probably not genuine scarlet fever, but a so-called streptococcus or staphylococcus infection, the symptoms of which closely resemble those of scarlet fever.

Of the 36 outbreaks of *diphtheria* tabulated, there is evidence that the disease prevailed at the dairy or farm in 13 instances. In 3 instances the employees continued to handle the milk while suffering themselves from the disease. In 12 instances the disease is attributed directly to the cows having inflammatory conditions of the teats and udders. These instances, however, may be regarded as typical examples of streptococcus and staphylococcus infection, giving rise to a form of follicular tonsillitis or pseudodiphtheria, often difficult to distinguish clinically from true diphtheria or scarlet fever.

There is much reason for assuming that *tuberculosis* has been spread through the milk supply and on pages 315-328, Report of the Health Officer of the District of Columbia, 1895, Dr. S. C. Busey and I have collected considerable clinical evidence on this subject, with the details of which I need not now burden you.

Apart from this, it has been demonstrated that milk is the most frequent cause of *cholera infantum* and the diarrheal diseases in children, especially when such milk is produced under unclean conditions, which together with a high temperature favor rapid germ proliferation and the production of toxins. Milk may also be rendered unfit for use and cause sickness in children, by reason of improper food of the animal, or while the animal is being treated with strong remedial agents, which may be excreted in the milk; and finally, milk may be moribund as the product of a diseased animal. I have elsewhere pointed out that inflammatory conditions of the udder and teats, especially the conditions known as garget, are doubtless responsible for a large number of cases of *pseudodiphtheria* and other *septic infections*. The milk of animals suffering from acute specific enteritis, puerperal and other septic fevers, foot-and-mouth disease, cowpox, anthrax, pleuropneumonia, rabies and tetanus has also been known to produce sickness in the consumer.

A review of the milk legislation shows that the laws which have been enacted deal largely with the prevention of milk sophistication, and those who are familiar with the surroundings of our milk farms and the habits of the average dairy employees need no argument for the necessity of sanitary reforms and additional legislation upon this subject. Since it is doubtful, however, whether legislation in matters of this kind is ever as effective as public education, the establishment of sanitary dairies and creameries should be encouraged. Such institutions, in addition to official control, are subject to frequent unannounced inspections by members of voluntary milk commissions, and have doubtless a very useful future.

Butter as a Carrier of Disease.—Since milk is known to be a carrier of disease germs, under the conditions re-

* Read before the American Social Science Association, April 24, 1902.

ferred to, the possibility that butter may act in the same way has been considered, and the evidence on this subject is as follows:

It has been shown by Hugo Laser¹ that when cholera bacilli are implanted in butter they remain alive and virulent for 32 days, and those of typhoid from three to four weeks. Gasperini found viable germs of tuberculosis in butter 128 days old, and V. A. Moore, chief of the division of animal pathology, in the Yearbook of the United States Department of Agriculture for 1895, page 431, describes an experiment in his laboratory which shows that tubercle bacilli will remain virulent for more than 90 days; the guineapig, inoculated with a piece of this butter the size of a small pea, died of tuberculosis 97 days after the infection.

Brusaferro, in 1891, produced tuberculosis in a rabbit through the injection of butter made from the milk of a cow with a tuberculous udder.

Roth, in 1894, got similar results and found, moreover, that 2 out of 20 market samples of butter used by him yielded positive results. Schuchardt got negative results from 42 samples, while Obermüller³ found the bacillus in every sample of Berlin butter used in his first experiments, and in his second series in 1899, when he used only the watery fluid of the butter obtained with the centrifuge, he found in four samples, of ten from the same source as his first lot, evidence of the presence of genuine tubercle bacilli. Petri, one of the experts on food for the German Imperial Health Office, in 1898 found the genuine tubercle bacillus in 32.4%, a bacillus resembling the tubercle bacillus in 32.4%, while only 30.4% of the samples were free from either organism. Gröning, another expert, found the tubercle bacillus in 8 of 17 samples. Korn found them in 32.5% of the samples purchased at Freiburg, and Dr. C. Coggi in only 2 out of 100 samples purchased at Milan. Dr. Lydia Rabinowitsch,⁴ in 80 samples of butter collected at Berlin and Philadelphia, found a bacillus resembling the tubercle bacillus in 28.7% of the samples.

We have no evidence that tuberculosis has ever been spread to man through the agency of butter. V. A. Moore states that Steyerthal and Konel have pointed out several cases of these diseases which were traced to the consumption of butter. Fröhner has shown that a disease of cattle in Europe known as foot-and-mouth disease and which is communicable to man, has been transmitted through butter made from the milk of cows affected with that malady. I have not been able to verify these statements, but we have evidence that the germs of tuberculosis may remain viable in butter for 128 days, and as Dr. Moore justly remarks, although the number of reported cases of infectious diseases in which the contagion was introduced through butter is not large, it is enough to show the possibility of contracting disease by the consumption of this common article of food. These facts are of importance when we realize that the production of butter in the United States amounts to 1,500,000,000 pounds per annum, and that butter, like milk, is an almost universal article of food. The remedy is simple enough, and consists in the pasteurization of the cream and the addition of certain butter cultures in order to restore the original aroma.

Butter Substitutes.—In the face of such evidence it is not surprising that scientific men should have given considerable attention to the so-called butter substitutes, more familiarly known as butterin and oleomargarin.

In 1868 Mege Mouriés, at the instigation of the French government, undertook experiments for the purpose of securing a substitute for butter at a less cost and which might be used by the navy and the wage-earners of France. This original process, according to Dr. E. A. de Schweinitz, of the Biochemic Laboratory, Bureau of Animal Industry, Department of Agriculture, Yearbook for 1895, was patented in the United States in 1873.

According to Mr. Miller, manager of the butterin department of one of the packing companies of Kansas City, their product consists of oleo oil, neutral lard, butter, cream, milk and salt; highly refined cottonseed oil is sometimes used in limited quantities in the cheapest grades. Oleo oil is made from caul fat, the richest and choicest fat of the beef. This fat amounts to about 40 pounds to the animal. It is taken out before the animal is skinned, thoroughly washed and thrown into a vat of ice water to stand until the following day; then it is cut up fine and cooked. The fat is cooked and placed in linen cloths and the oil is extracted in a hydraulic press. The residue in the cloths, after pressing it, is commercially known as stearin. The tallow element is therefore effectually removed. Neutral lard is obtained from the leaf lard of the pig. The leaf, amounting to about 5 or 6 pounds to the pig, is taken out as soon as the animal is killed, thoroughly washed, and put into a freezer for 24 hours. It is then cut into shreds and cooked, and after straining becomes snowy white. Both pigs and cattle are examined by government inspectors before and after killing, so that diseased animals are excluded.

Oleo and neutral lard, therefore, are the basis of the so-called oleomargarin or butterin. These are churned with cream or milk, salted and colored with annatto or butter-color, run through cold water, worked in a butter worker, and placed in suitable packages and labeled, according to the United States laws, "Oleomargarin."

According to a report of the Commissioner of Internal Revenue, May 14, 1900, the following are the percentages of ingredients used in the production of oleomargarin in the United States for the fiscal year ending June 30, 1899:

	Per cent.		Per cent.
Neutral lard.....	34.37	Stearin.....	.07
Oleo oil.....	26.82	Glucose.....	.03
Cottonseed oil.....	4.77	Milk.....	15.55
Sesame.....	.53	Salt.....	7.42
Coloring matter.....	.16	Butter oil.....	1.76
Sugar.....	.12	Butter.....	1.72
Glycerin.....	.01	Cream.....	3.86

Those who are familiar with the manufacture of oleo oil, neutral lard, and the process of making oleomargarin cannot fail to have been impressed with the fact that nothing but the most wholesome and pure fats are used, and that the most scrupulous precautions as regards cleanliness are observed in the manipulations. This extends not only to the material, the utensils, and the workrooms, but also to the person and clothing of the employes, and I can cheerfully corroborate the testimony of Dr. Ames, of the United States Navy, when he declared before the Senate committee (pp. 348-350) that the manufacture of butterin in properly constructed factories is much cleaner than the manufacture of butter, and that he has found the factories of Kansas City nearly perfect in that respect. It should be more generally used and not looked upon as an inferior article and makeshift for butter, when it is really superior.

CHEMICAL COMPOSITION OF BUTTER AND OLEOMARGARIN.

	Fat.	Casein.	Sugar.	Salt.	Water.
	Percent.	Percent.	Percent.	Percent.	Percent.
Butter.....	81.36	1.95	1	5.41	11.27
Oleomargarin.....	84.76	.74	.....	5.49	9.01

The great distinction between butter fat and margarin fat lies in the fact that butter fat contains nearly 8% of the volatile fats, while the margarin has about 5%. In the analysis of these substances this difference is made use of.

Wholesomeness and Digestibility of Oleomargarin.—Uffelmann, professor of hygiene, as early as 1890 reported that butterin is nearly as digestible as butter, fully 96% being utilized, and after quoting the experiments on this point of Sell, a food expert of the German health office, declared that no objections should be urged against its use so long as it is properly prepared from wholesome fats and sold under its real name.

Professor H. W. Wiley, chief chemist of the United States Department of Agriculture, testified before the Senate Committee on Manufactures on adulteration of food products (pp. 14-16) that from a nutritive point of view all the fats and oils used as food have nearly the same value as heat producers. Butter fat has a heat value of a little more than 9,000 calories per gram, while the beef fat of oleomargarin has a slightly higher heat value, but the butter fat is a little more easy of digestion, so that there is practically no difference in the value of the two fats in the human economy. Cottonseed oil has practically the same heat value as oleomargarin, and is probably a little easier of digestion. Dr. Wiley considers mixtures of animal fats and vegetable oils to be perfectly wholesome, but objects to the payment of fancy prices by persons in straitened circumstances who suppose they are getting butter when they are not.

Comparative Digestibility of Butter and Oleomargarin.—The most valuable experiments as to the relative digestibility of butter and oleomargarin were made by Adolph Mayer⁵ in 1883, N. Kienzel⁶ in 1898, and H. Lühring,⁷ with the following results:

	A. Mayer.	N. Kienzel.	H. Lühring.	Average of all experiments.
Digestibility of:	Per cent.	Per cent.	Per cent.	Per cent.
Butter.....	98.40-97.10	96.65	95.69	96.96
Oleomargarin.....	96.40-95.80	95.64-95.72	96.98-96.70-96.93	96.27

From these feeding experiments it would appear that, while 97% of the natural butter is digested, the digestibility of the artificial product is only about 0.7% less; in other words, the two are practically alike in point of digestibility.

Professor Jolles, in a report to the Imperial Academy of Sciences, in Vienna, March, 1894, arrived at a similar conclusion. Hultgren and Lundergren, the Swedish physiologists, and Wibbens and Huizenga, from the Physiological Institute of Berlin, offer similar testimony. The last named authors conclude their article in *Archiv für die gesammte Physiologie*, lxxxiii, February, 1901, page 609, by saying: "Everybody has to cut his coat according to the cloth, and it is therefore a great blessing for all mankind that those who have to deny themselves the regular use of natural butter will find in artificial butter a wholesome and cheap substitute."

Oleomargarin as a Carrier of Disease.—I have carefully searched the annals of medical literature for opinions opposed to the above formidable testimony, and find that Morgenroth⁸ has subjected oleomargarin to an investigation for the presence of tubercle bacilli, since milk is used in its manufacture, and found these organisms in 9 out of 20 samples. Dr. de Schweinitz, in the paper already quoted, expresses the belief that the germs of tuberculosis can be transmitted in oleomargarin, and bases this conclusion upon a number of inoculation experiments upon guineapigs with different samples of oleomargarin, and refers to five infections. He does not give the total number of experiments, but says: "A number of other guineapigs have been inoculated with different samples of oleomargarin, but at this writing (after eight months) have not contracted disease from the oleomargarin inoculation. Two of the samples which caused disease in the animals were made at a factory where the material used may have been questionable in character."

On the whole it is surprising that the evidence is not stronger against this food product, which has doubtless been subjected to the most rigid sanitary investigation by scientists and food experts, and who, on account of a general prejudice against all artificial products, would not hesitate to record adverse opinions. Government inspection already extends to pigs and cattle before and after killing, and if the officers perform their duty, and

all the ingredients, including the milk, are pasteurized, as I believe they now are in the manufacture of butterin, the possibility of transmitting infectious diseases in this food product is certainly less than with genuine butter, unless made from pasteurized cream.

As a teacher of hygiene, I have urged upon my students for years to bring the merits and nutritive value of this foodstuff to the attention of the public, and in the interest of the wage-earners of this country to correct, as far as possible, the prejudice which has been created against the use of this product, provided always it is sold under its true name and at its real value. In this opinion I am glad to be supported by the highest scientific authorities in this country and abroad. Professor Schweitzer, of the Missouri State University, in his testimony before the Senate committee, states that careful physiologic experiments reveal no difference whatever in palatability and digestibility between butter and the brand of butterin which he has examined. Professor Barker, of the University of Pennsylvania, considers butterin quite as valuable a nutritive agent as butter. Professor Johnson, of Yale University, says that for all the ordinary and culinary purposes it is the full equivalent of good butter made from cream, and regards the manufacture of oleomargarin as a legitimate and beneficial industry. Professor J. S. W. Arnold, of the medical department, University of New York, characterizes it as "a blessing for the public, and in every way a perfectly pure, wholesome, and palatable article of food." Henry Morton Stevens, Institute of Technology, New Jersey; J. C. Caldwell, of the chemic laboratory, Cornell University; Henry A. Mott, of New York; W. O. Atwater, Wesleyan University, Connecticut, have all offered similar testimony.

It is a matter of special satisfaction to note that Coplin and Bevan, in their *Manual of Practical Hygiene*, Philadelphia, 1892, and Professor Harrington, of Harvard, in his *Manual of Practical Hygiene*, 1901, devote several pages to the consideration of this subject and the misrepresentation concerning butter substitutes.

Owing to the fraudulent sale for butter, oleomargarin and butterin have been subject to a vast amount of restrictive legislation, and yet after all that has been said or done, the most effective remedy lies in the education of the public, who if they desire these products should not hesitate to ask for them by their proper name, and thus avoid deception.

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THE SURGICAL ELEVATION AND CONSERVATION OF THE PROLAPSED OVARY AND TUBE.—(ADNEXOPEXY.¹)

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The classes of ovarian and tubal disease to which I wish to call attention and suggest the practice of surgical elevation of the tube and ovary (the operation of adnexopexy) are, first, that of simple prolapse of the ovary and its correlated tube to the rectouterine plica or into the Douglas culdesac; and second, those instances of more or less mild chronic inflammatory disease of the tube and ovary which have resulted in the same degree of prolapse and in which the patho-

¹ Read before the Philadelphia Obstetric Society, April, 1902.

logic changes present are not sufficiently extensive or severe to demand the operation of salpingo-oophorectomy. The operation of adnexopexy is to be practised alone or in conjunction with the other conservative operations on the tube and ovary as shall hereafter be stated.

The first class of cases, the simple prolapse of the ovary, as a result of subinvolution after labor, enlargement through over-development, symmetric hypertrophy, simple follicular hypertrophy or its existence as a congenital displacement, is a rare condition, yet every practitioner of gynecology occasionally will have such a case under his care. The prolapse may be associated with no symptoms and require no treatment; on the other hand the woman's suffering may be extreme. There is pain whenever she is in the erect position. The pain is increased by walking, probably because the ovary is squeezed between the cervix and sacrum. Coitus sometimes causes pain. Pain begins with the movement of the bowels, and often lasts for one or two hours afterward. It is dull and aching in character, and is situated in the normal position of the ovary, radiating thence throughout the pelvis and extending down the thighs. It frequently produces faintness and nausea. There are often reflex disturbances, as great mental depression, headache and indigestion. The presence of an ovary producing such symptoms can be the cause of abortion. The manual replacement of the ovary, replacement by gravity with the patient in the knee-chest position, and the application of local treatments, though given a thorough trial, usually fail to relieve the patient, and operative treatment becomes the only method of cure. The customary operation under such circumstances has been radical, oophorectomy or salpingo-oophorectomy. This prolapsed ovary, in my experience and according to modern pathologic studies is, as a rule, not sufficiently diseased to indicate its removal, and if replaced permanently to normal position, the equilibrium of the arterial and venous blood supply would be restored, it would return to normal size and its function continue without symptom. The common pathologic changes in such an ovary are either primary, or through the dependent position, secondary hyperemia, venous stasis, followed by edema, symmetric, or follicular hypertrophy. When these changes have been long continued and are extensive, the ovary probably never returns to its former state of health, but its function remains, and without the production of symptoms.

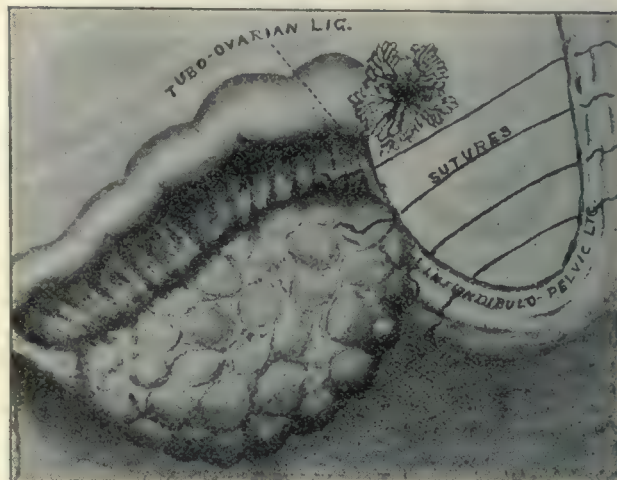
Therefore, in this simple descent of the ovary we have in five instances practised the operation of adnexopexy, with, where necessary, puncture or ignipuncture of the cystic follicles or resection of the ovary.

The second class of cases are of more frequent occurrence. These are instances of chronic catarrhal salpingitis associated with a small amount of perisalpingitis and periophoritis, with or without closure of the abdominal ostium of the tube. In the acute stage of the inflammation, the tube and ovary have fallen to the position of prolapse and fine adhesions have formed, fixing them in this abnormal position. After the acute or subacute inflammation has disappeared, because of the dependent position, the presence of chronic hyperemia and adhesions and more or less catarrhal inflammation of the tube continues, with usually the secondary changes in the ovary already described. Further, I would include in this class any instance of more severe inflammatory disease of the tube in which in the judgment of the surgeon a tube and ovary, or an ovary, have not undergone such changes as to destroy the function and make their retention in the pelvis harmful; also those cases in which the operation of resection of the tube (salpingotomy), puncture of cystic follicles, resection of the ovary and the simple freeing of adhesions is performed and the ovary is prolapsed. In these cases in conjunction with the other conservative operations, including in some instances the operation of ventrosuspension, we have practised and would also suggest the surgical elevation of the adnexa.

The elevation here restores the equilibrium of the blood supply, and thus places the organ in the most favorable position for regaining a healthy state. It prevents the adnexa from again dropping into its original position and becoming adherent. The ovary and tube now being in contact with the moving intestines, are much less apt to become adherent to the surrounding structures. The elevation makes possible the preservation of adnexa which would otherwise be sacrificed.

The method of elevation of the adnexa which I have practised was described by Sanger (*Centralblatt fur Gynakologie*, No. 9, 1897) in 1897 under the title "Ueber Descensus und Pelviifixure Ovarium." Sanger suggests the name adnexopexy, oophoropexy, or more proper, oophoropeliopexy.

According to the investigations of His, which seem to be accepted, the infundibulopelvic or suspensory ligament is the important ligamentary support of the ovary. Therefore, when the ovary is prolapsed, independent of displacements of the uterus, this ligament is abnormally long or lengthened. This being true, any method of shortening this ligament must elevate the ovary, and with it the tube, to normal position. Sanger secured the shortening of the ligament in two cases of simple descent of the ovary (cases of the first class) by placing two fine silk sutures through the peritoneal fold near the ampulla of the tube and through the parietal peritoneum, *i. e.*, each end of the suspensory ligament. The only other writer, so far as I can learn, who has practised the operation is Hirst, with practically the same



technic. Like Sanger, Hirst performed adnexopexy in three cases of simple descent of the ovary.

More in detail, the technic of this operation is as follows: After opening the abdomen any adhesions to the prolapsed ovary and tube are carefully separated and any necessary conservative operations performed. The fimbriated extremity of the tube is caught and drawn forward, exposing the suspensory ligament. A fine silk suture is placed through a small portion of the tubal end of the suspensory ligament, and then through the ligament near its pelvic attachment. Similarly, two or three sutures, or a sufficient number to close the fold made in the ligament, are placed below this one. The sutures are then tied. Care is taken not to include the ovarian artery or constrict it in the suturing. The position of the first suture will depend upon the degree of elevation of the adnexa desired, sometimes upon the length of the ligament and the amount of elevation gained by placing the first suture as described. It may be necessary to include in the suture the tuboovarian ligament to attain adequate elevation. Recently we have employed a continuous fine silk suture instead of the interrupted. The continuous suture is begun in the centre of the loop of the

ligament and proceeds, catching the ligament on each side, until the same result is gained. In two cases in which both ovaries were prolapsed with retroversion of the uterus the ovaries remained in Douglas's culdesac after performing ventrosuspension of the uterus, and therefore in conjunction with the suspension of the uterus we elevated the ovaries. Such a case is described and operated upon by Sanger. In another instance in which the uterus was retroverted to the second degree after elevating the adnexa we found it impossible to retrovert the uterus as before. It would seem that the performance of this operation on both sides might well be employed to restore a retroverted uterus to normal position, particularly in those cases in which the ovaries remain prolapsed after the uterus is brought forward to normal position. It appears to be equal in its advantages in this last direction to any of the intraabdominal methods of shortening the round ligaments.

The practical results of adnexopexy have thus far been most satisfactory. In the first class of cases it has been performed on 10 women (Sanger, 2; Hirst, 3; Beyea, 5), in all of which the various local treatments and manual means of replacement failed after a considerable length of time to relieve the patients. Adnexopexy was performed alone in four of the cases, with resection of the ovary in one, with separation of fine adhesions from both ovaries and ignipuncture in one, with ventrosuspension of the uterus in two, and with repair of the cervix and perineum in two. The operation was performed on both sides in three cases. The report is that all 10 patients have been completely relieved of symptoms, and a pelvic examination made in four of the cases determined the ovary could not be palpated or was found in normal position. In the second class of cases we have performed the operation on 12 women as follows:

CASE I.—Mrs. A. E., aged 31, was operated on in October, 1899. The right tube and ovary were adherent and tube abdominal ostium closed. The left ovary was strongly adherent to the posterior surface of the broad ligament. Tube ostium was closed. Uterus was retroverted to the third degree and retroposed. Separation of adhesions to the right tube, salpingotomy and adnexopexy was done. Salpingotomy was performed on the left tube, the ovary was not disturbed. The uterus was ventrosuspended with difficulty. The cervix was repaired. Convalescence was normal. A pessary was introduced to secure an anterior position of the uterus. An examination 18 months later showed the uterus forward in good position and movable. Left ovary was adherent as before. Right side was in the normal position and movable. The patient was relieved of previous symptoms.

CASE II.—Mrs. N. A., aged 24, was operated on in November, 1899. Both tubes and ovaries were prolapsed and adherent. The left ovary was the size of a large walnut through the presence of a corpus luteum cyst. Abdominal ostium was patent and the uterus was in good position. A separation of adhesions, opening of the corpus luteum cyst and suturing the cyst wall to the ovarian surface with catgut was done. Adnexopexy was done on both sides. Convalescence was normal. Examination two years later showed the tubes and ovaries palpable in normal position, not tender, and movable. Symptoms were relieved and the patient has gained 10 pounds in weight.

CASE III.—Mrs. A. J., aged 35, was operated on in December, 1899. A large pyosalpinx on the left side was adherent to the pelvic floor and abdominal wall. A prolapsed right tube and ovary were adherent but not distinctly diseased. Salpingo-oophorectomy was done on the left side, and a separation of adhesions on the right side with adnexopexy. Examination one year later showed the uterus in good position and movable. Right tube and ovary were not palpable. Symptoms were relieved, with the exception of pain, not severe, a day before the menstrual period.

CASE IV.—Mrs. N. S., aged 24, was operated on in October, 1900. Adherent tube and ovary were found on both sides. There was chronic catarrhal salpingitis, perisalpingitis and periophoritis, with closure of right tube ostium. Separation of adhesions from both tubes and ovaries, salpingotomy on the right side and adnexopexy on both sides were done. A year previous the cervix had been amputated for a condition strongly resembling tuberculosis. Examination several months after the last operation determined the adnexa in good position, movable, and the patient's health much improved. A letter received recently, states that she suffers with dysmenorrhea and a profuse leukorrheal discharge. It is possible that a radical operation may be necessary.

CASE V.—Miss C. S., aged 20, operated on in November,

1900. The left tube and ovary were found completely buried in adhesions; tube ostium closed by adhesions to the pelvic floor. The right tube was of normal size for a distance of 1½ inches, then interstitial salpingitis was observed. The ovary was inflamed and contained an apoplexy. Left side was freed from adhesions; salpingotomy and adnexopexy were performed. The right tube was resected and the ovary removed. An application of pure carbolic acid was made to the cervical canal. Convalescence was normal. In this case the changes were due to a gonorrheal infection, and the practice of conservatism was of extremely doubtful value. Conservatism was practised because of the age of the patient and at her urgent request. Her physician states that she is well, and free from pain a year after operation.

CASE VI.—Miss L. B., aged 28, was operated on in November, 1900. Both tubes and ovaries were adherent and prolapsed, tube ostium was closed and hematosalpinx was found on left side. Salpingotomy and adnexopexy were done on both sides, and appendectomy was also performed. Convalescence was normal. Two years after operation the patient has gained many pounds in weight and is in excellent health.

CASE VII.—Mrs. J. F., aged 30, operated on in January, 1901. There was retroversion to the third degree, and both tubes and ovaries were adherent and prolapsed. Separation of adhesions and adnexopexy were done on both sides. A report by letter states that she has good health.

CASE VIII.—Mrs. L. C., aged 39, was operated on in March, 1901. Hydrosalpinx was found on the right side, the size of a turkey's egg, the left tube and ovary were adherent, and the uterus retroverted to the third degree. Right salpingo-oophorectomy, ventrosuspension, and adnexopexy was done on the left side and a pessary introduced. Convalescence was normal. Examination at the end of 11 months showed the uterus forward in good position and movable, the left tube and ovary palpable, movable, and not tender. Symptoms were relieved and the patient has gained in weight.

CASE IX.—Mrs. N. E. V., aged 32, was operated on in November, 1901. Both tubes and ovaries were adherent by fine adhesions and prolapsed. The right tube ostium was closed and the uterus retroverted to the third degree. Separation of adhesions, salpingotomy on right tube, adnexopexy on both sides, and ventrosuspension of uterus were done. Convalescence was normal. Patient, three months after operation, has gained in weight and is relieved of her previous symptoms.

CASE X.—Mrs. W. J., aged 29, was operated on in March, 1902. There was retroversion to the third degree, prolapsed, adherent tubes and ovaries, with closure of abdominal tube ostil. Separation of adhesions, ventrosuspension, salpingotomy and adnexopexy were done on both sides. Convalescence was normal. She has been relieved of all her symptoms.

CASE XI.—Mrs. F. B., aged 23, was operated on in March, 1902. There was retroversion to the third degree with prolapsed and adherent tubes and ovaries. Separation of adhesions, ventrosuspension and adnexopexy were done on both sides. Convalescence was normal. The patient is relieved of her symptoms and improving.

CASE XII.—Mrs. H. K., aged 30, was operated on in April, 1902. There was hypertrophy of the cervix, an adherent, prolapsed and cystic ovary on the left, and a prolapsed and adherent follicular cystic ovary on the right. There was interstitial salpingitis of the left tube, and catarrhal salpingitis of the right. Salpingo-oophorectomy was done on the left, and separation of adhesions and adnexopexy on the right. Convalescence was normal. Patient is still in the hospital.

These 12 cases represent, as will be appreciated, the most conservative treatment of inflammatory disease of the tube and ovary. That the conservatism was justifiable is shown in the fact that in all but one of the cases for a number of months no symptoms have returned and the patient's health has been restored. In this one case the improvement is not complete, and I fear, because of an infection of the uterus (not gonorrheal), it may be necessary at some future time to remove the tubes, ovaries and uterus. I still feel that this disease is tuberculous, although the amputated cervix was examined microscopically.

In all the latter cases adnexopexy was performed in conjunction with other conservative operations, and its actual benefit therefore cannot be estimated directly. Yet it is reasonable to conclude that the simple separation of adhesions, with perhaps ventrosuspension of the uterus, would not have been sufficient to have prevented the recurrence of the adhesions, prolapse of the tube and ovary and the reproduction of the symptoms.

We wish particularly to call attention to the efficiency of this operative procedure in connection with the treatment of the second class of cases, suggested, so far as we can determine, for the first time; its value in making conservation of the tube and ovary possible, in widening

the field of this most important step in gynecic surgery, and its influence in securing a more complete and healthy restoration of the parts conserved.

THE EAR FROM A MEDICOLEGAL STANDPOINT.¹

BY

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In a case of injury the surgeon has an important responsibility when he testifies as to the nature of the injury and the means and manner in which the injury was inflicted. The importance of making a thorough examination with a view of finding the exact cause is illustrated by the fact that we are sometimes called on to give legal evidence in a case in which the medicolegal aspect did not suggest itself at the time. In all cases of injury, therefore, it is not only necessary to make a critical examination, but it is also advisable to make notes for future reference, a method that I have practised for several years.

In illustration of the importance of making such careful examinations and of not placing too much reliance in the testimony given by the patient, I will give the synopsis of a case which I reported at the time before the Société Française d'Otologie, de Laryngologie et de Rhinologie, and which is of interest from a medicolegal standpoint:

On July 15, 1895, Louise W., colored, called at the Eye, Ear, Nose and Throat Hospital, and gave the following history:

Eight days previously she had been suffering from a violent toothache, and after trying various methods of alleviating the pain, a neighbor volunteered the advice that if she would put a mixture of salt and cayenne pepper into the ear it would cure the toothache. Taking it in good faith, the patient inserted this mixture into the auditory canal, and the treatment was successful to a certain extent, for in two or three hours she was no longer conscious of the toothache; but she had instead a severe pain in the ear. This pain continued, and the next day the family physician was sent for, who, without making an otoscopic examination, declared that the symptoms were due to the pepper and salt, and advised that warm water be syringed into the ear for its removal. The pain continued, with considerable discharge from the ear, and a few days later the physician advised that the patient be sent to the hospital for special treatment.

A careful examination with the reflected light showed the auricular canal and the drum-membrane somewhat reddened, while in the anterior inferior segment of the drum there was a sharply defined perforation, from which came a purulent discharge.

Catheterization through the eustachian tube gave a distinct whistling sound, and the temperature of the patient was 99.5°.

The slightly inflamed condition of the external meatus and drum could be accounted for by the irritation due to the pepper and salt, but the perforation and its well-defined character could not be explained by this cause. The patient was then asked if she had made any efforts to remove the foreign body before the advent of the physician, and she stated that she had used the soft end of a feather dipped in oil for this purpose. As this could not have effected the perforation, she was asked if she had made use of nothing else, and she said that she had taken an old toothpick and had inserted it into the ear to remove the pepper and salt, but had felt a sharp pain while inserting this into the ear, whereupon she at once desisted. The appearance of the perforation corresponded perfectly with an opening that would have been caused by a toothpick, and this was no doubt the cause of the perforation, as well as of the purulent discharge and fever. Without making any comment on the cause of the injury, the proper treatment was instituted and the ear soon commenced to improve, and ten days later the perforation had closed and all signs of inflammatory action had disappeared.

In the meanwhile the patient had had an affidavit sworn out against her neighbor, who had advised her to make use of the pepper and salt, claiming that this advice was not given her for the purpose of relieving her, but with malicious intent, and that the conditions, which threatened her hearing and her health, were due to the irritating substances placed into the ear. Some days later, to my surprise, I was summoned as a witness to testify for the plaintiff. When the case was brought before the court, testimony was taken from other parties connected with the case, and finally I was called to give my statement. In

answer to questions I stated that the patient had called at the hospital, that there was an inflammation in the ear, that no doubt pepper had been used, as I had seen small particles of it when I examined the ear. When questioned as to whether her condition had been due to the pepper and salt inserted into the ear, I explained that I had made careful notes at the time that I examined the patient and had come to the conclusion that the inflammation of the middle ear, the purulent discharge, the febrile condition, and the perforation which I had found in the ear-drum, had been caused, not by the pepper and salt, but by the prick of an old and probably infected wooden toothpick which the plaintiff herself confessed to have used in the ear. After hearing my testimony the judge promptly discharged the case.

Quite recently I was consulted by a patient who had been injured in a railroad accident, the auricle of the ear being severely lacerated. The hearing on the injured side was quite dull, so that the watch could be heard only when brought in contact with the ear. The patient attributed the loss of hearing to the accident, and evidently considered himself entitled to proper damages.

A careful examination of the ear showed, however, that the loss of hearing was due to a progressive sclerotic inflammation of the middle ear which had evidently existed for a considerable time, but which, as is frequently the case, had not been observed by the patient. When I explained that a similar condition was present in the other ear, and that the hearing on this side was no better than the side that had been injured, the patient was convinced. A careful examination thus prevented a probable lawsuit, with all its attending expense and annoyances.

The careful examination of the ear from a medicolegal standpoint is indicated in a wide range of cases. In cases of violent explosions it is important to eliminate the effects of chronic catarrhal processes which may have been present but not observed, as shown in the case just reported. Railroad employees are required to pass an examination of their hearing capacity to avoid accident due to defective hearing, and this is also the case in the military service.

In the latter we sometimes have cases of simulation, for the detection of which various methods have been suggested. When the cases are supposed to be bilateral, the subject is unexpectedly called, or a sudden noise is made near him, and the patient carefully watched. While most cases are detected in this manner some present the greatest difficulty.

When the deafness is claimed to be only on one side, the most efficacious method is by means of two rubber tubes, one for each ear, and both connected with a mouthpiece behind the head of the subject. By compressing the tube leading to the ear admitted to be healthy, the sound will be transmitted only to the other ear, and the subject will soon be confused as to which sound to repeat. Other methods have been suggested for the more obstinate cases, but these are usually effective.

The careful examination of the ear is therefore of importance not only for the purpose of making a correct diagnosis with a view of ensuring a satisfactory result in the treatment, but also from a medicolegal standpoint. An insufficient examination may result in the escape of a criminal from his just deserts, while, on the other hand, it may subject an innocent person to an undeserved punishment.

The Cause of Leprosy.—At a recent meeting of the Royal Medical and Chirurgical Society two important papers on the subject of leprosy were read. Mr. T. J. Tonkin, who deals with the Soudan district, upholds the opinion that a poor diet, chiefly vegetables, is a very important predisponent, while Mr. J. Hutchinson contends that no predisposition is necessary and that the bacillus is introduced into the system by means of badly cured fish. Both admit that the disease is communicable from person to person, but both regard diet as of primary importance and place contagion in a second position. Mr. Hutchinson believes that the transference is effected solely through the stomach and never by touch or inhalation.—[Lancet.]

¹ Read June 1 at the Annual Meeting of the Louisiana State Medical Society.

PYEMIA, WITH REPORT OF A CASE.¹

BY

HENRY D. FULTON, M.D.,

of Pittsburg, Pa.

The theory of the absorption of pus, as the cause of pyemia and allied conditions, has undergone various modifications from the sixteenth century up to very recent times. The conclusions of Hunter, that the pus was absorbed from the walls of inflamed veins, foreshadowed a clearer conception of its etiology. The early researches of Virchow, and his discovery of the part that emboli play in the production of metastatic abscesses, one of the peculiar phenomena of this malady, was an important step toward a better understanding of the subject. During the decade from 1870 to 1880, valuable researches were made by Klebs, who first proved the direct relation existing between certain specific microbes and the pyemic processes. Pasteur and others during the same period were making experimental investigations along the same line and *Staphylococcus* and *Streptococcus pyogenes* under a different nomenclature were recognized in the contents of pyemic abscesses, and the conclusion was reached that one or the other, or both, of these pus microbes produce the disease.

At the commencement, then, of the disorder, there is the primary suppuration and a local infection of a vein, the pus microbes entering the vein through its walls and lighting up a phlebitis. This is followed by the formation of a thrombus, detached portions of which, being swept into the blood-current, are carried to other parts of the body, forming emboli, which become new foci of suppuration. Fortunately, pyemia is a much less common disease now than it was before the era of antisepsis, and can be regarded more as a complication than as a distinct and separate disease.

With this brief reference to the etiology of the disease, I will place before you the clinical history of a case which recently came under my care.

On August 27, 1901, Mrs. L., aged 31, received a slight wound on the end of the index finger of her right hand. A little pus formed, and she picked the finger with a pin. In a day or two the finger became much inflamed, and was swollen and painful. She was attended for a few days by a physician near her home in Allegheny. He freely incised the finger and dressed it antiseptically. There was considerable discharge of pus from the several incisions, and the case presented nothing unusual nor alarming in character. On September 2, the patient came under my care. For a day or two before, she had felt very sick and complained of aching limbs, weakness, and an intolerable sense of fatigue. On that date there occurred a severe chill, with a temperature of 103°. A remission of the fever later in the day was accompanied by profuse sweating. The inflamed finger presented a sodden, edematous appearance, and the pus discharged was sanious and small in quantity. The inflammation had extended to the hand and forearm. On September 3, she had another rigor, the temperature reaching 104°; the patient experienced great pain in the arm, and was nervous, anxious, and depressed. At this time she was removed to the Mercy Hospital. The inflammatory redness and swelling extended above the elbow, and maximum doses of morphia, administered subcutaneously, were required to allay pain and promote rest. A warm anodyne lotion, consisting of laudanum and lead acetate, was applied, the arm was placed in an elevated position and surrounded by an easy and voluminous dressing. On September 5, there was the first occurrence of delirium, which was distinctly typhoid in type, the patient talking incoherently, and was restless, agitated and wakeful. At this time free incisions were made in the back of the hand and forearm, only one of which, along the extensor tendon of the infected finger, discharged pus. In a day or two, however, pus came from two of the openings in the forearm. A dressing of gauze, soaked in a warm mercuric chlorid solution, was substituted for the first dressing, and was changed several times in the 24 hours. For a week following, the temperature, taken in the axilla, ranged from 101° to 103°, the daily exacerbation sometimes occurring in the morning. The pulse was weak and of small volume, was over 120, and sometimes as high as 140. There was rapid emaciation and exhaustive sweats. Indeed, all of her symptoms were ominous and foreboded an early and fatal termination of the case.

On September 7, symptoms of pneumonia developed, due to the presence of one or more infarcts in the right lung.

She had a short, distressing cough and severe pain in the right side. There was crepitation, bronchial breathing and rusty-colored sputum. The respiration for two or three days previous had been very rapid, from 30 to 50, indicating that the metastatic foci in the lung had likely been implanted that long before the symptoms of pneumonia manifested themselves. During the development of the lung complication, and as long as it formed a conspicuous feature of the case, the patient was less tractable, the delirium assumed a more active type, was more marked during the night, and the total amount of sleep each night, which was obtained at short intervals, did not exceed two hours. The patient had no control of the bladder or bowels, and on the fifteenth and sixteenth the stools were small, frequent, and foul-smelling. About September 10, in the upper and outer aspect of the arm three pockets of pus were evacuated. The pus was of an oily character, mixed with small bloodclots and shreds of broken down tissue. These metastatic abscesses did not cause swelling or redness at the surface; they were situated beneath the deep fascia and were recognized by the indurated area surrounding them. As these foci were discovered from day to day, after evacuation and thorough disinfection with hydrogen dioxid, followed by a 1:1,000 mercuric chlorid solution, the suppurative process showed no tendency to continue at those particular points. On September 17 the temperature fell to 99°, the pulse to 100, there was profuse sweating, lessened delirium, and the usual phenomena attending the crisis in pneumonia were observed. The temperature remained normal for three days, when the patient had a chill, fever returned, the improvement was shown to be only apparent, and the condition of the patient was progressively downward. There was a continuation of the suppurative process, abscesses being discovered at intervals of every two or three days. They were situated in the arms, the gluteal and supra-scapular regions, in the anterior part of the thighs and in the calves of the legs. Seldom two appeared simultaneously, but one after the other in the different situations, and were evacuated as early as possible. These purulent deposits varied considerably in size, those in the gluteal region being the largest. The smaller abscesses contained two or three drams of pus, the larger collections when evacuated discharged from one to three ounces. Most of them felt about as large as a hickory nut between the thumb and forefinger, and were movable in the particular group of muscles in which they happened to be situated. If the liver or other important organs contained infarcts, they were not discoverable at any time. There was now extreme emaciation, a small and frequent pulse, almost daily recurring chills, irregular temperature, and profuse sweating. In the two succeeding weeks the delirium was somewhat less constant. The patient seemed exhausted, and was emaciated and worn out to the last degree, but at critical times the vital forces rallied, and the monotonous course of the disease continued from week to week.

A stoical indifference to the incisions, which was evinced at the commencement of the malady, was now replaced by a morbid fear, and the opening of the abscesses, as they appeared from time to time, became an unpleasant duty. On October 9 the patient developed synovitis of the left knee-joint. The onset was marked by a severe rigor. The temperature rose to 108.4°, accompanied by extreme pain. On the following day there was an effusion into the joint with much distention and increase of pain. In view of the general suppurative condition, it was not deemed best to temporize with this new complication, and an incision was made through the capsule into the joint, and the effusion, which was a thin, straw-colored fluid, thoroughly drained off. The knee was carefully dressed, firmly bandaged, and maintained in an easy semiflexed position. The case went on without special incident until the eighteenth, when the right knee-joint became infected, and an effusion of synovial fluid followed, as in the left. This joint was aspirated, the effusion being similar to that in the other knee. The effusion contained pus cells, but was not examined bacteriologically. During the latter part of October, an abscess in the lung ruptured into a bronchial tube and more or less purulent matter was expectorated during a period of several weeks. From October 29 the temperature showed frequent remissions, and a gradual decline until November 20, after which it remained normal. About this time the menstrual function, which had been suspended for 16 weeks, returned.

The case was retarded very much by the pulmonary abscess during the discharge of which there was a distressing cough, great prostration and drenching sweats at night. It was about the end of October when the last metastatic abscess formed, being deeply situated in the muscles back of the shoulder, and one of the largest that had been opened.

The treatment consisted locally in the free evacuation of the purulent deposits so soon as discovered, a thorough disinfection with hydrogen dioxid and a mercuric chlorid solution of each suppurating focus, with daily antiseptic irrigation afterward and rigid attention to the dressings. The interne in attendance, Dr. Wm. H. Hall, who assisted me throughout, made frequent search for these abscesses and they were, therefore, discovered as a rule very early.

Generally the treatment was of a supporting character energetically maintained, with such variations as were required by complications as they arose. A liberal dosage of whisky was necessary and cardiac stimulants, such as digitalis and strychnia, were frequently resorted to, as occasion required,

¹ Read before the Austin Flint Medical Club, February 11, 1902.

and served a useful purpose. Opium was of the first importance throughout, and quinin was employed to advantage. During the latter part of the disease, iron, cod-liver oil and a generous allowance of malt liquors were all helpful in restoring the shattered forces. The diet, early in the disease, consisted mainly of milk and stimulating and highly nutritious broths. Toward the end of the illness, the feeding was forced as much as the stomach would bear and a liberal and varied diet allowed.

On November 6, the patient was taken to her home and entered upon a period of invalidism that was prolonged into the present year. Her convalescence was tedious, but she has at this time fully recovered her former health, and, aside from partial loss of function of the index finger that was the source of the infection, and a slight limp in walking, due to impairment of motion in the right knee, no effects of the malady remain.

As to the prognosis in pyemia, it is extremely unfavorable. All authorities say that the recoveries are few. Indeed, from the very nature of the disease, there is nothing from the outset, it would seem, upon which any reasonable expectations of recovery can be based. In this case the most favorable feature was the accessibility of the metastatic abscesses. The patient, too, was a woman of excellent health previous to this illness; of an active temperament and a hopeful disposition. She possessed great reserve power, and unusual capacity for work and sustained effort. With a good family history, she had a large inherited stock of vitality. All of which, no doubt, contributed largely to the sum total of those forces which made up her resistance to the disease, and was likely an important determining influence in the result.

THE SIGNIFICANCE OF EOSINOPHILIA IN PEMPHIGUS.*

BY

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Since T. R. Brown (Vol. iii, *Journal of Experimental Medicine*) published three cases of trichiasis showing a decided increase in eosinophilic leukocytes in the blood, the presence of these coarsely granular cells in greatly increased proportions has been looked upon as one of the most diagnostic points in this affection.

Many cases have been also reported of eosinophilia in various cutaneous lesions. The highest recorded counts are by Cabot, 19% in a case of dermatitis herpetiformis; Brown, 44% in the same condition; T. R. Brown, 24% in a case of chronic eczema; Zappert, 33% in a case of pemphigus, and Lazarus, 60% in a case of urticaria.

It has been held that the grade of the eosinophilia in skin affections was proportionate to the amount of tissue involved.

Having recently had the opportunity to examine the blood from two very severe cases of pemphigus, one terminating in recovery and the second fatally, and finding in each very different degrees of eosinophilia, the possibility of there being a prognostic value in these differences suggested itself. It is to be regretted that the reports are so incomplete, but it could not be avoided.

December 10, 1900, Mr. A. R. Eaton, a student in the Cornell University Medical College, brought to the laboratory some blood smears from a case of pemphigus.

The patient was a married woman, aged 44. During the preceding four months she had successive extensive outbreaks of pemphigus over both cutaneous and mucous surfaces.

A differential count of leukocytes on December 10 showed: polynuclear, 27.3%; eosinophiles, 51.8; small mononuclear, 12.8; large mononuclear and transitional, 7.8. During the next three weeks the patient's condition remained about the same. On December 30 she was seen by me, but only a very superficial examination was possible. Considering the duration of the trouble she seemed in excellent condition. A blood examination on this day showed: red corpuscles, 4,300,000; white corpuscles, 12,000; hemoglobin, 77%. The differential count was:

polynuclear, 30.9%; eosinophiles, 49; small mononuclear, 15.6; large mononuclear and transitional, 4.9. The red cells were normal in shape and size.

The patient then began to improve and for several weeks had no fresh eruptions.

On March 10, 1901, a fresh crop of blisters appeared. A blood count the following day showed: polynuclear, 71.5%; eosinophiles, 10.5; small mononuclear, 13.3; large mononuclear and transitional, 4.5. During the next four weeks successive crops of vesicles appeared, and on April 7 the blood examination was: polynuclear, 43.8%; eosinophiles, 50.7; small mononuclear, 4.3; large and transitional, 1.1. Soon after that the patient began to improve and has since been in excellent health. No subsequent blood examination has been possible.

Here, then, was a case of relapsing pemphigus extending over a period of nine months. The eosinophilia was very marked, so far as we have been able to ascertain, the highest yet reported in any skin lesion with the exception of that of urticaria, 60%, reported by Lazarus. The increase in the eosinophiles followed the appearance of the eruption and therefore gave no warning of the attack.

The relation of the time the eruption appeared to that of the eosinophilia is well shown in the accompanying table:

Date.	Polynuclear.	Eosinophile.	Small Mononuclear.	Large Mononuclear and Transitional.	Remarks.
December 10, 1900.	27.3	51.8	12.8	7.8	History of pemphigus for 4 months.
December 30, 1900.	30.9	49.0	15.6	4.9	Same condition continued. R. B. C., 4,300,000. W. B. C., 12,000. Hb., 77%.
March 11, 1901.....	71.5	10.5	13.3	4.5	Excellent health until Mar. 10, when fresh crop of vesicles appeared.
April 7, 1901.....	43.8	50.7	4.3	1.1	Numerous crops of vesicles since last date.

The question then arose, will the presence or absence of an eosinophilia assist in the prognosis in severe cases of pemphigus, and perhaps in other skin affections?

Directly bearing upon this point is the following report upon a case of rapidly fatal pemphigus vulgaris:

On October 18, 1901, a man, aged 44, came to Dr. A. F. Büchler's clinic, at the Presbyterian Hospital. Five months before a vesicular eruption appeared around the umbilicus, one month later similar spots came on the penis, and about a week before applying for treatment sores appeared in his mouth. Such was the patient's condition when first seen. A stained specimen of blood showed it to be normal. Two days later flabby vesicles appeared on the right thigh. Fresh eruptions rapidly appeared, and on October 29 the patient was referred to one of the general hospitals. His condition grew worse rapidly, and he died on November 22.

Through the courtesy of Dr. Büchler I was able to make several blood examinations. These showed the eosinophilic leukocytes to be only 6%. May it not be that in such conditions an increase in the eosinophilic leukocytes of the blood is comparable to a polynuclear neutrophile increase in, for example, pneumonia, and may not this, as in pneumonia, indicate a more favorable prognosis?

In *American Medicine*, March 15, 1902, Russ reports a case of pemphigus foliaceus proving fatal in about 15 days. Blood examination showed an entire absence of eosinophilia.

New Blood Parasite.—The discovery of a parasite in the blood of African persons suffering from an intermittent form of fever is reported. Nepven claimed to have found it in an Algerian and Dutton in a European in West Africa. The latter has recently found the parasite in the blood of native children. It belongs to the genus *trypanosoma*, resembling the Brucei in some points but being much smaller. In addition to irregular fever the patients have edema of the feet and eyelids. There is a possible causal relationship between this disease and nagana and surra, native diseases of horses and cattle.

* From the Laboratory of Clinical Pathology, Cornell University Medical College, New York City.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

June 21, 1902. [Vol. XXXVIII, No. 25.]

1. Analysis of 96 Operations for the Relief of Tuberculosis of the Testicle. ORVILLE HORWITZ.
2. What of the Future? J. H. CARSTENS.
3. Physical Diagnosis as Related to Dental College Curriculums. A. H. PECK.
4. The Embryology of the Dental Pulp. R. R. ANDREWS.
5. Gangrene Following Thrombosis of the Abdominal Aorta and Its Branches. R. EDWARD GARRETT.
6. Maternal Impression "Marks" Child for a Frog. J. W. COOLIDGE.

1.—See *American Medicine*, Vol. III, No. 20, p. 810.2.—See *American Medicine*, Vol. III, No. 24, p. 988.

3.—Physical Diagnosis in Dental College Curriculums.

—Peck hopes to see the time when a dentist will inquire into the health of his patient before deciding on the amount of work safe to do at one sitting. In order to judiciously outline his work he should have as thorough a knowledge as possible of diseases and be able to recognize these by their physical signs as well as symptoms. He urges that instruction in physical diagnosis, particularly as regards the thorax, be given in all dental colleges. [H.M.]

4.—Embryology of Dental Pulp.—Specialization of cells

which are to form the dentine germ occurs about the end of the second intrauterine month. The formation seems influenced by contact with an enamel organ. The round cells at the rim of the papilla appear to be in a protoplasmic substance. Some authorities speak of elementary cells on the outer layers from which odontoblasts are formed, but Andrews has never observed anything but globular masses that are not cells. These are filled at the fifth month with glistening globules. The so-called "conjugation cells" are the pear-shaped fiber-forming cells. These send their processes into the intercellular spaces of the odontoblasts. At this time dentinification begins. Calcium salts are brought by the blood in loose proteid combination and modified by the cytoplasm, forming calcospherites. The fibers of Mummery serve as scaffolding in which gelatinous tissue and the calcospherites are deposited. The earlier layers of odontoblasts are engulfed within the forming layer of dentinal wall and others are developed from the cells of the pulp tissue just within. The germ tissue remaining after full calcification is the normal pulp, the source of nutrition and nerve supply. It is semigelatinous, studded with cells not in contact, and containing many fine fibers. The pear-shaped cells at the periphery conveying fibers to canals in the calcified matrix do not take part in forming the secondary dentine arterraries. New formation cells develop from the layer just within. Lymph vessels have never been certainly demonstrated. [H.M.]

Boston Medical and Surgical Journal.

June 19, 1902. [Vol. CXLVI, No. 25.]

1. The Necessity for an Elective System in a School of Medicine and its Disadvantages. HERBERT L. BURRELL.
2. Report of a Case of Chronic, Continuous Hypersecretion with Hyperchlorhydria (Reichmann's Disease), with Especial Reference to Treatment. R. F. CHASE.
3. The Use of Suprarenal Extract in Hay-fever. J. PAYSON CLARK.

2.—Continuous Hypersecretion with Hyperchlorhydria.

—Chase reports a case in detail, with the treatment. The disease is rare but the diagnosis is easy with proper methods of examination and sufficient time for observation. Nitrogenous diet without condiments and with antacids and lavage gave only temporary relief from the gastralgia, the worst symptom. Vegetable diet with liquids, atropin and potassium bromid also failed. Rectal feeding for six days resulted in relief of the pain, which had continued for ten months. This is probably due to some favorable change in the mucosa, making it tolerant of the highly acid secretions which still continue. [H.M.]

3.—Suprarenal Extract in Hay-fever.—In simple vasomotor rhinitis with no discoverable local abnormality and no general dyscrasia, suprarenal extract used locally appears to give favorable results in a large proportion of cases, preventing or diminishing the symptoms. It does not act favorably when there are local abnormalities. In rheumatic and allied

dyscrasias it causes some reaction at first and does not act as favorably as in uncomplicated cases. [H.M.]

Medical Record.

June 21, 1902. [Vol. 61, No. 25.]

1. Postgraduate Instruction in Great Britain.
2. Postgraduate Instruction in Germany and Austria.
3. Postgraduate Instruction in the United States.
4. Certain Clinical Types of Brain Syphilis.
5. Multiple Neuritis.

4.—Clinical Types of Brain Syphilis.—Intimate familiarity with brain syphilis is the most essential qualification of the neurologist as, with the exception of general paresis and locomotor ataxia, it is the commonest organic lesion he sees. The important clinical groups are the apoplectic, epileptic, meningitic, those with oculomotor palsies, those characterized by somnolence, and those that correspond with anatomic types of gummas and cerebrospinal affection. The course of specific meningitis may be wholly changed by apoplexy. In acute vascular cases disturbances of cutaneous sensibility and of the higher visual tracts are commoner than is usually described. In some cases focal signs are wholly absent. The first symptoms in chronic vascular disease are chiefly mental; later there is an appearance of brain tumor without the general symptoms and the optic neuritis. These cases respond poorly to specific treatment, probably because begun too late. Attacks simulating Jacksonian epilepsy are generally due to disease of the blood-vessels. General epilepsy is due to histologically definable disease in intracranial structures, and may be, but oftener is not, influenced by treatment. Trauma as a direct excitant of brain syphilis is extremely rare. Most if not all cases of nervous syphilis are cerebrospinal anatomically. Psychoses and neuroses are disproportionately frequent in persons who have had syphilis. The toxic effects of treatment may be responsible in some cases, but the vast majority result from malnutrition due to the disease. [H.M.]

New York Medical Journal.

June 14, 1902. [Vol. LXXV, No. 24.]

1. The President's Address. JOHN ALLAN WYETH.
2. The Relation of Medical Science to Commerce. FRANK BILLINGS.
3. Suture of Heart Wounds. HARRY M. SHERMAN.
4. State Medicine: Past, Present and Future. J. M. EMMERT.
5. Two Cases of Supposed Gastric Perforation in which No Explanation of the Symptoms was Found at Operation. A. H. SMITH.
6. Cerebral Localization and Brain Function. L. HARRISON METTLER.

1, 2, 3, 4.—See *American Medicine*, Vol. III, No. 24, pp. 1004, 1007, 1011, 1018.

5.—Supposed Gastric Perforation.—Smith details two cases in which the symptoms pointed strongly to the existence of gastric ulcer with consequent perforation. Operation in the first revealed no abnormality of the stomach. Death followed in 24 hours, no autopsy allowed. In case 2 the symptoms were more marked and the leukocyte count was 21,000. Operation revealed an ulcer the size of a melon seed in the lesser curvature of the stomach, but it extended only through the epithelial layer and showed no signs of recent hemorrhage. It was excised, but death occurred in 24 hours. In this case operation verified the diagnosis of ulcer, but did not explain the symptoms. [A.G.E.]

6.—To be abstracted when completed.

Medical News.

June 21, 1902. [Vol. 80, No. 25.]

1. The Local Treatment of the Organs. W. BYRON COAKLEY.
2. Neurectomy for Facial Neuralgia. E. M. MAGRUDER.
3. Medical Photography. MILTON FRANKLIN.

2.—Neurectomy for Facial Neuralgia.—Magruder details six cases of excision of a portion of the offending nerve for the relief of facial neuralgia. Temporary relief, followed by a return of the trouble in from 6 to 12 months, is the brier history of all the cases operated upon. In one patient the right supra-orbital region was operated upon four times, the right infra-

orbital ten times, the right nasal and right temporal once each. The technic of the operation is described. [A.G.E.]

3.—Medical Photography.—Franklin described the essential points in apparatus and technic. When the camera is to be used in one location only a studio box is most convenient, when in more a landscape camera. A focusing screen is important. There should be a large lens board. A camera 5x7 or 6½x8½ inches is of suitable size. The important qualities in the lens are speed, depth of focus, definition and focal length. Every one purchasing an expensive lens should have it examined by an expert. The shutter should be capable of smooth and simple operation. Both rapid and slower plates are needed. When surface detail is wanted even lighting gives the most satisfactory results. When swelling, unevenness, etc., is to be brought out light and shade play an important part. In most offices a side light is the only one available. The darkness on the opposite side can be overcome by a reflector of white cloth, or a screen of the same may be interposed between subject and light to soften the shadows. If electricity is used, the arc must have a capacity of 25 or 30 amperes. The magnesium flash-light is nearest the ideal. The writer discusses methods of developing and printing, including the three-color process, and gives the technic of photomicrography. [H.M.]

Philadelphia Medical Journal.

June 21, 1902. [Vol. ix, No. 25.]

1. Abdominal Hysterocolpectomy, a New Operation for Removal of Cancer of the Cervix Uteri. JOHN H. GLEASON.
2. Fourteen Cases of Spastic Spinal Paralysis Occurring in One Family. WILLIAM G. SPILLER.
3. Primary Sarcoma of the Omentum. The Clinical Report of a Case. J. PRESTON MILLER.
4. Osteitis Deformans. M. HOWARD FUSSELL.
5. Report of Five Cases of Asthma Treated with Silver Nitrate Injections. H. T. BASS.

1.—Abdominal Hysterocolpectomy.—Under this title Gleason describes an operation for cancer of the cervix uteri, which is a modification of the operation of panhysterocolpectomy as suggested by Edebohls. The latter operation is done entirely by the vaginal route, while the former is accomplished by both the vaginal and abdominal routes. The operation permits the resection of the greater part of the vagina, and will allow a most thorough excision of the surrounding connective tissues, thereby preventing extension of the disease by continuity. It will also permit the removal of the uterus, ovaries, tubes, broad ligaments and all the pelvic connective tissues to the bony walls, as well as allow the palpation and possible dissection of any enlarged glands to be found in the pelvis or about its brim. The operation requires two sittings. The first consists of a thorough curettement of the entire cervix and uterine cavity. If the cervix is not too extensively involved the diseased portion is excised, and the edges brought together by silkworm sutures. The edges of the diseased vaginal areas are then to be incised, the underlying cellular tissue dissected out, and the various vaginal openings enlarged to the form of elliptical incisions, these incisions to be carefully united with silkworm gut. The radical operation is done about twelve days later. By this preliminary procedure there is little danger of septic infection or of the implantation of cancer cells and the tissues thus removed can be submitted to a microscopic examination. One case is detailed. [F.C.H.]

2.—Spastic Spinal Paralysis.—Spiller reports 14 cases of this disease occurring in one family. He gives a review of the literature pertaining to the subject. [F.C.H.]

3.—Primary Sarcoma of the Omentum.—Miller details the history and pathologic findings of an interesting case of primary sarcoma of the omentum. He also gives the medical and surgical references to the subject obtained from the literature. [F.C.H.]

Medical College for Chinese at Hongkong.—An address by the staff and students of this college was given Hon. T. Stewart Lockhart on his recent departure for his work in furthering the work of the college. This institution was founded in 1887 by the exertions of Dr. Manson. British journals call attention to the importance of educating the Chinese in the profession of medicine.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

Polypharmacy in Nature and Art is the title of an article by George Mohamed (*Journal of Balneology and Climatology*, Vol. v, Part 3, 1901, p. 189). There is a "justifiable polypharmacy" which consists in the judicious combination of two or more drugs having one physiologic action in common, but exerting opposite effects on one or more organs or functions of the body. Thus, for instance, if a drug is pushed to obtain its effect on the kidneys, a very unwelcome effect may, in addition, be obtained on the heart; whereas if the drug is combined with one that has an opposite cardiac effect, free diuresis without any effect on the heart may be obtained. Mohamed has collated an interesting table of 14 drugs, and has assigned numerical values to their actions as expectorants, diaphoretics, diuretics, their action on the heart and on the nervous system, and what he terms their antiseptic action on excretions, the combined action of the drug being 100. Thus, for example, ammonium carbonate is described as having an expectorant action of 30, a diaphoretic action of 10, a cardiac excitant action of 40, and a stimulating action on the nervous system of 20. The numbers are, of course, arbitrary, and, as Mohamed says, chosen by "intuition." [It may be remarked that this same principle of justifiable polypharmacy has long been taught by H. C. Wood under the name of "cross-action of drugs," although Mohamed presents the subject as original, which it undoubtedly is, so far as he is concerned.] A few examples are given illustrating the manner of compiling a prescription according to the table.

Polypharmacy is unjustifiable under the following conditions: 1. When as good a result could be obtained by the use of a single drug. 2. When two drugs are used whose chief actions are antagonistic and their common property is not the sole object of the prescription. 3. When drugs are used whose actions are only known to us empirically. 4. When two or more drugs are used from infirmity of mind. In this connection he says that it seems indefensible to unite digitalis and nitroglycerin in one prescription for heart disease, as they are so antagonistic that one must undo the good effected by the other. [A bad illustration—the combination is good theoretically and actually—nitroglycerin correcting an undesired effect of digitalis.—s.s.c.] If the physician has a clear idea of what the various drugs are going to do, polypharmacy is right; if not, it is wrong. There follows a list of well-known mineral waters with the proportion of potassium salts contained. What Mohamed wishes to emphasize is the fact that every mineral water contains a number of ingredients, many of which may be antagonistic in their effects, and that in spite of this the waters have a good effect in various diseases. "A thermal water is an entity, a mixture of chemicals and dynamics very hard to understand." The various mineral waters contain chiefly sodium calcium and magnesium, while potassium, iron, aluminium, manganese and lithium are not always present, and when they are, in much smaller quantities. But although the solvent action of potassium salts upon uric acid concretions has only been known within the last 50 years, yet every spring that contains a considerable quantity of potassium salts, such as Carlsbad, Ems, Seltzer, Vichy and others, has had a reputation for gout for generations. One or two of the more important drugs are then taken up and discussed in the same way, and the author concludes, contrary to the opinion which is now gaining ground, that it is "not always the right and scientific thing to give the alkaloids or principles which can be separated from vegetable products, but that it is often better to give the crude drug with all its constituents." [R.M.G.]

Remineralization Applied to the Treatment of Chronic Rheumatism.—Gaubé (*Journal des Praticiens*, June 1, 1901) has found that the coefficient of mineralization is decreased in patients suffering from chronic rheumatism as compared to that found in healthy individuals. Under these circumstances he recommends that this loss be compensated by the administration of phosphoric acid, sodium chlorid, lime, etc., according to the indications furnished by biologic analysis. [L.F.A.]

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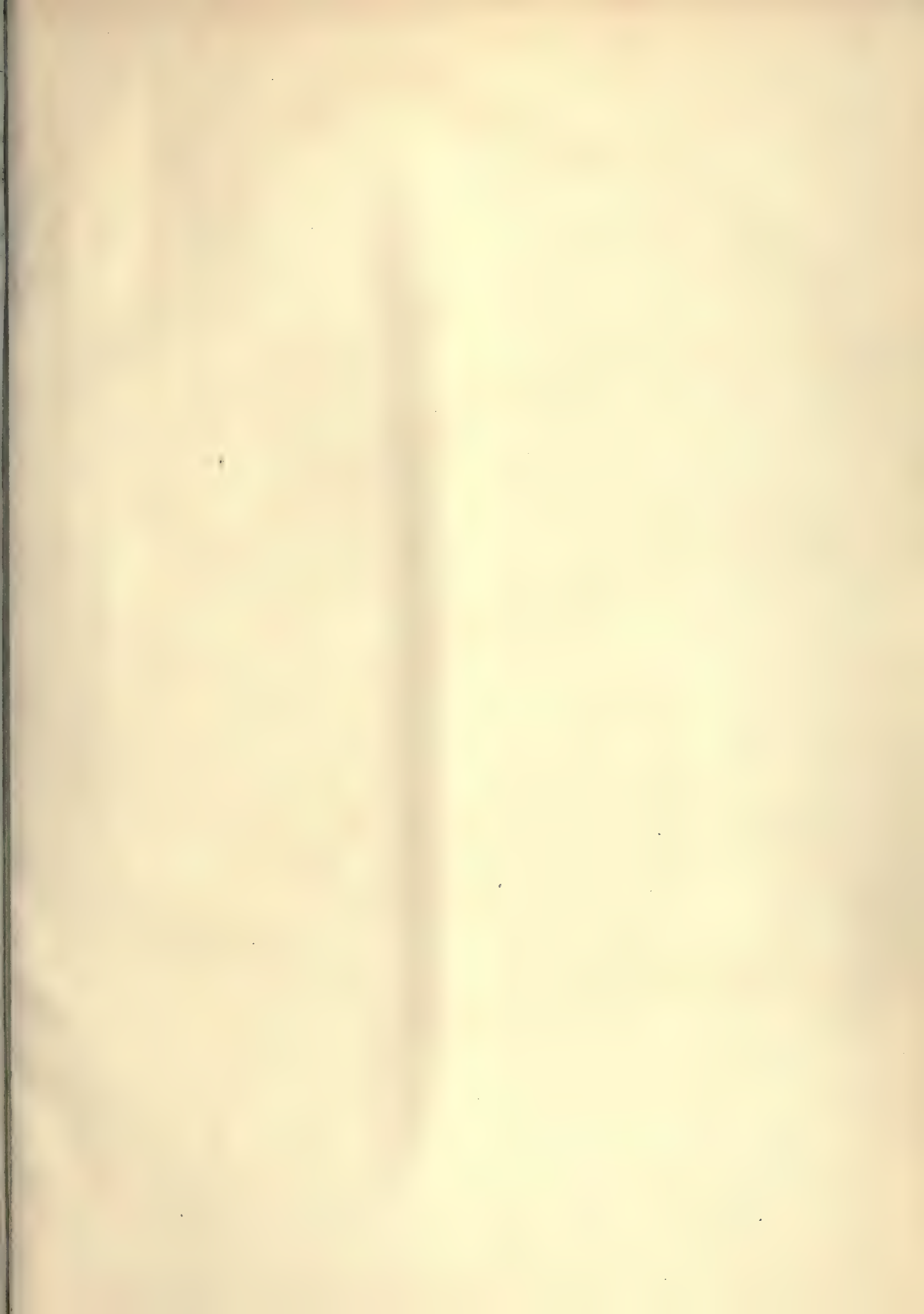
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